Reports on tasks for scientific cooperation

Report of experts participating in Task 3.2.10

April 2003

Collection of occurrence data of *Fusarium* toxins in food and assessment of dietary intake by the population of EU Member States

Directorate-General Health and Consumer Protection

SCOOP TASK 3.2.10

"COLLECTION OF OCCURRENCE DATA OF *FUSARIUM* TOXINS IN FOOD AND ASSESSMENT OF DIETARY INTAKE BY THE POPULATION OF EU MEMBER STATES"

Final Report

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Finalisation of the task April 2003

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I SCOOP Task 3.2.10

1 General information

The SCOOP task 3.2.10 „Collection of Occurrence Data of *Fusarium* Toxins in Food and Assessment of Dietary Intake by the Population of EU Member States" consists of three separate sub-tasks:

Subtask I: Trichothecene mycotoxins
Subtask II: Zearalenone
Subtask III: Fumonisins

This final report has been structured in a general section (part I), the three subtasks (A-C) and an annex part (II).
The information for the participating institutes including the forms, tables and the food categorisation system, the time table of the task, the list of participants and a glossary are reported in section II “Annexes”. For each single task the participants received detailed instructions. As these instructions are identical except for the respective toxin and the concentration considered, only one example is given in the annex part.

2 Summary of Occurrence Data

Thirteen countries were asked to provide information on the exposure of the population to *Fusarium* toxins in their country. Twelve countries provided data on trichothecenes, 9 countries each on zearalenone and fumonisins (Table I).

Table II summarizes the information structured by country, mycotoxins, number of samples analysed and percentage of positive samples. The database covers altogether 16 *Fusarium* mycotoxins and 44 959 analyses. Positive samples ranged from 0 % (verrucarol) to 57 % (deoxynivalenol) of all samples.

Table I: SCOOP Task 3.2.10 – Participating countries and contributions

Participating Countries	**Subtask I Trichothecenes**	**Subtask II Zearalenone**	**Subtask III Fumonisins**
Austria	X	X	X
Belgium	X	-	X
Denmark	X	-	-
Finland	X	X	-
France	X	X	X
Germany	X	X	X
Ireland	-	-	-
Italy	X	X	X
The Netherlands	X	X	X
Norway	X	X	X
Portugal	X	X	-
Sweden	X	-	X
United Kingdom	X	X	X
Sum:	**12**	**9**	**9**

Table II: Overview on *Fusarium* toxin occurrence data submitted by the participating countries

***Fusarium* toxin**	**Countries**	**Number of samples**	**Positive samples**
Type B trichothecenes			
Deoxynivalenol	11	11 022	57 %
Nivalenol	7	4 166	16 %
3-Acetyldeoxynivalenol	6	3 721	8 %
15-Acetyldeoxynivalenol	3	1 954	20 %
Fusarenon X	3	1 872	10 %
Type A trichothecenes			
T-2 Toxin	8	3 490	20 %
HT-2 Toxin	6	3 032	14 %
T-2 Triol	2	1 389	6 %
Neosolaniol	2	1 323	1 %
Diacetoxyscirpenol	3	1 886	4 %
Monoacetoxyscirpenol	1	853	1 %
Verrucarol	1	121	0%
Zearalenone	9	5 018	32 %
Fumonisins			
Fumonisin B_1	9	3 863	46 %
Fumonisin B_2	6	1 010	42 %
Fumonisin B_3	1	239	36 %
	Sum:	**44 959**	

Table III presents a summary of food categories most frequently contaminated with *Fusarium* mycotoxins. Cereals ranking first, among them corn and wheat showed the highest level of contamination with *Fusarium* mycotoxins.

Table III: Summary of food groups most frequently contaminated with *Fusarium* mycotoxins

***Fusarium* toxin**	**Main food items/food groups contaminated (percentage of positive samples)**
Type B trichothecenes	
Deoxynivalenol	corn (89 %), wheat* (61 %)
Nivalenol	corn (35 %), oats (21 %), wheat*(14 %)
3-Acetyldeoxynivalenol	corn (27 %), wheat*(8%)
Type A trichothecenes	
T-2 Toxin	corn (28 %), wheat (21 %), oats (21 %)
HT-2 Toxin	oats (41 %), corn (24 %), rye** (17 %)
Zearalenone	corn (79 %), corn milling fractions (51 %), corn based products (53%); wheat (30 %), wheat milling fraction (24 %), wheat based products (11 %); baby food (23 %)
Fumonisins	
Fumonisin B_1	corn (66 %), corn flour (79 %), corn based products (31 %), corn flakes (46 %); wheat (79 %)
Fumonisin B_2	corn (51 %)

* Wheat and wheat flour ** Rye and rye flour

3 Summary of Consumption Data

Consumption data for the three subtasks trichothecenes, zearalenone and fumonisins were provided from 11, 9 and 7 participating countries, respectively (Table IV). Various methodologies were used in the Member States to calculate the food consumption for all population and/or specific groups of consumers (details see parts A – C).

Table IV: Summary of food consumption data submitted by the participating countries

Participating Countries	Subtask I Trichothecenes	Subtask II Zearalenone	Subtask III Fumonisins
Austria	X	X	X
Belgium	X	-	X
Denmark	X	-	-
Finland	X	X	-
France	X	X	X
Germany	X	X	X
Italy	X	X	X
The Netherlands	X	X	X
Norway	X	X	X
Portugal	-	X	-
Sweden	X	-	-
United Kingdom	X	X	-
Sum:	**11**	**9**	**7**

4 Summary of Dietary Intakes

Dietary intakes were calculated from 12 (trichothecenes), 9 (subtask II) and 7 countries (subtask III).

Table V: Summary of dietary intake data submitted by the participating countries

Participating Countries	Subtask I Trichothecenes	Subtask II Zearalenone	Subtask III Fumonisins
Austria	X	X	X
Belgium	X	-	X
Denmark	X	-	-
Finland	X	X	-
France	X	X	X
Germany	X	X	X
Italy	X	X	X
The Netherlands	X	X	X
Norway	X	X	X
Portugal	X	X	-
Sweden	X	-	-
United Kingdom	X	X	-
Sum:	**12**	**9**	**7**

An overview of the calculations of mean dietary intakes and the exploitation of the TDI-values is given in Table VI.

The calculated average dietary intake values for the most *Fusarium* toxins were found to be considerably below the (t)-TDI-values. Higher intakes and a transgression of the (t)-TDI values were observed for the group of infants and children. Intakes higher than the TDI were noted for the sum of T-2 toxin and HT-2 toxin.

Table VI: Range of average dietary intakes* calculated as percentage of the TDI-values

Mycotoxin	TDI µg/kg bw/day	Population	Adults	Infants
Deoxynivalenol	1	0.8% - 33.8%	14.4% - 46.1%	11.3% - 95.9%
Nivalenol**	0.7	4.2% - 11.1%	0.8% - 8.2%	3.7% - 22.6%
T-2 + HT-2 toxin**	0.06	18.3% - 250%	61.7% - 171.7%	26.7% - 563.3%
Zearalenone**	0.2	13.4%	5.3% -14.5%	3% - 27.5%
Fumonisins $B_1 + B_2$	2	0.8% - 13.2%	0.1% - 14.1%	22.3%

* Mean food consumption and mean 1 occurrence data. For details see parts A-C.
** Temporary TDI

Deoxynivalenol:
The average level intakes (mean food consumption and mean 1 occurrence data) for the entire population as well as for the group adults are low and do not exceed 46.1 % of the TDI of 1 µg/kg bodyweight/day. However for the group of young children the intake might approach the TDI.

DON high level intake: Especially for group of young children the TDI can be exceeded. For the group of adolescents (13-18 years) the intake might come to the TDI (see part A).

Nivalenol:
All intakes are far below the t-TDI of 0.7 µg/kg bodyweight/day.

T-2 and HT-2 Toxin:
The t-TDI of 0.06 µg/kg bodyweight/day for the sum of the two toxins is often exceeded. However, the significance of the total number of positive samples must be considered. Only 20 % of the samples tested for HT-2 toxin and 14 % of the samples tested for T-2 toxin were positive. Therefore the mean 1 (and the intake) is strongly influenced by the limit of detection of the used analytical methods.

Wheat and wheat containing products (like bread and pasta) are the predominant source for DON, NIV T-2 toxin and HT-2 toxin intake.

Other trichothecenes:
As far as the information is available, the intakes are very low.

Zearalenone:
The average daily intakes ranged among adults from 0.8 to 29 ng/kg body weight. Small children had the highest average daily intakes ranging from 6 to 55 ng/kg bodyweight/day. The t-TDI value of 0.2 µg/kg of body weight per day is not exceeded. Main contributors for the intake were found to be corn, wheat and the corresponding products.

Fumonisins:
The average daily intakes are well below the fumonisins group TDI of 2 µg/kg body weight/day. Higher intakes were noted for young children.
Cereals represent the major source of intake for fumonisins. Among cereals, corn and wheat dominate as main contributors to the total intake.

5 General Conclusions

The results of this task demonstrate that *Fusarium* mycotoxins are widely distributed in the food chain in the EU. The major sources are products made from cereals, in particular wheat and corn.

While the dietary intakes of *Fusarium* toxins are often less than the TDI's for the respective toxin for the entire population and adults, they are close or even exceed in some cases the TDI's for risk groups like infants and children.

Variations in climate, products and consumption result in different patterns over time and region. Continuous monitoring of the toxin status is therefore recommended. Thus far, the scientific evaluation of the threats posed by *Fusarium* toxins is hampered by different standards and methodologies applied in the Member States.
The lack of harmonisation in sampling procedures, analytical methods, quality assurance of data, type of commodities analysed and wide spectrum of different methodologies to calculate consumption data could in some cases influence the reliability of the results.
It is proposed by this body that the EU initiates projects to this purpose. In particular, specific guidelines aimed at improving the harmonisation of methodology for the survey on consumption data are needed. In order to assess more accurately the exposure of the European population, exposure data should be related to consumers only and precisely defined, e.g. by age.

Nevertheless, the information provided by the Member States is sufficient to assess the status of *Fusarium* toxin contamination and dietary intakes as a prerequisite for future European legislation.

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TASK 3.2.10 "COLLECTION OF OCCURRENCE DATA OF FUSARIUM TOXINS IN FOOD AND ASSESSMENT OF DIETARY INTAKE BY THE POPULATION OF EU MEMBER STATES"

Subtask I: TRICHOTHECENES

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1 GENERAL

Data has been provided by the participating institutes on the following trichothecenes:

- Deoxynivalenol (DON)
- Nivalenol (NIV)
- 3-Acetyldeoxynivalenol (3-AcDON)
- 15-Acetyldeoxynivalenol (15-AcDON)
- Fusarenon-X (FUS-X)
- T-2 toxin
- HT-2 toxin
- T2-triol
- Diacetoxyscirpenol (DAS)
- Neosolaniol (NEOSOL)
- Monoacetoxyscirpenol (MAS)
- Verrucarol (VOL)

2 TRICHOTHECENE OCCURRENCE IN FOOD

Occurrence data has been provided by 12 countries, of which 11 countries provided data for DON, 8 for T-2 toxin, 7 for NIV, 6 for HT-2 toxin and 3-AcDON, 3 for 15-AcDON, DAS and FUS-X and 2 for NEOSOL and T2-triol and 1 for MAS and VOL (**Figure 1 and 2**).

According to the request of information reported in Annex 3, most of the participants have sent their information on the occurrence of trichothecenes in various food, generally by following the food categories provided by the Co-ordinators. In order to allow the Co-ordinators to better harmonise the occurrence data by each Member State, participants were asked to send, whenever possible, also the individual data for each group or subgroup.
The Co-ordinator decided to omit in the tables for the occurrence of trichothecenes in selected commodities the provided information on reference and year, contamination ranges, evidence of quality assurance, sampling strategies, analytical methods and or the samples are representative for the member states.

Calculation of the mean 1 and mean 2

Mean 1 accounts for all the individual provided values according to the following criteria:

1) If LOD and LOQ are available, participants were requested to calculate mean level using LOD/2 for results lower than the LOD. For results between LOD and LOQ, numerical values, if available, were used.

2) If only LOQ is available, or if numerical values between LOD and LOQ are not available, LOQ/6 for values below the LOQ was used.

Mean 2 accounts for all positives above LOD values and it accounts for the distribution and level of positive results.

Range of contamination and median value

The ranges of concentration were chosen in order to provide a wide spectrum of the low region of concentration.

The median value, corresponding to the 50th percentile, provides an indication, along with mean 1, of the distribution of data population.

Trichothecene B: Deoxynivalenol

Table 1A presents the occurrence data as provided by participants (N = 11) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 11022 samples were analysed for DON, with 57 % of positive samples (**Figure 3**).

Occurrence data for selected commodities

In order to account for the overall incidence of deoxynivalenol contamination in different food matrices in European countries, all provided data on the occurrence in wheat and wheat flour, barley, oats, rye and rye flour and corn are gathered in **Tables 1A1, 1A2, 1A3, 1A4 and 1A5** respectively. In these tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. **Table 1B** presents a summary of best estimates of occurrence data in cereals and cereal products.

At the bottom of the tables the weighed mean 1 and mean 2 among all participating countries were calculated.

Wheat (and wheat flour)

The occurrence data for wheat and wheat flour in each participating country are gathered in **Table 1A1.**

The total number of results was 6358 with 61 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 50000 µg/kg (France). The mean 1 ranged between 8 (Belgium) to 1427 µg/kg (Sweden). The weighed mean 1 was 205 µg/kg and the weighed mean 2 was 293 µg/kg. 11 countries (Austria, Belgium, Denmark, Finland, France, Germany, The Netherlands, Norway, Portugal, Sweden and UK) provided contributions.

Barley

The occurrence data for barley in each participating country are gathered in **Table 1A2.**

The total number of results was 781 with 47 % of positive samples, which ranged from LOD 1.7 µg/kg (UK), to 619 µg/kg (Finland). The mean 1 ranged between 1.5 (UK) to 153 µg/kg (The Netherlands). The weighed mean 1 was 37 µg/kg and the weighed mean 2 was 106 µg/kg. 5 countries (Finland, France, The Netherlands, Norway, and UK) provided contributions.

Oats

The occurrence data for oats in each participating country are gathered in **Table 1A3.**

The total number of results was 595 with 33 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 5004 µg/kg (Finland). The mean 1 ranged between 5 (The Netherlands) to 627.8 µg/kg (Finland). The weighed mean 1 was 95 µg/kg and the weighed mean 2 was 253 µg/kg. 5 countries (Austria, Finland, The Netherlands, Norway, and Sweden) provided contributions.

Rye (and rye flour)

The occurrence data for rye and rye floor in each participating country are gathered in **Table 1A4.**

The total number of results was 271 with 41 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 595 µg/kg (France). The mean 1 ranged between 6.7 (Finland) to 150 µg/kg (The Netherlands). The weighed mean 1 was 42 µg/kg and the weighed mean 2 was 95 µg/kg. 5 countries (Denmark, Finland, The Netherlands, Norway, and Sweden) provided contributions.

Corn

The occurrence data for corn in each participating country are gathered in **Table 1A5.**

The total number of results was 520 with 89 % of positive samples, which ranged from LOD 7 µg/kg (France) to 8850 µg/kg (France). The mean 1 ranged between 19 (France) to 1056 µg/kg (France). The weighed mean 1 was 594 µg/kg and the weighed mean 2 was 660 µg/kg. 3 countries (Austria, France and The Netherlands) provided contributions.

Comments on deoxynivalenol occurrence

A considerable number of data was provided. Most of the data where provided by the North European countries.

- Among the individual commodities, wheat has been investigated more widely in comparison with the other grains.
- Weighed mean 1 ranged from 37 µg/kg for barley to 594 µg/kg for corn.
- Weighed mean 2 (all positive samples) ranged from 95 µg/kg for rye to 660 µg/kg for corn.
- Corn showed the highest level of contamination, with 89 % of positive samples.

Trichothecene B: Nivalenol

Table 2A presents the occurrence data as provided by participants (N = 7) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 4166 samples were analysed for NIV, with 16 % of positive samples (**Figure 4**).

Occurrence data for selected commodities

In order to account for the overall incidence of nivalenol contamination in different food matrices in European countries, all provided data on the occurrence in wheat and wheat flour, barley, oats, rye and rye flour and corn are gathered in **Tables 2A1, 2A2, 2A3, 2A4** and **2A5** respectively. In these tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. **Table 2B** presents a summary of best estimates of occurrence data in cereals and cereal products.

At the bottom of the tables the weighed mean 1 and mean 2 among all participating countries were calculated. (for rye and corn the weighted mean 1 and for oats, rye and corn the weighted mean 2 were not calculated because too many results were negative)

Wheat (and wheat flour)

The occurrence data for wheat and wheat flour in each participating country are gathered in **Table 2A1.**

The total number of results was 2166 with 14 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 440 µg/kg (Denmark). The mean 1 ranged between 1.7 (UK) to 199 µg/kg (Finland). The weighed mean 1 was 24 µg/kg and the weighted mean 2 was 98. 7 countries (Austria, Denmark, Finland, France, Norway, Sweden and UK) provided contributions.

Barley

The occurrence data for barley in each participating country are gathered in **Table 2A2.**

The total number of results was 521 with 8 % of positive samples, which ranged from LOD 1.7 µg/kg (UK) to 351 µg/kg (Finland). The mean 1 ranged between 1.7 (UK) to 54.5 µg/kg (Finland). The weighed mean 1 was 15 µg/kg and the weighted mean 2 was 76. 4 countries (Finland, France, Norway, and UK) provided contributions.

Oats

The occurrence data for oats in each participating country are gathered in **Table 2A3.**

The total number of results was 545 with 21 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 1860 µg/kg (Austria). The mean 1 ranged between 10 (Sweden and Norway) to 197.2 µg/kg (Austria). The weighed mean 1 was 56 µg/kg. 4 countries (Austria, Finland, Norway, and Sweden) provided contributions.

Rye (and rye flour)

The occurrence data for rye and rye floor in each participating country are gathered in **Table 2A4.**

The total number of results was 185 with 5 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 48 µg/kg (Denmark). 4 countries (Denmark, Finland, Norway, and Sweden) provided contributions.

Corn

The occurrence data for corn in each participating country are gathered in **Table 2A5.**

The total number of results was 268 with 35 % of positive samples, which ranged from LOD 7 µg/kg (France) to 340 µg/kg (France). 2 countries (Austria and France) provided contributions.

Comments on Nivalenol occurrence

A considerable number of data was provided. Most of the data where provided by the North European countries.

- Among the individual commodities, wheat has been investigated more widely in comparison with the other grains.
- Weighed mean 1 ranged from 15 µg/kg for barley to 56 µg/kg for oats.
- Weighed mean 2 (all positive samples) was only calculated for wheat and barley and ranged from 76 µg/kg for barley to 98 µg/kg for wheat.
- Corn showed the highest level of contamination (35 %).

Trichothecene B: 3-Acetyldeoxynivalenol

Table 3A presents the occurrence data as provided by participants (N = 6) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 3721 samples were analysed for 3-AcDON, with 8 % of positive samples (**Figure 5**).

Occurrence data for selected commodities

In order to account for the overall incidence of 3-Acetyldeoxynivalenol contamination in different food matrices in European countries, all provided data on the occurrence in wheat and wheat flour, barley, oats, rye and rye flour and corn are gathered in **Tables 3A1, 3A2, 3A3, 3A4 and 3A5** respectively. In these tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. **Table 3B** presents a summary of best estimates of occurrence data in cereals and cereal products.

No weighed mean 1 and mean 2 among all participating countries were calculated because too many results were negative.

Wheat (and wheat flour)

The occurrence data for wheat and wheat flour in each participating country are gathered in **Table 3A1.**

The total number of results was 1910 with 8 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 239 µg/kg (Sweden). 6 countries (Austria, Finland, France, Norway, Sweden and UK) provided contributions.

Barley

The occurrence data for barley in each participating country are gathered in **Table 3A2.**

The total number of results was 521 with 4 % of positive samples, which ranged from LOD 1.7 µg/kg (UK) to 101 µg/kg (Finland). 4 countries (Finland, France, Norway, and UK) provided contributions.

Oats

The occurrence data for oats in each participating country are gathered in **Table 3A3.**

The total number of results was 409 with 6 % of positive samples, which ranged from LOD 2 µg/kg (Sweden) to 438 µg/kg (Finland). 4 countries (Austria, Finland, Norway and Sweden) provided contributions.

Rye

The occurrence data for rye in each participating country are gathered in **Table 3A4.**

The total number of results was 134 with 1 positive sample (19 µg/kg, Sweden). 3 countries (Finland, Norway, and Sweden) provided contributions.

Corn

The occurrence data for corn in each participating country are gathered in **Table 3A5.**

The total number of results was 271 with 27 % of positive samples, which ranged from LOD 7 µg/kg (France) to 520 µg/kg (France). 2 countries (Austria and France) provided contributions.

Comments on 3-Acetyldeoxynivalenol occurrence

A considerable number of data was provided. Most of the data where provided by the North European countries.

- Among the individual commodities, wheat has been investigated more widely in comparison with the other grains.
- Corn showed the highest level of contamination (27 %).

Trichothecene B: 15-Acetyldeoxynivalenol

Table 4A presents the occurrence data as provided by participants (N = 3) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 1954 samples were analysed for 15-AcDON, with 20 % of positive samples, which ranged from LOD 1.7 µg/kg (UK) to 1320 µg/kg (France). 3 countries (Austria, France and UK) provided contributions (**Figure 6**).

Comments on 15-Acetyldeoxynivalenol occurrence

- The number of reported results was rather small. Levels up to 1320 µg/kg were found in corn.

Trichothecene B: Fusarenon-X

Table 5A presents the occurrence data as provided by participants (N = 3) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 1872 samples were analysed for FUS-X, with 10 % of positive samples, which ranged from LOD 3.3 µg/kg (UK) to 50 µg/kg (France). 3 countries (Finland, France and UK) provided contributions (**Figure 7**).

Comments on Fusarenon-X occurrence

- The number of reported results was rather small. Levels up to 50 µg/kg were found in wheat.

Trichothecene A: T-2 toxin

Table 6A presents the occurrence data as provided by participants (N = 8) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 3490 samples were analysed for T-2 toxin, with 20 % of positive samples (**Figure 8**).

Occurrence data for selected commodities

In order to account for the overall incidence of T-2 toxin contamination in different food matrices in European countries, all provided data on the occurrence in wheat and wheat flour, barley, oats, rye and rye flour and corn are gathered in **Tables 6A1, 6A2, 6A3, 6A4** and **6A5** respectively. In these tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. **Table 6B** presents a summary of best estimates of occurrence data in cereals and cereal products.

Only for wheat, the weighed mean 1 and mean 2 among all participating countries was calculated.

Wheat (and wheat flour)

The occurrence data for wheat and wheat flour in each participating country are gathered in **Table 6A1.**

The total number of results was 1417 with 21 % of positive samples, which ranged from LOD 2 µg/kg (Italy) to 160 µg/kg (Italy). The mean 1 ranged between 1.7 (UK) to 90 µg/kg (Denmark). The weighed mean 1 was 15 µg/kg and the weighed mean 2 was 28 µg/kg. 7 countries (Denmark, Finland, France, Italy, Norway, Portugal and UK) provided contributions.

Barley

The occurrence data for barley in each participating country are gathered in **Table 6A2.**

The total number of results was 502 with 3 % of positive samples, which ranged from LOD 1.7 µg/kg (UK), to 280 µg/kg (Italy). The mean 1 ranged between 0.8 (UK) to 280 µg/kg (Italy). 4 countries (Finland, France, Italy, and UK) provided contributions.

Oats

The occurrence data for oats in each participating country are gathered in **Table 6A3.**

The total number of results was 464 with 16 % of positive samples, which ranged from LOD 10 µg/kg (Finland) to 550 µg/kg (Austria). The mean 1 ranged between 4.2 (Finland) to 68.3 µg/kg (Austria). 3 countries (Austria, Finland and Norway) provided contributions.

Rye (and rye flour)

The occurrence data for rye and rye floor in each participating country are gathered in **Table 6A4.**

The total number of results was 62 with 21 % of positive samples, which ranged from LOD 10 µg/kg (Finland) to 193 µg/kg (Denmark). 3 countries (Denmark, Finland and Norway) provided contributions.

Corn

The occurrence data for corn in each participating country are gathered in **Table 6A5.**

The total number of results was 293 with 28 % of positive samples, which ranged from LOD 3 µg/kg (France) to 255 µg/kg (Austria). 3 countries (Austria, France and Italy) provided contributions.

Comments on T-2 Toxin occurrence

A considerable number of data was provided. Most of the data where provided by the North European countries.

- Among the individual commodities, wheat has been investigated more widely in comparison with the other grains.
- Corn showed the highest level of contamination (28 %).

Trichothecene A: HT-2 toxin

Table 7A presents the occurrence data as provided by participants (N = 6) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 3032 samples were analysed for HT-2 toxin, with 14 % of positive samples (**Figure 9**).

Occurrence data for selected commodities

In order to account for the overall incidence of HT-2 toxin contamination in different food matrices in European countries, all provided data on the occurrence in wheat and wheat flour, barley, oats, rye and rye flour and corn are gathered in **Tables 7A1, 7A2, 7A3, 7A4 and 7A5** respectively. In these tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. Table **7B** presents a summary of best estimates of occurrence data in cereals and cereal products.

No weighed mean 1 and mean 2 among all participating countries were calculated because too many results were negative.

Wheat (and wheat flour)

The occurrence data for wheat and wheat flour in each participating country are gathered in **Table 7A1.**

The total number of results was 1213 with 12 % of positive samples, which ranged from LOD 3.3 µg/kg (UK) to 50 µg/kg (France). 5 countries (Denmark, Finland, France, Norway and UK) provided contributions.

Barley

The occurrence data for barley in each participating country are gathered in **Table 7A2.**

The total number of results was 501 with 5 % of positive samples, which ranged from LOD 1.7 µg/kg (UK), to 287 µg/kg (Finland). 3 countries (Finland, France and UK) provided contributions.

Oats

The occurrence data for oats in each participating country are gathered in **Table 7A3.**

The total number of results was 464 with 41 % of positive samples, which ranged from LOD 10 µg/kg (Finland) to 1150 µg/kg (Austria). 3 countries (Austria, Finland and Norway) provided contributions.

Rye (and rye flour)

The occurrence data for rye and rye floor in each participating country are gathered in **Table 7A4.**

The total number of results was 63 with 17 % of positive samples, which ranged from LOD 10 µg/kg (Finland) to 70 µg/kg (Denmark). 3 countries (Denmark, Finland and Norway) provided contributions.

Corn

The occurrence data for oats in each participating country are gathered in **Table 7A5.**

The total number of results was 261 with 24 % of positive samples, which ranged from LOD 3 µg/kg (France) to 120 µg/kg (Austria). 2 countries (Austria and France) provided contributions.

Comments on HT-2 Toxin occurrence

A considerable number of data was provided. Most of the data where provided by the North European countries.

- Among the individual commodities, wheat has been investigated more widely in comparison with the other grains.
- Oats showed the highest level of contamination. (41 %).

Trichothecene A: Diacetoxyscirpenol

Table 8A presents the occurrence data as provided by participants (N = 3) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 1886 samples were analysed for DAS with 4 % of positive samples, which ranged from LOD 3.3 µg/kg (UK) to 50 µg/kg (France). 3 countries (Finland, France and UK) provided contributions (**Figure 10**).

Comments on Diacetoxyscirpenol occurrence

- The number of reported results was rather small. Levels up to 50 µg/kg were found in wheat.

Trichothecene A: T2-triol

Table 9A presents the occurrence data as provided by participants (N = 2) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 1389 samples were analysed for T2-triol, with 6 % of positive samples, which ranged from LOD 3.3 µg/kg (UK) to 50 µg/kg (France). 2 countries (France and UK) provided contributions.

Comments on T2-triol occurrence

- The number of reported results was rather small. Levels up to 50 µg/kg were found in wheat.

Trichothecene A: Neosolaniol

Table 10A presents the occurrence data as provided by participants (N = 2) (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 1323 samples were analysed for NEOSOL, with 1 % of positive samples, which ranged from LOD 3.3 µg/kg (UK) to 40 µg/kg (France). 2 countries (France and UK) provided contributions.

Comments on Neosolaniol occurrence

- The number of reported results was rather small. Levels up to 40 µg/kg were found in wheat.

Trichothecene A: Monoacetoxyscirpenol

Table 11A presents the occurrence data as provided by one participant (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 853 samples were analysed for Monoacetoxyscirpenol, with 1 % of positive samples, which ranged from LOD 20 µg/kg to 30 µg/kg. Only France provided a contribution.

Comments on Monoacetoxyscirpenol occurrence

- The number of reported results was rather small. Levels up to 30 µg/kg were found in wheat.

Trichothecene A: Verrucarol

Table 12A presents the occurrence data as provided by one participant (aggregated tables 1A1 of the "Information to participating institutes"). The total number of analysed samples for each Member State is represented in **Table 13**. A total of 121 samples were analysed for Verrucarol, with no positive samples. Only France provided a contribution.

Comments on Verrucarol occurrence

- The number of reported results was rather small and no positive samples were found.

3 CONSUMPTION DATA

11 countries provided consumption data.

Table 14 presents the food consumption data (mean, median and 95th percentile) and the information on the adopted methodology for recording the food consumption data which were provided by the participants (N = 11) (aggregated tables 2A1).

Most countries (except Belgium and UK), provided food consumption data for all population. In addition since in the instruction for participants it was requested, whenever possible, to provide food consumption data also for specific groups of consumers (consumers only, by age, by gender, by living area), Belgium, France, Italy, The Netherlands, Norway and the UK provided also information in this respect.
Almost all participants either provided as grouped foods and/or as individual foods consumption data.
Germany provided no food consumption data as requested in table 2A1 of the "Information to participating institutes". However Germany provided information on the food consumption in the tables used for the intake calculation.

4 TRICHOTHECENS DIETARY INTAKE

12 countries provided intake data, of which 11 countries provided data for DON, 8 for T-2 toxin, 7 for NIV, 6 for HT-2 toxin, 5 for 3-AcDON, 2 for 15-AcDON and 1 for T2-triol, DAS and FUS-X.

In order to obtain the overall European scenario of the exposure to trichothecenes, through the combination of trichothecene occurrence data in food products and consumption data, various approaches were followed, namely by country, by food commodity and by groups of population.

Best estimate of the dietary intakes

In general on the basis of the provided data, four different estimates of dietary intakes from each food commodity, as derived by the combination of the above sets of data, could be calculated theoretically:

A. Mean food consumption and mean 1 occurrence data
B. Mean food consumption and mean 2 occurrence data
C. 95th percentile food consumption (if available) and mean 1 occurrence data
D. 95th percentile food consumption (if available) and mean 2 occurrence data

A summary for all Member States of the best estimates of daily intake of the DON, NIV, 3-AcDON, 15-AcDON, FUS-X, T-2 toxin, HT-2 toxin, DAS and T2-Triol for different groups of population is given in **Tables 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C and 9C** respectively**.** Included are the calculated intakes A, B and C. Dietary intake D was not calculated, since it would represent a gross overestimation. The intake estimates were calculated as referred both to person and per kg of body weight (bw).
Only dietary intake values related to commodities on which both occurrence and consumption data were available, the corresponding consumption and occurrence data could be reported.

Total dietary intake in participating countries

For each Member State, the best estimate of total dietary intake (ng/kg bw/day) for all population and/or for specific groups of population was calculated by summing up the dietary intakes A and C from each food commodity from the Tables 1C, 2C, 3C, 4C, 5C, 6C, 7C, 8C and 9C (**Table 15**). For DON, NIV, T-2 toxin and HT-2 toxin these intakes are summarised in **Figures 11, 12, 13 and 14**. In **Figure 15** the combined intake of T-2 toxin and HT-2 toxin is summarised. In these figures the daily intake is expressed as percentage of the (t)-TDI.
This approach provides the value closest to the real situation. As far as dietary intake B is concerned, it had been agreed previously that the summing up of the contribution from each commodity would provide an overestimation of the total dietary intake.

Consistently with the consumption data provided, most countries calculated the best estimates for "all population". Many countries have provided consumption data for specific groups of population and the dietary intakes were calculated also for those groups. Main categories considered by participants included consumers only, children and adults. Dietary intakes for these groups of population allow for the recommendations outlined in the CODEX guidelines (1999), related to the evaluation of dietary intake of food chemicals. According to these recommendations "……as appropriate, risk assessors and risk managers should consider differences in food consumption patterns across population and in vulnerability to toxicity within population as they estimate exposure to, and potential human health consequences resulting from exposure to chemicals found in foods……..".

5 TRICHOTHECENE OCCURRENCE IN BODY FLUIDS

Table 16 presents the occurrence data as provided by one participant. A total of 6 samples were analysed for HT-2 toxin, T-2 Tetraol and T2-triol. Only Germany provided a contribution.

Comments on trichothecene occurrence in body fluids

- The number of reported results was very small. Levels up to 21.2 ng/ml were found in urine.

6 DISCUSSION AND CONCLUSIONS

Participating countries provided a conspicuous number of data on trichothecenes occurrence, related to food commodities considered as the most susceptible to trichothecenes contamination, and on their consumption. The bulk of information allows to draw relevant conclusions from different points of view and to provide recommendation for future work.

OCCURRENCE

- Occurrence data has been provided by 12 countries, of which 11 countries provided data for DON, 8 for T-2 toxin, 7 for NIV, 6 for HT-2 toxin and 3-AcDON, 3 for 15-AcDON, DAS and FUS-X and 2 for, NEOSOL and T2-triol and 1 for MAS and VOL.
- Far most of the occurrence data is available for deoxynivalenol in the case of trichothecenes B and for T-2 toxin in the case of the trichothecenes A.
- Among cereals, corn showed the highest level of contamination with trichothecenes.
- The percentage of cereal samples (raw cereals and flour) with a DON level of 750 µg/kg or higher was 7 %.
- The percentage of cereal samples (products) with a DON level of 500 µg/kg or higher was 6 %.
- In consideration of the communitary guidance limits, the provided occurrence data showed very few levels of contamination higher than the proposed legal limit of 500 µg/kg (for cereal products as consumed and other cereal products at retail stage) and of 750 µg/kg (for flour used as raw material in food products).
- The lack of harmonisation in sampling procedures and in analytical methods could in some cases influence the soundness of the results. Nevertheless the provided information on the trichothecenes occurrence depicted a sufficient overall scenario of trichothecenes contamination, to be used as the benchmark for future European legislation.

CONSUMPTION

- 11 countries provided consumption data.
- There is a significant lack of consumption data in some countries. In particular, information on baby food is generally not available.
- In addition, it has not been possible to handle the provided data homogeneously, since they were referred, in some cases, to all population or consumers and in other cases to specific groups of population.

DIETARY INTAKE

- 12 countries provided intake data, of which 11 countries provided data for DON, 8 for T-2 toxin, 7 for NIV, 6 for HT-2 toxin, 5 for 3-AcDON, 2 for 15-AcDON and 1 for T2-triol, DAS and FUS-X.

The summary of contribution to dietary intake A (mean level for food consumption and mean 1 level for trichothecenes occurrence), from a number of groups of commodities in participating Member States is for DON, NIV, T-2 toxin and HT-2 toxin presented in **Table 17,** both for all population and for specific groups of population (ng/kg body weight/day). **Figures 16, 17, 18, and 19** summarise for DON, NIV, T-2 toxin and HT-2 toxin the contribution for a number of groups of commodities to the dietary intake A (all population) (the intakes are expressed as percentage of the total intakes).
Only the dietary intake A was taken into consideration due to its closeness to real situation**.** The total dietary intake, as obtained by the summing up of contributions from the data available for all commodities is given in **Table 15**.
Each commodity considered in Table 17 contributed to the trichothecenes intake, but it should be noted that no participating country could estimate intakes from all the commodities known to be susceptible to trichothecenes contamination.
In consideration of the already mentioned limiting aspects (see occurrence and consumption sections) some factors contribute to overestimate or underestimate the calculated total dietary intake:

- Since it is rather unlikely that one single person is a consumer of all the considered food groups, the calculated total dietary intake should be considered overestimated when applied to consumers only.
- Whenever dietary intakes were calculated on the basis of occurrence data on raw materials, this led to an overestimation of the intakes, due to the lack of information on the trichothecenes reduction attributable to technological procedures, or on the actual percentage of raw materials in the final product (however a number of the dietary intakes calculations were based on occurrence data on final products).
- For each country, the fewer the number of the tested food, the more underestimated should the result of the total dietary intake be considered.
- Since in most cases, occurrence data were not corrected for recovery factors, an additional underestimation of the intakes should be considered.

Therefore, as shown in Table 17 and keeping into due consideration the limitations above mentioned, and the limited amount of data available for some of the toxins, the following conclusion can be drawn:

- Wheat and wheat containing product (like bread and pasta) represent for DON, NIV T-2 toxin and HT-2 toxin the major source of intake.

It should be underlined that, as shown in Table 17, most countries did not provide information on all food products potentially affected by trichothecenes contamination; therefore the total dietary intake A by country should be generally considered underestimated.

For DON a TDI of 1.0 µg/kg bw, for NIV a t-TDI of 0.7 and for the sum of T-2 toxin and HT-2 toxin a t-TDI of 0.06 µg/kg bw was set by the SCF.
By comparing the results in Table 15 with the above mentioned (t-)TDIs the following conclusions can be drawn:

- DON mean1 intake: Most of the intakes for the population groups are far below the TDI of 1 µg/kg bw. However for the group of young children the intake is very close to the TDI.
- DON high level intake: Especially for group of young children the TDI is exceeded. For the group of 13-18 years adolescents the intake is close tot the TDI.
- NIV intake: All intakes are far below the t-TDI of 0,7 µg/kg bw.
- HT-2 and T-2 toxin intake: The t-TDI of 0.06 µg/kg bw for the sum of the two toxins is in most of the cases exceeded.
  It should be taken in consideration that for T-2 toxin the amount of positive samples was 20 % and for HT-2 toxin 14 %. Therefore the mean 1 (and the intake) is strongly influenced by the limit of detection of the used analytical methods.
- Other trichothecenes intake: as far as the information is available, the intakes are low.

7 FUTURE NEEDS

OCCURRENCE

As far as the factors influencing the reliability of data are concerned, some lack of information still persists. In fact, harmonised sampling plans and methods of analysis, number and type of analysed commodities, quality assurance of data, information on the role of technological processing on the fate of trichothecenes should be improved.

CONSUMPTION

In consideration of the wide spectrum of methodologies used in each Member State to calculate consumption data, research projects should be launched by EU in order to define specific guidelines aimed at improving the harmonisation of methodology for the survey on consumption data to be adopted by each Member State.
In addition, to assess more accurately the exposure of European population, data for consumers only should be collected.

INTAKE

Additional data based upon total diet or duplicate test portion should be developed in order to overcome uncertainties due to many factors including not representative sampling procedures, and inaccurate consumption data

Annex 1

Basic information on trichothecenes

Sources and properties

Trichothecenes are a family of closely related sesquiterpenoids produced by several plant pathogenic fungi. They have a tetracyclic 12,13-epoxytrichothecene skeleton in common, and can be divided into four categories (WHO, 1990):
Type A: characterized by a functional group other than a ketone at C-8
Type B: characterized by a carbonyl function at C-8
Type C: characterized by a second epoxide group at C-7,8 or C-9,10
Type D: characterized by a macrocyclic ring system between C-4 and C-15 with two ester linkages.
The trichothecenes that are subject of this study belong to the type A and type B trichothecenes.

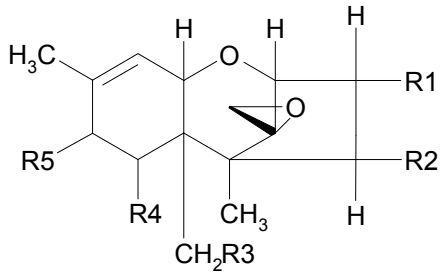

Figure 1 Structural formula of type A trichothecenes

Table 1 Examples of type A trichothecenes

	Mol. wt	R1	R2	R3	R4	R5
DAS [a]	366	OH	OAc	OAc	H	H
NeoSol [b]	382	OH	OAc	OAc	H	OH
T-2 [c]	466	OH	OAc	OAc	H	$OCOCH_2CH(CH_3)_2$
HT-2 [d]	424	OH	OH	OAc	H	$OCOCH_2CH(CH_3)_2$
MAS[e]	324	OH	OH	OAc	H	H
T2-triol	382	OH	OH	OH	H	$OCOCH_2CH(CH_3)_2$
VER[f]	266	H	OH	OH	H	H

[a] diacetoxyscirpenol
[b] neosolaniol
[c] T-2 toxin
[d] HT-2 toxin
[e] Monoacetoxyscirpenol
[f] Verrucarol

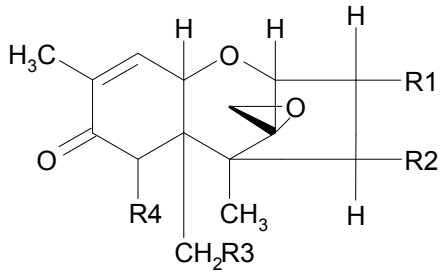

Figure 2 Structural formula of type B trichothecenes

Table 2 Examples of type B trichothecenes

Name	Mol. wt	R1	R2	R3	R4
NIV [a]	312	OH	OH	OH	OH
FusX [b]	354	OH	OAc	OH	OH
DON [c]	296	OH	H	OH	OH
3-Ac-DON [d]	338	OAc	H	OH	OH
15-Ac-DON [e]	338	OH	H	OAc	OH

[a] nivalenol
[b] fusarenon X
[c] deoxynivalenol
[d] 3-acetyl-deoxynivalenol
[e] 15-acetyl-deoxynivalenol

Physical and chemical properties

The trichothecenes are colourless, mostly crystalline solids. Type A trichothecenes are soluble in moderately polar solvents, such as chloroform, diethyl ether, ethyl acetate, and acetone, whereas type B trichothecenes require higher polarity solvents, such as aqueous methanol or aqueous acetonitrile.
Type A and B trichothecenes lack conjugated unsaturation in their structures with a consequent absence of UV absorption, except for end absorption due to unsaturation at C9-C10. They also exhibit no fluorescence under UV light.

The trichothecenes are generally stable. They remain unaffected when refluxed with various organic solvents and also under mildly acidic conditions (WHO, 1990; Ueno, 1987b)

Toxicity and recommendations for maximum exposure (Pronk et al. (2002)

Although since a few years analytical methods are available for the nine most occurring trichothecenes, up till now in monitoring programs most attention has been focussed on DON. Hence, compared to other trichothecenes, relatively a lot of data are reported on the occurrence of DON in feeds and foods. Also the toxicology of DON is relatively well investigated, like that of T-2 and HT-2. For these three trichothecenes risk assessments have recently been performed by the Scientific Committee on Food (SCF) of the European Commission (SCF, 1999, 2001, 2002), the Joint FAO/WHO Expert Committee on Food Additives (JECFA; WHO/FAO, 2001) and the Nordic Working Group (Eriksen and Alexander, 1998). Each established Tolerable Daily Intakes (TDI) for DON, T-2 and HT-2. Whereas the SCF and Eriksen and Alexander (1998) also evaluated NIV, only the SCF established a TDI for NIV (SCF, 2000, 2002).

For DON, a temporary TDI (tTDI) of 1 µg/kg bw was established by the SCF (SCF, 1999), based on a 2-year feeding study in mice. In this study reduced growth was the most sensitive parameter, with a no-observed-adverse-effect-level (NOAEL) of 0.1 mg/kg bw. An uncertainty factor of 100 was applied to this NOAEL, in order to extrapolate from rodents to humans (factor 10) and to cover for (human) interindividual differences (factor 10). This tTDI would also protect against other toxic effects of DON, including the acute vomiting effect. The tTDI set by the SCF in 1999 is in line with the tTDI established for DON by the Nordic Working Group (Eriksen and Alexander, 1998) and Pieters *et al.* (1999) and with the provisional maximum TDI (PMTDI) established by JECFA (WHO/FAO, 2001). The SCF made the TDI temporary pending a group evaluation. This because DON belongs to a group of trichothecenes sharing a common basic chemical structure and common mechanisms of toxic action and because most *Fusarium* species are capable of producing several trichothecenes. In 2002, after having evaluated four of the most commonly occurring trichothecenes, the SCF performed a group evaluation of DON, NIV, T-2 and HT-2 and considered the appropriateness of a group TDI. SCF concluded that the available data, while limited, did not support the establishing of a group TDI for the four trichothecenes evaluated and, with respect to DON, changed the tTDI of 1 µg/kg bw into a full TDI (SCF, 2002). The SCF, as well as JECFA, expressed the need for further studies.

In 2001, the SCF established a tTDI of 0.06 µg/kg bw for the sum of T-2 and HT-2 (SCF, 2001). This because *in vivo* T-2 is rapidly metabolised to HT-2. Hence, the toxic effects of T-2 and its metabolite HT-2 cannot be differentiated, and the toxicity of T-2 *in vivo* might be due at least partly to HT-2. The tTDI was based on haematotoxic and immunotoxic effects observed in a 3-week feeding study with T-2 in swine. The lowest-observed-adverse-effect-level (LOAEL) for these effects was 0.03 mg/kg bw/day, a dose level at which also reduced feed intake was seen. The uncertainty factor used was 500: an extra uncertainty factor of 5 was applied to account for some deficiencies in the data set and the use of a LOAEL, which was presumably close to the NOAEL. The TDI was made temporary pending the evaluation of the group of trichothecenes as a whole, and also because of gaps in the database. JECFA (WHO/FAO, 2001) came to the same value of 0.06 µg/kg bw as PMTDI for the sum of T-2 and HT-2, and both SCF and JECFA expressed the need for further studies. The Nordic Working Group set a different tTDI of 0.2 µg/kg bw. Because of

concern on the seriousness of the possible carcinogenic effect of T-2, they applied an uncertainty factor of 1000 to the highest level without tumourigenic effect (approximately 0.1-0.2 mg/kg bw). This tTDI was also for the sum of T-2 and HT-2 (Eriksen and Alexander, 1998).
After having concluded that the available data, while limited, did not support the establishing of a group TDI for DON, NIV, T-2 and HT-2, the SCF in 2002 confirmed the combined tTDI of 0.06 µg/kg bw for T-2 and HT-2 and recommended that further studies should fill the data gaps (SCF, 2002).

The SCF also recently evaluated the toxicity of NIV. They set a tTDI of 0.7 µg/kg bw based on a LOAEL of 0.7 mg/kg bw/day found in long-term dietary studies with mice. For NIV reduced growth and haematotoxicity/immunotoxicity were the most critical effects. The SCF applied a large uncertainty factor of 1000 because of the use of a LOAEL and the limited database. The TDI was made temporary pending a group evaluation of the trichothecenes, and also because of gaps in the database. A need for further studies was expressed (SCF, 2000). NIV was also evaluated by the Nordic Working Group (Eriksen and Alexander, 1998), but they did not find the available toxicity data sufficient to set a (t)TDI for NIV.
In 2002, the SCF performed a group evaluation of four trichothecenes and concluded that the available data, while limited, did not support the establishing of a group TDI for DON, NIV, T-2 and HT-2. They therefore confirmed the tTDI of 0.7 µg/kg bw for NIV and recommended that further studies should fill the data gaps (SCF, 2002).

Trichothecenes regulation in EU Member States

As far as regulation is concerned, most countries have no regulations or follow the communitary guidance limits of 500 µg/kg (for cereal products as consumed and other cereal products at retail stage) and of 750 µg/kg (for flour used as raw material in food products) for deoxynivalenol. For the other trichothecenes no regulation is in effect in the Member States.

Analysis

Langseth and Rundberget (1998) and Krska *et al.* (2001) amongst many others, provided exhaustive reviews of quantitative and qualitative methods for the determination of trichothecenes.
In general four major steps are necessary for the determination of trichothecenes; sampling (including sample preparation), extraction, clean-up and detection and quantification of the toxins.

Sampling
In general, mycotoxins are inhomogeneously distributed in the commodities to be inspected, which makes it difficult to obtain a representative sample (Van Egmond and Speijers, 1999). To reduce the variance, clearly defined sampling plans are required, including in general large sample sizes. To prepare a representative test portion for analysis, the sample is ground and thoroughly mixed.

Extraction
Test portions of 20 to 50 g of sample are normally used for extraction. Lower quantities can be used, but require great care in order to obtain a homogeneous test portion.

Various combinations of solvents have been used for the extraction of the trichothecenes from the test portion, including methanol-water, acetonitrile-water and ethyl acetate-acetonitrile in various ratios (Mateo *et al.*, 2001).
Nowadays acetonitrile/water (84+16, v/v) is the most extensively used extraction medium for trichothecene analysis (Langseth and Rundberget, 1998).
The extraction time is strongly dependent on the particle size, the used shaker and extraction flask and has to be optimised for every combination.

Clean-up
Various procedures for clean-up of the extracts have been published. Most procedures include purification of the extract by means of columns packed with adsorbents like silica, Florisil® or charcoal-alumina. A modified charcoal-alumina based column, the MycoSep® column, is commercially available and showed very good results (Radová *et al.*, 1998; Weingaertner *et al.*, 1997).
Recently immunoaffinity columns for DON and T-2/HT-2 became commercially available. (Cahill *et al.*, 1999). Drawbacks are that these columns are only applicable for a single toxin and that recoveries in general are poor.

Detection and quantification
Methods that have been applied to identify and quantify the trichothecenes are

- Thin-layer chromatography (TLC),
- High-performance liquid chromatography (HPLC) with post or pre-column derivatization and either UV detection, fluorescence detection (FLD) or mass spectrometric (MS) detection,
- Supercritical fluid chromatography (SFC),
- Capillary gas chromatography (GC) with either electron-capture detection (ECD), flame ionisation detection (FID) or mass spectrometric (MS) detection (Schothorst and Jekel, 2001).

At present, gas chromatographic methods with ECD or MS detection are most commonly used (Langseth and Rundberget, 1998).
Prior to GC analysis, trichothecenes require derivatization of the hydroxyl groups, which can be performed with a number of different agents. The choice of derivatizing agent depends on the trichothecene analysed and detection method used.
For screening purposes enzyme-linked immunosorbent assays (ELISA) (Krska *et al.*, 2001) can be used. In general, no clean-up is required after extraction of the mycotoxin. The assay can therefore be applied directly to the crude extract and the results are quickly available. ELISA methods are very sensitive, however the uncertainty of the results is in general high. ELISA methods are not available for all trichothecenes.

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Annex 2

Figures

Figure 1: Number of samples and number of positive samples per country

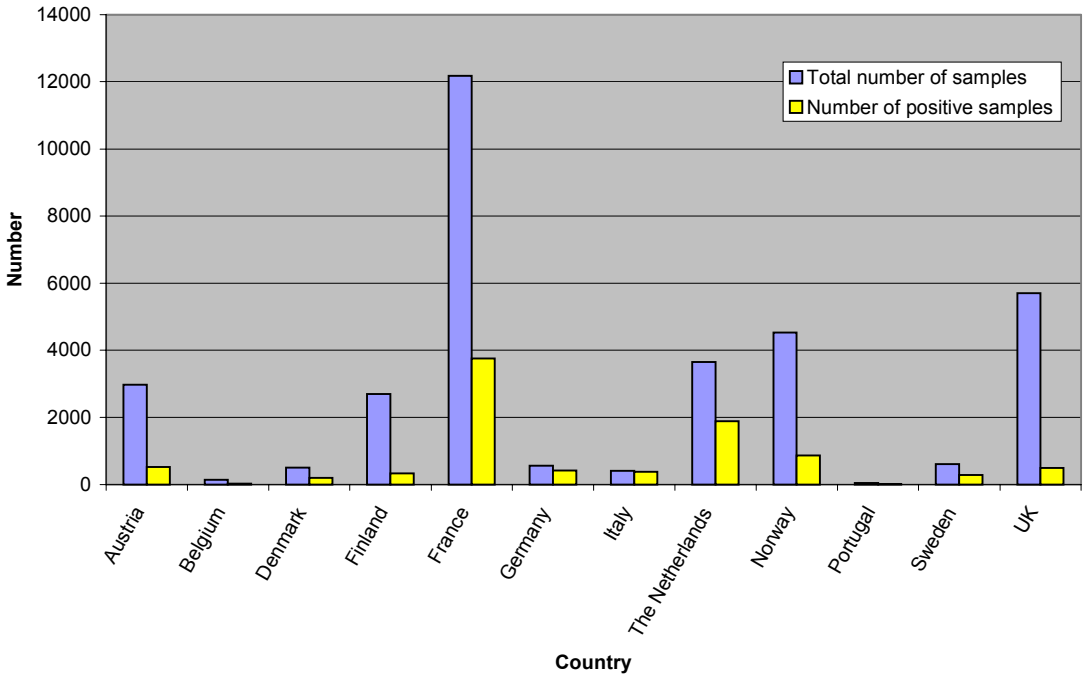


Figure 2: Number of samples for each trichothecene in each country

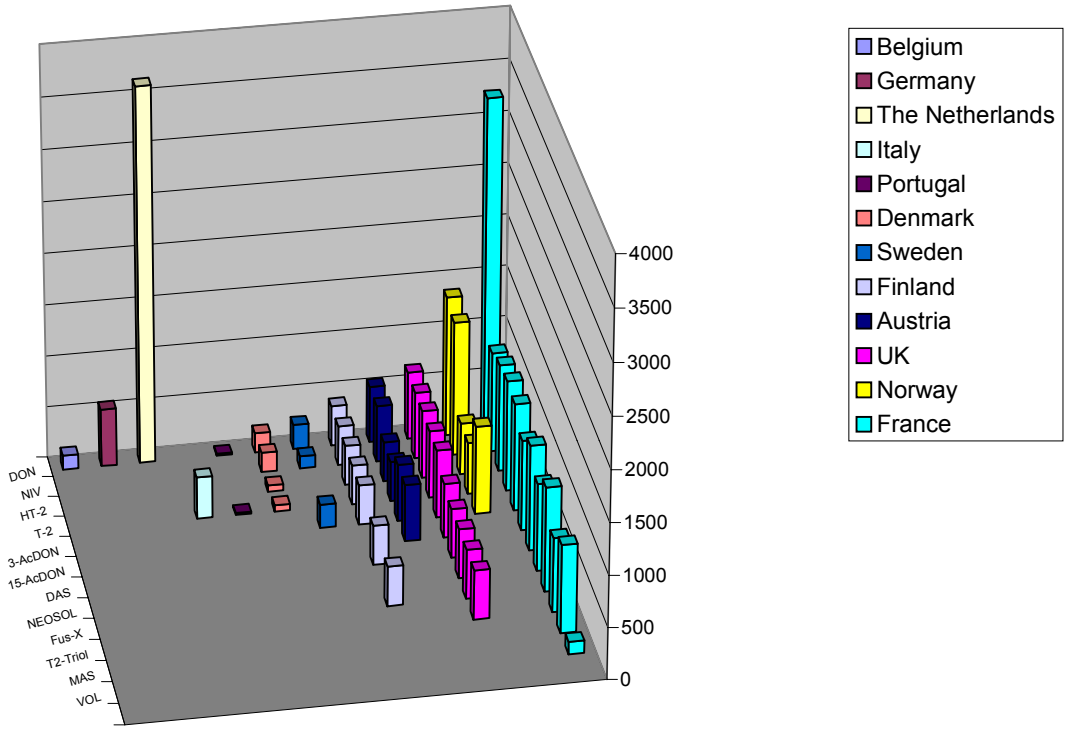


Figure 3: DON; Number of samples and number of positive samples per country

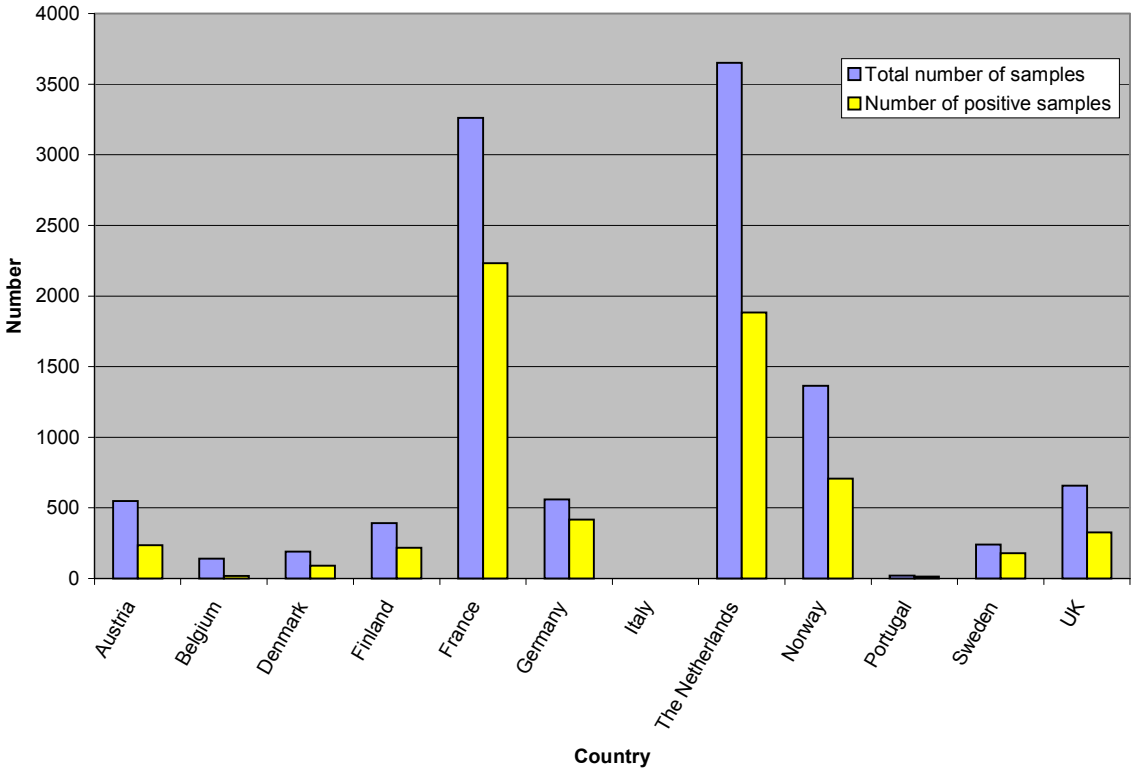


Figure 4: NIV; Number of samples and number of positive samples per country

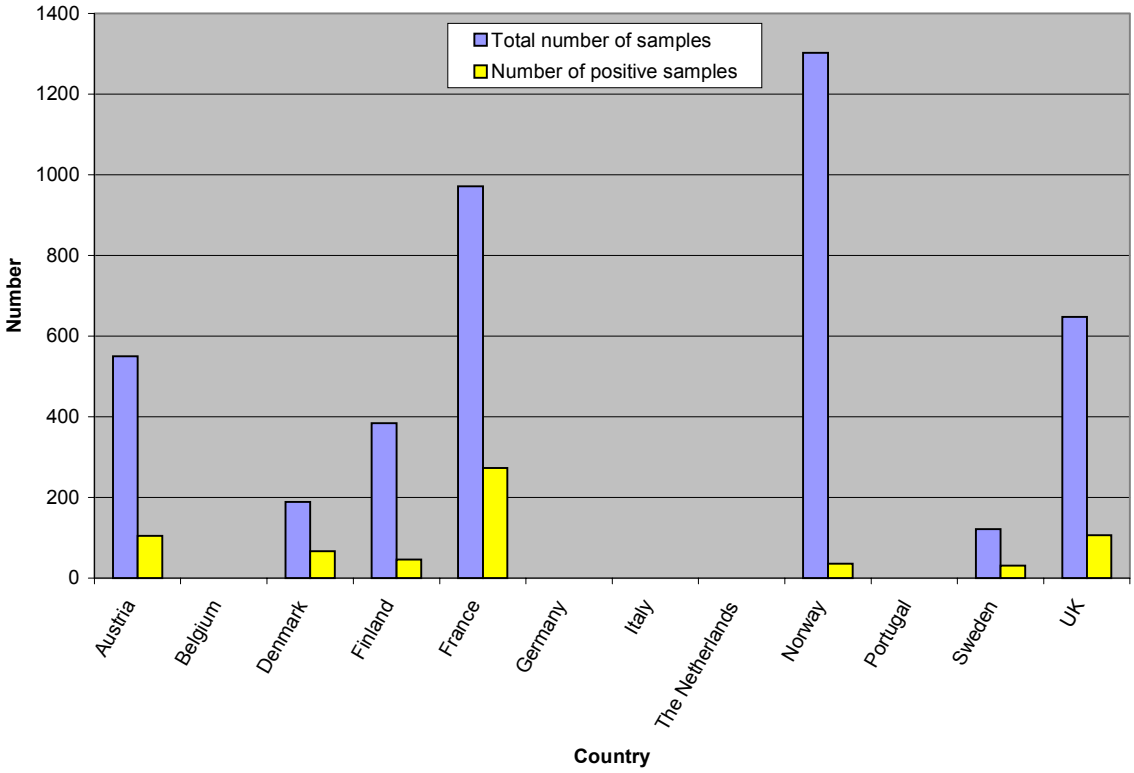


Figure 5: 3-AcDON; Number of samples and number of positive samples per country

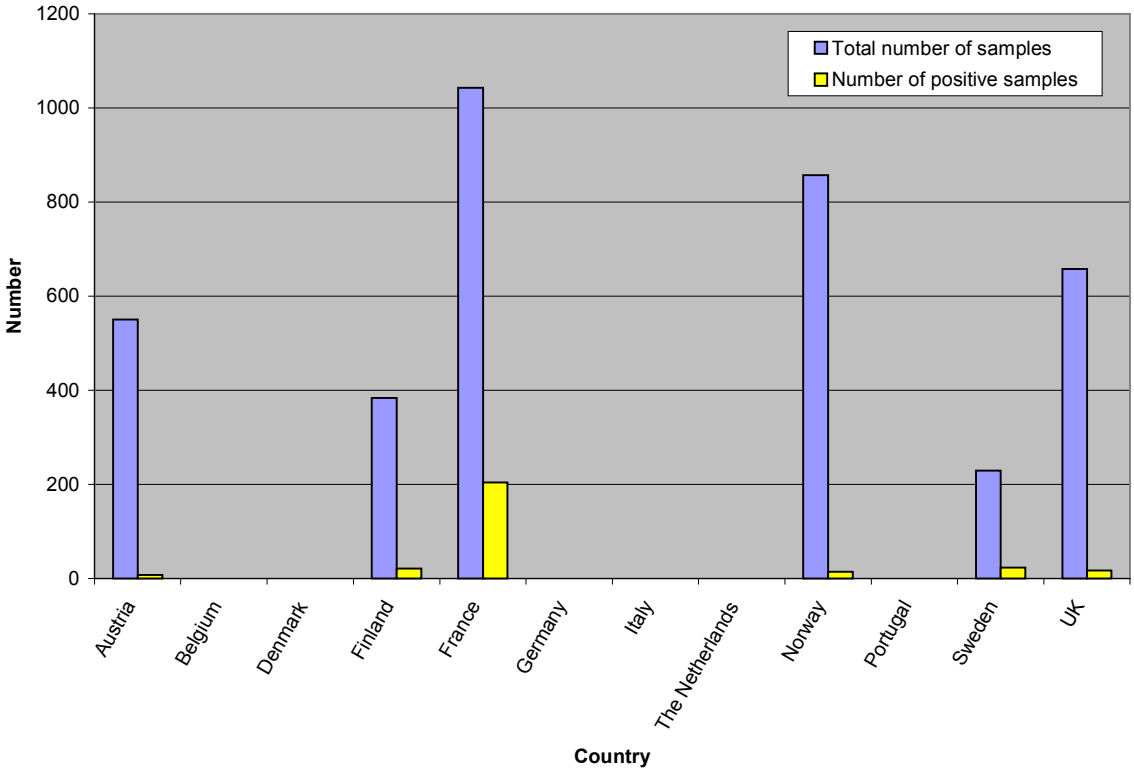


Figure 6: 15-AcDON; Number of samples and number of positive samples per country

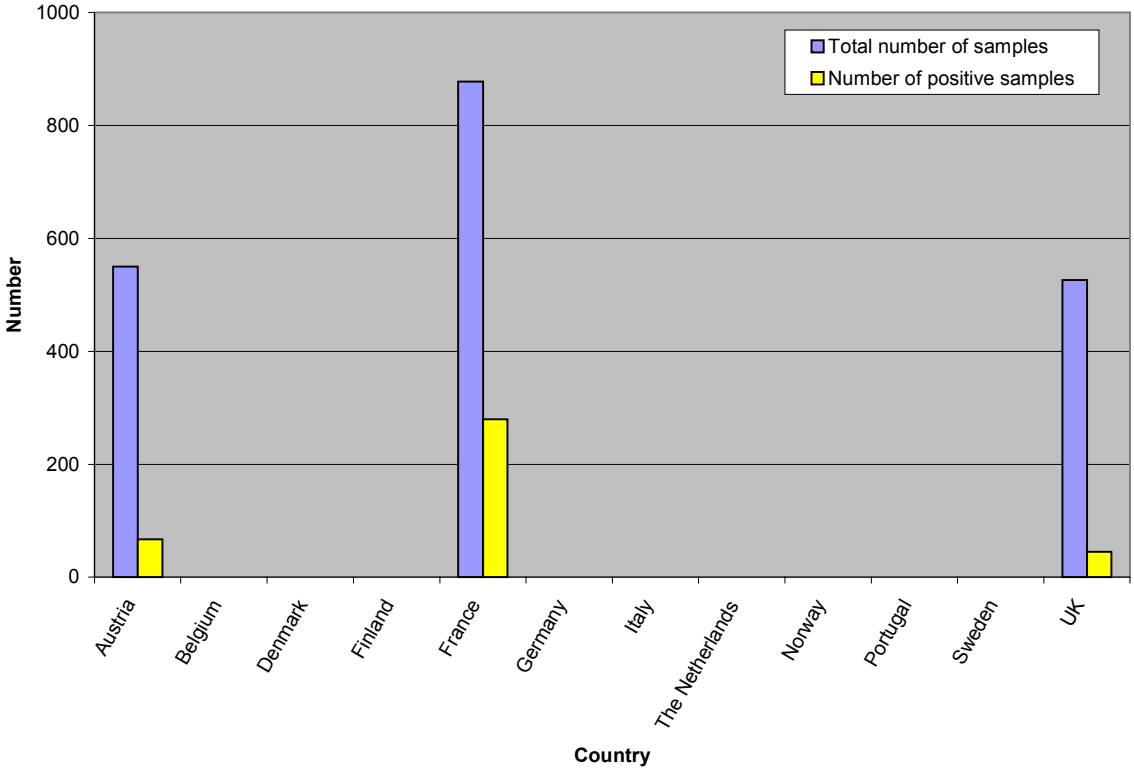


Figure 7: FUS-X; Number of samples and number of positive samples per country

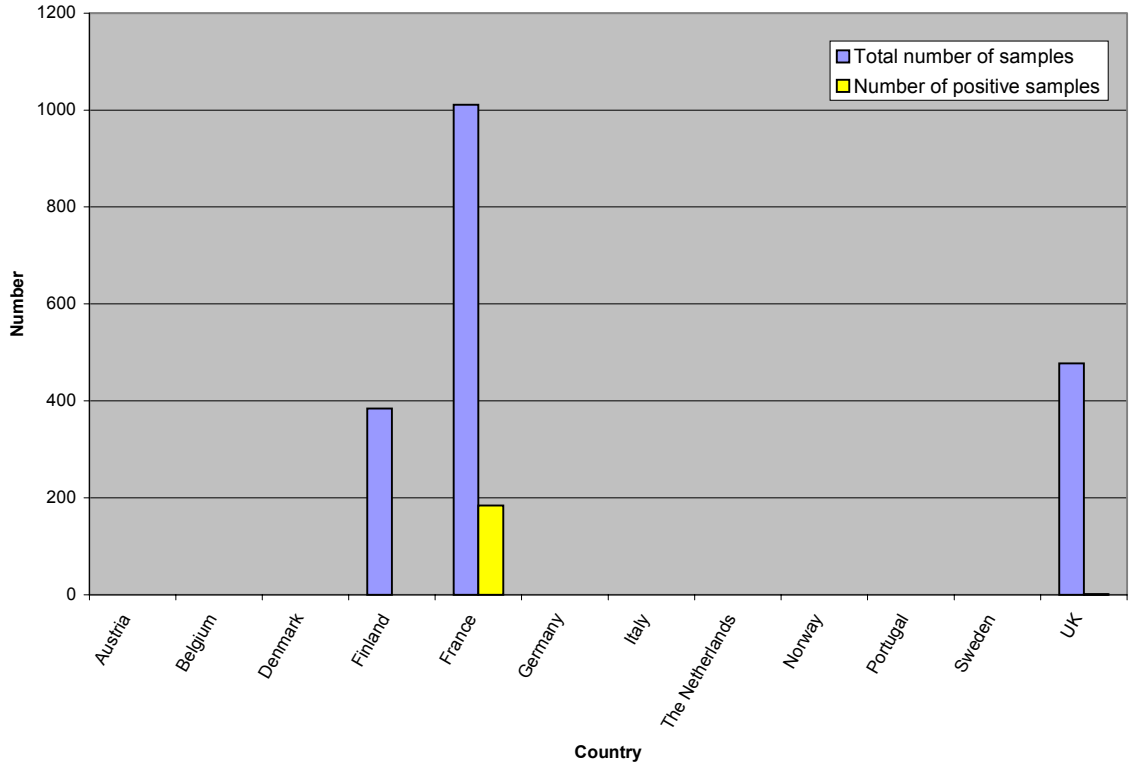


Figure 8: T-2; Number of samples and number of positive samples per country

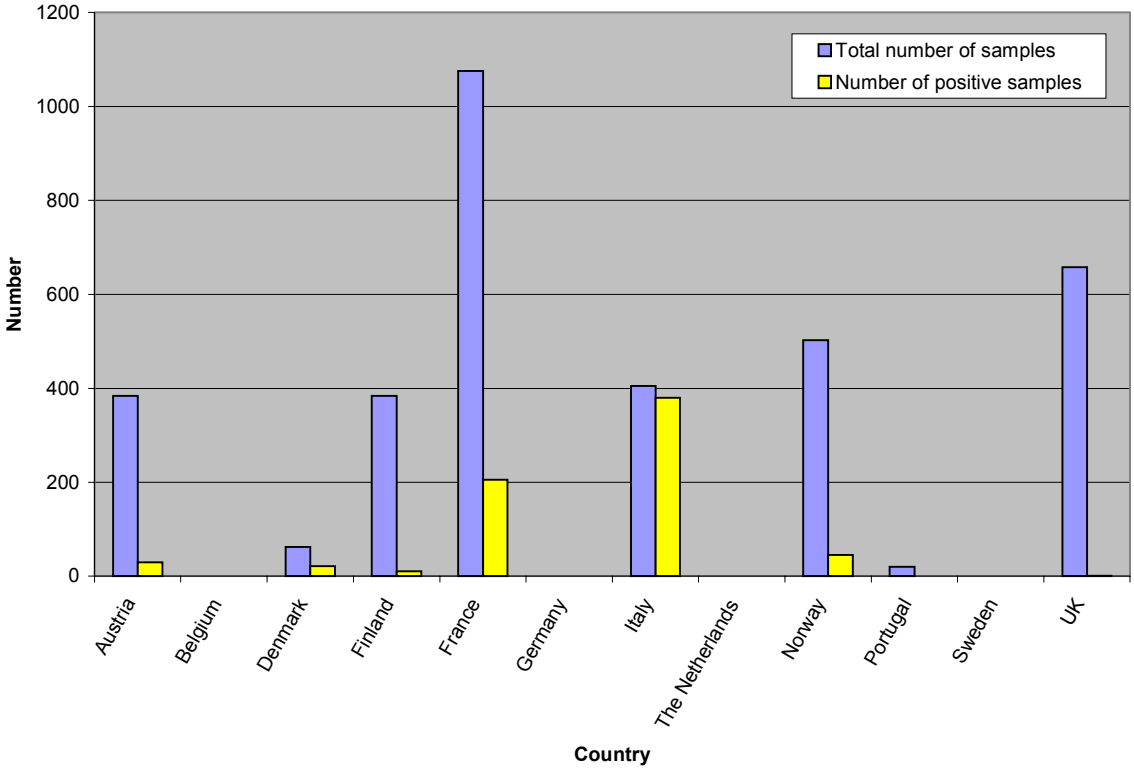


Figure 9: HT-2; Number of samples and number of positive samples per country

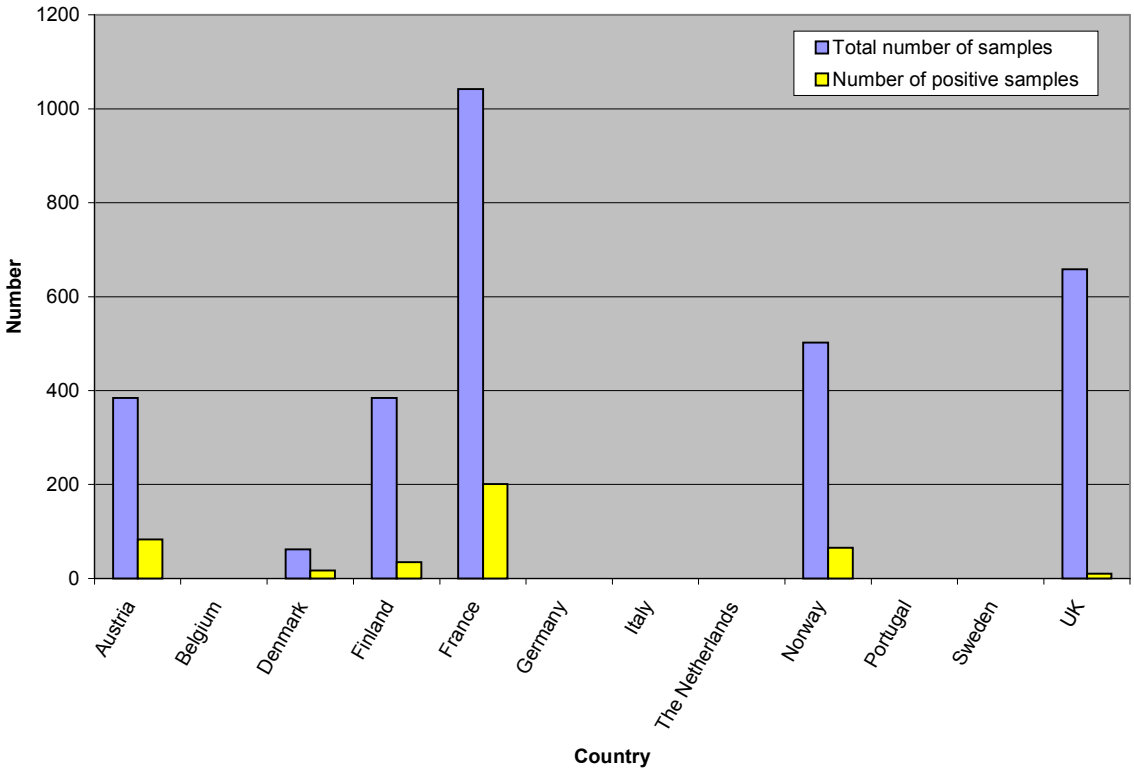


Figure 10: DAS; Number of samples and number of positive samples per country

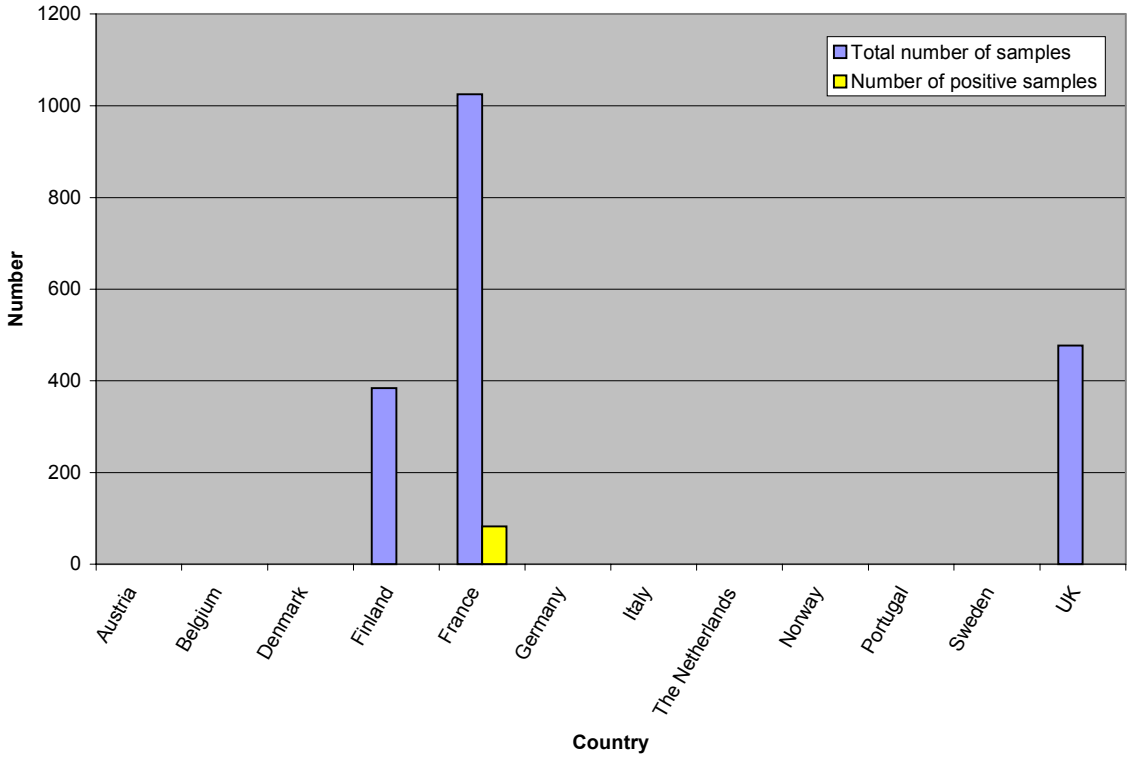


Figure 11: DON intake data

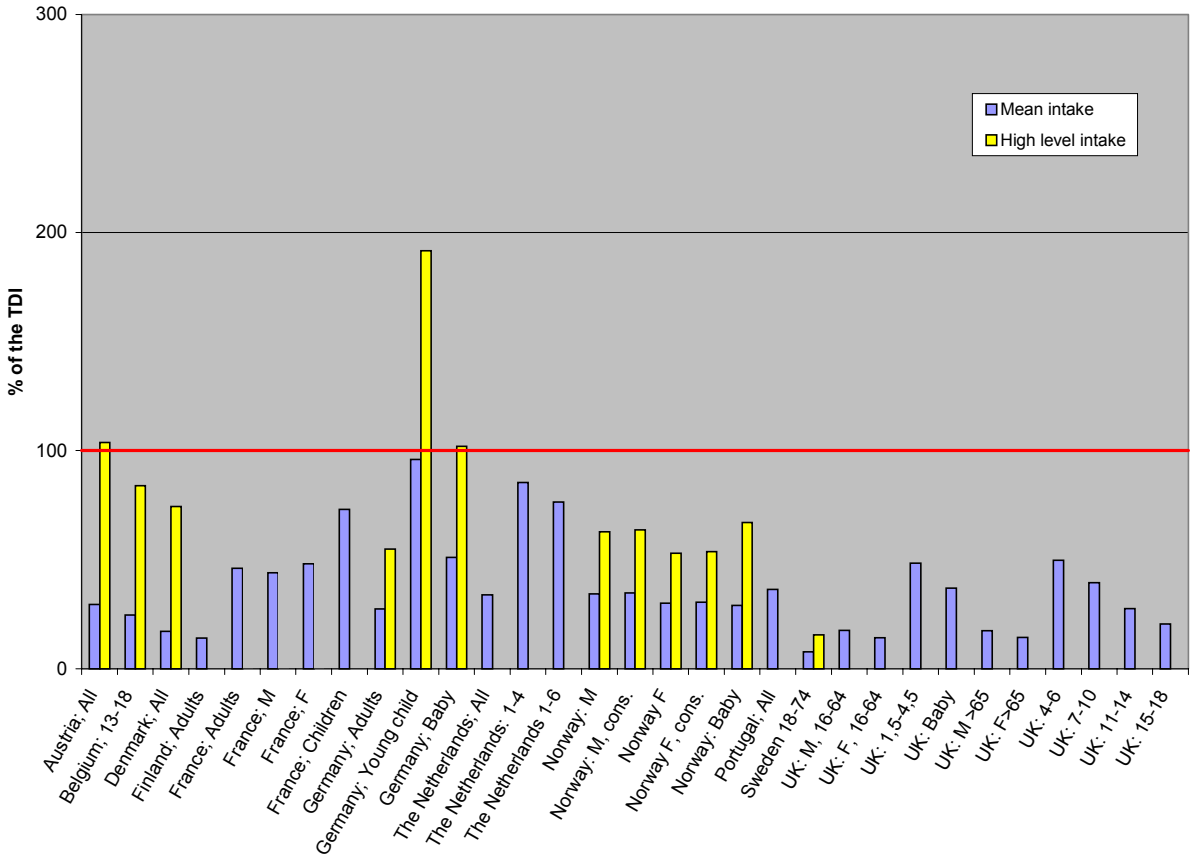


Figure 12: NIV intake data

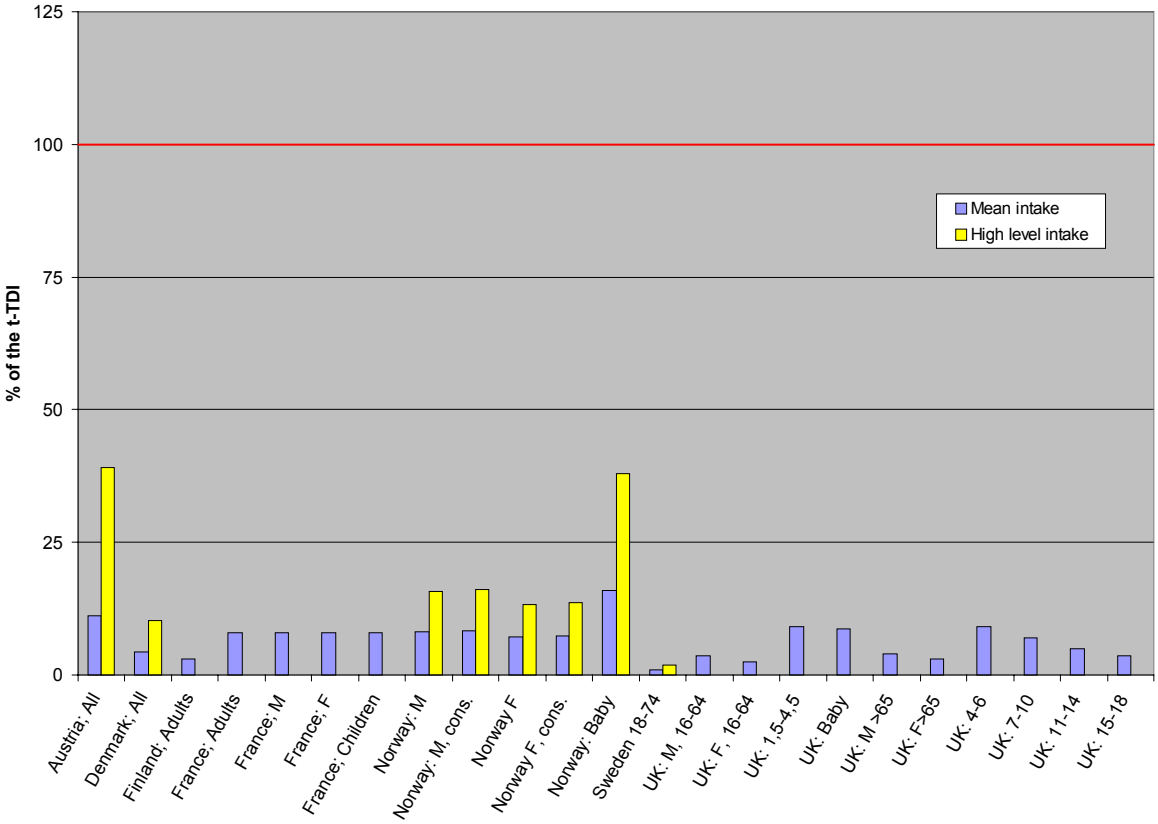


Figure 13: T-2 toxin intake data

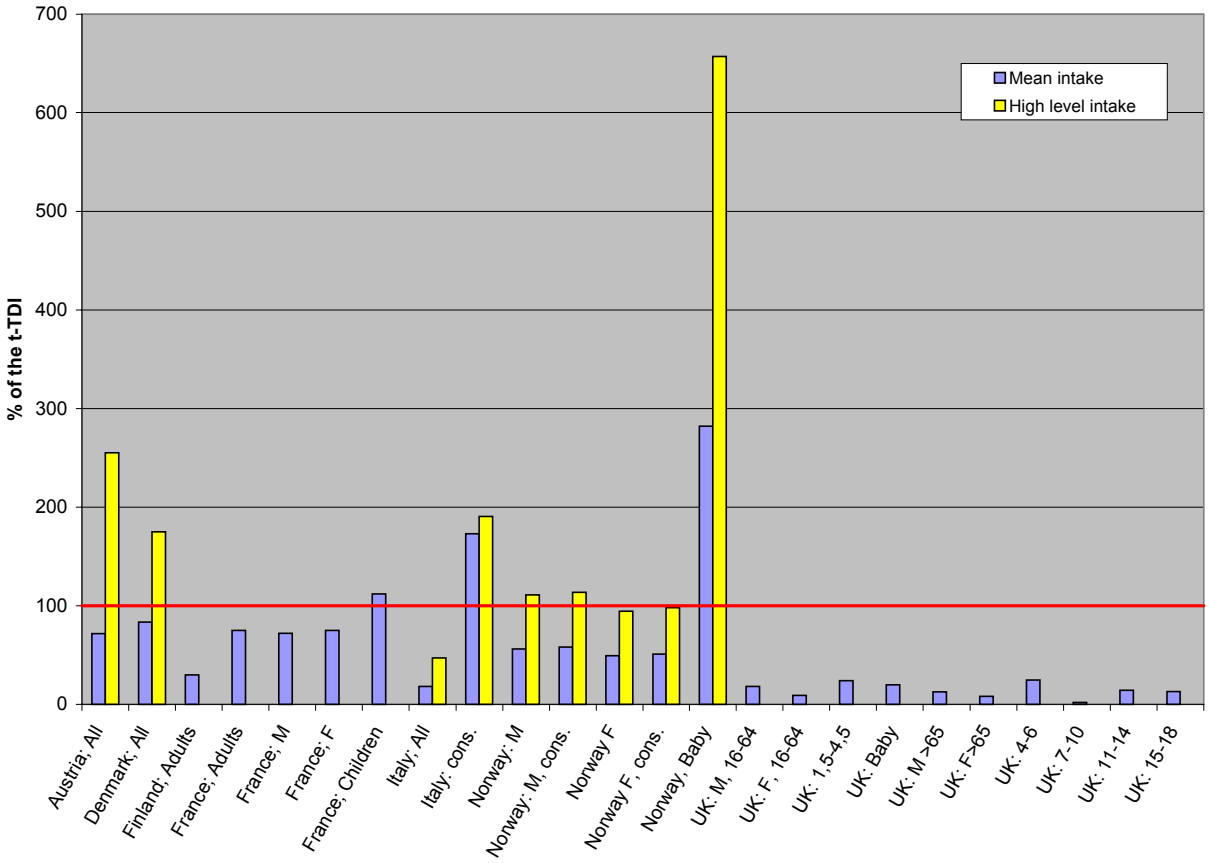


Figure 14: HT-2 toxin intake data

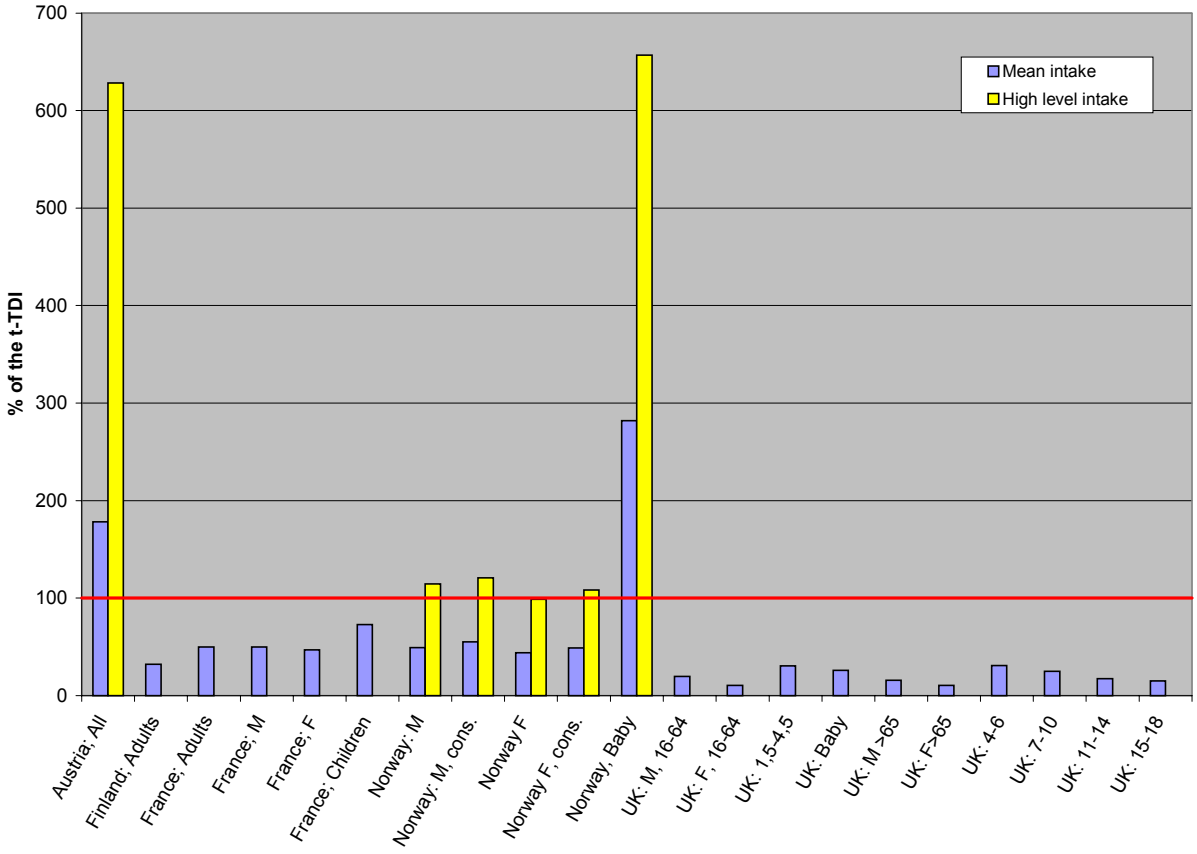


Figure 15: Summarized intake data T-2 toxin and HT-2 toxin

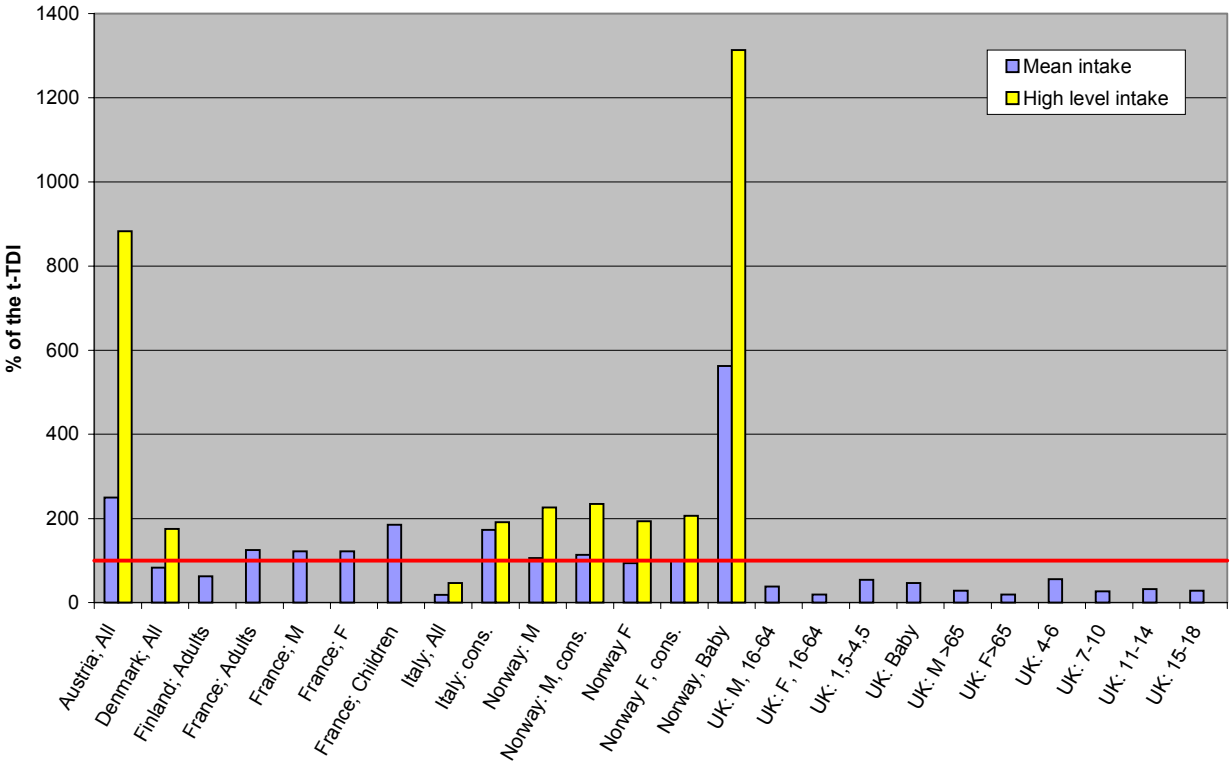


Figure 16: Contribution of food commodities to the DON intake

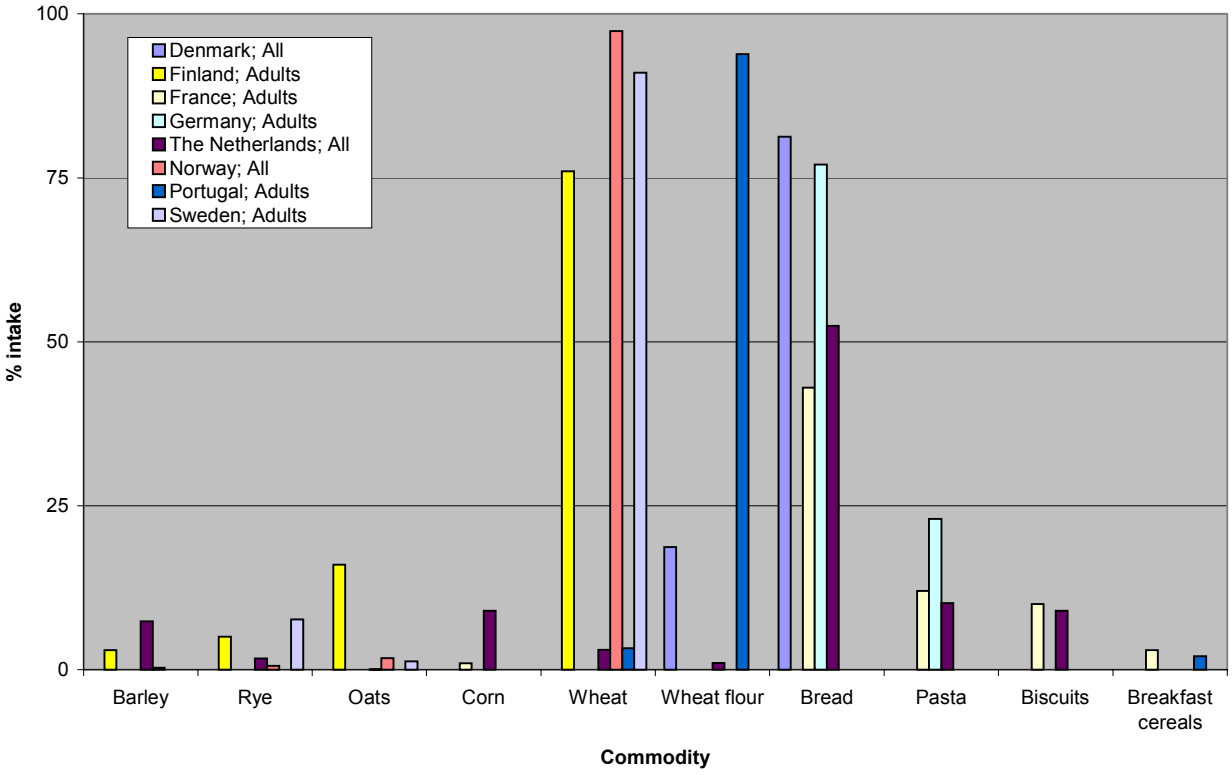


Figure 17: Contribution of food commodities to the NIV intake

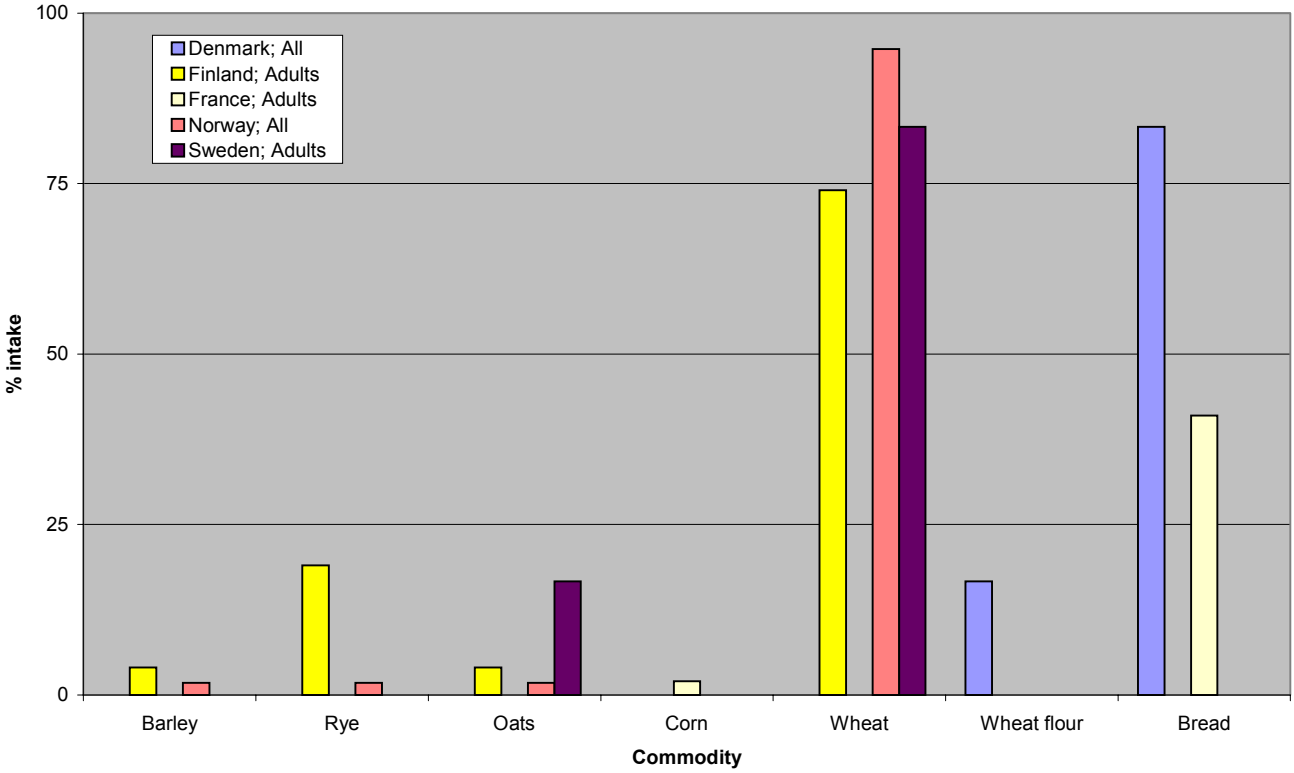


Figure 18: Contribution of food commodities to the T-2 toxin intake

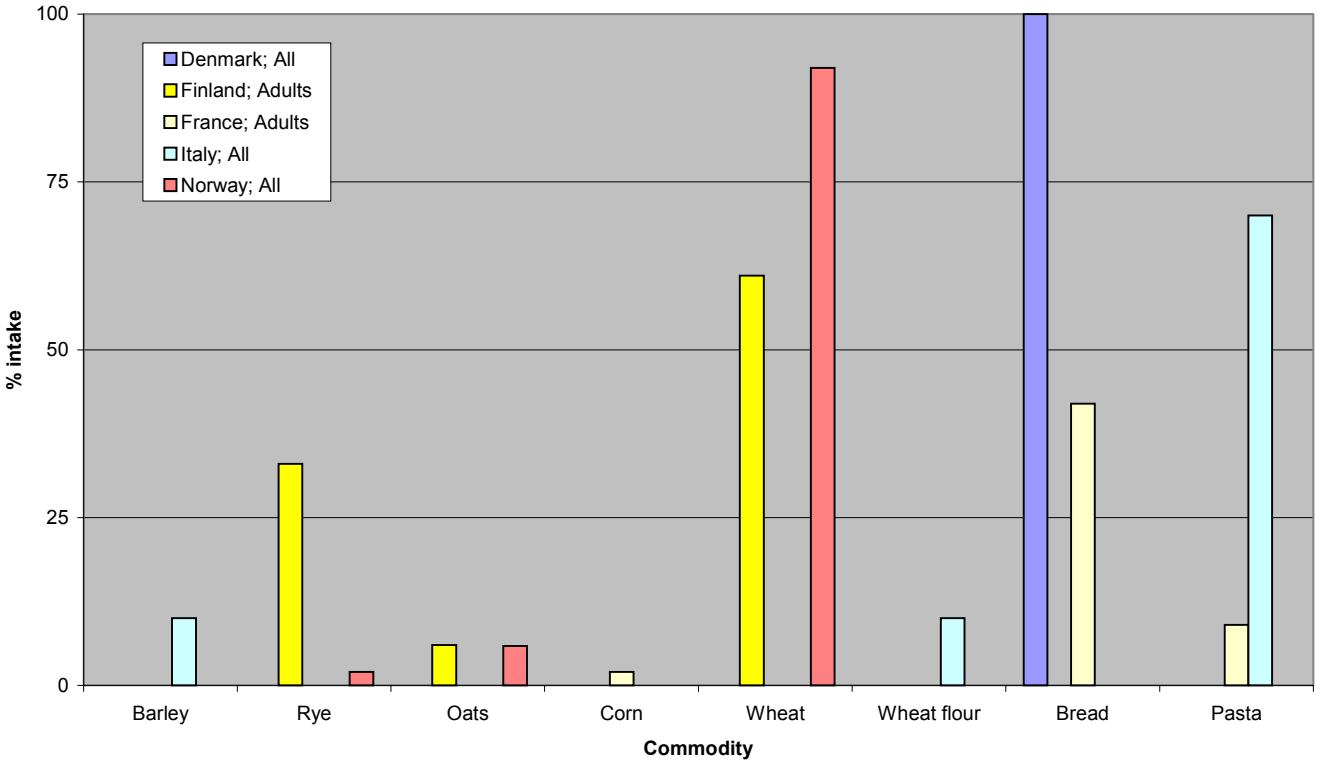
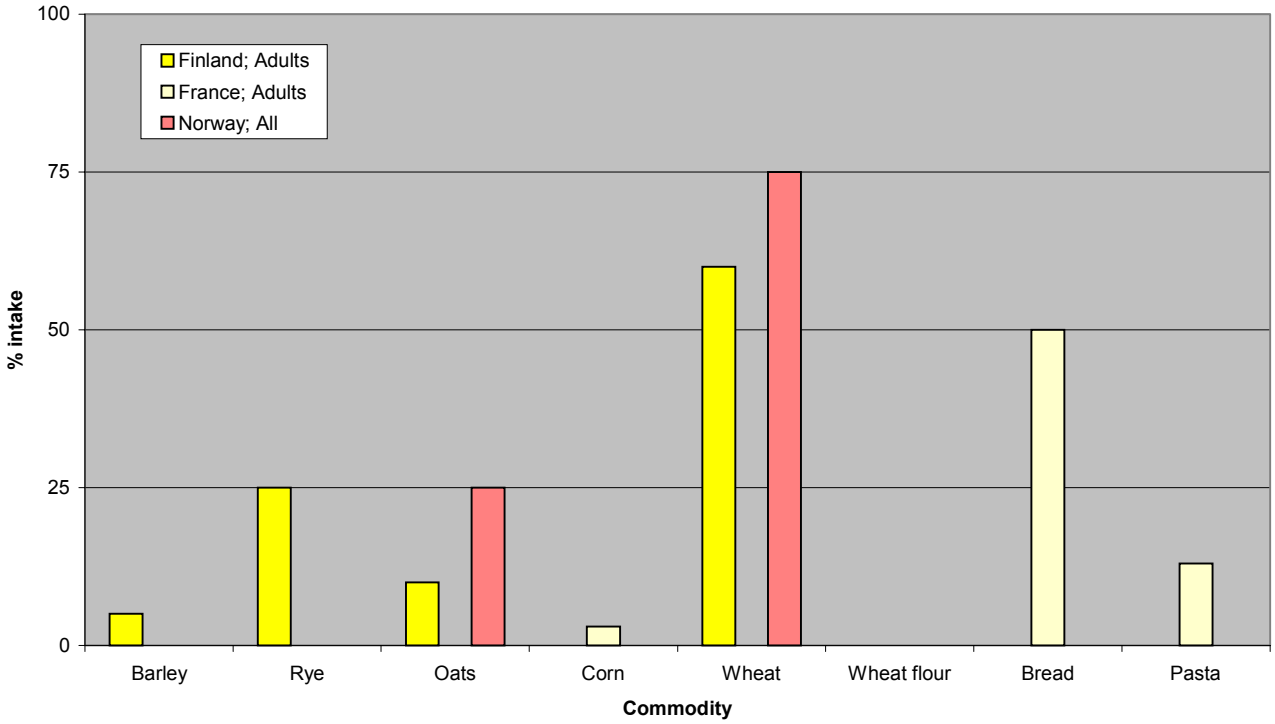


Figure 19: Contribution of food commodities to the HT-2 toxin intake



Annex 3

Tables

Table 1A: Summary occurrence data by food group and country

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	45	50		4	9	5	9	3	5	8	2	2810	590,2	647	350	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	50		20	13	23	1	1				575	94,7	140,1	80	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	50		13	4	13	9	6	1	2		1360	285,1	387,9	170	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	100		88		8						180	25,9	127,5	15	y	target	GC		y
Oat	GC3	03 01 C	2000	96	100		83		10	2	1				530	43,5	214,6	2000	y	target	GC		y
Oat	GC3	03 01 C	2001	40	100		36		4						200	29,3	142,5	15	y	target	GC		y
Wheat	GC1	03 01 A	1999	68	100		29		25	9	3	1	1		1250	185,3	310,8	137,5	y	target	GC		y
Wheat	GC1	03 01 A	2000	62	100		24		15	7	1	2	6	7	6090	744	1203,4	2000	y	target	GC		y
Wheat	GC1	03 01 A	2001	36	100		18		12	4		1	1		1230	175,6	334,4	72,5	y	target	GC		y

Country: Belgium

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	33	250		28		3	1	1				504	87	343	<250		random	HPLC	good	yes
Wheat	GC1	03 01 A	2002	14	50		14								<50	8	0	<50		random	HPLC	good	yes
Biscuits	CG1	02 01B	2000	5	250		5								<250	42	0	<250		random	HPLC	limited	yes
babyfood	CG1	02 01B	2000	5	250		5								<250	42	0	<250		random	HPLC	limited	yes
babyfood	CG1	02 01B	2002	5	50		5								<50	8	0	<50		random	HPLC	good	yes
Bread	CG2	02 01B	2000	10	250		6		2		2				560	187	405	<250		random	HPLC	limited	yes
Bread	CG2	02 01B	2001	5	200		4			1					350	97	350	<200		random	HPLC	limited	yes
Bread	CG2	02 01B	2001	5	175		5								<175	29	0	<175		random	HPLC	limited	yes
Bread	CG2	02 01B	2002	18	50		18								<50	8	0	<50					
Pasta	CG3	02 01 B	2000	10	250		7		1	1	1				559	159	432	<250		random	HPLC	limited	yes
Pasta	CG3	02 01B	2001	10	250		7			1	2				716	193	547	<250		random	HPLC	limited	yes
Pasta	CG3	02 01B	2002	9	50		8	1							74	16	74	<50					
Wheat bran	CF1	02 01B	2000	5	250		4			1					475	128	475	<250		random	HPLC	limited	yes
muësli bars	CP	03 01	2000	5	250		5								<250	42	0	<250		random	HPLC	limited	yes

Country: Denmark

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat flour	CF2	0201B	1998	14	20	20	1	2	7	4	0	0	0	0	465	191	221	140	yes	Random	GC-ECD	Good	yes
Wheat flour	CF2	0201B	1999	16	20	20	2	2	10	2	1	0	0	0	527	175	198	167	yes	Random	GC-ECD	Good	yes
Wheat flour	CF2	0201B	2000	28	20	20	2	23	2	1	0	0	0	0	330	59	63	33	yes	Random	GC-ECD	Good	yes
Wheat flour	CF2	0201B	2001	30	20	20	11	17	2	0	0	0	0	0	204	32	56	10	yes	Random	GC-ECD	Good	yes
Rye flour			1998	16	20	20	0	8	8	0	0	0	0	0	257	99	104	96	yes	Random	GC-EDC	Good	yes
Rye flour			1999	16	20	20	6	10	0	0	0	0	0	0	80	31	52	18	yes	Random	GC-EDC	Good	yes
Rye flour			2000	17	20	20	9	8	0	0	0	0	0	0	84	23	40	10	yes	Random	GC-EDC	Good	yes
Rye flour			2001	20	20	20	9	11	0	0	0	0	0	0	55	17	24	10	yes	Random	GC-EDC	Good	yes
Durum wheat flour			2000	23	20	20	0	0	3	4	2	1	11	2	2591	1157	1157	1242	yes	random	GC-ECD	Good	yes
Durum wheat flour			2001	10	20	20	0	0	0	0	3	0	7	0	1619	1153	1153	1224	yes	random	GC-ECD	Good	yes

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		5	6								190	34,1	43,2	23	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	12								264	55,7	88,6	57,7	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		10								1026	169,9	234,5	111	Y	Random	GC-MS	Good	Y
Wheat			2001	39	25/40		25								376	36,3	90,9	4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		5	3								35	15,5	25,3	12	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	6								278	122	149,3	105,1	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		12								293	57	130,1	8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		10								619	78,8	135,5	17,4	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	7								335	73,3	112	59,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		18								394	45,7	141,8	8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		15								144	28,4	64,9	4,17		Random	GC-MS	Good	Y
Oats			1998	7		5	1								955	178,4	207,7	63	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	1								2146	627,8	696,2	325,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		10								5004	537,2	936,4	97,6	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		4								1560	236,1	271,7	89,9	Y	Random	GC-MS	Good	Y
Rye			1998	6		5	3								20	9,4	16,3	6,75	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		14								178	19,6	178	8,33	Y	Random	GC-MS	Good	Y
Rye			2001	12	25/40		10								37,4	9,18	31,8	4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001	1	25/40		1									6,67			Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			24	2	3	0	0	0	1	2125	132,15	325,42	3,3	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			21	1	0	0	0	0	0	170	10,88	170,00	3,3	Y	R	GC	G	no
Wheat	GC1	03 01 A	2000	1		100	1	0	0	0	0	0	0	0	0	50,00		50	Y	R			no
Wheat	GC1	03 01 A	2001	1		50	0	1	0	0	0	0	0	0	85	105,00	85,00	40	Y	R			no
Wheat	GC1	03 01 A	2002	3		100	1	1	1	0	0	0	0	0	120	100,33	95,00	50	Y	R			no
Corn	GC2	03 01 b	2001	29	20			19	4	3	0	1	0	2	8850	494,12	840,59	50	Y	R	GC	G	no
Corn	GC2	03 01 B	2000	25	125		0	0	5	4	4	1	8	3	2000	895,00	895,00			R	ELISA	L	Y
Corn	GC2	03 01 B	2001	25		30	1	0	2	3	4	2	11	2	4800	1056,0	1140,00			R	GC-MS	L	Y
Corn	GC2	03 01 B	2000	59	60-100		0	4	26	13	7	5	2	2	3390	475,00		300			GC or HPLC		
Corn	GC2	03 01 B	2001	107	50-60		0	22	13	11	16	17	17	11	5400	903,00		650			GC or HPLC		
Corn	GC2	03 01 B	2001	9	50	25	5	9	0	0	0	0	0	0	36	19,00		12			GC or HPLC		
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0	35	6,47	35,00	3,3	Y	R	GC	G	no
Wheat bran	CF1	02 01 B	2001	1	100		1									16,67		16,67	Y	R	HPLC	G	No
Wheat bran	CF1	02 01 B	2002	6	200			6								33,30	33,30	33,3	Y	R	HPLC	G	No
Wheat bran	CF1	02 01 B	2001	3	200		1	2								33,30		33,3	Y	R	HPLC	G	No
Wheat bran	CF1	02 01 B	94 - 98	39		100	18	7	8	3	2	0	0	1	3600	205,05	352,48	50	Y	R			no
Wheat bran	CF1	02 01 B	1999	8		50	1	4	2	0	1	0	0	0	650	166,38	188,71	86	Y	R			no
Wheat bran	CF1	02 01 B	2000	9		50	0	3	3	1	0	0	1	1	2000	525,56	525,56	240	Y	R			no
Wheat bran	CF1	02 01 B	2001	8		20	1	4	3	0	0	0	0	0	170	59,38	64,29	13	Y	R			no
Wheat bran	CF1	02 01 B	2002	13		10, 20 ou	4	0	6	2	0	1	0	0	915	222,23	309,89	140	Y	R			no
White wheat flour	CF2	02 01 B	2000	15	200	60	6	6		2	1				500	155,62	315,71	125	Y	R	HPLC	G	No
White wheat flour	CF2	02 01 B	2000	1	100				1							125,00	125,00	125	Y	R	HPLC	G	No
White wheat flour	CF2	02 01 B	2001	170	200		14	125		25	1	4	1		1213	143,14	323,56	33,3	Y	R	HPLC	G	No
White wheat flour	CF2	02 01 B	2002	11	200			11							136	45,50	100,50	33,3	Y	R	HPLC	G	No
White wheat flour	CF2	02 01 B	2002	46	100		13	30		2	1				595	63,08	321,51	16,7	Y	R	HPLC	G	No
White wheat flour	CF2	02 01 B	94 - 98	308		100	285	0	22	1	0	0	0	0	300	67,50	123,04	50	Y	R			no
White wheat flour	CF2	02 01 B	1999	57		50	18	24	14	1	0	0	0	0	330	65,58	91,23	41	Y	R			no
White wheat flour	CF2	02 01 B	2000	55		51	9	28	14	2	0	1	0	1	50000	992,89	1182,91	45	Y	R			no
White wheat flour	CF2	02 01 B	2001	38		50	16	6	13	3	0	0	0	0	400	105,00	174,09	40	Y	R			no
White wheat flour	CF2	02 01 B	2002	33		50	16	5	9	3	0	0	0	0	330	100,33	184,47	50	Y	R			no
White wheat flour	CF2	02 01 B	94 - 98	14		100	9	2	3	0	0	0	0	0	200	67,50	127,20	50	Y	R			no
White wheat flour	CF2	02 01 B	1999	4		50	1	1	2	0	0	0	0	0	130	65,58	96,67	41	Y	R			no
White wheat flour	CF2	02 01 B	2000	10		50	3	2	4	1	0	0	0	0	300	153,00	993,00	45	Y	R			no
White wheat flour	CF2	02 01 B	2001	4		50	2	0	2	0	0	0	0	0	280	105,00	220,00	40	Y	R			no
White wheat flour	CF2	02 01 B	2002	3		100	3	0	0	0	0	0	0	0	0	50,00		50	Y	R			no
White wheat flour	CF2	02 01 B	2000	37	50		0	5	20	9	0	2	0	1	2100	304,00		220			GC or HPLC		
White wheat flour	CF2	02 01 B	2001	101	20-50		0	87	12	2	0	0	0	0	328	53,00		25			GC or HPLC		
	CF3	02 01 B	2000	29	200	60	11	18								30,00		30	Y	R	HPLC	G	No
Corn fractions	CF3	02 01 C	2001	1						1					340	340,00	340,00	340	Y	R	HPLC	G	No
Corn fractions	CF3	02 01 C	2001	1							1				620	620,00	620,00	620	Y	R	HPLC	G	No
Corn fractions	CF3	02 01 C	94 - 98	1		100	1	0	0	0	0	0	0	0		50,00		50	Y	R			no
Corn fractions	CF3	02 01 C	1999	1		100	1	0	0	0	0	0	0	0		50,00		50	Y	R			no
Corn fractions	CF3	02 01 C	2000	1		100	1	0	0	0	0	0	0	0		50,00		50	Y	R			no
Corn fractions	CF3	02 01 C	2001	17		100	3	1	3	3	4	1	2	0	1400	105,00	559,29	40	Y	R			no
Corn fractions	CF3	02 01 C	2002	7		10, 20 ou	0	2	2	2	0	1	0	0	825	100,33	270,71	50	Y	R			no
	CF3A	02 01 B	2001	1	200			1								33,30		33,3	Y	R	HPLC	G	No
Corn meal	CF3B	02 01 C	2001	2						2					450	435,00	435,00	435	Y	R	HPLC	G	No
Corn meal	CF3B	02 01 C	2001	3	200			1			1		1		1400	331,10	480,00	340	Y	R	HPLC	G	No
Corn meal	CF3B	02 01 C	2002	1					1						245	245,00	245,00	245	Y	R	HPLC	G	No

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat products	CG	02 01 B	2000	3		60	3									30,00		30	Y	R	HPLC	G	No
Wheat products	CG	02 01 B	2001	5	200		1	4								33,30		33,3	Y	R	HPLC	G	No
Wheat products	CG	02 01 B	2001	75	200		8	35		17	5	3	7		1826	286,40	537,70	235	Y	R	HPLC	G	No
Wheat products	CG	02 01 B	2002	2	200			2								33,30		33,3	Y	R	HPLC	G	No
Wheat products	CG	02 01 B	2002	8	200		2	5			1				502	348,28	901,50	33,3	Y	R	HPLC	G	No
Wheat products	CG	02 01 B	94 - 98	10		100	8	0	1	0	0	1	0	0	800	67,50	450,00	50	Y	R			no
Wheat products	CG	02 01 B	1999	2		50	0	1	1	0	0	0	0	0	160	65,58	102,50	41	Y	R			no
Wheat products	CG	02 01 B	2000	1		50	0	0	1	0	0	0	0	0	289	289,00	289,00	289	Y	R			no
Wheat products	CG	02 01 B	2001	15		50	13	0	2	0	0	0	0	0	250	105,00	235,00	40	Y	R			no
Wheat products	CG	02 01 B	2002	7		100	6	0	1	0	0	0	0	0	220	100,33	220,00	50	Y	R			no
Wheat products	CG	02 01 B	94 - 98	24		100	18	1	4	0	1	0	0	0	600	67,50	208,33	50	Y	R			no
Wheat products	CG	02 01 B	1999	1		50	1	0	0	0	0	0	0	0		65,58		66	Y	R			no
Wheat products	CG	02 01 B	2000	12		50	1	3	1	4	1	0	2	0	1000	992,89	409,55	45	Y	R			no
Wheat products	CG	02 01 B	2001	15		50	3	0	10	2	0	0	0	0	410	105,00	235,83	40	Y	R			no
Wheat products	CG	02 01 B	2002	3		100	2	0	1	0	0	0	0	0	220	100,33	220,00	50	Y	R			no
Pasta	CG3	02 01 B	2001	1	200			1								33,30		33,3	Y	R	HPLC	G	No
Pizza	CG4	02 01 B	2000	1				1							150	150,00	150,00	150	Y	R	HPLC	G	No
Pizza	CG4	02 01 B	2001	1				1							216	216,00	216,00	216	Y	R	HPLC	G	No
	CH	02 01 B	2001	2					1		1				611	33,30	33,30	33,3	Y	R	HPLC	G	No
Corn products	CH	02 01 C	2001	1				1								33,30		33,3	Y	R	HPLC	G	No
Corn products	CH	02 01 C	2001	8			2	4		2					320	237,59	91,65	225,95	Y	R	HPLC	G	No
Polenta	CH1	02 01 C	2001	1				1								33,30		33,3	Y	R	HPLC	G	No
Polenta	CH1	02 01 C	2002	3	100											63,90	87,50	25	Y	R	HPLC	G	No
Sweet corn	CH5	02 01 C	2002	4			1	3							222	33,30	222,00	33,3	Y	R	HPLC	G	No
	CH5	02 01 B	2002	9	200			9							224	57,49	142,15	33,3	Y	R	HPLC	G	No
Soft wheat	BT		2001	31	20			28	2	1	0	0	0	0	230	22,068	148,75	3,3	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	7	14	32	15	9	2	3	0	1500	270	319	190	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	48	11	9	1	3	0	0	0	700	62	201	15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	15	18	25	4	5	1	3	0	1900	216	313	100	Y	T	GC-MS	G	Y
Soft wheat	BT		2000	276	40-100	30-250	47	88	83	53	35	13	4	0	1520	283		190		R	GC or HPLC	L	Y
Soft wheat	BT		2001	252	10-100	25-30	67	190	39	18	3	1	1	0	1038	95		25		R	GC or HPLC	L	Y
Soft wheat	BT		2001	8	50	25	5	8	0	0	0	0	0	0						R	GC or HPLC	L	Y
Durum wheat	BD		1999	16	60	30	6	1	2	4	2	0	1	0	1000	263	412	170	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	7	0	4	1	1	0	3	0	1600	372	649	175	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	4	2	4	2	1	0	0	0	730	169	238	110	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	9	5	7	6	5	5	10	5	3600	689	891	470	Y	T	GC-MS	G	Y
Grain fractions	CF	02 01 A	2000-2001	145	200	200	50	0	37	32	8	10	8	0					No	R	Elisa	G	No
Grain fractions	CF	02 01 A	2002	69	200	200	24	0	18	18	8	1	0	0					No	R	Elisa	G	No
Rye flour	D5		2000	1					1						120	120	120	120	Y	R	HPLC	G	No
Rye flour	D5		2001	2	200			2								33,3		33,3	Y	R	HPLC	G	No
Rye flour	D5		2002	1	200			1								33,3		33,3	Y	R	HPLC	G	No
Rye flour	D5		2002	3	200		1		1		1				595	174	595	33	Y	R	HPLC	G	No
Rice flour	D7		2001	1	200			1								33,3		33,3	Y	R	HPLC	G	No
Rice flour	D7		2002	1	100		1									16,7		16,7	Y	R	HPLC	G	No
Buckwheat	D9		2000	1		60	1									30		30	Y	R	HPLC	G	No
Buckwheat	D9		2000	5		60	5									30		30	Y	R	HPLC	G	No
Buckwheat	D9		2001	3	200			3								33,3		33,3	Y	R	HPLC	G	No
Buckwheat	D9		2001	15	200		6	9								33,3		33,3	Y	R	HPLC	G	No
Buckwheat	D9		2002	1	100			1								16,07		16,07	Y	R	HPLC	G	No
Buckwheat	D9		2002	3	100		2	1							70	34,5	70	16,07	Y	R	HPLC	G	No

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Oat products	E3		2000	1		60	1									30		30	Y	R	HPLC	G	No
Oat products	E3		2001	11	200		1	10								33,3		33,3	Y	R	HPLC	G	No
Oat products	E3		2001	3	200		1	2								33,3		33,3	Y	R	HPLC	G	No
Oat products	E3		2002	5	50		4	1								8,3		8,3	Y	R	HPLC	G	No
Barley products	E6		2000	1		60	1									30		30	Y	R	HPLC	G	No
Barley products	E6		2001	9	200		3	6								33,3		33,3	Y	R	HPLC	G	No
Rice products	E7		2000	1		60	1									30		30	Y	R	HPLC	G	No
Rice products	E7		2001	7	200		1	6								33,3		33,3	Y	R	HPLC	G	No
Rice products	E7		2002	1	100		1									16,7		16,7	Y	R	HPLC	G	No
Rice products	E7		2002	3	200		1	2								33,3		33,3	Y	R	HPLC	G	No
Rye flour	D5		2001	11	200		1	9		1					350	103,76	291,6	33,3	Y	R	HPLC	G	No
Breakfast cerals	A		2001	14	200			14							235	63	243	33	Y	R	HPLC	G	No
Breakfast cerals	A		2002	1	200			1								33,3		33,3	Y	R	HPLC	G	No
Breakfast cerals	A		94 - 98	24		50	20	3	1	0	0	0	0	0	100	67	50	50	Y	R			no
Breakfast cerals	A		1999	8		50	0	6	1	0	0	0	0	1	25700	66	3229	41	Y	R			no
Breakfast cerals	A		2000	9		50	3	5	1	0	0	0	0	0	250	993	42	45	Y	R			no
Breakfast cerals	A		2001	1		50	0	1	0	0	0	0	0	0	0	105	0	40	Y	R			no
Breakfast cerals	A		2002	4		50	3	1	0	0	0	0	0	0	80	100	80	50	Y	R			no
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	50	1	1	0	0	0	0	0	200	9,7561	200	5	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	32	3	6	2	1	0	0	0	500	5	173	5	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	55	9	3	1	0	0	0	0	310	21,103	155,71	5	Y	R	GC-MS	G	Y
								LOD- 20	20-150	150-500	>500												
Malting barley	OB		1999	59	20			23	28	8	0				550	50		10	Y	R	HPLC	G	Y
Malting barley	OB		1999	47	20			26	19	1	1				350	61		35	Y	R	HPLC	G	Y
Malting barley	OB		2000	50	20			39	8	3	0				550	46		10	Y	R	HPLC	G	Y
Malting barley	OB		2000	64	20			29	26	8	1				350	65		37	Y	R	HPLC	G	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: Germany

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat flour	CF2		1, 1999	42	111	111	12	0	28	2	0	0	0	0	327	159	200	179	yes	Random	ELISA		
Wheat flour	CF2		1, 1999	9	111	111	6	0	0	3	0	0	0	0	420	173	408	55	yes	Random	ELISA		
Wheat	CF2		1, 1999	26	111	111	5	0	15	4	1	1	0	0	764	240	285	208	yes	Random	ELISA		
Wheat flour	CF2		1, 2000	29	111	111	11	0	10	4	2	0	0	0	690	198	296	166	yes	Random	ELISA		
Wheat flour	CF2		2, 2001	106	25	25	34	26	38	6	2	0	0	0	640	120	162	86	yes	Random	ELISA		
Wheat, flour, food	GC1		1, 1999	26	111	111	8	0	10	7	1	0	0	0	553	221	295	194	yes	Random	ELISA		
Wheat	GC1		3, 2000	27	40	20	9	4	13	1	0	0	0	0	402	112	159	115	yes	Random	HPLC		
Pasta	CG3,	0201B	1, 2000	8	40	20	1	6	1	0	0	0	0	0	370	145	145	123	yes	Random	HPLC	P	
Pasta			2, 2001/2	102	30	30	6	30	31	16	12	4	2	1	3200	292	309	177	yes	Random	ELISA	P	yes
Baby food	CP		1, 2000	32	40	20	10	6	14	1	0	0	1	0	1075	134	186	102	yes	Random	HPLC	P	yes
Baby food			2, 2001/2	132	30	30	37	84	11	0	0	0	0	0	220	70	54	46	yes	Random	SA, partly HF	P	yes
Wheat bran	CF1		1999	20	111	111	3	0	4	2	3	2	5	1	2050	711	830	543	yes	Random	ELISA		

Country: The Netherlands

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
infant food	CGX		4 (1998)	28	100	50	8	0	1	2	1	2	12	2	2607	942	1308	1488,5	y	random			no
infant food	CGX		4 (1999)	16	100	50	4	9	3	0	0	0	0	0	148	65	78	58	y	random			yes
infant food	CGX		4 (2000)	5	20	10	1	0	4	0	0	0	0	0	270	131	163	130	y	random			yes
wheat flour	CF		4 ('98-'00)	327	100	50	211	0	91	15	5	2	2	1	2650	99	233	<10	y	random			yes
wheat flour	CF		4 ('98-'00)	82	100	50	31	0	40	6	2	2	1	0	1060	151	228	140	y	random			yes
bread	CG2		4 ('98-'01)	51	100	50	27	0	21	2	1	0	0	0	557	103	192	<50	y	random			yes
pasta	CG3		4 ('98-'01)	163	100	50	110	0	39	5	6	3	0	0	840	92	231	<10	y	random			yes
barley	GC6		4 ('98-'99)	18	100	50	18	0	0	0	0	0	0	0	0	25		137.5?	y	random			yes
barley	GC6		4 ('00-'01)	4	20	10	4	0	0	0	0	0	0	0	0	5		<220	y	random			yes
barley	GC6		2 (2000)	6		110	3		3	0	0	0	0	0	230	113	227	<50	y	random			yes
barley	GC6		2(2001)	12		220	10		1	0	1	0	0	0	510	153	370	<50	y	random			yes
oat	GC3		4 ('98-'99)	15	100	50	30	0	0	0	0	0	0	0	0	50			y	random			yes
oat	GC3		4 ('00-'01)	8	20	10	8	0	0	0	0	0	0	0	0	5			y	random			yes
biscuits	CG1		4 ('98-'01)	80	100	50	57	0	21	2	0	0	0	0	420	60	147	<50	y	random			yes
corn	GC2		4 ('98-'01)	8	100	50	2	0	3	2	0	0	1	0	1040	286	373	195	y	random			yes
corn*	GC2		2 (2000)	23		110	2		9	5	5	3	1	0	1300	379	416	293	y	random			yes
corn*	GC2		2(2001)	84		220	10		3	21	23	23	33	12	3920	761	849	640	y	random			yes
muesli	CP		4 ('98-'01)	46	100	50	37	0	8	1	0	0	0	0	390	56	185	<50	y	random			yes
rye	GC5		4 ('98-'01)	9	100	50	7	0	2	0	0	0	0	0	219	57	168	<50	y	random			yes
rye	GC5		2 (2000)	8		110	1		7	0	0	0	0	0	220	150	163	142,5	y	random			yes
rye	GC5		2(2001)	20		220	20		0	0	0	0	0	0	-	110	-	<220	y	random			yes
wheat	GC1		4 (1998)	215	100	50	34		72	53	18	9	25	4	3280	463	546	300	y	random			yes
wheat	GC1		4 (1999)	273	100	50	128		106	26	9	3	1	0	1946	142	245	100	y	random			yes
wheat	GC1		4 (2000)	175	100	50	107		45	14	5	2	1	1	3280	145	333	<10	y	random			yes
wheat	GC1		4 (2001)	98	20	10	43		30	10	6	3	6	0	1200	206	363	110	y	random			yes
wheat*	GC1		2 (2000)	939		110	150		450	174	107	64	68	13	5000	315	375	220	y	random			yes
wheat*	GC1		2(2001)	765		220	583		39	75	47	21	26	5	2300	206	512	<220	y	random			yes
wheatbran	CF1		4 ('98-'01)	20	100	50	13	0	5	2	0	0	0	0	360	75	169	<50	y	random			yes
starch	CF3A		4 ('98-'01)	24	100	50	14	0	8	2	0	0	0	0	320	97	199	<50	y	random			yes
beer	DM1		5(2000)	51	25	12,5	48	3	0	0	0	0	0	0	41	7,9	34	<12.5	y	random			no
puffed wheat	CGX		2 (2001)	12		220	11		1	0	0	0	0	0	240	121	240	240					
wheat bio	GC1		2 (2001)	14		220	12		1	1	0	0	0	0	430	144	345	345					
wheat durum	GC1		2 (2000)	22	110	110	2		12	4	2	1	1	0	1700	370	401,5	230					
wheat durum	GC1		2 (2001)	19		220	14		1	2	2	0	0	0	680	204	467,6	460					
wheat durum bio	GC1		2 (2000)	4	110	110	1		3	0	0	0	0	0	235	183	225	220					
wheat durum bio	GC1		2 (2001)	8		220	8		0	0	0	0	0	0		110	-	-					

* = Samples > 750 weighted for 40%

Country: Norway

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat, no	GC 1	0301 A	1.-1990	138	90	30	28	60	40	8		2			890	103,3	114,7	80	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	1.-1990	27	90	30	19	4			4				660	109,4	331,3	20	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	2.-1991	107	90	30	20	56	30	1					310	83,8	98,8	45	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	3.-1992	112	90	30	16	25	48	16	6				600	191,2	222,9	150	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	3.-1992	16	90	30	4	2	3	1	1	3	2		1300	406,8	537,3	245	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	4.-1993	101	90	30	35	30	30	5	1				560	96,1	138,7	67	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	4.-1993	29	90	30	15		2	3	4	2	2	1	2500	390,5	792,9	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	5.-1994	112	90	30	86	15	9	2					370	42,0	126,7	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	5.-1994	30	90	30	18	7	2	2	1				610	78,6	172,3	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	6.-1995	26	90	30	16	9	1						165	28,7	50,7	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	6.-1995	13	90	30	5	5		1	2				650	153,5	240,0	48	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	7.-1996	28	60	20	28								.-	10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	7.-1996	14	60	20	7	1	2	2	1			1	2700	332,9	655,7	30	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	8.-1997	25	60	20	19	6							73	15,7	33,8	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	8.-1997	10	60	20	3	3		2	1		1		1900	356,0	504,3	45	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	9.-1998	35	60	20	32	3							85	13,5	45,7	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	9.-1998	24	60	20	6	13	5						233	76,8	99,0	50	yes	random	HPLC	good	yes
Wheat *, no	GC 1	0301 A	10.-2001	64	60	20	30	14	14	6					464	87,1	155,1	35	yes	random	HPLC	good	yes
Wheat *	GC 1	0301 A	11.-2001	44	60	20	40	4							51	12,1	33,5	10	yes	random	HPLC	good	yes
Wheat **	CG **	0201 B	12.-2001	39	60	20	26	11	2						183	27,8	63,4	10	yes	random	HPLC	good	yes
Barley *	GC 6 *	0301 F	1.-1990	20	90	30	14	6							60	26,0	46,7	15	yes	random	HPLC	good	yes
Rye, no	GC 5	0301 E	1.-1990	2	90	30	0	2							60	60,0	60,0	60	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	1.-1990	18	90	30	12	6							50	26,1	45,0	20	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	4.-1993	11	90	30	8	3							62	24,6	50,3	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	5.-1994	12	90	30	8	4							60	28,2	48,5	21,5	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	6.-1995	11	90	30	8	3							57	25,7	46,0	20	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	7.-1996	10	60	20	10								.-	10	0	10	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	4.-1993	3	90	30	0		1		2				670	470,0	470,0	610	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	1.-1990	40	90	30	2	10	23	2	3				690	186,6	195,3	147,5	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	5.-1994	3	90	30	0	1	1				1		1300	538,3	538,3	240	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	6.-1995	26	90	30	10	10	6						230	60,1	87,9	42	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	7.-1996	14	60	20	5	2	7						266	104,1	156,4	81,5	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	8.-1997	14	60	20	0	12	2						130	58,2	58,2	55	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	9.-1998	22	60	20	10	4	6	1		1			849	134,2	236,9	52	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	10.-2001	24	60	20	24								.-	10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	11.-2001	58	60	20	38	18	2						220	26,2	57,0	10	yes	random	HPLC	good	yes
Oat **	GC3 **	0301 C	12.-2001	28	60	20	28								.-	10	0	10	yes	random	HPLC	good	yes
Maize **	CH **	0201 C	12.-2001	19	60	20	1	8			2	7	1		1022	450,9	475,4	609	yes	random	HPLC	good	yes
Rice **	GC7 **	0301 G	12.-2001	16	60	20	16								.-	10	0	10	yes	random	HPLC	good	yes
Ceral fractions	CF	0201 A	12.-2001	19	60	20	9	10							86	25,4	39,3	21	yes	random	HPLC	good	yes

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

Country: Portugal

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
wheat	GC1	0301A	2002	3	50	25	2				1				744	256,3	744		yes	Random	HPLC	L	Yes
white wheat flour	CF2	0201B	2002	3	50	25	2			1					333	119,3	333		yes	Random	HPLC	L	Yes
wheat bran	CF1	0201B	2002	4	50	25	2						2		1821	761	1509,5		yes	Random	HPLC	L	Yes
cereal breakfast	CF4	0201D	2002	10	50	25		3	6	1					426	161,6	161,6	161	yes	Random	HPLC	L	Yes

Country: Sweden

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	0301A	1996-97	57	10	2			3	2				1	2153	67	123	2	YES	Random	GC	G	yes
Wheat	GC1	0301A	1999	75	10	2	17	44	14	1					346	54	67	34	YES	Random	GC	G	yes
Wheat	GC1	0301A	2001	27	10	2	2	21	3	1					333	61	66	26	YES	Random	GC	L	no
Wheat	GC1*	0301A	2001	17	10	2							16	1	2033	1427	1427	1367	YES	Target	GC	G	no
Oat	GC3	0301C	1996-97	23	10	2	7	16							70	11	15	2	YES	Random	GC	G	yes
Oat	GC3	0301C	1999	10	10	2	6	4							19	7	16	2	YES	Random	GC	G	yes
Oat	GC3	0301C	2001	3	10	2		2	1						174	87	87	66	YES	Random	GC	L	no
Rye	GC5	0301E	1996-97	28	10	2	21	6		1					351	14	54	1	YES	Random	GC	G	yes
Rye	GC5	0301E	1999	19	10	2	9	10							41	14	24	12	YES	Random	GC	G	yes

* a single special case, not representative

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		99	1							12,0	1,8	12,0	<10	Y	Random	GC/MS	G	yes
Ceral fractions	CF	02 01A	2/2000	16	10		15	1	0	0	0	0	0	0	61,0	27,6	34,6	<10	Y	Random	GC/MS	G	yes
Ceral fractions	CF	02 01A	2/2000	11	10		1	7	2	1					531,0	106,1	116,5	50,0	Y	Random	GC/MS	G	yes
Barley	GC6	03 01F	1999	54	5		49	5	0	0	0	0	0	0	16,0	1,9	12,6	<5	Y	Random	GC/MS	G	yes
Barley	GC6	03 01F	2000	50	5		46	4	0	0	0	0	0	0	20,0	1,5	8,7	<5	Y	Random	GC/MS	G	yes
Barley	GC6	03 01F	2001	49	5		29	20	0	0	0	0	0	0	53,0	5,9	14,5	<5	Y	Random	GC/MS	G	yes
Beer	DM1	02 05A	2000	28	5		28	0	0	0	0	0	0	0	<5	0,8	0,0	<5	Y	Random	GC/MS	G	yes
Corn products	CH	02 01C	2/2000	15	10		0	9	5	0	1	0	0	0	683,0	132,7	132,7	46,0	Y	Random	GC/MS	G	yes
Corn products	CH	02 01C	2/2000	30	10		4	11	4	2	8	1			879,0	257,3	296,6	88,0	Y	Random	GC/MS	G	yes
Corn products	CH	02 01C	2/2000	1	10		0	1	0	0	0	0			16,0	16,0	16,0	16,0	Y	Random	GC/MS	G	yes
Corn products	CH	02 01C	2/2001	24	10		3	6	15	0	0	0			275,0	109,5	124,9	127,0	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2000	14	10		3	11	0	0	0	0	0	1	31,0	3,5	31,0	24,0	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2000	14	10		0	8	5	0	0	0	0	0	2261,0	235,6	235,6	54,0	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2000	40	10		21	19	0	0					67,0	12,4	24,3	<10	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2000	6	10		0	5	1	0	0	0			156,0	75,7	75,7	67,0	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2001	13	10		0	11	2	0	0	0			199,0	47,5	47,5	25,0	Y	Random	GC/MS	G	yes
Wheat products	CG	02 01B	2/2000	8	10		1	6	1	0	0	0			177,0	53,5	60,9	36,0	Y	Random	GC/MS	G	yes
Wheat flour	CF2	02 01B	2/2000	29	10		3	26	0	0					99,0	35,1	39,0	32,0	Y	Random	GC/MS	G	yes
flour	CF3D	02 01C	2/2000	8	10		8	0	0	0	0	0			<10	1,7	0,0	<10	Y	Random	GC/MS	G	yes
Polenta	CH1	02 01C	2/2000	8	10		1	2	4	1					466,0	153,3	175,0	140,0	Y	Random	GC/MS	G	yes
Biscuits	CG1	02 01B	2/2000	54	10		8	45	0	1					315,0	29,1	33,8	18,5	Y	Random	GC/MS	G	yes
Bread	CG2	02 01B	2/2000	40	10		2	34	3	1					366,0	47,8	50,2	25,5	Y	Random	GC/MS	G	yes
Bread	CG2	02 01B	2/2000	16	10		0	10	6	0					198,0	79,9	79,9	82,0	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	1	10		0	1	0	0	0	0	0	0	76,0	76,0	76,0	76,0	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	2	10		0	2	0	0					19,0	6,0	19,0	16,5	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	4	10		3	1	0	0					20,0	16,5	16,5	<10	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	3	10		0	3	0	0					86,0	39,0	39,0	17,0	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	1	10		1	0	0	0					<10	1,7	0,0	<10	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	4	10		0	2	0	1	1	0			521,0	219,5	219,5	171,5	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2001	1	10		1	0	0	0	0	0			<10	1,7	0,0	<10	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2001	5	10		2	2	1	0	0	0			121,0	34,7	34,0	14,0	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	6	10		2	4	0	0	0	0			68,0	23,6	34,5	15,0	Y	Random	GC/MS	G	yes
Mixed	CP	03 01	2/2000	2	10		0	2	0	0	0	0			30,0	27,0	27,0	27,0	Y	Random	GC/MS	G	yes

Table 1B: Summary of occurence in cereals from data reported in tables1A

Trichothecene type B: DON (Units: µg/kg)

Country: Austria

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Cereral grains	GC	03 01	549	690	216	485,8	<LOQ

Country: Belgium

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat grains			47	504	63	343	<LOQ
biscuits including babyfood			15	<LOQ	31	0	<LOQ
bread			38	560	70	394	<LOQ
pasta			29	716	126	430	<LOQ
bran			5	475	128	475	<LOQ
muësli bars			5	<LOQ	42	0	<LOQ

Country: Denmark

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat flour	CF2	0201B	88	527	114	135	87
Rye flour		0201 (?)	69	257	43	55	14
Durum wheat flour		0201 (?)	33	2591	1155	1155	1233

Country: France

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat bran	CF1	02 01 B	1		17		17
Wheat bran	CF1	02 01 B	6		33	33	33
Wheat bran	CF1	02 01 B	3		33		33
Wheat bran	CF1	02 01 B	39	3600	205	352	50
Wheat bran	CF1	02 01 B	8	650	166	189	86
Wheat bran	CF1	02 01 B	9	2000	526	526	240
Wheat bran	CF1	02 01 B	8	170	59	64	13
Wheat bran	CF1	02 01 B	13	915	222	310	140
White wheat flour	CF2	02 01 B	15	500	156	316	125
White wheat flour	CF2	02 01 B	1		125	125	125
White wheat flour	CF2	02 01 B	170	1213	143	324	33
White wheat flour	CF2	02 01 B	11	136	46	101	33
White wheat flour	CF2	02 01 B	46	595	63	322	17
White wheat flour	CF2	02 01 B	308	300	67	123	50
White wheat flour	CF2	02 01 B	57	330	66	91	41
White wheat flour	CF2	02 01 B	55	50000	993	1183	45
White wheat flour	CF2	02 01 B	38	400	105	174	40
White wheat flour	CF2	02 01 B	33	330	100	184	50
White wheat flour	CF2	02 01 B	14	200	67	127	50
White wheat flour	CF2	02 01 B	4	130	66	97	41
White wheat flour	CF2	02 01 B	10	300	153	993	45
White wheat flour	CF2	02 01 B	4	280	105	220	40
White wheat flour	CF2	02 01 B	3	0	50		50
White wheat flour	CF2	02 01 B	37	2100	304		220
White wheat flour	CF2	02 01 B	101	328	53		25
	CF3	02 01 B	29		30		30
Corn fractions	CF3	02 01 C	1		50		50
Corn fractions	CF3	02 01 C	1		50		50
Corn fractions	CF3	02 01 C	1		50		50
Corn fractions	CF3	02 01 C	17	1400	105	559	40
Corn fractions	CF3	02 01 C	7	825	100	271	50
Corn fractions	CF3	02 01 C	1	340	340	340	340
Corn fractions	CF3	02 01 C	1	620	620	620	620
	CF3A	02 01 B	1		33		33
Corn meal	CF3B	02 01 C	2	450	435	435	435
Corn meal	CF3B	02 01 C	3	1400	331	480	340
Corn meal	CF3B	02 01 C	1	245	245	245	245
Wheat products	CG	02 01 B	3		30		30
Wheat products	CG	02 01 B	5		33		33
Wheat products	CG	02 01 B	75	1826	286	538	235
Wheat products	CG	02 01 B	2		33		33
Wheat products	CG	02 01 B	8	502	348	902	33
Wheat products	CG	02 01 B	10	800	67	450	50
Wheat products	CG	02 01 B	2	160	66	103	41
Wheat products	CG	02 01 B	1	289	289	289	289
Wheat products	CG	02 01 B	15	250	105	235	40
Wheat products	CG	02 01 B	7	220	100	220	50
Wheat products	CG	02 01 B	24	600	67	208	50
Wheat products	CG	02 01 B	1		66		66
Wheat products	CG	02 01 B	12	1000	993	410	45
Wheat products	CG	02 01 B	15	410	105	236	40
Wheat products	CG	02 01 B	3	220	100	220	50
Pasta	CG3	02 01 B	1		33		33
Pizza	CG4	02 01 B	1	150	150	150	150
Pizza	CG4	02 01 B	1	216	216	216	216

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Corn products	CH	02 01 B	2	611	33	33	33
Corn products	CH	02 01 C	1		33		33
Corn products	CH	02 01 C	8	320	238	92	226
Polenta	CH1	02 01 C	1		33		33
Polenta	CH1	02 01 C	3		64	88	25
Sweet corn	CH5	02 01 C	4	222	33	222	33
Sweet corn	CH5	02 01 B	9	224	57	142	33
Wheat	GC1	03 01 A	30	2125	132	325	3
Wheat	GC1	03 01 A	22	170	11	170	3
Wheat	GC1	03 01 A	1	0	50		50
Wheat	GC1	03 01 A	1	85	105	85	40
Wheat	GC1	03 01 A	3	120	100	95	50
Corn	GC2	03 01 B	29	8850	494	841	50
Corn	GC2	03 01 B	25	4800	1056	1140	
Corn	GC2	03 01 B	59	3390	475		300
Corn	GC2	03 01 B	107	5400	903		650
Barley	GC6	03 01 F	9	35	6	35	3
Breakfast cereals	A		14	235	63	243	33
Breakfast cereals	A		1		33		33
Breakfast cereals	A		24	100	67	50	50
Breakfast cereals	A		8	25700	66	3229	41
Breakfast cereals	A		9	250	993	42	45
Breakfast cereals	A		1	0	105		40
Breakfast cereals	A		4	80	100	80	50
Durum wheat	BD		16	1000	263	412	170
Durum wheat	BD		16	1600	372	649	175
Durum wheat	BD		13	730	169	238	110
Durum wheat	BD		52	3600	689	891	470
Soft wheat	BT		31	230	22	149	3
Soft wheat	BT		82	1500	270	319	190
Soft wheat	BT		72	700	62	201	15
Soft wheat	BT		71	1900	216	313	100
Soft wheat	BT		276	1520	283		190
Soft wheat	BT		252	1038	95		25
Rye flour	D5		1	120	120	120	120
Rye flour	D5		2		33		33
Rye flour	D5		1		33		33
Rye flour	D5		3	595	174	595	33
Rye flour	D5		11	350	104	292	33
Rice flour	D7		1		33		33
Rice flour	D7		1		17		17
Buckwheat	D9		1		30		30
Buckwheat	D9		5		30		30
Buckwheat	D9		3		33		33
Buckwheat	D9		15		33		33
Buckwheat	D9		1		16		16
Buckwheat	D9		3	70	35	70	16
Oat products	E3		1		30		30
Oat products	E3		11		33		33
Oat products	E3		3		33		33
Oat products	E3		5		8		8
Barley products	E6		1		30		30
Barley products	E6		9		33		33
Rice products	E7		1		30		30
Rice products	E7		7		33		33
Rice products	E7		1		17		17
Rice products	E7		3		33		33
Malting barley	OB		30		15		15
Malting barley	OB		52	200	10	200	5
Malting barley	OB		44	500	5	173	5
Malting barley	OB		68	310	21	156	5
Malting barley	OB		59	550	50		10
Malting barley	OB		47	350	61		35
Malting barley	OB		50	550	46		10
Malting barley	OB		64	350	65		37

Country: Germany

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat			265	764	175	258	143
Pasta			110	3200	219	227	150
Baby food			164	1075	102	120	74
Wheat bran	CF1		20	2050	711	830	543

Country: The Netherlands

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
infant food	CGX		21	270	81	99	70
wheat flour	CF		409	2650	109	232	<50
bread	CG2		51	557	103	192	<50
pasta	CG3		163	840	92	231	<10
barley	GC6		40	510	75	284	<50
oat	GC3		23	-	34	-	-
biscuits	CG1		80	420	60	147	<50
corn	GC2		115	3920	653	668	510
muesli	CP		46	390	56	185	<50
rye	GC5		37	220	106	164	<220
wheat	GC1		2250	5000	239	399	?130
wheatbran	CF1		20	360	75	169	<50
starch	CF3A		24	320	97	199	<50

Country: Norway

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
no/imp WHEAT	GC1	0301 A	955	1723	145	258	40
no/imp RYE	GC5	0301 E	64	61	43	46	15
Oats, no	GC3	0301 C	204	1300	93	157	46
Barley, no	GC6	0301 F	20	60	26	47	15
Maize baby porridge	CH	0201 C	19	1022	451	475	609
Rice baby porridge	GC7	0301 G	16		10	0	10
Oat baby porridge	GC3	0301 C	28		10	0	10
Wheat baby porridge	CG	0201 B	39	183	28	63	10
Composite grain product	CF	02 01A	19	86	25	39	21

Country: Portugal

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat	GC1	0301A	3	744	256	744	
white wheat flour	CF2	0201B	3	333	119	333	
wheat bran	CF1	0201B	4	1821	761	1510	
cereal breakfast	CF4	0201D	10	426	162	162	161

Country: Sweden

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat	GC1	0301A	159	2153	60	90	17
oat	GC3	0301C	36	174	16	38	18
rye	GC5	0301E	47	351	15	51	20

Table 1C: Estimated daily intake of trichothecenes in each member state

Trichothecene type B: deoxynivalenol

Country : Austria; whole population
Body Weight for average person (kg): 75

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360	216	486		22054	49600	77760	294	661	1037
Total intake								22054	49600	77760	294	661	1037

Country : Belgium; adolescents 13-18 years
Body Weight for average person (kg): 60 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread	CG2		165,3	360	70	394		11571	65128	25200	193	1085	420
pasta	CG3		24,65	200	126	430		3106	10600	25200	52	177	420
bran	CF1		0,06		128	475		8	29		0,1	0,5	
Total intake								14685	75757	50400	245	1263	840

Country : Denmark; whole population
Body Weight for average person (kg): 70 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat bread white*			70,5	148,5	80	95		5640	6698	11880	81	96	170
Wheat bread coarsely*			23,7	97,1	80	95		1896	2252	7768	27	32	111
Rye bread*			71,7	150,5	30	39		2151	2796	4515	31	40	65
Wheat flour			19,8	44,9	114	135	20-527	2257	2673	5119	32	38	73
Durum flour wheat (1)			?	19,8	1155	1155				22869			324
Total intake								11944	14419	52151	171	206	743
* calculated as bread contain 70 % flour													
(1) assuming that the intake of durum flour wheat is in the same order as for wheat flour (worst case)													

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		74,0	114,3		8488	13064		110	169	
Rye	GC5	0301E	49,1		11,5	75,4		564	3702		7	48	
Oat	GC3	0301C	4,45		394,9	528,0		1757	2350		23	30	
Barley*	GC6	0301F	4,45		72	103,4		321	460		4	6	
Total intake								11130	19576		144	254	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Country : France; adults
Body Weight for average person (kg): 66,4 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	117,35	278,6	111,2	209,7		13044	24607		196	371	
pasta	CG3	0201B	36,09	100,0	101,0	260,1		3647	9388		55	141	
semolina	CG	0201B	1,67	14,3	146,8	220,3		245	368		4	6	
corn	CH	0201C	2,44	17,9	214,5	370,1		523	903		8	14	
biscuits	CG1	0201B	67,03	191,4	46,5	99,1		3114	6642		47	100	
pizzas and tarts	CG	0201B	73,32	400,0	92,0	130,7		6743	9583		102	144	
sandwiches	CG	0201B	13,80	74,3	46,5	99,1		641	1367		10	21	
compound dishes with pasta	CG	0201B	9,01	50,0	50,5	130,1		455	1172		7	18	
other compound dishes	CG	0201B	20,85	100,0	46,5	99,1		969	2066		15	31	
beer	DM1	0205A	28,50	142,9	4,9	23,5		138	671		2	10	
Rye bread	E5		0,31	0,0	83,7	272,7		26	85		0	1	
buckwheat pancakes	E9		0,60	0,0	12,8	28,0		8	17		0	0	
breakfast cereals without corn cereals	A		3,88	28,6	205,0	527,6		795	2047		12	31	
cooked rice	E7		19,12	65,0	12,7			242			4		
other products	A*		0,77	0,0	28,3			22			0		
Total intake								30613	58915		461	887	

Country : France; male
Body Weight for average person (kg): 73,9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	147,92	340,5	111,2	209,7		16441	31016		222	420	
pasta	CG3	0201B	42,11	118,2	101,0	260,1		4255	10955		58	148	
semolina	CG	0201B	1,62	14,3	146,8	220,3		237	356		3	5	
corn	CH	0201C	2,043835	14,7	214,5	370,1		438	756		6	10	
biscuits	CG1	0201B	70,26	205,3	46,5	99,1		3264	6962		44	94	
pizzas and tarts	CG	0201B	46,53	300,0	92,0	130,7		4280	6082		58	82	
sandwiches	CG	0201B	18,90	97,1	46,5	99,1		878	1873		12	25	
compound dishes with pasta	CG	0201B	10,65	60,4	50,5	130,1		538	1385		7	19	
other compound dishes	CG	0201B	23,61	109,2	46,5	99,1		1097	2340		15	32	
beer	DM1	0205A	50,54	250,0	4,9	23,5		245	1190		3	16	
Rye bread	E5		0,33	0,0	83,7	272,7		27	89		0	1	
buckwheat pancakes	E9		0,61	0,0	12,8	28,0		8	17		0	0	
breakfast cereals without corn cereals	A		3,72	28,6	205,0	527,6		763	1964		10	27	
cooked rice	E7		20,62	73,7	12,7			261			4	0	
other products	A*		0,59	0,0	28,3			17			0	0	
Total intake								32751	64986		443	879	

Country : France; female
Body Weight for average person (kg): 60,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	91,7	218,0	111,2	209,7		10197	19237		170	320	
pasta	CG3	0201B	31,0	85,7	101,0	260,1		3136	8075		52	134	
semolina	CG	0201B	1,7	14,3	146,8	220,3		252	378		4	6	
corn	CH	0201C	2,8	18,2	214,5	370,1		595	1026		10	17	
biscuits	CG1	0201B	64,3	171,4	46,5	99,1		2989	6374		50	106	
pizzas and tarts	CG	0201B	95,8	498,9	92,0	130,7		8807	12516		147	208	
sandwiches	CG	0201B	9,5	48,6	46,5	99,1		442	943		7	16	
compound dishes with pasta	CG	0201B	7,6	46,4	50,5	130,1		386	994		6	17	
other compound dishes	CG	0201B	18,5	92,7	46,5	99,1		861	1837		14	31	
beer	DM1	0205A	10,0	70,4	4,9	23,5		49	236		1	4	
Rye bread	E5		0,3	0,0	83,7	272,7		25	81		0	1	
buckwheat pancakes	E9		0,6	0,0	12,8	28,0		8	17		0	0	
breakfast cereals without corn cereals	A		4,0	28,6	205,0	527,6		823	2118		14	35	
cooked rice	E7		17,9	57,1	12,7			226			4		
other products	A*		0,9	0,0	28,3			26			0		
Total intake								28821	53830		480	896	

Country : France; children
Body Weight for average person (kg): 31,6 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	58,6	173,8	111,2	209,7		6519	12297		206	389	
pasta	CG3	0201B	37,0	100,0	101,0	260,1		3741	9630		118	305	
semolina	CG	0201B	2,0	20,2	146,8	220,3		298	447		9	14	
corn	CH	0201C	7,9	39,5	214,5	370,1		1703	2939		54	93	
biscuits	CG1	0201B	85,9	210,8	46,5	99,1		3992	8514		126	269	
pizzas and tarts	CG	0201B	19,6	68,8	92,0	130,7		1802	2560		57	81	
sandwiches	CG	0201B	10,2	45,9	46,5	99,1		476	1015		15	32	
compound dishes with pasta	CG	0201B	13,9	57,7	50,5	130,1		705	1814		22	57	
other compound dishes	CG	0201B	18,5	75,1	46,5	99,1		859	1831		27	58	
beer	DM1	0205A	0,0	0,0	4,9	23,5		0	0		0	0	
Rye bread	E5		0,2	0,0	83,7	272,7		19	61		1	2	
buckwheat pancakes	E9		0,5	0,0	12,8	28,0		6	13		0	0	
breakfast cereals without corn cereals	A		12,3	51,4	205,0	527,6		2523	6492		80	205	
cooked rice	E7		19,3	57,1	12,7			244			8		
other products	A*		1,3	0,0	28,3			36			1		
Total intake								22920	47613		725	1507	

Country : Germany
Body Weight for average person (kg): 70 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Bread	CG2		170	340	87	129	55-205				211	313	423
Pasta	CG3		20	40	219	227	145-292				63	65	125
Total intake											274	378	548

Country : Germany; young child
Body Weight for average person (kg): 20 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Bread*	CG2		170	340	87	129	55-205				740	1097	1479
Pasta	CG3		20	40	219	227	145-292				219	227	438
Total intake											959	1324	1917

Country : Germany; 4 month baby
Body Weight for average person (kg): 10 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Baby food	CP		50	100	102	120	70-134				510	600	1020
Total intake											510	600	1020

Country : The Netherlands; whole population
Body Weight for average person (kg): 65.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
infant food*	CGX		0,5		80,7			28			0		
wheat flour	CF		2,1		109,5			233			4		
bread*	CG2		132,3		103,4			11652			177		
pasta*	CG3		24,6		92,1			2260			34		
barley	GC6		21,9		74,8			1636			25		
oat	GC3		0,3		34,3			9			0		
biscuits*	CG1		38,6		60,2			1914			29		
muesli	CP		2,0		56,4			112			2		
rye	GC5		3,6		105,6			379			6		
wheat	GC1		2,8		238,7			679			10		
wheatbran	CF1		0,1		75,4			7			0		
starch	CF3A		0,8		97,3			75			1		
complex dishes*	CP		29,9		238,7			1302			20		
corn	GC2		3,0		652,9			1959			30		
Total intake								22245			338		

* = intake figures are not calculated as mean consumption * mean concentration,
but as the sum of the consumption of the products of this category with their specific concentrations.

Country : The Netherlands; children 1-4 years
Body Weight for average person (kg): 13.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
infant food*	CGX		6,4		80,7			225			16		
wheat flour	CF		1,4		109,5			157			11		
bread*	CG2		68,0		103,4			5982			433		
pasta*	CG3		11,0		92,1			1008			73		
barley	GC6		0,0		74,8			3			0		
oat	GC3		0,4		34,3			14			1		
biscuits*	CG1		18,4		60,2			1105			80		
muesli	CP		0,4		56,4			21			2		
rye	GC5		2,3		105,6			239			17		
wheat	GC1		4,5		238,7			1064			77		
wheatbran	CF1		0,0		75,4			0			0		
starch	CF3A		0,3		97,3			31			2		
complex dishes*	CP		15,3		238,7			493			36		
corn	GC2		2,2		652,9			1436			104		
Total intake								11778			853		

* = intake figures are not calculated as mean consumption * mean concentration,
but as the sum of the consumption of the products of this category with their specific concentrations.

Country : The Netherlands; children 1-6 years
Body Weight for average person (kg): 17.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
infant food*	CGX		3,2		80,7			115			7		
wheat flour	CF		1,6		109,5			177			10		
bread*	CG2		81,7		103,4			7228			423		
pasta*	CG3		12,0		92,1			1104			65		
barley	GC6		0,0		74,8			2			0		
oat	GC3		0,4		34,3			14			1		
biscuits*	CG1		20,9		60,2			1208			71		
muesli	CP		0,5		56,4			29			2		
rye	GC5		2,2		105,6			234			14		
wheat	GC1		3,5		238,7			841			49		
wheatbran	CF1		0,0		75,4			2			0		
starch	CF3A		0,4		97,3			34			2		
complex dishes*	CP		15,6		238,7			448			26		
corn	GC2		2,5		652,9			1632			95		
Total intake								13069			764		

* = intake figures are not calculated as mean consumption * mean concentration,
but as the sum of the consumption of the products of this category with their specific concentrations.

Country : Norway male, all participants

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	145,1	258,0	< LOD - 2700	17696	31479	30606	218	389	378
WHEAT /wholemeal flour	GC 1	0301A	65	118	145,1	258,0	< LOD - 2700	9428	16771	17116	116	207	211
RYE	GC 5	0301E	3	16	42,9	46,3	< LOD - 62	129	139	687	2	2	8
BARLEY	GC 6	0301F	3	16	26,0	46,7	< LOD - 60	78	140	416	1	2	5
OATS	GC 3	0301C	5	22	93,3	156,8	< LOD - 1300	467	784	2053	6	10	25
Total intake								27798	49313	50878	343	609	628

Country : Norway male, consumers

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	145,1	258,0	< LOD - 2700	17696	31479	30606	218	389	378
WHEAT /wholemeal flour	GC 1	0301A	65	119	145,1	258,0	< LOD - 2700	9428	16771	17261	116	207	213
RYE	GC 5	0301E	3	16	42,9	46,3	< LOD - 62	129	139	687	2	2	8
BARLEY	GC 6	0301F	6	23	26,0	46,7	< LOD - 60	156	280	598	2	3	7
OATS	GC 3	0301C	8	25	93,3	156,8	< LOD - 1300	747	1255	2333	9	15	29
Total intake								28156	49924	51485	348	616	636

Country: Norway female, all participants

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	145,1	258,0	< LOD - 2700	12765	22706	21468	193	344	325
WHEAT /wholemeal flour	GC 1	0301A	45	77	145,1	258,0	< LOD - 2700	6527	11611	11169	99	176	169
RYE	GC 5	0301E	2	12	42,9	46,3	< LOD - 62	86	93	515	1	1	8
BARLEY	GC 6	0301F	2	12	26,0	46,7	< LOD - 60	52	93	312	1	1	5
OATS	GC 3	0301C	4	16	93,3	156,8	< LOD - 1300	373	627	1493	6	10	23
Total intake								19803	35130	34957	300	532	530

Country: Norway female, consumers

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	145,1	258,0	< LOD - 2700	12765	22706	21468	193	344	325
WHEAT /wholemeal flour	GC 1	0301A	45	77	145,1	258,0	< LOD - 2700	6527	11611	11169	99	176	169
RYE	GC 5	0301E	2	12	42,9	46,3	< LOD - 62	86	93	515	1	1	8
BARLEY	GC 6	0301F	5	16	26,0	46,7	< LOD - 60	130	233	416	2	4	6
OATS	GC 3	0301C	6	20	93,3	156,8	< LOD - 1300	560	941	1866	8	14	28
Total intake								20068	35584	35434	304	539	537

Country: Norway, 6-months old babies, all participants.

Body Weight for average person (kg): 8

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
If all porridge consumed consisted of maize:													
Maize baby porridge	CH	0201C	90	210	450,95	475,44	< LOD - 1022	40585	42790	94699	5073	5349	11837
If all porridge consumed consisted of rice:													
Rice baby porridge	GC 7	0301G	90	210	10,00	0	< LOD	900	0	2100	113	0	263
If all porridge consumed consisted of oat:													
Oat baby porridge	GC 3	0301C	90	210	10,00	0	< LOD	900	0	2100	113	0	263
If all porridge consumed consisted of wheat:													
Wheat baby porridge	CG	0201B	90	210	27,79	63,38	< LOD - 183	2501	5704	5836	313	713	729
If all porridge consumed consisted of :													
Composite grain product	CF	0201A	90	210	25,42	39,30	< LOD - 86	2288	3537	5338	286	442	667

Country : Portugal

Body Weight for average person (kg): 65 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
wheat	GC1	0301A	3,01		256,3	744		772	2239		12	34	
white wheat flour	CF2	0201B	185,6		119,3	333		22142	61805		341	951	
wheat bran	CF1	0201B	0,25		761	1510		190	378		3	6	
cereal breakfast	CF4	0201D	3		161,6	161.6		485	485		8	8	
Total intake								23589	64907		363	999	

Country : Sweden; all population 18-74 year
Body Weight for average person (kg): 75 kg (men and women together)

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
wheat	GC 1	0301A	89	168	60	90	<LOD -2153	5340	8010	10080	71	107	134
oats	GC 3	0301C	4	27	16	38	<LOD -174	64	152	432	1	2	6
rye	GC 5	0301E	33	75	15	51	<LOD -351	495	1683	1125	6	22	15
Total intake								5899	9845	11637	78	131	155

Country : UK, average male adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,77	12,00	<10.00-12,00	63	427	202	1	6	3
Malted Barley			0,02	0,02	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			735,50	2138,90	0,83	0,00	<5.00-<5.00	610	0	1775	8	0	24
Breakfast cereals			41,20	109,40	96,78	137,50	<10.00-2261	3986	5664	10584	54	77	143
Biscuits			20,10	56,70	27,11	32,82	<10.00-315,00	546	660	1538	7	9	21
Bread			135,30	262,70	55,17	57,98	<10.00-366,00	7464	7844	14495	100	105	199
Cakes			44,00	114,00	12,40	24,26	<10.00-67,00	546	1067	1414	7	14	20
Flour (1)			21,30	56,60	54,64	60,53	<10.00-531,00	1166	1292	3094	16	17	44
Polenta (2)			22,50	34,70	153,33	175,00	<10.00-466,00	3445	3932	5326	55	63	88
Snacks			13,30	36,90	152,00	171,68	<10.00-879,00	2016	2277	5607	28	31	78
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					37,59	45,29	<10.00-177,00						
Total intake											176		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,77	12,00	<10.00-12,00	42	286	114	1	5	2
Malted Barley			0,03	0,05	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			193,10	738,00	0,83	0,00	<5.00-<5.00	160	0	613	3	0	10
Breakfast cereals			29,90	76,10	96,78	137,50	<10.00-2261	2894	4111	7365	48	68	119
Biscuits			17,40	46,90	27,11	32,82	<10.00-315,00	471	570	1272	8	9	21
Bread			85,00	159,00	55,17	57,98	<10.00-366,00	4691	4929	8770	75	79	145
Cakes			34,90	88,30	12,40	24,26	<10.00-67,00	433	847	1095	7	14	18
Flour (1)			16,70	43,40	54,64	60,53	<10.00-531,00	912	1010	2370	15	16	41
Polenta (2)			7,30	7,30	153,33	175,00	<10.00-466,00	1117	1275	1117	15	17	15
Snacks			10,00	25,90	152,00	171,68	<10.00-879,00	1521	1718	3931	25	28	68
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					37,59	45,29	<10.00-177,00						
Total intake											142		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,77	12,00	<10.00-12,00	26	173	93	2	12	7
Malted Barley			0,01	0,01	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			7,80	16,80	0,83	0,00	<5.00-<5.00	7	0	14	0	0	1
Breakfast cereals			21,40	49,20	96,78	137,50	<10.00-2261	2070	2941	4764	147	208	349
Biscuits			16,90	41,10	27,11	32,82	<10.00-315,00	459	556	1114	32	39	77
Bread			42,00	89,20	55,17	57,98	<10.00-366,00	2318	2436	4919	161	169	334
Cakes			18,30	50,80	12,40	24,26	<10.00-67,00	226	443	630	16	30	41
Flour (1)			13,00	36,30	54,64	60,53	<10.00-531,00	709	785	1983	50	55	142
Polenta (2)			6,50	13,80	153,33	175,00	<10.00-466,00	1003	1145	2120	83	94	177
Snacks			12,10	29,60	152,00	171,68	<10.00-879,00	1836	2074	4506	129	146	329
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	37,59	45,29	<10.00-177,00	2095	2524	6324	176	212	470
Total intake											483		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,77	12,00	<10.00-12,00	13	87	37	1	10	4
Malted Barley			0,00	0,00	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			0,00	0,00	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Breakfast cereals			16,20	36,10	96,78	137,50	<10.00-2261	1570	2230	3498	165	234	362
Biscuits			7,20	19,60	27,11	32,82	<10.00-315,00	195	237	533	20	24	54
Bread			16,90	46,90	55,17	57,98	<10.00-366,00	934	982	2590	97	102	265
Cakes			7,00	20,20	12,40	24,26	<10.00-67,00	87	171	251	9	17	25
Flour (1)			11,20	32,50	54,64	60,53	<10.00-531,00	610	676	1777	64	71	181
Polenta (2)			7,30	18,00	153,33	175,00	<10.00-466,00	1120	1278	2760	126	144	316
Snacks			3,80	11,00	152,00	171,68	<10.00-879,00	576	651	1672	57	64	165
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	37,59	45,29	<10.00-177,00	548	661	1820	61	73	204
Total intake											369		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,77	12,00	<10.00-12,00	50	342	122	1	4	2
Malted Barley			0,03	0,03	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			532,90	1669,70	0,83	0,00	<5.00-<5.00	442	0	1411	6	0	18
Breakfast cereals			67,90	242,40	96,78	137,50	<10.00-2261	6572	9338	23462	88	126	296
Biscuits			24,30	59,10	27,11	32,82	<10.00-315,00	658	797	1602	9	11	21
Bread			112,10	203,40	55,17	57,98	<10.00-366,00	6185	6501	11223	82	87	152
Cakes			50,50	116,60	12,40	24,26	<10.00-67,00	626	1225	1446	8	16	20
Flour (1)			20,40	61,90	54,64	60,53	<10.00-531,00	1116	1236	3385	15	16	43
Polenta (2)			5,30	5,30	153,33	175,00	<10.00-466,00	813	928	813	15	17	15
Snacks			11,90	26,60	152,00	171,68	<10.00-879,00	1816	2051	4050	24	28	59
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					37,59	45,29	<10.00-177,00						
Total intake											174		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,77	12,00	<10.00-12,00	43	293	150	1	5	3
Malted Barley			0,00	0,00	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			220,30	646,30	0,83	0,00	<5.00-<5.00	183	0	536	3	0	9
Breakfast cereals			46,50	146,70	96,78	137,50	<10.00-2261	4502	6396	14202	72	102	237
Biscuits			20,20	49,60	27,11	32,82	<10.00-315,00	548	664	1344	9	11	22
Bread			80,90	148,40	55,17	57,98	<10.00-366,00	4464	4691	8188	71	74	134
Cakes			39,10	90,30	12,40	24,26	<10.00-67,00	485	948	1120	8	15	18
Flour (1)			17,40	49,60	54,64	60,53	<10.00-531,00	952	1055	2711	15	17	40
Polenta (2)			0,00	0,00	153,33	175,00	<10.00-466,00	0	0	0	0	0	0
Snacks			8,80	26,10	152,00	171,68	<10.00-879,00	1337	1510	3972	21	24	59
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					37,59	45,29	<10.00-177,00						
Total intake											143		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,77	12,00	<10.00-12,00	31	210	102	1	10	5
Malted Barley			0,02	0,02	4,09	11,92	<5.00-53,00	0	0	0	0	0	0
Beer			21,40	21,40	0,83	0,00	<5.00-<5.00	18	0	18	1	0	1
Breakfast cereals			29,60	67,70	96,78	137,50	<10.00-2261	2869	4076	6557	138	197	287
Biscuits			20,00	46,40	27,11	32,82	<10.00-315,00	543	657	1257	26	32	63
Bread			62,90	121,60	55,17	57,98	<10.00-366,00	3469	3646	6709	167	176	332
Cakes			26,50	59,80	12,40	24,26	<10.00-67,00	329	643	742	15	30	36
Flour (1)			16,50	39,80	54,64	60,53	<10.00-531,00	901	998	2172	43	48	98
Polenta (2)			4,70	4,70	153,33	175,00	<10.00-466,00	716	818	716	38	43	38
Snacks			16,30	34,60	152,00	171,68	<10.00-879,00	2473	2793	5259	121	137	253
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	37,59	45,29	<10.00-177,00	696	839	2276	39	46	137
Total intake											496		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,77	12,00	<10.00-12,00	46	313	159	2	10	6
Malted Barley			0,10	0,10	4,09	11,92	<5.00-53,00	0	1	0	0	0	0
Beer			9,30	12,60	0,83	0,00	<5.00-<5.00	8	0	11	0	0	0
Breakfast cereals			33,60	74,40	96,78	137,50	<10.00-2261	3255	4624	7203	10	154	239
Biscuits			23,10	56,60	27,11	32,82	<10.00-315,00	627	759	1534	21	26	50
Bread			78,10	140,70	55,17	57,98	<10.00-366,00	4311	4531	7760	141	148	263
Cakes			30,50	77,10	12,40	24,26	<10.00-67,00	379	741	956	13	25	32
Flour (1)			20,20	48,90	54,64	60,53	<10.00-531,00	1103	1222	2674	37	41	92
Polenta (2)			4,10	7,10	153,33	175,00	<10.00-466,00	630	719	1087	17	20	25
Snacks			18,40	40,80	152,00	171,68	<10.00-879,00	2797	3159	6203	93	106	213
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	37,59	45,29	<10.00-177,00	0	0	0	0	0	0
Total intake											395		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,77	12,00	<10.00-12,00	69	469	234	1	1002	5
Malted Barley			0,10	0,10	4,09	11,92	<5.00-53,00	0	1	0	0	0	0
Beer			61,30	129,30	0,83	0,00	<5.00-<5.00	51	0	107	1	0	2
Breakfast cereals			36,60	81,40	96,78	137,50	<10.00-2261	3538	5027	7875	77	110	184
Biscuits			20,80	53,10	27,11	32,82	<10.00-315,00	565	684	1440	13	15	33
Bread			86,20	162,40	55,17	57,98	<10.00-366,00	4754	4996	8957	103	108	192
Cakes			32,40	90,90	12,40	24,26	<10.00-67,00	401	785	1127	9	17	22
Flour (1)			24,60	64,00	54,64	60,53	<10.00-531,00	1344	1489	3496	29	32	71
Polenta (2)			8,20	19,60	153,33	175,00	<10.00-466,00	1262	1441	3011	22	26	53
Snacks			19,80	43,50	152,00	171,68	<10.00-879,00	3009	3398	6617	67	76	167
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	37,59	45,29	<10.00-177,00	537	647	537	13	16	13
Total intake											275		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,77	12,00	<10.00-12,00	79	533	245	1	9	4
Malted Barley			0,16	0,22	4,09	11,92	<5.00-53,00	1	2	1	0	0	0
Beer			391,30	1108,60	0,83	0,00	<5.00-<5.00	325	0	920	5	0	15
Breakfast cereals			39,30	95,10	96,78	137,50	<10.00-2261	3804	5405	9208	61	87	147
Biscuits			20,00	62,50	27,11	32,82	<10.00-315,00	541	655	1693	9	11	27
Bread			102,00	185,10	55,17	57,98	<10.00-366,00	5627	5914	10211	90	95	169
Cakes			29,60	82,50	12,40	24,26	<10.00-67,00	367	718	1023	6	12	16
Flour (1)			27,70	76,40	54,64	60,53	<10.00-531,00	1515	1678	4172	24	27	64
Polenta (2)			13,50	23,60	153,33	175,00	<10.00-466,00	2072	2364	3624	40	45	70
Snacks			17,60	43,70	152,00	171,68	<10.00-879,00	2674	3020	6637	43	49	120
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	37,59	45,29	<10.00-177,00	493	594	743	8	9	12
Total intake											205		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 1A1: Summary of occurrence in wheat and wheat flour from data reported in table 1A

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	68	100		29	1250	185,3	310,8	137,5
Wheat	62	100		24	6090	744	1203,4	2000
Wheat	36	100		18	1230	175,6	334,4	72,5

Country: Belgium

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	33	250		28	504	87	343	<250
Wheat	14	50		14	<50	8	0	<50

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	14	20	20	1	465	191	221	140
Wheat flour	16	20	20	2	527	175	198	167
Wheat flour	28	20	20	2	330	59	63	33
Wheat flour	30	20	20	11	204	32	56	10
Durum wheat flou	23	20	20	0	2591	1157	1157	1242
Durum wheat flou	10	20	20	0	1619	1153	1153	1224

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	27		5	6	190	34,1	43,2	23
Wheat	37		25	12	264	55,7	88,6	57,7
Wheat	35	50		10	1026	169,9	234,5	111
Wheat	39	25/40		25	376	36,3	90,9	4,17

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	30	20			2125	132,1	325,4	3,3
Wheat	22	20			170	10,9	170,0	3,3
Wheat	1		100	1	0	50,0		50
Wheat	1		50	0	85	105,0	85,0	40
Wheat	3		100	1	120	100,3	95,0	50
Wheat flour	15	200	60	6	500	155,6	315,7	125
Wheat flour	1	100				125,0	125,0	125
Wheat flour	170	200		14	1213	143,1	323,6	33,3
Wheat flour	11	200			136	45,5	100,5	33,3
Wheat flour	46	100		13	595	63,1	321,5	16,7
Wheat flour	308		100	285	300	67,5	123,0	50
Wheat flour	57		50	18	330	65,6	91,2	41
Wheat flour	55		51	9	50000	992,9	1182,9	45
Wheat flour	38		50	16	400	105,0	174,1	40
Wheat flour	33		50	16	330	100,3	184,5	50
Wheat flour	14		100	9	200	67,5	127,2	50
Wheat flour	4		50	1	130	65,6	96,7	41
Wheat flour	10		50	3	300	153,0	993,0	45
Wheat flour	4		50	2	280	105,0	220,0	40
Wheat flour	3		100	3	0	50,0		50
Wheat flour	37	50		0	2100	304,0		220
Wheat flour	101	20-50		0	328	53,0		25
Soft wheat	31	20			230	22,1	148,8	3,3
Soft wheat	82	60	30	7	1500	270	319	190
Soft wheat	72	60	30	48	700	62	201	15
Soft wheat	71	60	30	15	1900	216	313	100
Soft wheat	276	40-100	30-250	47	1520	283		190
Soft wheat	252	10-100	25-30	67	1038	95		25
Soft wheat	8	50	25	5				
Durum wheat	16	60	30	6	1000	263	412	170
Durum wheat	16	60	30	7	1600	372	649	175
Durum wheat	13	60	30	4	730	169	238	110
Durum wheat	52	60	30	9	3600	689	891	470
Buckwheat	1		60	1		30		30
Buckwheat	5		60	5		30		30
Buckwheat	3	200				33,3		33,3
Buckwheat	15	200		6		33,3		33,3
Buckwheat	1	100				16,1		16,1
Buckwheat	3	100		2	70	34,5	70	16,1

Country: Germany

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	42	111	111	12	327	159	200	179
Wheat flour	9	111	111	6	420	173	408	55
Wheat	26	111	111	5	764	240	285	208
Wheat flour	29	111	111	11	690	198	296	166
Wheat flour	106	25	25	34	640	120	162	86
Wheat bran	20	111	111	3	2050	711	830	543

Country: The Netherlands

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
wheat	215	100	50	34	3280	463	546	300
wheat	273	100	50	128	1946	142	245	100
wheat	175	100	50	107	3280	145	333	<10
wheat	98	20	10	43	1200	206	363	110
wheat*	939		110	150		315	375	220
wheat*	765		220	583		206	512	<220
wheatbran	20	100	50	13	360	75	169	<50
puffed wheat	12		220	11	240	121	240	240
wheat bio	14		220	12	430	144	345	345
wheat durum	22	110	110	2	1700	370	401,5	230
wheat durum	19		220	14	680	204	467,6	460
wheat durum bio	4	110	110	1	235	183	225	220
wheat durum bio	8		220	8		110		

* = Samples > 750 weighted for 40%

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat, no	138	90	30	28	890	103,3	114,7	80
Wheat, imp	27	90	30	19	660	109,4	331,3	20
Wheat, no	107	90	30	20	310	83,8	98,8	45
Wheat, no	112	90	30	16	600	191,2	222,9	150
Wheat, imp	16	90	30	4	1300	406,8	537,3	245
Wheat, no	101	90	30	35	560	96,1	138,7	67
Wheat, imp	29	90	30	15	2500	390,5	792,9	15
Wheat, no	112	90	30	86	370	42,0	126,7	15
Wheat, imp	30	90	30	18	610	78,6	172,3	15
Wheat, no	26	90	30	16	165	28,7	50,7	15
Wheat, imp	13	90	30	5	650	153,5	240,0	48
Wheat, no	28	60	20	28		10	0	10
Wheat, imp	14	60	20	7	2700	332,9	655,7	30
Wheat, no	25	60	20	19	73	15,7	33,8	10
Wheat, imp	10	60	20	3	1900	356,0	504,3	45
Wheat, no	35	60	20	32	85	13,5	45,7	10
Wheat, imp	24	60	20	6	233	76,8	99,0	50
Wheat *, no	64	60	20	30	464	87,1	155,1	35
Wheat *	44	60	20	40	51	12,1	33,5	10
Wheat **	39	60	20	26	183	27,8	63,4	10

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Country: Portugal

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
wheat	3	50	25	2	744	256,3	744	
white wheat flour	3	50	25	2	333	119,3	333	
wheat bran	4	50	25	2	1821	761	1509,5	

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	57	10	2		2153	67	123	2
Wheat	75	10	2	17	346	54	67	34
Wheat	27	10	2	2	333	61	66	26
Wheat	17	10	2		2033	1427	1427	1367

* a single special case, not representative

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	29	10		3	99	35,1	39,0	32,0
Overall	**6358**					**205**	**293**	

Table 1A2: Summary of occurrence in Barley from data reported in table 1A

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	7		5	3	35	15,5	25,3	12
Barley	30		25	6	278	122	149,3	105,1
Barley	20	50		12	293	57	130,1	8,33
Barley	20	25/40		10	619	78,8	135,5	17,4
Barley malt	18		25	7	335	73,3	112	59,5
Barley malt	25	50		18	394	45,7	141,8	8,33
Barley malt	25	25/40		15	144	28,4	64,9	4,17

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	9	20			35	6,47	35,00	3,3
Malting barley	30		30	30		15		15
Malting barley	52		30	50	200	9,8	200	5
Malting barley	44		30	32	500	5	173	5
Malting barley	68		30	55	310	21,1	155,7	5
Malting barley	59	20			550	50		10
Malting barley	47	20			350	61		35
Malting barley	50	20			550	46		10
Malting barley	64	20			350	65		37

Country: The Netherlands

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
barley	18	100	50	18	0	25		137.5
barley	4	20	10	4	0	5		<220
barley	6		110	3	230	113	227	<50
barley	12		220	10	510	153	370	<50

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley *	20	90	30	14	60	26,0	46,7	15

* = The products is divided into different grain products.

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	54	5		49	16	1,92	12,6	<5
Barley	50	5		46	20	1,46	8,7	<5
Barley	49	5		29	53	5,9	14,5	<5
Overall	**781**					**37**	**106**	

Table 1A3: Summary of occurrence in Oat from data reported in table 1A

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	96	100		88	180	25,9	127,5	15
Oat	96	100		83	530	43,5	214,6	2000
Oat	40	100		36	200	29,3	142,5	15

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats	7		5	1	955	178,4	207,7	63
Oats	10		25	1	2146	627,8	696,2	325,5
Oats	25	50		10	5004	537,2	936,4	97,6
Oats	30	25/40		4	1560	236,1	271,7	89,9

Country: The Netherlands

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
oat	15	100	50	30	0	50		
oat	8	20	10	8	0	5		

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats, no	3	90	30	0	670	470,0	470,0	610
Oats *	40	90	30	2	690	186,6	195,3	147,5
Oats, no	3	90	30	0	1300	538,3	538,3	240
Oats, no	26	90	30	10	230	60,1	87,9	42
Oats, no	14	60	20	5	266	104,1	156,4	81,5
Oats, no	14	60	20	0	130	58,2	58,2	55
Oats, no	22	60	20	10	849	134,2	236,9	52
Oats *	24	60	20	24		10	0	10
Oats *	58	60	20	38	220	26,2	57,0	10
Oat **	28	60	20	28		10	0	10

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	23	10	2	7	70	11	15	2
Oat	10	10	2	6	19	7	16	2
Oat	3	10	2		174	87	87	66
Overall	**595**					**95**	**253**	

Table 1A4: Summary of occurrence in Rye and rye flour from data reported in table 1A

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye flour	16	20	20	0	257	99	104	96
Rye flour	16	20	20	6	80	31	52	18
Rye flour	17	20	20	9	84	23	40	10
Rye flour	20	20	20	9	55	17	24	10

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	6		5	3	20	9,4	16,3	6,75
Rye	2		25	2		12,5		12,5
Rye	15	50		14	178	19,6	178	8,33
Rye	12	25/40		10	37,4	9,2	31,8	4,2
Rye organic	1	25/40		1		6,7		

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye flour	1				120	120	120	120
Rye flour	2	200				33,3		33,3
Rye flour	1	200				33,3		33,3
Rye flour	3	200		1	595	174	595	33
Rye flour	11	200		1	350	103,8	291,6	33,3

Country: The Netherlands

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
rye	9	100	50	7	219	57	168	<50
rye	8		110	1	220	150	163	142,5
rye	20		220	20		110		<220

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye, no	2	90	30	0	60	60,0	60,0	60
Rye, imp	18	90	30	12	50	26,1	45,0	20
Rye, imp	11	90	30	8	62	24,6	50,3	15
Rye, imp	12	90	30	8	60	28,2	48,5	21,5
Rye, imp	11	90	30	8	57	25,7	46,0	20
Rye, imp	10	60	20	10		10	0	10

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	28	10	2	21	351	14	54	1
Rye	19	10	2	9	41	14	24	12
Overall	**271**					**42**	**95**	

Table 1A5: Summary of occurrence in Corn from data reported in table 1A

Trichothecene type B: Deoxynivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	45	50		4	2810	590,2	647	350
Corn	58	50		20	575	94,7	140,1	80
Corn	48	50		13	1360	285,1	387,9	170

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	29	20			8850	494,1	840,6	50
Corn	25	125		0	2000	895,0	895,0	
Corn	25		30	1	4800	1056,0	1140,0	
Corn	59	60-100		0	3390	475,0		300
Corn	107	50-60		0	5400	903,0		650
Corn	9	50	25	5	36	19,0		12

Country: The Netherlands

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
corn	8	100	50	2	1040	286	373	195
corn*	23		110	2	1300	379	416	293
corn*	84		220	10	3920	761	849	640

* = Samples > 750 weighted for 40%

Overall	**520**					**594**	**660**	

Table 2A: Summary occurrence data by food group and country

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	46	50		39	2	4	1					330	25,6	141,4	<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	50		58								<LOQ	8,3		<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	50		44	3	1						110	14,1	77,5	<LOQ	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	100		84		10	2					390	38,6	192,5	<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2000	96	100		56		32	4		2	2		1860	137,8	307,5	<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2001	40	100		7		28	1	2	2			980	197,2	235,5	135	y	target	GC		y
Wheat	GC1	03 01 A	1999	68	100		68								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2000	62	100		54		8						270	38,1	183,1	<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2001	36	100		36								<LOQ	16,7		<LOQ	y	target	GC		y

Country: Denmark

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat flour	CF2	0201B	1998	14	20	20	9	4	1	0	0	0	0	0	172	22	45	10	yes	Random	GC-EDC	Good	yes
Wheat flour	CF2	0201B	1999	16	20	20	13	3	0	0	0	0	0	0	15	10	10	10	yes	Random	GC-EDC	Good	yes
Wheat flour	CF2	0201B	2000	28	20	20	26	2	0	0	0	0	0	0	20	10	20	10	yes	Random	GC-EDC	Good	yes
Wheat flour	CF2	0201B	2001	29	20	20	15	13	1	0	0	0	0	0	189	26	41	13	yes	Random	GC-EDC	Good	yes
Rye flour			1998	16	20	20	12	3	0	0	0	0	0	0	48	13	22	10	yes	random	GC-EDC	Good	yes
Rye flour			1999	16	20	20	16	0	0	0	0	0	0	0	<20	n.d.	n.d.	n.d.	yes	random	GC-EDC	Good	yes
Rye flour			2000	17	20	20	13	4	0	0	0	0	0	0	38	13	22	10	yes	random	GC-EDC	Good	yes
Rye flour			2001	20	20	20	19	1	0	0	0	0	0	0	10	10	10	10	yes	random	GC-EDC	Good	yes
Durum wheat flour			2000	23	20	20	0	5	14	4	0	0	0	0	440	199	199	234	yes	random	GC-EDC	Good	Yes
Durum wheat flour			2001	10	20	20	0	10	0	0	0	0	0	0	83	47	47	52	yes	random	GC-EDC	Good	Yes

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		15	27									7,5		7,5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	36								130	25	130	12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		33								200	15,29	130,1	8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		34								30,3	4,92	30,3	4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		15	7									7,5		7,5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	28								351	29,1	261,5	12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		18								87,4	9,67	59,2	4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	15								293	54,5	264,7	12,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		19								89,5	22,8	65,3	8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		13								225	43,4	74,3	27,3		Random	GC-MS	Good	Y
Oats			1998	7		15	5								56	17,4	42	7,5	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		17								234	43,6	118,6	8,33	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		21								131	24	70,2	4,17	Y	Random	GC-MS	Good	Y
Rye			1998	6		15	6									7,5		7,5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		15									8,33		8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	0301 A	2001	30	20			29	0	1	0	0	0	0	285	19,31	83,33	3,3	Y	R	GC	G	no
Wheat	GC1	0301 A	2001	22	20			21	1	0	0	0	0	0	100	7,70	100	3,30	Y	R	GC	G	no
Corn	GC2	0301 B	2001	29	20			26	2	1	0	0	0	0	255	27,22	90	3,3	Y	R	GC	G	no
Corn	GC2	0301 B	2001	25		30	15	5	5	0	0	0	0	0	170	41	148			T	GC-MS		
Corn	GC2	0301 B	2000	16	30	30	4	15	0	1	0	0	0	0	340	42		15		R	GC or HPLC	L	Y
Corn	GC2	0301 B	2001	46	50-60	30	14	40	6	0	0	0	0	0	170	43		25		R	GC or HPLC	L	Y
Barley	GC6	0301 F	2001	9	20			9	0	0	0	0	0	0	40	6,97	40	3,30	Y	R	GC	G	no
White wheat flour	CF2	0201 B	1999	12		20	12	0	0	0	0	0	0	0		10		10	Y				
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0	15	15	15	15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	69	2	1	0	0	0	0	0	230	20	96	15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	66	4	1	0	0	0	0	0	110	17	85	15	Y	T	GC-MS	G	Y
Soft wheat	BT		2000	208	10-60	30	189	208	0	0	0	0	0	0	102	15		15		R	GC or HPLC	L	Y
Soft wheat	BT		2001	27	L0-10(	30	1	26	1	0	0	0	0	0	120	36		25		R	GC or HPLC	L	Y
Durum wheat	BD		1999	16	60	30	11	2	3	0	0	0	0	0	230	58	152	15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	14	1	0	1	0	0	0	0	300	36	185	15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	11	0	2	0	0	0	0	0	190	36	150	15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	16	28	8	0	0	0	0	0	230	52	95	15	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	52	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	44	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	68	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: Norway

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat, no	GC 1	0301 A	1.-1990	138	150	50	138									25	0	25	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	1.-1990	27	150	50	26	1							65	26,48	65	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	2.-1991	107	150	50	97	4	6						170	34,99	114,6	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	3.-1992	112	150	50	112									25	0	25	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	3.-1992	16	150	50	16									25	0	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	4.-1993	101	150	50	101									25	0	25	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	4.-1993	29	150	50	29									25	0	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	5.-1994	112	150	50	112									25	0	25	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	5.-1994	30	150	50	26	3	1						120	28,77	53,25	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	6.-1995	26	150	50	26									25	0	25	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	6.-1995	13	150	50	13									25	0	25	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	7.-1996	28	60	20	28									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	7.-1996	14	60	20	14									10	0	10	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	8.-1997	25	60	20	25									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	8.-1997	10	60	20	7	2	1						270	40	108,3	10	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	9.-1998	35	60	20	35									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	9.-1998	24	60	20	22	2							38	12,79	38	10	yes	random	HPLC	good	yes
Wheat *, no	GC 1	0301 A	10.-2001	45	60	20	44	1							33	10,51	33	10	yes	random	HPLC	good	yes
Wheat *	GC 1	0301 A	11.-2001	6	60	20	6									10	0	10	yes	random	HPLC	good	yes
Wheat **	CG	0201 B	12.-2001	38	60	20	38									10	0	10	yes	random	HPLC	good	yes
Barley *	GC 6 *	0301 F	1.-1990	20	150	50	20									25,5	0	25	yes	random	HPLC	good	yes
Rye, no	GC 5	0301 E	1.-1990	2	150	50	2									25	0	25	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	1.-1990	18	150	50	18									25	0	25	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	4.-1993	11	150	50	11									25	0	25	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	5.-1994	12	150	50	12									25	0	25	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	6.-1995	11	150	50	11									25	0	25	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	7.-1996	10	60	20	10									10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	1.-1990	40	150	50	39		1						120	27,38	120	25	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	4.-1993	3	150	50	2	1							69	39,67	69	25	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	5.-1994	3	150	50	3									25	0	25	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	6.-1995	26	150	50	26									25	0	25	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	7.-1996	14	60	20	14									10	0	10	yes	random	HPLC	good	
Oats, no	GC 3	0301 C	8.-1997	14	60	20	8	6							60	20,71	35	10	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	9.-1998	22	60	20	22									10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	10.-2001	24	60	20	24									10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	11.-2001	58	60	20	58									10	0	10	yes	random	HPLC	good	yes
Oat **	GC3	0301 C	12.-2001	27	60	20	27									10	0	10	yes	random	HPLC	good	yes
Maize **	CH	0201 C	12.-2001	19	60	20	13	6							26	14,37	23,83	10	yes	random	HPLC	good	yes
Rice **	GC7	0301 G	12.-2001	15	60	20	15									10	0	10	yes	random	HPLC	good	yes
Cereal fractions	CF	0201 A	12.-2001	18	60	20	18									10	0	10	yes	random	HPLC	good	yes

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

Country: Sweden

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	0301A	1999	75	10	2	66	9							30	4	18	2	YES	Random	GC	G	YES
Wheat	GC1	0301A'	2001	17	10	2	0		17						275	159	159	143	YES	TARGET	GC	G	NO
Oat	GC3	0301C	1999	10	10	2	5	5							33	10	18	6	YES	Random	GC	G	YES
Rye	GC5	0301E	1999	19	10	2	19								0	0	0	0	YES	Random	GC	G	YES

* A single special case

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		7	4							21	5,97	13,50	<10	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	1999	54	5		51	3	0	0	0	0	0	0	24	1,79	18	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2000	50	5		46	3	1	0	0	0	0	0	109	4,21	43	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2001	49	5		46	3	0	0	0	0	0	0	18	1,66	14,33	<5	Y	Random	GC/MS	G	Y
Beer	DM1	02 05A	2000	28	5		28	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		8	6	1						214	24,82	51,29	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		17	13							43	10,94	23,08	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		17	7							58	6,72	19,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		8	6	0						20	7,52	15,33	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		2	9	3						260	61,60	71,58	48,0	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		39	1							11	1,90	11,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		4	2							21	6,94	17,50	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		11	2							17	3,79	15,50	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		4	4							66	17,33	33,00	8,5	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		19	10							15	5,68	13,30	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		4	4							46	12,46	23,25	6,0	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	44	10		44	11							24	4,48	15,45	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		37	3							12	2,52	13,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		10	6							39	8,48	19,83	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		0	0	1						112	112,00	112,00	112,0	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		2	2							28	11,58	21,50	7,5	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		5	1							12	3,73	12,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 2B: Summary of occurence in cereals from data reported in tables1A

Trichothecene type B: NIV (Units: µg/kg)

Country: Austria

Food product		Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Cereal grains	GC		03 01	550	1860	57,1	241,8	<LOQ

Country: Denmark

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat flour	CF2	0201B	87	189	17	30	10
Rye flour		0201 (?)	69	48	13	16	10
Durum wheat		0201 (?)	33	440	140	140	142

Country: France

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Barley	GC6	0301 F	9	40	7	40	3,3
Wheat	GC1	0301 A	22	100	7,7	100	3,3
Wheat	GC1	0301 A	30	285	19,3	83,3	3,3
White wheat flour	CF2	0201 B	12		10		10
Corn	GC2	0301 B	25	170	41	148,0	
Corn	GC2	0301 B	16	340	42		15
Corn	GC2	0301 B	46	170	43		25
Corn	GC2	0301 B	29	255	27,2	90	3,3
Malting barley	OB		30		15		15
Malting barley	OB		52		15		15
Malting barley	OB		44		15		15
Malting barley	OB		68		15		15
Durum wheat	BD		16	230	58	152	15
Durum wheat	BD		16	300	36	185	15
Durum wheat	BD		13	190	36	150	15
Durum wheat	BD		52	230	52	95	15
Soft wheat	BT		82	15	15	15	15
Soft wheat	BT		72	230	20	96	15
Soft wheat	BT		71	110	17	85	15
Soft wheat	BT		31		3,3		3,3
Soft wheat	BT		208	102	15		15
Soft wheat	BT		27	120	36		25

Country: Norway

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
no/imp WHEAT	GC1	0301 A	898	216	23,5	93,0	25
no/imp RYE	GC5	0301 E	64		25	0	25
Oats, no	GC3	0301 C	204	120	16,7	49,9	10
Barley, no	GC6	0301 F	20		25,5	0	25
Maize baby porridge	CH	0201 C	19	26	14,4	23,8	10
Rice baby porridge	GC7	0301 G	15		10	0	10
Oat baby porridge	GC3	0301 C	27		10	0	10
Wheat baby porridge	CG	0201 B	38		10	0	10
Composite grain product	CF	02 01A	18		10	0	10

Country: Sweden

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat	GC 1	0301A	75	30	4	18	2
oat	GC3	0301C	10	33	10	12	6
rye	GC5	0301E	19	< LOD	2	2	2

Table 2C: Estimated daily intake of trichothecenes in each member state

Trichothecene type B: NIV

Country : Austria; whole population
Body Weight for average person (kg): 75 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360	57,1	241,8		5830	24688	20556	78	329	274
Total intake								5830	24688	20556	78	329	274

Country : Denmark; whole population
Body Weight for average person (kg): 70 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat bread white*			70,5	148,5	12	21		846	1480	1782	12	21	25
Wheat bread coarsely*			23,7	97,1	12	21		284	498	1165	4	7	17
Rye bread*			71,7	150,5	9	11		645	789	1355	9	11	19
Wheat flour			19,8	44,9	17	30		337	594	763	5	8	11
Total intake										5065	30	47	72
* calculated as bread contain 70 % flour													

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		13,2	96,8		1514	11103		20	144	
Rye	GC5	0301E	49,1		8,1			398	0		5		
Oat	GC3	0301C	4,45		24,4	76,9		109	342		1	4	
Barley*	GC6	0301F	4,45		15,4	160,4		69	714		1	9	
Total intake								2089	12159		27	158	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Country : France; adults
Body Weight for average person (kg): 66,4 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	117,4	278,6	13,4	58,3		1569	6842		24	103	
pasta	CG3	0201B	36,1	100,0	18,3	48,1		661	1736		10	26	
semolina	CG	0201B	1,7	14,3	19,3	50,6		32	85		0	1	
corn	CH	0201C	2,4	17,9	38,5	116,9		94	285		1	4	
biscuits	CG1	0201B	67,0	191,4	7,7			518			8		
pizzas and tarts	CG	0201B	73,3	400,0	7,7			566			9		
sandwiches	CG	0201B	13,8	74,3	7,7			107			2		
compound dishes with pasta	CG	0201B	9,0	50,0	9,2	24,1		83	217		1	3	
other compound dishes	CG	0201B	20,9	100,0	7,7			161			2		
beer	DM1	0205A	28,5	142,9	2,0			58			1		
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		3,9	28,6									
cooked rice	E7		19,1	65,0									
other products	A*		0,8	0,0	7,0	40,0		5	31		0	0	
Tortal intake								3854	9196		58	138	

Country : France; male
Body Weight for average person (kg): 73,9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	147,9	340,5	13,4	58,3		1978	8624		27	117	
pasta	CG3	0201B	42,1	118,2	18,3	48,1		771	2026		10	27	
semolina	CG	0201B	1,6	14,3	19,3	50,6		31	82		0	1	
corn	CH	0201C	2,0	14,7	38,5	116,9		79	239		1	3	
biscuits	CG1	0201B	70,3	205,3	7,7			543			7		
pizzas and tarts	CG	0201B	46,5	300,0	7,7			359			5		
sandwiches	CG	0201B	18,9	97,1	7,7			146			2		
compound dishes with pasta	CG	0201B	10,6	60,4	9,2	24,1		98	256		1	3	
other compound dishes	CG	0201B	23,6	109,2	7,7			182			2		
beer	DM1	0205A	50,5	250,0	2,0			102			1		
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		3,7	28,6									
cooked rice	E7		20,6	73,7									
other products	A*		0,6	0,0	7,0	40,0		4	24		0	0	
Total intake								4294	11251		58	152	

Country : France; female
Body Weight for average person (kg): 60,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	91,7	218,0	13,4	58,3		1227	5349		20	89	
pasta	CG3	0201B	31,0	85,7	18,3	48,1		569	1493		9	25	
semolina	CG	0201B	1,7	14,3	19,3	50,6		33	87		1	1	
corn	CH	0201C	2,8	18,2	38,5	116,9		107	324		2	5	
biscuits	CG1	0201B	64,3	171,4	7,7			497			8		
pizzas and tarts	CG	0201B	95,8	498,9	7,7			740			12		
sandwiches	CG	0201B	9,5	48,6	7,7			74			1		
compound dishes with pasta	CG	0201B	7,6	46,4	9,2	24,1		70	184		1	3	
other compound dishes	CG	0201B	18,5	92,7	7,7			143			2		
beer	DM1	0205A	10,0	70,4	2,0			20			0		
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		4,0	28,6									
cooked rice	E7		17,9	57,1									
other products	A*		0,9	0,0	7,0	40,0		6	37		0	1	
Total intake								3485	7474		58	124	

Country : France; children
Body Weight for average person (kg): 31,6 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	58,6	173,8	13,4	58,3		784	3419		25	108	
pasta	CG3	0201B	37,0	100,0	18,3	48,1		678	1781		21	56	
semolina	CG	0201B	2,0	20,2	19,3	50,6		39	103		1	3	
corn	CH	0201C	7,9	39,5	38,5	116,9		306	928		10	29	
biscuits	CG1	0201B	85,9	210,8	7,7			664			21		
pizzas and tarts	CG	0201B	19,6	68,8	7,7			151			5		
sandwiches	CG	0201B	10,2	45,9	7,7			79			3		
compound dishes with pasta	CG	0201B	13,9	57,7	9,2	24,1		128	336		4	11	
other compound dishes	CG	0201B	18,5	75,1	7,7			143			5		
beer	DM1	0205A	0,0	0,0	2,0								
Rye bread	E5		0,2	0,0									
buckwheat pancakes	E9		0,5	0,0									
breakfast cereals without corn cereals	A		12,3	51,4									
cooked rice	E7		19,3	57,1									
other products	A*		1,3	0,0	7,0	40,0		9	51		0	2	
Total intake								2981	6618		94	209	

Country : Norway male, all participants

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	23,5	93,0	< LOD - 270	2867	11344	4958	35	140	61
WHEAT /wholemeal flour	GC 1	0301A	65	118	23,5	93,0	< LOD - 270	1527	6044	2773	19	75	34
RYE	GC 5	0301E	3	16	25,0	0,0	< LOD	75	0	400	1	0	5
BARLEY	GC 6	0301F	3	16	25,5	0,0	< LOD	77	0	408	1	0	5
OATS	GC 3	0301C	5	22	16,7	49,9	< LOD - 120	84	249	368	1	3	5
Total intake								4629	17637	8907	57	218	110

Country : Norway male, consumers

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	23,5	93,0	< LOD - 270	2867	11344	4958	35	140	61
WHEAT /wholemeal flour	GC 1	0301A	65	119	23,5	93,0	< LOD - 270	1527	6044	2796	19	75	35
RYE	GC 5	0301E	3	16	25,0	0,0	< LOD	75	0	400	1	0	5
BARLEY	GC 6	0301F	6	23	25,5	0,0	< LOD	153	0	587	2	0	7
OATS	GC 3	0301C	8	25	16,7	49,9	< LOD - 120	134	399	418	2	5	5
Total intake								4756	17787	9159	59	220	113

Country: Norway female, all participants

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	23,5	93,0	< LOD - 270	2068	8182	3478	31	124	53
WHEAT /wholemeal flour	GC 1	0301A	45	77	23,5	93,0	< LOD - 270	1057	4184	1809	16	63	27
RYE	GC 5	0301E	2	12	25,0	0,0	< LOD	50	0	300	1	0	5
BARLEY	GC 6	0301F	2	12	25,5	0,0	< LOD	51	0	306	1	0	5
OATS	GC 3	0301C	4	16	16,7	49,9	< LOD - 120	67	200	267	1	3	4
Total intake								3293	12566	6161	50	190	93

Country: Norway female, consumers

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	23,5	93,0	< LOD - 270	2068	8182	3478	31	124	53
WHEAT /wholemeal flour	GC 1	0301A	45	77	23,5	93,0	< LOD - 270	1057	4184	1809	16	63	27
RYE	GC 5	0301E	2	12	25,0	0,0	< LOD	50	0	300	1	0	5
BARLEY	GC 6	0301F	5	16	25,5	0,0	< LOD	128	0	408	2	0	6
OATS	GC 3	0301C	6	20	16,7	49,9	< LOD - 120	100	299	334	2	5	5
Total intake								3403	12666	6329	52	192	96

Country: Norway, 6-months old babies, all participants.

Body Weight for average person (kg): 8

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
If all porridge consumed consisted of maize:													
Maize baby porridge	CH	0201C	90	210	14,00	24,00	< LOD - 26	1260	2160	2940	158	270	368
If all porridge consumed consisted of rice:													
Rice baby porridge	GC 7	0301G	90	210	10,00	0	< LOD	900	0	2100	113	0	263
If all porridge consumed consisted of oat:													
Oat baby porridge	GC 3	0301C	90	210	10,00	0	< LOD	900	0	2100	113	0	263
If all porridge consumed consisted of wheat:													
Wheat baby porridge	CG	0201B	90	210	10,00	0	< LOD	900	0	2100	113	0	263
If all porridge consumed consisted of :													
Composite grain product	CF	0201A	90	210	10,00	0,00	< LOD	900	0	2100	113	0	263

Country : Sweden; all population

Body Weight for average person (kg): 75 kg (men and women together)

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
wheat	GC 1	0301A	89	168	4	18	<LOD -30	356	1602	672	5	21	9
oats	GC 3	0301C	4	27	10	12	<LOD -33	40	48	270	1	1	4
rye	GC 5	0301E	33	75	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Total intake								396	1650	942	6	22	13

Country : UK, average male adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,66	0,00	<10.00-<10.00	59	0	189	1	0	3
Malted Barley			0,02	0,02	2,55	25,11	<5.00-109,00	0	0	0	0	0	0
Beer			735,50	2138,90	0,83	0,00	<5.00-<5.00	610	0	1775	8	0	24
Breakfast cereals			41,20	109,40	24,64	54,69	<10.00-260,00	1015	2253	2695	14	31	36
Biscuits			20,10	56,70	4,19	15,45	<10.00-24,00	84	311	238	1	4	3
Bread			135,30	262,70	4,05	17,56	<10.00-39,00	548	2376	1064	7	32	15
Cakes			44,00	114,00	1,90	11,00	<10.00-11,00	84	484	217	1	7	3
Flour (1)			21,30	56,60	5,76	13,36	<10.00-21,00	123	285	326	2	4	5
Polenta (2)			22,50	34,70	12,46	23,25	<10.00-46,00	280	522	433	4	8	7
Snacks			13,30	36,90	7,85	19,92	<10.00-59,00	104	264	290	1	4	4
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					9,04	33,00	<10.00-66,00						
Total intake											25		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,66	0,00	<10.00-<10.00	40	0	107	1	0	2
Malted Barley			0,03	0,05	2,55	25,11	<5.00-109,00	0	1	0	0	0	0
Beer			193,10	738,00	0,83	0,00	<5.00-<5.00	160	0	613	3	0	10
Breakfast cereals			29,90	76,10	24,64	54,69	<10.00-260,00	737	1635	1875	12	27	30
Biscuits			17,40	46,90	4,19	15,45	<10.00-24,00	73	269	197	1	4	3
Bread			85,00	159,00	4,05	17,56	<10.00-39,00	344	1493	644	6	24	11
Cakes			34,90	88,30	1,90	11,00	<10.00-11,00	66	384	168	1	6	3
Flour (1)			16,70	43,40	5,76	13,36	<10.00-21,00	96	223	250	2	4	4
Polenta (2)			7,30	7,30	12,46	23,25	<10.00-46,00	91	169	91	1	2	1
Snacks			10,00	25,90	7,85	19,92	<10.00-59,00	79	199	203	1	3	4
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					9,04	33,00	<10.00-66,00						
Total intake											17		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,66	0,00	<10.00-<10.00	24	0	87	2	0	6
Malted Barley			0,01	0,01	2,55	25,11	<5.00-109,00	0	0	0	0	0	0
Beer			7,80	16,80	0,83	0,00	<5.00-<5.00	7	0	14	0	0	1
Breakfast cereals			21,40	49,20	24,64	54,69	<10.00-260,00	527	1170	1213	37	83	89
Biscuits			16,90	41,10	4,19	15,45	<10.00-24,00	71	262	172	5	18	12
Bread			42,00	89,20	4,05	17,56	<10.00-39,00	170	738	361	12	51	25
Cakes			18,30	50,80	1,90	11,00	<10.00-11,00	35	201	97	2	14	6
Flour (1)			13,00	36,30	5,76	13,36	<10.00-21,00	75	173	209	5	12	15
Polenta (2)			6,50	13,80	12,46	23,25	<10.00-46,00	82	152	172	7	13	14
Snacks			12,10	29,60	7,85	19,92	<10.00-59,00	95	241	233	7	17	17
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	9,04	33,00	<10.00-66,00	504	1839	1521	42	154	113
Total intake											64		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,66	0,00	<10.00-<10.00	12	0	35	1	0	4
Malted Barley			0,00	0,00	2,55	25,11	<5.00-109,00	0	0	0	0	0	0
Beer			0,00	0,00	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Breakfast cereals			16,20	36,10	24,64	54,69	<10.00-260,00	400	887	891	42	93	92
Biscuits			7,20	19,60	4,19	15,45	<10.00-24,00	30	111	82	3	11	8
Bread			16,90	46,90	4,05	17,56	<10.00-39,00	69	297	190	7	31	19
Cakes			7,00	20,20	1,90	11,00	<10.00-11,00	13	77	39	1	8	4
Flour (1)			11,20	32,50	5,76	13,36	<10.00-21,00	64	149	187	7	16	19
Polenta (2)			7,30	18,00	12,46	23,25	<10.00-46,00	91	170	224	10	19	26
Snacks			3,80	11,00	7,85	19,92	<10.00-59,00	30	76	86	3	7	9
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	9,04	33,00	<10.00-66,00	132	481	438	15	53	49
Total intake											62		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,66	0,00	<10.00-<10.00	47	0	115	1	0	2
Malted Barley			0,03	0,03	2,55	25,11	<5.00-109,00	0	1	0	0	0	0
Beer			532,90	1669,70	0,83	0,00	<5.00-<5.00	442	0	1411	6	0	18
Breakfast cereals			67,90	242,40	24,64	54,69	<10.00-260,00	1673	3714	5973	23	50	75
Biscuits			24,30	59,10	4,19	15,45	<10.00-24,00	102	375	248	1	5	3
Bread			112,10	203,40	4,05	17,56	<10.00-39,00	454	1969	823	6	26	11
Cakes			50,50	116,60	1,90	11,00	<10.00-11,00	96	556	824	1	7	3
Flour (1)			20,40	61,90	5,76	13,36	<10.00-21,00	118	273	357	2	4	5
Polenta (2)			5,30	5,30	12,46	23,25	<10.00-46,00	66	123	66	1	2	1
Snacks			11,90	26,60	7,85	19,92	<10.00-59,00	94	238	209	1	3	3
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					9,04	33,00	<10.00-66,00						
Total intake											27		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,66	0,00	<10.00-<10.00	41	0	141	1	0	3
Malted Barley			0,00	0,00	2,55	25,11	<5.00-109,00	0	0	0	0	0	0
Beer			220,30	646,30	0,83	0,00	<5.00-<5.00	183	0	536	3	0	9
Breakfast cereals			46,50	146,70	24,64	54,69	<10.00-260,00	1146	2544	3616	18	40	60
Biscuits			20,20	49,60	4,19	15,45	<10.00-24,00	85	312	208	1	5	3
Bread			80,90	148,40	4,05	17,56	<10.00-39,00	328	1421	601	5	22	10
Cakes			39,10	90,30	1,90	11,00	<10.00-11,00	74	430	172	1	7	3
Flour (1)			17,40	49,60	5,76	13,36	<10.00-21,00	100	233	286	2	3	4
Polenta (2)			0,00	0,00	12,46	23,25	<10.00-46,00	0	0	0	0	0	0
Snacks			8,80	26,10	7,85	19,92	<10.00-59,00	69	175	205	1	3	3
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					9,04	33,00	<10.00-66,00						
Total intake											21		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,66	0,00	<10.00-<10.00	29	0	95	1	0	5
Malted Barley			0,02	0,02	2,55	25,11	<5.00-109,00	0	1	0	0	0	0
Beer			21,40	21,40	0,83	0,00	<5.00-<5.00	18	0	18	1	0	1
Breakfast cereals			29,60	67,70	24,64	54,69	<10.00-260,00	730	1621	1699	35	78	73
Biscuits			20,00	46,40	4,19	15,45	<10.00-24,00	84	309	194	4	15	10
Bread			62,90	121,60	4,05	17,56	<10.00-39,00	255	1104	493	12	53	24
Cakes			26,50	59,80	1,90	11,00	<10.00-11,00	50	292	114	2	14	5
Flour (1)			16,50	39,80	5,76	13,36	<10.00-21,00	95	220	229	5	11	10
Polenta (2)			4,70	4,70	12,46	23,25	<10.00-46,00	58	109	58	3	6	3
Snacks			16,30	34,60	7,85	19,92	<10.00-59,00	128	324	272	6	16	13
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	9,04	33,00	<10.00-66,00	167	611	547	9	34	33
Total intake											64		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,66	0,00	<10.00-<10.00	43	0	149	1	0	5
Malted Barley			0,10	0,10	2,55	25,11	<5.00-109,00	0	2	0	0	0	0
Beer			9,30	12,60	0,83	0,00	<5.00-<5.00	8	0	11	0	0	0
Breakfast cereals			33,60	74,40	24,64	54,69	<10.00-260,00	829	1839	1834	28	61	61
Biscuits			23,10	56,60	4,19	15,45	<10.00-24,00	97	358	237	3	12	8
Bread			78,10	140,70	4,05	17,56	<10.00-39,00	317	1372	570	10	45	19
Cakes			30,50	77,10	1,90	11,00	<10.00-11,00	58	336	147	2	11	5
Flour (1)			20,20	48,90	5,76	13,36	<10.00-21,00	116	270	282	4	9	10
Polenta (2)			4,10	7,10	12,46	23,25	<10.00-46,00	51	96	88	1	3	2
Snacks			18,40	40,80	7,85	19,92	<10.00-59,00	144	367	320	5	12	11
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	9,04	33,00	<10.00-66,00	0	0	0	0	0	0
Total intake											50		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,66	0,00	<10.00-<10.00	65	0	220	1	0	5
Malted Barley			0,10	0,10	2,55	25,11	<5.00-109,00	0	3	0	0	0	0
Beer			61,30	129,30	0,83	0,00	<5.00-<5.00	51	0	107	1	0	2
Breakfast cereals			36,60	81,40	24,64	54,69	<10.00-260,00	901	1999	2005	20	44	47
Biscuits			20,80	53,10	4,19	15,45	<10.00-24,00	87	322	223	2	7	5
Bread			86,20	162,40	4,05	17,56	<10.00-39,00	349	1513	658	8	33	14
Cakes			32,40	90,90	1,90	11,00	<10.00-11,00	62	356	173	1	8	3
Flour (1)			24,60	64,00	5,76	13,36	<10.00-21,00	142	329	369	3	7	7
Polenta (2)			8,20	19,60	12,46	23,25	<10.00-46,00	103	191	245	2	3	4
Snacks			19,80	43,50	7,85	19,92	<10.00-59,00	155	394	342	3	9	9
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	9,04	33,00	<10.00-66,00	129	471	129	3	11	3
Total intake											34		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country: UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,66	0,00	<10.00-<10.00	74	0	230	1	0	3
Malted Barley			0,16	0,22	2,55	25,11	<5.00-109,00	0	4	1	0	0	0
Beer			391,30	1108,60	0,83	0,00	<5.00-<5.00	325	0	920	5	0	15
Breakfast cereals			39,30	95,10	24,64	54,69	<10.00-260,00	969	2150	2344	16	35	38
Biscuits			20,00	62,50	4,19	15,45	<10.00-24,00	84	308	262	1	5	4
Bread			102,00	185,10	4,05	17,56	<10.00-39,00	413	1791	750	7	29	12
Cakes			29,60	82,50	1,90	11,00	<10.00-11,00	56	325	157	1	5	2
Flour (1)			27,70	76,40	5,76	13,36	<10.00-21,00	160	371	440	3	6	7
Polenta (2)			13,50	23,60	12,46	23,25	<10.00-46,00	168	314	295	3	6	6
Snacks			17,60	43,70	7,85	19,92	<10.00-59,00	138	350	343	2	6	6
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	9,04	33,00	<10.00-66,00	119	433	179	2	7	3
Total intake											26		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 2A1: Summary of occurrence in wheat and wheat flour from data reported in table 2A

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	68	100		68	<LOQ	16,7		<LOQ
Wheat	62	100		54	270	38,1	183,1	<LOQ
Wheat	36	100		36	<LOQ	16,7		<LOQ

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	14	20	20	9	172	22	45	10
Wheat flour	16	20	20	13	15	10	10	10
Wheat flour	28	20	20	26	20	10	20	10
Wheat flour	29	20	20	15	189	26	41	13
Durum wheat flour	23	20	20	0	440	199	199	234
Durum wheat flour	10	20	20	0	83	47	47	52

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	27		15	27		7,5		7,5
Wheat	37		25	36	130	25	130	12,5
Wheat	35	50		33	200	15,3	130,1	8,3
Wheat	35	25/40		34	30,3	4,9	30,3	4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	30	20			285	19,3	83,3	3,3
Wheat	22	20			100	7,7	100	3,3
Wheat flour	12		20	12		10		10
Soft wheat	31	20				3,33		3,33
Soft wheat	82	60	30	82	15	15	15	15
Soft wheat	72	60	30	69	230	20	96	15
Soft wheat	71	60	30	66	110	17	85	15
Soft wheat	208	10-60	30	189	102	15		15
Soft wheat	27	10-10(	30	1	120	36		25
Durum wheat	16	60	30	11	230	58	152	15
Durum wheat	16	60	30	14	300	36	185	15
Durum wheat	13	60	30	11	190	36	150	15
Durum wheat	52	60	30	16	230	52	95	15

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat, no	138	150	50	138		25	0	25
Wheat, imp	27	150	50	26	65	26,5	65	25
Wheat, no	107	150	50	97	170	35,0	114,6	25
Wheat, no	112	150	50	112		25	0	25
Wheat, imp	16	150	50	16		25	0	25
Wheat, no	101	150	50	101		25	0	25
Wheat, imp	29	150	50	29		25	0	25
Wheat, no	112	150	50	112		25	0	25
Wheat, imp	30	150	50	26	120	28,8	53,3	25
Wheat, no	26	150	50	26		25	0	25
Wheat, imp	13	150	50	13		25	0	25
Wheat, no	28	60	20	28		10	0	10
Wheat, imp	14	60	20	14		10	0	10
Wheat, no	25	60	20	25		10	0	10
Wheat, imp	10	60	20	7	270	40	108,3	10
Wheat, no	35	60	20	35		10	0	10
Wheat, imp	24	60	20	22	38	12,8	38	10
Wheat *, no	45	60	20	44	33	10,5	33	10
Wheat *	6	60	20	6		10	0	10
Wheat **	38	60	20	38		10	0	10

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	75	10	2	66	30	4	18	2
Wheat	17	10	2	0	275	159	159	143
Oat	10	10	2	5	33	10	18	6
Rye	19	10	2	19	0	0	0	0

* A single special case

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	29	10		19	15	5,7	13,3	<10
flour	8	10		8	<10	1,7	0,0	<10
Overall	**2166**					**24**	**98**	

Table 2A2: Summary of occurrence in Barley from data reported in table 2A

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	7		15	7		7,5		7,5
Barley	30		25	28	351	29,1	261,5	12,5
Barley	20	50		20		8,3		8,3
Barley	20	25/40		18	87,4	9,7	59,2	4,2
Barley malt	18		25	15	293	54,5	264,7	12,5
Barley malt	25	50		19	89,5	22,8	65,3	8,3
Barley malt	25	25/40		13	225	43,4	74,3	27,3

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	9	20			40	7,0	40	3,3
Malting barley	30		30	30		15		15
Malting barley	52		30	52		15		15
Malting barley	44		30	44		15		15
Malting barley	68		30	68		15		15

Country: Nowway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley *	20	150	50	20		25,5	0	25

* = The products is divided into different grain products.

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	54	5		51	24	1,8	18	<5
Barley	50	5		46	109	4,2	43	<5
Barley	49	5		46	18	1,7	14,3	<5
Overall	**521**					**15**	**76**	

Table 2A3: Summary of occurrence in Oat from data reported in table 2A

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	96	100		84	390	38,6	192,5	<LOQ
Oat	96	100		56	1860	137,8	307,5	<LOQ
Oat	40	100		7	980	197,2	235,5	135

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats	7		15	5	56	17,4	42	7,5
Oats	10		25	10		12,5		12,5
Oats	25	50		17	234	43,6	118,6	8,3
Oats	30	25/40		21	131	24	70,2	4,2

Country: Nowway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats *	40	150	50	39	120	27,4	120	25
Oats, no	3	150	50	2	69	39,7	69	25
Oats, no	3	150	50	3		25	0	25
Oats, no	26	150	50	26		25	0	25
Oats, no	14	60	20	14		10	0	10
Oats, no	14	60	20	8	60	20,7	35	10
Oats, no	22	60	20	22		10	0	10
Oats *	24	60	20	24		10	0	10
Oats *	58	60	20	58		10	0	10
Oat **	27	60	20	27		10	0	10

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	10	10	2	5	33	10	18	6
Overall	**545**					**56**		

Table 2A4: Summary of occurrence in Rye and rye flour from data reported in table 2A

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye flour	16	20	20	12	48	13	22	10
Rye flour	16	20	20	16	<20			
Rye flour	17	20	20	13	38	13	22	10
Rye flour	20	20	20	19	10	10	10	10

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	6		15	6		7,5		7,5
Rye	2		25	2		12,5		12,5
Rye	15	50		15		8,3		8,3
Rye	10	25/40		10		4,2		4,2

Country: Nowway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye, no	2	150	50	2		25	0	25
Rye, imp	18	150	50	18		25	0	25
Rye, imp	11	150	50	11		25	0	25
Rye, imp	12	150	50	12		25	0	25
Rye, imp	11	150	50	11		25	0	25
Rye, imp	10	60	20	10		10	0	10

no= norwegian , imp = imported

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	19	10	2	19	0	0	0	0

Overall **185**

Table 2A5: Summary of occurrence in Corn from data reported in table 2A

Trichothecene type B: Nivalenol (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	46	50		39	330	25,6	141,4	<LOQ
Corn	58	50		58	<LOQ	8,3		<LOQ
Corn	48	50		44	110	14,1	77,5	<LOQ

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	29	20			255	27,2	90	3,3
Corn	25		30	15	170	41	148	
Corn	16	30	30	4	340	42		15
Corn	46	50-60	30	14	170	43		25

Overall **268**

Table 3A. Summary occurrence data by food group and country

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	46	50		39	4	3						125	20,9	90,7	<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	50		58								<LOQ	8,3		<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	50		48								<LOQ	8,3		<LOQ	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	100		96								<LOQ	16,7		<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2000	96	100		96								<LOQ	16,7		<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2001	40	100		40								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	1999	68	100		68								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2000	62	100		62								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2001	36	100		36								<LOQ	16,7		<LOQ	y	target	GC		y

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		5	27									2,5		2,5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	37									12,5		12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		35									8,33		8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		35									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		5	7									2,5		2,5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	25								70,8	19	61,6	12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		19								101	4,17	101	4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	18									12,5		12,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		25									8,33		8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		25									4,17		4,17		Random	GC-MS	Good	Y
Oats			1998	7		5	6								79	8,4	79	8,4	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		19								438	53,7		197,4	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		22								183	25,5		84,3	Y	Random	GC-MS	Good	Y
Rye			1998	6		5	6									2,5		2,5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		15									8,33		8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0	45	4,69	45	3,3	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	29	20			27	1	0	1	0	0	0	520	26,75	230	3,3	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		30	25	0	0	0	0	0	0	0	15	15	0			T	GS-MS		
Corn	GC2	03 01 B	2000	10	10-30		0	10	0	0	0	0	0	0	18	11		15		R	GC or HPLC	L	Y
Corn	GC2	03 01 B	2001	55		20-25	28	54	1	0	0	0	0	0	172	21		12		R	GC or HPLC	L	Y
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2000	204	10-60	30	185	204	0	0	0	0	0	0	30	15		15		R	GC or HPLC	L	Y
Soft wheat	BT		2001	112	10-100	25-30	85	112	0	0	0	0	0	0	50	19		15		R	GC or HPLC	L	Y
Durum wheat	BD		1999	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	13	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	52	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	52	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	44	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	68	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: Norway

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat, no	GC 1	0301 A	1.-1990	138	90	30	138									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	1.-1990	27	90	30	27									15	0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	2.-1991	107	90	30	106		1						120	16,0	120,0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	3.-1992	112	90	30	109	3							96	16,5	61,7	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	3.-1992	16	90	30	16									15	0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	4.-1993	101	90	30	101									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	4.-1993	29	90	30	28	1							40	15,9	40,0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	5.-1994	112	90	30	112									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	5.-1994	30	90	30	30									15	0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	6.-1995	26	90	30	26									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	6.-1995	13	90	30	13									15	0	15	yes	random	HPLC	good	yes
Barley *	GC 6 *	0301 F	1.-1990	20	90	30	20									15	0	15	yes	random	HPLC	good	yes
Rye, no	GC 5	0301 E	1.-1990	2	90	30	2									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	1.-1990	18	90	30	18									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	4.-1993	11	90	30	11									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	5.-1994	12	90	30	12									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	6.-1995	11	90	30	11									15	0	15	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C	1.-1990	40	90	30	34	6							60	19,1	42,5	15	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	4.-1993	3	90	30	1	2							52	35,3	45,5	39	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	5.-1994	3	90	30	2	1							72	34	72	15	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	6.-1995	26	90	30	26									15	0	15	yes	random	HPLC	good	yes

no= norwegian , imp = imported

* = The products is divided into different grain products.

Country: Sweden

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	0301A	1996-97	57	10	2	53	4							86	3	36	1	YES	Random	GC	G	YES
Wheat	GC1	0301A	1999	75	10	2	74	1							10	1	10	1	YES	Random	GC	G	YES
Wheat	GC1	0301A*	2001	17	10	2			17						239	193	193	191	YES	TARGET	GC	G	NO
Oat	GC3	0301C	1996-97	23	10	2	23								0	0	0	0	YES	Random	GC	G	YES
Oat	GC3	0301C	1999	10	10	2	10								0	0	0	0	YES	Random	GC	G	YES
Rye	GC5	0301E	1996-97	28	10	2	27	1							19	2	19	1	YES	Random	GC	G	YES
Rye	GC5	0301E	1999	19	10	2	19								0	0	0	0	YES	Random	GC	G	YES

* a single special case, not representative

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	1999	54	5		51	3	0	0	0	0	0	0	8	1,18	7	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2000	50	5		50	0	0	0	0	0	0	0	<5	0,83	0	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2001	49	5		44	5	0	0	0	0	0	0	37	2,07	13,00	<5	Y	Random	GC/MS	G	Y
Beer	DM1	02 05A	2000	28	5		25	3	0	0	0	0	0	0	10,2	1,64	8,4	<5	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		14	1							11	2,29	11,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		26	4							15	3,04	12,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		13	1							36	4,12	36,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 3B: Summary of occurence in cereals from data reported in tables1A

Trichothecene type B: 3-AcDON (Units: µg/kg)

Country: Austria

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Cereal grains	GC	03 01	550	125	15,4	90,7	<LOQ

Country: Norway

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
no/imp WHEAT total	GC 1	0301 A	711	83	15,3	59,6	15
no/imp RYE total	GC 5	0301 E	54		15,0	0	15
Oats, no total	GC 3	0301 C	72	72	18,9	46,4	15
Barley, no total	GC 6 *	0301 F	20		15,0	0	15

Country: Sweden

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat	GC1	0301A	132	86	3	31	28
oat	GC3	0301C	33	< LOD	2	2	2
rye	GC5	0301E	47	19	2	19	2

Table 3C: Estimated daily intake of trichothecenes in each member state

Trichothecene type B: 3-AcDON

Country : Austria; whole population
Body Weight for average person (kg): 75

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360	15,4	90,7		1572	9260	5544	21	123	74
Total intake								1572	9260	5544	21	123	74

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		6,9			791			10		
Rye	GC5	0301E	49,1		6,9			339			4		
Oat	GC3	0301C	4,45		25,0	81,7		111	364		1	5	
Barley*	GC6	0301 F	4,45		10,2	81,3		45	362		1	5	
Total intake								1287	725		17	9	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Country : Norway male, all participants

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	23,5	93,0	< LOD - 120	2867	11344	4958	35	140	61
WHEAT /wholemeal flour	GC 1	0301A	65	118	15,3	59,6	< LOD - 120	996	3872	1808	12	48	22
RYE	GC 5	0301E	3	16	15,0	0,0	< LOD	45	0	240	1	0	3
BARLEY	GC 6	0301F	3	16	15,0	0,0	< LOD	45	0	240	1	0	3
OATS	GC 3	0301C	5	22	18,9	46,4	< LOD - 72	95	232	416	1	3	5
Total intake								4047	15448	7663	50	191	95

Country : Norway male, consumers

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	23,5	93,0	< LOD - 120	2867	11344	4958	35	140	61
WHEAT /wholemeal flour	GC 1	0301A	65	119	15,3	59,6	< LOD - 120	996	3872	1823	12	48	23
RYE	GC 5	0301E	3	16	15,0	0,0	< LOD	45	0	240	1	0	3
BARLEY	GC 6	0301F	6	23	15,0	0,0	< LOD	90	0	345	1	0	4
OATS	GC 3	0301C	8	25	18,9	46,4	< LOD - 72	151	372	473	2	5	6
Total intake								4149	15588	7840	51	192	97

Country: Norway female, all participants

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	23,5	93,0	< LOD - 120	2068	8182	3478	31	124	53
WHEAT /wholemeal flour	GC 1	0301A	45	77	15,3	59,6	< LOD - 120	690	2681	1180	10	41	18
RYE	GC 5	0301E	2	12	15,0	0,0	< LOD	30	0	180	0	0	3
BARLEY	GC 6	0301F	2	12	15,0	0,0	< LOD	30	0	180	0	0	3
OATS	GC 3	0301C	4	16	18,9	46,4	< LOD - 72	76	186	303	1	3	5
Total intake								2893	11049	5320	44	167	81

Country: Norway female, consumers

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	23,5	93,0	< LOD - 120	2068	8182	3478	31	124	53
WHEAT /wholemeal flour	GC 1	0301A	45	77	15,3	59,6	< LOD - 120	690	2681	1180	10	41	18
RYE	GC 5	0301E	2	12	15,0	0,0	< LOD	30	0	180	0	0	3
BARLEY	GC 6	0301F	5	16	15,0	0,0	< LOD	75	0	240	1	0	4
OATS	GC 3	0301C	6	20	18,9	46,4	< LOD - 72	114	279	379	2	4	6
Total intake								2976	11142	5456	45	169	83

Country : Sweden
Body Weight for average person (kg): 75 kg (men and women together)

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
wheat	GC 1	0301A	89	168	3	31	<LOD -86	267	2759	504	4	37	7
oats	GC 3	0301C	4	27	16	38	<LOD	0	0	0	0	0	0
rye	GC 5	0301E	33	75	15	51	<LOD	0	741	0	0	10	0
Total intake								267	3500	504	4	47	7

Country : UK, average male adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,67	0,00	<10.00-<10.00	59	0	190	1	0	3
Malted Barley			0,02	0,02	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			735,50	2138,90	1,64	8,40	<5.00-10,20	1206	6178	3508	16	81	47
Breakfast cereals			41,20	109,40	2,39	23,50	<10.00-36,00	98	968	261	1	13	4
Biscuits			20,10	56,70	1,67	0,00	<10.00-<10.00	34	0	95	0	0	1
Bread			135,30	262,70	1,67	0,00	<10.00-<10.00	226	0	439	3	0	6
Cakes			44,00	114,00	1,67	0,00	<10.00-<10.00	74	0	190	1	0	3
Flour (1)			21,30	56,60	1,67	0,00	<10.00-<10.00	36	0	95	0	0	1
Polenta (2)			22,50	34,70	1,67	0,00	<10.00-<10.00	38	0	58	1	0	1
Snacks			13,30	36,90	2,19	6,00	<10.00-15,00	29	80	81	0	1	1
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											16		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,67	0,00	<10.00-<10.00	40	0	108	1	0	2
Malted Barley			0,03	0,05	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			193,10	738,00	1,64	8,40	<5.00-10,20	317	1622	1210	5	27	19
Breakfast cereals			29,90	76,10	2,39	23,50	<10.00-36,00	72	703	182	1	12	3
Biscuits			17,40	46,90	1,67	0,00	<10.00-<10.00	29	0	78	0	0	1
Bread			85,00	159,00	1,67	0,00	<10.00-<10.00	142	0	266	2	0	4
Cakes			34,90	88,30	1,67	0,00	<10.00-<10.00	58	0	148	1	0	2
Flour (1)			16,70	43,40	1,67	0,00	<10.00-<10.00	28	0	72	0	0	1
Polenta (2)			7,30	7,30	1,67	0,00	<10.00-<10.00	12	0	12	0	0	0
Snacks			10,00	25,90	2,19	6,00	<10.00-15,00	22	60	57	0	1	1
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,67	0,00	<10.00-<10.00	24	0	88	2	0	6
Malted Barley			0,01	0,01	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			7,80	16,80	1,64	8,40	<5.00-10,20	13	66	28	1	4	2
Breakfast cereals			21,40	49,20	2,39	23,50	<10.00-36,00	51	503	118	4	36	9
Biscuits			16,90	41,10	1,67	0,00	<10.00-<10.00	28	0	69	2	0	5
Bread			42,00	89,20	1,67	0,00	<10.00-<10.00	70	0	149	5	0	10
Cakes			18,30	50,80	1,67	0,00	<10.00-<10.00	31	0	85	2	0	6
Flour (1)			13,00	36,30	1,67	0,00	<10.00-<10.00	22	0	61	2	0	4
Polenta (2)			6,50	13,80	1,67	0,00	<10.00-<10.00	11	0	23	1	0	2
Snacks			12,10	29,60	2,19	6,00	<10.00-15,00	27	73	65	2	5	5
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	1,67	0,00	<10.00-<10.00	93	0	281	8	0	21
Total intake											15		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,67	0,00	<10.00-<10.00	12	0	35	1	0	4
Malted Barley			0,00	0,00	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			0,00	0,00	1,64	8,40	<5.00-10,20	0	0	0	0	0	0
Breakfast cereals			16,20	36,10	2,39	23,50	<10.00-36,00	39	381	86	4	40	9
Biscuits			7,20	19,60	1,67	0,00	<10.00-<10.00	12	0	33	1	0	3
Bread			16,90	46,90	1,67	0,00	<10.00-<10.00	28	0	78	3	0	8
Cakes			7,00	20,20	1,67	0,00	<10.00-<10.00	12	0	34	1	0	3
Flour (1)			11,20	32,50	1,67	0,00	<10.00-<10.00	19	0	54	2	0	6
Polenta (2)			7,30	18,00	1,67	0,00	<10.00-<10.00	12	0	30	1	0	3
Snacks			3,80	11,00	2,19	6,00	<10.00-15,00	8	23	24	1	2	2
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	1,67	0,00	<10.00-<10.00	24	0	81	3	0	9
Total intake											12		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,67	0,00	<10.00-<10.00	48	0	115	1	0	2
Malted Barley			0,03	0,03	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			532,90	1669,70	1,64	8,40	<5.00-10,20	874	4476	2788	11	59	36
Breakfast cereals			67,90	242,40	2,39	23,50	<10.00-36,00	162	1596	579	2	21	7
Biscuits			24,30	59,10	1,67	0,00	<10.00-<10.00	41	0	99	1	0	1
Bread			112,10	203,40	1,67	0,00	<10.00-<10.00	187	0	340	2	0	5
Cakes			50,50	116,60	1,67	0,00	<10.00-<10.00	84	0	195	1	0	3
Flour (1)			20,40	61,90	1,67	0,00	<10.00-<10.00	34	0	103	0	0	1
Polenta (2)			5,30	5,30	1,67	0,00	<10.00-<10.00	9	0	9	0	0	0
Snacks			11,90	26,60	2,19	6,00	<10.00-15,00	26	72	58	0	1	1
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											10		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,67	0,00	<10.00-<10.00	41	0	141	1	0	3
Malted Barley			0,00	0,00	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			220,30	646,30	1,64	8,40	<5.00-10,20	361	1851	1060	6	31	17
Breakfast cereals			46,50	146,70	2,39	23,50	<10.00-36,00	111	1093	351	2	17	6
Biscuits			20,20	49,60	1,67	0,00	<10.00-<10.00	34	0	83	1	0	1
Bread			80,90	148,40	1,67	0,00	<10.00-<10.00	135	0	248	2	0	4
Cakes			39,10	90,30	1,67	0,00	<10.00-<10.00	65	0	151	1	0	2
Flour (1)			17,40	49,60	1,67	0,00	<10.00-<10.00	29	0	83	0	0	1
Polenta (2)			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Snacks			8,80	26,10	2,19	6,00	<10.00-15,00	19	53	57	0	1	1
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,67	0,00	<10.00-<10.00	29	0	96	1	0	5
Malted Barley			0,02	0,02	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			21,40	21,40	1,64	8,40	<5.00-10,20	35	35	35	2	2	2
Breakfast cereals			29,60	67,70	2,39	23,50	<10.00-36,00	71	71	162	3	3	7
Biscuits			20,00	46,40	1,67	0,00	<10.00-<10.00	33	0	77	2	0	4
Bread			62,90	121,60	1,67	0,00	<10.00-<10.00	105	0	203	5	0	10
Cakes			26,50	59,80	1,67	0,00	<10.00-<10.00	4	0	100	2	0	5
Flour (1)			16,50	39,80	1,67	0,00	<10.00-<10.00	28	0	66	1	0	3
Polenta (2)			4,70	4,70	1,67	0,00	<10.00-<10.00	8	0	8	0	0	0
Snacks			16,30	34,60	2,19	6,00	<10.00-15,00	36	36	76	2	2	4
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	1,67	0,00	<10.00-<10.00	31	0	101	2	0	6
Total intake											16		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,67	0,00	<10.00-<10.00	44	0	1480	1	0	5
Malted Barley			0,10	0,10	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			9,30	12,60	1,64	8,40	<5.00-10,20	15	15	21	0	0	1
Breakfast cereals			33,60	74,40	2,39	23,50	<10.00-36,00	80	80	178	3	3	6
Biscuits			23,10	56,60	1,67	0,00	<10.00-<10.00	39	0	95	1	0	3
Bread			78,10	140,70	1,67	0,00	<10.00-<10.00	131	0	235	4	0	8
Cakes			30,50	77,10	1,67	0,00	<10.00-<10.00	51	0	129	2	0	4
Flour (1)			20,20	48,90	1,67	0,00	<10.00-<10.00	34	0	82	1	0	3
Polenta (2)			4,10	7,10	1,67	0,00	<10.00-<10.00	7	0	12	0	0	0
Snacks			18,40	40,80	2,19	6,00	<10.00-15,00	40	40	89	1	1	3
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Total intake											13		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,67	0,00	<10.00-<10.00	65	0	221	1	0	5
Malted Barley			0,10	0,10	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			61,30	129,30	1,64	8,40	<5.00-10,20	101	101	212	2	2	4
Breakfast cereals			36,60	81,40	2,39	23,50	<10.00-36,00	87	87	195	2	2	5
Biscuits			20,80	53,10	1,67	0,00	<10.00-<10.00	35	0	89	1	0	2
Bread			86,20	162,40	1,67	0,00	<10.00-<10.00	144	0	271	3	0	6
Cakes			32,40	90,90	1,67	0,00	<10.00-<10.00	54	0	152	1	0	3
Flour (1)			24,60	64,00	1,67	0,00	<10.00-<10.00	41	0	107	1	0	2
Polenta (2)			8,20	19,60	1,67	0,00	<10.00-<10.00	14	0	33	0	0	1
Snacks			19,80	43,50	2,19	6,00	<10.00-15,00	43	43	95	1	1	2
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	1,67	0,00	<10.00-<10.00	24	0	24	1	0	1
Total intake											9		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,67	0,00	<10.00-<10.00	74	0	232	1	0	3
Malted Barley			0,16	0,22	1,36	6,67	<5.00-37,00	0	0	0	0	0	0
Beer			391,30	1108,60	1,64	8,40	<5.00-10,20	642	642	1818	10	10	30
Breakfast cereals			39,30	95,10	2,39	23,50	<10.00-36,00	94	94	227	2	2	4
Biscuits			20,00	62,50	1,67	0,00	<10.00-<10.00	33	0	104	1	0	2
Bread			102,00	185,10	1,67	0,00	<10.00-<10.00	170	0	309	3	0	5
Cakes			29,60	82,50	1,67	0,00	<10.00-<10.00	47	0	124	1	0	2
Flour (1)			27,70	76,40	1,67	0,00	<10.00-<10.00	46	0	128	1	0	2
Polenta (2)			13,50	23,60	1,67	0,00	<10.00-<10.00	23	0	40	0	0	1
Snacks			17,60	43,70	2,19	6,00	<10.00-15,00	39	39	96	1	1	2
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	1,67	0,00	<10.00-<10.00	22	0	33	0	0	1
Total intake											9		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 3A1: Summary of occurrence in wheat and wheat flour from data reported in table 3A

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	68	100		68	<LOQ	16,7		<LOQ
Wheat	62	100		62	<LOQ	16,7		<LOQ
Wheat	36	100		36	<LOQ	16,7		<LOQ

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	27		5	27		2,5		2,5
Wheat	37		25	37		12,5		12,5
Wheat	35	50		35		8,3		8,3
Wheat	35	25/40		35		4,2		4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	30	20			45	4,7	45	3,3
Wheat	22	20				3,3		3,3
Soft wheat	31	20				3,3		3,3
Soft wheat	82	60	30	82		15		15
Soft wheat	72	60	30	72		15		15
Soft wheat	71	60	30	71		15		15
Soft wheat	204	10-60	30	185	30	15		15
Soft wheat	112	10-100	25-30	85	50	19		15
Durum wheat	16	60	30	16		15		15
Durum wheat	16	60	30	16		15		15
Durum wheat	13	60	30	13		15		15
Durum wheat	52	60	30	52		15		15

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat, no	138	90	30	138		15	0	15
Wheat, imp	27	90	30	27		15	0	15
Wheat, no	107	90	30	106	120	16,0	120,0	15
Wheat, no	112	90	30	109	96	16,5	61,7	15
Wheat, imp	16	90	30	16		15	0	15
Wheat, no	101	90	30	101		15	0	15
Wheat, imp	29	90	30	28	40	15,9	40,0	15
Wheat, no	112	90	30	112		15	0	15
Wheat, imp	30	90	30	30		15	0	15
Wheat, no	26	90	30	26		15	0	15
Wheat, imp	13	90	30	13		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	57	10	2	53	86	3	36	1
Wheat	75	10	2	74	10	1	10	1
Wheat	17	10	2		239	193	193	191

* a single special case, not representative

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	29	10		29	<10	1,7	0,0	<10

Table 3A2: Summary of occurrence in Barley from data reported in table 3A

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	7		5	7		2,5		2,5
Barley	30		25	25	70,8	19	61,6	12,5
Barley	20	50		20		8,3		8,33
Barley	20	25/40		19	101	4,2	101	4,2
Barley malt	18		25	18		12,5		12,5
Barley malt	25	50		25		8,3		8,3
Barley malt	25	25/40		25		4,2		4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	9	20				3,3		3,3
Malting barley	30		30	30		15		15
Malting barley	52		30	52		15		15
Malting barley	44		30	44		15		15
Malting barley	68		30	68		15		15

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley *	20	90	30	20		15	0	15

* = The products is divided into different grain products.

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	54	5		51	8	1,2	7	<5
Barley	50	5		50	<5	0,8	0	<5
Barley	49	5		44	37	2,1	13	<5

Table 3A3: Summary of occurrence in Oat from data reported in table 3A

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	96	100		96	<LOQ	16,7		<LOQ
Oat	96	100		96	<LOQ	16,7		<LOQ
Oat	40	100		40	<LOQ	16,7		<LOQ

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats	7		5	6	79	8,4	79	8,4
Oats	10		25	10		12,5		12,5
Oats	25	50		19	438	53,7		197,4
Oats	30	25/40		22	183	25,5		84,3

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats *	40	90	30	34	60	19,1	42,5	15
Oats, no	3	90	30	1	52	35,3	45,5	39
Oats, no	3	90	30	2	72	34	72	15
Oats, no	26	90	30	26		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	23	10	2	23	0	0	0	0
Oat	10	10	2	10	0	0	0	0

Table 3A4: Summary of occurrence in Rye from data reported in table 3A

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	6		5	6		2,5		2,5
Rye	2		25	2		12,5		12,5
Rye	15	50		15		8,33		8,33
Rye	10	25/40		10		4,17		4,17

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye, no	2	90	30	2		15	0	15
Rye, imp	18	90	30	18		15	0	15
Rye, imp	11	90	30	11		15	0	15
Rye, imp	12	90	30	12		15	0	15
Rye, imp	11	90	30	11		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

Country: Sweden

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	28	10	2	27	19	2	19	1
Rye	19	10	2	19	0	0	0	0

Table 3A5: Summary of occurrence in Corn from data reported in table 3A

Trichothecene type B: 3-AcDON (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	46	50		39	125	20,9	90,7	<LOQ
Corn	58	50		58	<LOQ	8,3		<LOQ
Corn	48	50		48	<LOQ	8,3		<LOQ

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	29	20			520	26,8	230	3,3
Corn	25		30	25	15	15	0	
Corn	10	10-30		0	18	11		15
Corn	55		20-25	28	172	21		12

Table 4A. Summary occurrence data by food group and country

Trichothecene type B: 15-AcDON (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	46	50		17	6	12	7	3	1			975	170,3	265,3	97,5	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	50		48	5	5						190	23,2	94,5	<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	50		22	7	14	4		1			830	122,8	219,6	57,5	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	100		96								<LOQ	16,7		<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2000	96	100		96								<LOQ	16,7		<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2001	40	100		40								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	1999	68	100		68								<LOQ	16,7		<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2000	62	100		60		2						110	19,5	105	<LOQ	y	target	GC		y
Wheat	GC1	03 01 A	2001	36	100		36								<LOQ	16,7		<LOQ	y	target	GC		y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0	50	4,86	50	3,33	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	29	20			25	2	1	0	0	1	0	1320	76,88	197,3	3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		30	3	1	13	7	1	0	0	0	700	236	266			T	GC-MS		
Corn	GC2	03 01 B	2000	10	30		0	8	2	0	0	0	0	0	152	52		28		R	GC or HPLC	L	Y
Corn	GC2	03 01 B	2001	54	30	20-25	4	20	11	19	2	1	0	0	883	197		160		R	GC or HPLC	L	Y
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2000	203	10-60	30	185	203	0	0	0	0	0	0	30	15		15		R	GC or HPLC	L	Y
Soft wheat	BT		2001	112	10-100	25-30	84	112	0	0	0	0	0	0	50	19		15		R	GC or HPLC	L	Y
Durum wheat	BD		1999	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	13	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	52	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0	0	0	0	0			<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2001	49	5		48	1	0	0	0	0	0	0	6	0,94	6,00	<5	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		9	5	1	0	0	0			157	20,60	49,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		14	9	7						214	51,48	95,06	17,0	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		10	14	0						59	22,15	36,79	17,0	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0	0	0	0	0			<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		13	1	0	0	0	1			806	62,21	425,50		Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		4	4							46	16,96	32,25	7,0	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1			1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		2	1	1						125	47,33	93,00	30,5	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		5	1	0						28	6,06	28,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 4C: Estimated daily intake of trichothecenes in each member state

Trichothecene type B: 15-AcDON

Country : Austria; whole population
Body Weight for average person (kg): 75 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360	39,8	217,3		4064	22186	14328	54	296	191
Total intake								4064	22186	14328	54	296	191

Country : UK, average male adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,67	0,00	<10.00-<10.00	59	0	190	1	0	3
Malted Barley			0,02	0,02	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			41,20	109,40	20,53	143,13	<10.00-806,00	846	5896	2245	12	80	30
Biscuits			20,10	56,70	1,67	0,00	<10.00-<10.00	34	0	95	0	0	1
Bread			135,30	262,70	1,67	0,00	<10.00-<10.00	226	0	439	3	0	6
Cakes			44,00	114,00	1,67	0,00	<10.00-<10.00	74	0	190	1	0	3
Flour (1)			21,30	56,60	1,67	0,00	<10.00-<10.00	36	0	95	0	0	1
Polenta (2)			22,50	34,70	16,96	35,25	<10.00-46,00	381	725	589	6	12	10
Snacks			13,30	36,90	28,52	65,52	<10.00-214,00	378	869	1052	5	12	15
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											14		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,67	0,00	<10.00-<10.00	40	0	108	1	0	2
Malted Barley			0,03	0,05	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			29,90	76,10	20,53	143,13	<10.00-806,00	614	4280	1562	10	71	25
Biscuits			17,40	46,90	1,67	0,00	<10.00-<10.00	29	0	78	0	0	1
Bread			85,00	159,00	1,67	0,00	<10.00-<10.00	142	0	266	2	0	4
Cakes			34,90	88,30	1,67	0,00	<10.00-<10.00	58	0	148	1	0	2
Flour (1)			16,70	43,40	1,67	0,00	<10.00-<10.00	28	0	72	0	0	1
Polenta (2)			7,30	7,30	16,96	35,25	<10.00-46,00	124	235	124	2	3	2
Snacks			10,00	25,90	28,52	65,52	<10.00-214,00	285	656	738	5	11	13
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											12		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,67	0,00	<10.00-<10.00	24	0	88	2	0	6
Malted Barley			0,01	0,01	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			21,40	49,20	20,53	143,13	<10.00-806,00	439	3061	1011	31	217	74
Biscuits			16,90	41,10	1,67	0,00	<10.00-<10.00	28	0	69	2	0	5
Bread			42,00	89,20	1,67	0,00	<10.00-<10.00	70	0	149	5	0	10
Cakes			18,30	50,80	1,67	0,00	<10.00-<10.00	31	0	85	2	0	6
Flour (1)			13,00	36,30	1,67	0,00	<10.00-<10.00	22	0	61	2	0	4
Polenta (2)			6,50	13,80	16,96	35,25	<10.00-46,00	111	211	235	9	17	20
Snacks			12,10	29,60	28,52	65,52	<10.00-214,00	345	27	845	24	2	62
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	1,67	0,00	<10.00-<10.00	93	0	281	8	0	21
Total intake											58		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,67	0,00	<10.00-<10.00	12	0	35	1	0	4
Malted Barley			0,00	0,00	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			16,20	36,10	20,53	143,13	<10.00-806,00	333	2322	742	35	243	77
Biscuits			7,20	19,60	1,67	0,00	<10.00-<10.00	12	0	33	1	0	3
Bread			16,90	46,90	1,67	0,00	<10.00-<10.00	28	0	78	3	0	8
Cakes			7,00	20,20	1,67	0,00	<10.00-<10.00	12	0	34	1	0	3
Flour (1)			11,20	32,50	1,67	0,00	<10.00-<10.00	19	0	54	2	0	6
Polenta (2)			7,30	18,00	16,96	35,25	<10.00-46,00	124	236	305	14	27	35
Snacks			3,80	11,00	28,52	65,52	<10.00-214,00	108	248	314	11	24	31
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	1,67	0,00	<10.00-<10.00	24	0	81	3	0	9
Total intake											42		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,67	0,00	<10.00-<10.00	48	0	115	1	0	2
Malted Barley			0,03	0,03	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			67,90	242,40	20,53	143,13	<10.00-806,00	1394	9720	4977	19	131	63
Biscuits			24,30	59,10	1,67	0,00	<10.00-<10.00	41	0	99	0	0	1
Bread			112,10	203,40	1,67	0,00	<10.00-<10.00	187	0	340	2	0	5
Cakes			50,50	116,60	1,67	0,00	<10.00-<10.00	84	0	195	1	0	3
Flour (1)			20,40	61,90	1,67	0,00	<10.00-<10.00	34	0	103	0	0	1
Polenta (2)			5,30	5,30	16,96	35,25	<10.00-46,00	90	171	90	2	3	2
Snacks			11,90	26,60	28,52	65,52	<10.00-214,00	341	783	760	5	11	11
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											18		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,67	0,00	<10.00-<10.00	41	0	141	1	0	3
Malted Barley			0,00	0,00	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			46,50	146,70	20,53	143,13	<10.00-806,00	955	6658	3013	15	106	50
Biscuits			20,20	49,60	1,67	0,00	<10.00-<10.00	34	0	83	1	0	1
Bread			80,90	148,40	1,67	0,00	<10.00-<10.00	135	0	248	2	0	4
Cakes			39,10	90,30	1,67	0,00	<10.00-<10.00	65	0	151	1	0	2
Flour (1)			17,40	49,60	1,67	0,00	<10.00-<10.00	29	0	83	0	0	1
Polenta (2)			0,00	0,00	16,96	35,25	<10.00-46,00	0	0	0	0	0	0
Snacks			8,80	26,10	28,52	65,52	<10.00-214,00	251	576	745	4	9	11
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											14		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,67	0,00	<10.00-<10.00	29	0	96	1	0	5
Malted Barley			0,02	0,02	0,94	6,00	<5.00-6,00	0	0	0	0	0	0
Breakfast cereals			29,60	67,70	20,53	143,13	<10.00-806,00	609	4243	1391	29	205	61
Biscuits			20,00	46,40	1,67	0,00	<10.00-<10.00	33	0	77	2	0	4
Bread			62,90	121,60	1,67	0,00	<10.00-<10.00	105	0	203	5	0	10
Cakes			26,50	59,80	1,67	0,00	<10.00-<10.00	44	0	100	2	0	5
Flour (1)			16,50	39,80	1,67	0,00	<10.00-<10.00	28	0	66	1	0	3
Polenta (2)			4,70	4,70	16,96	35,25	<10.00-46,00	79	151	79	4	8	4
Snacks			16,30	34,60	28,52	65,52	<10.00-214,00	464	1066	987	23	52	47
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	1,67	0,00	<10.00-<10.00	31	0	101	2	0	6
Total intake											61		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,67	0,00	<10.00-<10.00	44	0	150	1	0	5
Malted Barley			0,10	0,10	0,94	6,00	<5.00-6,00	0	1	0	0	0	0
Breakfast cereals			33,60	74,40	20,53	143,13	<10.00-806,00	690	4814	1528	23	160	51
Biscuits			23,10	56,60	1,67	0,00	<10.00-<10.00	39	0	95	1	0	3
Bread			78,10	140,70	1,67	0,00	<10.00-<10.00	131	0	235	4	0	8
Cakes			30,50	77,10	1,67	0,00	<10.00-<10.00	51	0	129	2	0	4
Flour (1)			20,20	48,90	1,67	0,00	<10.00-<10.00	34	0	82	1	0	3
Polenta (2)			4,10	7,10	16,96	35,25	<10.00-46,00	70	132	120	2	4	3
Snacks			18,40	40,80	28,52	65,52	<10.00-214,00	525	1206	1164	18	40	40
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Total intake											47		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,67	0,00	<10.00-<10.00	65	0	221	1	0	5
Malted Barley			0,10	0,10	0,94	6,00	<5.00-6,00	0	1	0	0	0	0
Breakfast cereals			36,60	81,40	20,53	143,13	<10.00-806,00	751	5232	1671	16	115	39
Biscuits			20,80	53,10	1,67	0,00	<10.00-<10.00	35	0	89	1	0	2
Bread			86,20	162,40	1,67	0,00	<10.00-<10.00	144	0	271	3	0	6
Cakes			32,40	90,90	1,67	0,00	<10.00-<10.00	54	0	152	1	0	3
Flour (1)			24,60	64,00	1,67	0,00	<10.00-<10.00	41	0	107	1	0	2
Polenta (2)			8,20	19,60	16,96	35,25	<10.00-46,00	140	266	333	2	5	6
Snacks			19,80	43,50	28,52	65,52	<10.00-214,00	565	1297	1242	13	29	31
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	1,67	0,00	<10.00-<10.00	24	0	24	1	0	1
Total intake											32		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,67	0,00	<10.00-<10.00	74	0	232	1	0	3
Malted Barley			0,16	0,22	0,94	6,00	<5.00-6,00	0	1	0	0	0	0
Breakfast cereals			39,30	95,10	20,53	143,13	<10.00-806,00	807	5626	1953	13	91	31
Biscuits			20,00	62,50	1,67	0,00	<10.00-<10.00	33	0	104	1	0	2
Bread			102,00	185,10	1,67	0,00	<10.00-<10.00	170	0	309	3	0	5
Cakes			29,60	82,50	1,67	0,00	<10.00-<10.00	49	0	138	1	0	2
Flour (1)			27,70	76,40	1,67	0,00	<10.00-<10.00	46	0	128	1	0	2
Polenta (2)			13,50	23,60	16,96	35,25	<10.00-46,00	229	436	401	4	8	8
Snacks			17,60	43,70	28,52	65,52	<10.00-214,00	502	1152	1245	8	19	23
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	1,67	0,00	<10.00-<10.00	22	0	33	0	0	1
Total intake											21		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 5A. Summary occurrence data by food group and country

Trichothecene type B: Fusarenon-X (Units: µg/kg or µg/L)

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		5	27									2,5		2,5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	37									12,5		12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		35									8,33		8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		35									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		5	7									2,5		2,5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	30									12,5		12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		20									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	18									12,5		12,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		25									8,33		8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		25									4,17		4,17		Random	GC-MS	Good	Y
Oats			1998	7		5	7									2,5		2,5	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		25									8,33		8,33	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		30									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye			1998	6		5	6									2,5		2,5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		15									8,33		8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 b	2001	29	20			29	0	0	0	0	0	0	40	4,57	40	3,3	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		30	25	0	0	0	0	0	0	0	15	15	0			T	GS-MS		
Corn	GC2	03 01 B	2000	10	10-40		0	10	0	0	0	0	0	0	15	10		10		R	GC or HPLC	L	Y
Corn	GC2	03 01 B	2001	40	50	30	24	40	0	0	0	0	0	0	25	19		15		R	GC or HPLC	L	Y
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2000	197	10-60	30	185	197	0	0	0	0	0	0	30	15		15		R	GC or HPLC	L	Y
Soft wheat	BT		2001	102	10-10(	30	77	102	0	0	0	0	0	0	50	19		15		R	GC or HPLC	L	Y
Durum wheat	BD		1999	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	13	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	52	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	52	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	44	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	68	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		15	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		13	1							34	3,98	34,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 5C. Estimated daily intake of trichothecenes in each member state

Trichothecene type B: Fusarenon-X (Units: µg/kg or µg/L)

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		6,9			791			10		
Rye	GC5	0301E	49,1		6,9			339			4		
Oat	GC3	0301C	4,45		6,9			31			0,4		
Barley*	GC6	0301F	4,45		6,4			28			0,4		
Total intake								1189			15		

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Table 6A. Summary occurrence data by food group and country

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	46	100		45							1	255	21,8	255	<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	100		58								<LOQ	16,7		<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	100		46					1	1		150	21,8	140	<LOQ	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	100		73					9	4	10	550	68,3	232,2	<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2000	96	100		93					2	1		190	20,7	146,7	<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2001	40	100		40								<LOQ	16,7		<LOQ	y	target	GC		y

Country: Denmark

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat flour	CF2	0201B	1998	9	20	20	8	1	0	0	0	0	0	0	20	10	20	20	yes	Random	GC-EDC	Limited	Few samples
Wheat flour	CF2		1999	9	20	20	9	0	0	0	0	0	0	0	n.d.	n.d.	n.d.	n.d.	yes	Random	GC-EDC	Limited	Few samples
Wheat flour	CF2		2000	10	20	20	10	1	0	0	0	0	0	0	20	10	10	10	yes	Random	GC-EDC	Limited	Few samples
Rye flour			1998	9	20	20	2	0	1	2	2	1	1	0	193	90	117	87	yes	random	GC-EDC	Limited	Few samples
Rye flour			1999	9	20	20	4	1	1	1	2	0	1	0	161	47	62	40	yes	random	GC-EDC	Limited	Few samples
Rye flour			2000	7	20	20	7	0	0	0	0	0	0	0	n.d.	n.d.	n.d.	n.d.	yes	random	GC-EDC	Limited	Few samples
Durum wheat flour			2000	9	20	20	1	1	1	0	2	2	1	0	153	90	95	92	yes	random	GC-EDC	Limited	Few Samples

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		10	27									5		5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	37									12,5		12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		35									8,33		8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		35									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		10	7									5		5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	30									12,5		12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		20									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	18									12,5		12,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		24								101	11,9	101	8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		21								159	15,3	73,9	4,17		Random	GC-MS	Good	Y
Oats			1998	7		10	6								23	7,6	23	7,5	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		22								547	36,9	246,1	8,33	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		30									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye			1998	6		10	6									5		5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		14									14,84	106	8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0		3,33		3,30	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	29	20			29	0	0	0	0	0	0		3,33		3,3	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		40	25	0	0	0	0	0	0	0		20		20		T	GC-MS		
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
White wheat flour	CF2	02 01 B	1999	12		20	12	0	0	0	0	0	0	0		10		10	Y	R			no
White wheat flour	CF2	02 01 B	2000	15		50	15	0	0	0	0	0	0	0		25		25	Y	R			no
White wheat flour	CF2	02 01 B	2001	2		20	0	1	1	0	0	0	0	0	26	23	23	23	Y	R			no
White wheat flour	CF2	02 01 B	2002	13		20	0	12	1	0	0	0	0	0	38	18	18	15	Y	R			no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	very good	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	very good	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	very good	Y
Durum wheat	BD		1999	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	very good	Y
Durum wheat	BD		2000	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	very good	Y
Durum wheat	BD		2001	13	80	40	13	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	very good	Y
Durum wheat	BD		2002	52	80	40	52	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	very good	Y
Malting barley	OB		2001	30		40	30	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		40	52	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		40	44	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		40	68	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y

								Level of contamination															
								< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median					
Corn	GC2	03 01 B	2000	17	10-40	30	7	4	13	0	0	0	0	0	0	20	14		15	R	Chromato	L	Y
Corn	GC2	03 01 B	2001	40	50	40	25	0	40	0	0	0	0	0	0	25	20		20	R	Chromato	L	Y
Soft wheat	BT		2000	208	10-80	30-40	189	13	189	6	0	0	0	0	0	40	20		20	R	Chromato	L	Y
Soft wheat	BT		2001	106	50-10(	30-40	81	0	97	9	0	0	0	0	0	50	23		20	R	Chromato	L	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: Italy

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01A	1-1998	3	6	2	1	2							15	8	11,5	8	YES	Random	ELISA		NO
Barley	GC6	03 01F	1-1999	1	6	2								1	280	280	280	280	YES	Random	ELISA		NO
White wheat flour	CF2	02 01B	2-2001	57		5		45	12						115	20	20	15	YES	Random	ELISA		YES
White wheat flour	CF2	02 01B	2-2002	20		5		13	4	1	1	1							YES	Random	ELISA		YES
Cereal grain	GC	03 01	2-2001	13		5	2	10	1						149	19,1	21,3	10	YES	Random	ELISA		YES
Cereal grain	GC	03 01	2-2002	4		5		3				1							YES	Random	ELISA		YES
Wheat Bran	CF1	02 01B	2-2001	2		5	1		1						45	23,8	45	23,8	YES	Random	ELISA		YES
Wheat	GC1	03 01A	2-2001	18		5		6	8	2	1	1			160	40,4	40,4	31	YES	Random	ELISA		YES
Wheat	GC1	03 01A	2-2002	33		5		9	18	4			2						YES	Random	ELISA		YES
Corn	GC2	03 01B	2-2001	28		5	7	21							91	10,5	12,9	6,5	YES	Random	ELISA		YES
Corn	GC2	03 01B	2-2002	2		5			1		1								YES	Random	ELISA		YES
Whole meal	CF	02 01A	2-2001	17		5		12	5						57	19,1	19,7	16	YES	Random	ELISA		YES
Whole meal	CF	02 01A	2-2002	9		5	1	7		1									YES	Random	ELISA		YES
Durum wheat	CG3	02 01B	2-2001	64		5	10	50	4						36	13,5	15,4	13	YES	Random	ELISA		YES
Corn flour	CF3D	02 01 C	2-2002	6		5		6							13	10,5	10,5	10,5	YES	Random	ELISA		YES
Bakery products			2-2001	64		5	3	54	5	1		1			105	19,3	19,9	13	YES	Random	ELISA		YES
Bakery products			2-2002	32		5		22	5	2	2	1							YES	Random	ELISA		YES
Wheat semolina	CF	02 01A	2-2001	11		5		9	2										YES	Random	ELISA		YES
Wheat semolina	CF	02 01A	2-2002	21		5		12	9						40	21,7	21,7	20	YES	Random	ELISA		YES

Country: Norway

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat, no *	GC 1 *	0301 A		28	90	30	28									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		14	90	30	14									15	0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A		25	90	30	25									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		10	90	30	10									15	0	15	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A		35	90	30	35									15	0	15	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		24	90	30	24									15	0	15	yes	random	HPLC	good	yes
Wheat, no *	GC 1 *	0301 A		65	60	20	65									10	0	10	yes	random	HPLC	good	yes
Wheat *	GC 1	0301 A		44	60	20	44									10	0	10	yes	random	HPLC	good	yes
Wheat **	CG **	0201 B		39	90	30	39									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E		4	90	30	4									15	0	15	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		14	90	30	7	2	2	1		1		1	317	49	112	17	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		14	90	30	6		2	3		2	1		195	55	83	40	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		22	90	30	12	5	4+1 ^						42	20	38	15	yes	random	HPLC	good	yes
Oats, no *	GC 3 *	0301 C		24	60	20	24									10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C		58	60	20	38		3	5	6	2	4		196	39,1	94,3	10	yes	random	HPLC	good	yes
Oat **	GC3 **	0301 C		28	90	30	28									15	0	15	yes	random	HPLC	good	yes
Maize **	CH **	0201 C		19	90	30	19									15	0	15	yes	random	HPLC	good	yes
Rice **	GC7 **	0301 G		16	90	30	16									15	0	15	yes	random	HPLC	good	yes
Composite grain p	CF	0201 A		19	90	30	19									15	0	15	yes	random	HPLC	good	yes

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

^ = One sample had a value lower than LOD, while four samples had values in the consentration range 30-49,9

Country: Portugal

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
wheat	GC1	0301A	1999	9	112	37	9								0	0	0	0		Random	HPLC	L	yes
corn	GC2	0301B	1999	11	112	37	11								0	0	0	0		Random	HPLC	L	yes

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	CG7	0301G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	1999	54	5		54	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2000	50	5		50	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2001	49	5		49	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Beer	DM1	02 05A	2000	28	5		28	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		15	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		13	0	1						31	3,76	31,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0	0						<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 6B: Summary of occurence in cereals from data reported in tables1A

Trichothecene type A: T-2 (Units: µg/kg)

Country: Austria

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Cereal grains	GC	03 01	384	550	31,9	217,8	<LOQ

Country: Denmark

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat flour	CF2	0201B	28	20	<20	<20	<20
Rye flour		0201 (?)	25	193	49	67	40
Durum wheat flour		0201 (?)	10	153	90	93	92

Country: France

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat	GC1	03 01 A	30		3,3		3,3
Wheat	GC1	03 01 A	22		3,3		3,3
Barley	GC6	03 01 F	9		3,3		3,3
Corn	GC2	03 01 B	29		3,3		3,3
Corn	GC2	03 01 B	17	20	14,0		15,0
Corn	GC2	03 01 B	40	25	20,0		20,0
	GC2	02 01 B	25		20,0		20,0
White wheat flour	CF2	02 01 B	12		10,0		10,0
White wheat flour	CF2	02 01 B	15		25,0		25,0
White wheat flour	CF2	02 01 B	2	26	22,5	22,5	22,5
White wheat flour	CF2	02 01 B	13	38	18,4	18,4	15,0
Malting barley	OB		30		20		20
Malting barley	OB		52		20		20
Malting barley	OB		44		20		20
Malting barley	OB		68		20		20
Malting barley	OB		30		20		20
Malting barley	OB		52		20		20
Malting barley	OB		44		20		20
Malting barley	OB		68		20		20
Durum wheat	BD		16		20		20
Durum wheat	BD		16		20		20
Durum wheat	BD		13		20		20
Durum wheat	BD		52		20		20
Soft wheat	BT		31		3		3
Soft wheat	BT		82		15		15
Soft wheat	BT		72		15		15
Soft wheat	BT		71		15		15
Soft wheat	BT		208	40	20		20
Soft wheat	BT		106	50	23		20

Country: Italy

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat	GC1	03 01A	51	160	40,4	40,4	31
White wheat flour	CF2	02 01B	77	115	20	20	15
Cereal grain	GC	03 01	17	149	19,1	21,3	10
Wheat Bran	CF1	02 01B	2	45	23,8	45	23,8
Corn	GC2	03 01B	30	91	10,5	12,9	6,5
Whole meal	CF	02 01A	26	57	19,1	19,7	16
Durum wheat paste	CG3	02 01B	64	36	13,5	15,4	13
Corn flour	CF3D	02 01 C	6	13	10,5	10,5	10,5
Bakery products			96	105	19,3	19,9	13
Wheat semolina	CF	02 01A	32	40	21,7	21,7	20

Country: Norway

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
WHEAT	GC 1	0301 A	245		13,5	0	15
RYE	GC 5	0301 E	4		15	0	15
OATS	GC 3	0301 C	132	317	33	88	15
Maize baby porridge	CH	0201 C	19		15	0	15
Rice baby porridge	GC 7	0301 G	16		15	0	15
Oat baby porridge	GC 3	0301 C	28		15	0	15
Wheat baby porridge	CG	0201 B	39		15	0	15
Composite grain product	CF	02 01A	19		15	0	15

Country: Portugal

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
wheat	GC1	0301A	9	0	0	0	0
corn	GC2	0301B	11	0	0	0	0

Table 6C: Estimated daily intake of trichothecenes in each member state

Trichothecene type A: T-2

Country : Austria; whole population
Body Weight for average person (kg): 75 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360	31,9	217,8		3257	22237	11484	43	296	153
Total intake								3257	22237	11484	43	296	153

Country : Denmark; whole population
Body Weight for average person (kg): 70 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat bread white*			70,5	148,5	nd	nd							
Wheat bread coarsely*			23,7	97,1	nd	nd							
Rye bread*			71,7	150,5	49	67		3513	4803	7375	50	69	105
Wheat flour			19,8	44,9	nd	nd							
Total intake								3513	4803	7375	50	69	105
* calculated as bread contain 70 % flour													

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		7,5			860			11		
Rye	GC5	0301E	49,1		9,1	106		447	5205		6	68	
Oat	GC3	0301C	4,45		15,3	134,6		68	599		1	8	
Barley*	GC6	0301F	4,45		7,2			32			0,4		
Total intake								1407	5804		18	75	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Country : France; adults
Body Weight for average person (kg): 66,4 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	117,4	278,6	10,5	15,1		1238	1777		19	27	
pasta	CG3	0201B	36,1	100,0	7,6			274			4		
semolina	CG	0201B	1,7	14,3	8,0			13			0		
corn	CH	0201C	2,4	17,9	14,7			36			1		
biscuits	CG1	0201B	67,0	191,4	7,4	7,6		497	508		7	8	
pizzas and tarts	CG	0201B	73,3	400,0	7,4	7,6		544	555		8	8	
sandwiches	CG	0201B	13,8	74,3	7,4	7,6		102	105		2	2	
compound dishes with pasta	CG	0201B	9,0	50,0	3,8			34			1		
other compound dishes	CG	0201B	20,9	100,0	7,4	7,6		155	158		2	2	
beer	DM1	0205A	28,5	142,9	2,7			77			1		
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		3,9	28,6									
cooked rice	E7		19,1	65,0									
other products	A*		0,8	0,0	20,0			15			0		
Total intake								2986	3103		45	47	

Country : France; male
Body Weight for average person (kg): 73,9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	147,9	340,5	10,5	15,1		1560	2240		21	30	
pasta	CG3	0201B	42,1	118,2	7,6			320			4		
semolina	CG	0201B	1,6	14,3	8,0			13			0		
corn	CH	0201C	2,0	14,7	14,7			30			0		
biscuits	CG1	0201B	70,3	205,3	7,4	7,6		521	532		7	7	
pizzas and tarts	CG	0201B	46,5	300,0	7,4	7,6		345	352		5	5	
sandwiches	CG	0201B	18,9	97,1	7,4	7,6		140	143		2	2	
compound dishes with pasta	CG	0201B	10,6	60,4	3,8			40			1		
other compound dishes	CG	0201B	23,6	109,2	7,4	7,6		175	179		2		
beer	DM1	0205A	50,5	250,0	2,7								
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		3,7	28,6									
cooked rice	E7		20,6	73,7									
other products	A*		0,6	0,0	20,0			12			0		
Total intake								3157	3447		43	44	

Country : France; female
Body Weight for average person (kg): 60,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	91,7	218,0	10,5	15,1		968	1390		16	23	
pasta	CG3	0201B	31,0	85,7	7,6			236			4		
semolina	CG	0201B	1,7	14,3	8,0			14			0		
corn	CH	0201C	2,8	18,2	14,7			41			1		
biscuits	CG1	0201B	64,3	171,4	7,4	7,6		477	487		8	8	
pizzas and tarts	CG	0201B	95,8	498,9	7,4	7,6		710	725		12	12	
sandwiches	CG	0201B	9,5	48,6	7,4	7,6		71	72		1	1	
compound dishes with pasta	CG	0201B	7,6	46,4	3,8			29			0		
other compound dishes	CG	0201B	18,5	92,7	7,4	7,6		138	140		2	2	
beer	DM1	0205A	10,0	70,4	2,7								
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		4,0	28,6									
cooked rice	E7		17,9	57,1									
other products	A*		0,9	0,0	20,0			18			0		
Total intake								2701	2814		45	47	

Country : France; children
Body Weight for average person (kg): 31,6 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	58,6	173,8	10,5	15,1		619	888		20	28	
pasta	CG3	0201B	37,0	100,0	7,6			281			9		
semolina	CG	0201B	2,0	20,2	8,0			16			1		
corn	CH	0201C	7,9	39,5	14,7			117			4		
biscuits	CG1	0201B	85,9	210,8	7,4	7,6		637	651		20	21	
pizzas and tarts	CG	0201B	19,6	68,8	7,4	7,6		145	148		5	5	
sandwiches	CG	0201B	10,2	45,9	7,4	7,6		76	78		2	2	
compound dishes with pasta	CG	0201B	13,9	57,7	3,8			53			2	0	
other compound dishes	CG	0201B	18,5	75,1	7,4	7,6		137	140		4	4	
beer	DM1	0205A	0,0	0,0	2,7			0			0		
Rye bread	E5		0,2	0,0									
buckwheat pancakes	E9		0,5	0,0									
breakfast cereals without corn cereals	A		12,3	51,4									
cooked rice	E7		19,3	57,1									
other products	A*		1,3	0,0	20,0			26			1	0	
Total intake								2108	1905		67	60	

Country: Italy, whole population
Body Weight for average person (kg): 70

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
White wheat flour	CF2	0201B	5,218	28,571	20	20	6-115	104	104	571	1	1	8
Wheat Bran	CF1	0201B	0,143	0,000	23,8	45	<LOD-45	3	6	0	0	0	0
Whole meal	CF	0201A	0,108	0,000	19,1	19,7	<LOD-57	2	2	0	0	0	0
Durum wheat paste	CG3	0201B	42,665	97,272	13,5	15,4	<LOD-36	576	657	1313	8	9	19
Corn flour	CF3D	0201C	1,454	9,042	10,5	10,5	8-13	15	15	95	0	0	1
Wheat semolina	CF	0201A	0,167	0,000	21,7	21,7	9-40	4	4	0	0	0	0
Bakery products			0,071	0,000	19,3	19,9	<LOD-105	1	1	0	0	0	0
Barley	GC6	0301F	0,22	-	280	280	280	62	62		1	1	
Total intake								768	852	1980	11	12	28

Country: Italy, consumers only
Body Weight for average person (kg): 70

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
White wheat flour	CF2	0201B	15,377	46,7	20	20	6-115	308	308	934	4	4	13
Wheat Bran	CF1	0201B	12,270	24,643	23,8	45	<LOD-45	292	552	587	4	8	8
Whole meal	CF	0201A	26,786	54,418	19,1	19,7	<LOD-57	512	528	1039	7	8	15
Durum wheat paste	CG3	0201B	46,116	99,628	13,5	15,4	<LOD-36	623	710	1345	9	10	19
Corn flour	CF3D	0201C	25,916	60,760	10,5	10,5	8-13	272	272	638	4	4	9
Wheat semolina	CF	0201A	11,802	34,934	21,7	21,7	9-40	256	256	758	4	4	11
Bakery products			140,000	140,000	19,3	19,9	<LOD-105	2702	2786	2702	39	40	39
Barley	GC6	0301F	8,23	-	280	280	280	2304	2304	-	33	33	-
Total intake								7268	7716	8003	104	110	114

Country : Norway male, all participants

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	13,5	0	< LOD	1647	0	2849	20	0	35
WHEAT /wholewheat	GC 1	0301A	65	118	13,5	0	< LOD	878	0	1593	11	0	20
RYE	GC 5	0301E	3	16	15	0	< LOD	45	0	240	1	0	3
OATS	GC 3	0301C	5	22	33	88	< LOD -317	165	440	726	2	5	9
Total intake								2735	440	5408	34	5	67

Country : Norway male, consumers

Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211	13,5	0	< LOD	1647	0	2849	20	0	35
WHEAT /wholewheat	GC 1	0301A	65	119	13,5	0	< LOD	878	0	1607	11	0	20
RYE	GC 5	0301E	3	16	15	0	< LOD	45	0	240	1	0	3
OATS	GC 3	0301C	8	25	33	88	< LOD -317	264	704	825	3	9	10
Total intake								2834	704	5520	35	9	68

Country: Norway female, all participants

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	13,5	0	< LOD	1188	0	1998	18	0	30
WHEAT /wholewheat	GC 1	0301A	45	77	13,5	0	< LOD	608	0	1040	9	0	16
RYE	GC 5	0301E	2	12	15	0	< LOD	30	0	180	0	0	3
OATS	GC 3	0301C	4	16	33	88	< LOD -317	132	352	528	2	5	8
Total intake								1958	352	3746	30	5	57

Country: Norway female, consumers

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148	13,5	0	< LOD	1188	0	1998	18	0	30
WHEAT /wholewheat	GC 1	0301A	45	77	13,5	0	< LOD	608	0	1040	9	0	16
RYE	GC 5	0301E	2	12	15	0	< LOD	30	0	180	0	0	3
OATS	GC 3	0301C	6	20	33	88	< LOD -317	198	528	660	3	8	10
Total intake								2024	528	3878	31	8	59

Country: Norway, 6-months old babies, all participants.

Body Weight for average person (kg): 8

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
If all porridge consumed consisted of maize:													
Maize baby porridge	CH	0201C	90	210	15	0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of rice:													
Rice baby porridge	GC 7	0301G	90	210	15	0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of oat:													
Oat baby porridge	GC 3	0301C	90	210	15	0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of wheat:													
Wheat baby porridge	CG	0201B	90	210	15	0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of :													
Composite grain product	CF	0201A	90	210	15	0	< LOD	1350	0	3150	169	0	394

Country: Portugal

Body Weight for average person (kg): 65

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
wheat	GC1	0301A		235.1			0			0			0
GC2	GC2	0301B		28.5			0			0			0
Total intake										0			0

Country : UK, average male adult (16-64 years), consumers only

Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,67	0,00	<10.00-<10.00	59	0	190	1	0	3
Malted Barley			0,02	0,02	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			735,50	2138,90	0,83	0,00	<5.00-<5.00	610	0	1775	8	0	24
Breakfast cereals			41,20	109,40	2,16	31,00	<10.00-31,00	89	1277	236	1	17	3
Biscuits			20,10	56,70	1,67	0,00	<10.00-<10.00	34	0	95	0	0	1
Bread			135,30	262,70	1,67	0,00	<10.00-<10.00	226	0	439	3	0	6
Cakes			44,00	114,00	1,67	0,00	<10.00-<10.00	74	0	190	1	0	3
Flour (1)			21,30	56,60	1,67	0,00	<10.00-<10.00	36	0	95	0	0	1
Polenta (2)			22,50	34,70	1,67	0,00	<10.00-<10.00	38	0	58	1	0	1
Snacks			13,30	36,90	1,67	0,00	<10.00-<10.00	22	0	62	0	0	1
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											11		

(1) does not include cakes, bread, biscuits containing flour

(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,67	0,00	<10.00-<10.00	40	0	108	6	0	2
Malted Barley			0,03	0,05	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			193,10	738,00	0,83	0,00	<5.00-<5.00	160	0	613	3	0	10
Breakfast cereals			29,90	76,10	2,16	31,00	<10.00-31,00	65	927	164	1	15	3
Biscuits			17,40	46,90	1,67	0,00	<10.00-<10.00	29	0	78	0	0	1
Bread			85,00	159,00	1,67	0,00	<10.00-<10.00	142	0	266	2	0	4
Cakes			34,90	88,30	1,67	0,00	<10.00-<10.00	58	0	148	1	0	2
Flour (1)			16,70	43,40	1,67	0,00	<10.00-<10.00	28	0	72	0	0	1
Polenta (2)			7,30	7,30	1,67	0,00	<10.00-<10.00	12	0	12	0	0	0
Snacks			10,00	25,90	1,67	0,00	<10.00-<10.00	17	0	43	0	0	1
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,67	0,00	<10.00-<10.00	24	0	88	2	0	6
Malted Barley			0,01	0,01	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			7,80	16,80	0,83	0,00	<5.00-<5.00	7	0	14	0	0	1
Breakfast cereals			21,40	49,20	2,16	31,00	<10.00-31,00	46	663	106	3	47	8
Biscuits			16,90	41,10	1,67	0,00	<10.00-<10.00	28	0	69	2	0	5
Bread			42,00	89,20	1,67	0,00	<10.00-<10.00	70	0	149	5	0	10
Cakes			18,30	50,80	1,67	0,00	<10.00-<10.00	31	0	85	2	0	6
Flour (1)			13,00	36,30	1,67	0,00	<10.00-<10.00	22	0	61	2	0	4
Polenta (2)			6,50	13,80	1,67	0,00	<10.00-<10.00	11	0	23	1	0	2
Snacks			12,10	29,60	1,67	0,00	<10.00-<10.00	20	0	50	1	0	4
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	1,67	0,00	<10.00-<10.00	93	0	281	8	0	21
Total intake											14		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,67	0,00	<10.00-<10.00	12	0	30	1	0	4
Malted Barley			0,00	0,00	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			0,00	0,00	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Breakfast cereals			16,20	36,10	2,16	31,00	<10.00-31,00	35	503	78	4	53	8
Biscuits			7,20	19,60	1,67	0,00	<10.00-<10.00	12	0	33	1	0	3
Bread			16,90	46,90	1,67	0,00	<10.00-<10.00	28	0	78	3	0	8
Cakes			7,00	20,20	1,67	0,00	<10.00-<10.00	12	0	34	1	0	3
Flour (1)			11,20	32,50	1,67	0,00	<10.00-<10.00	19	0	54	2	0	6
Polenta (2)			7,30	18,00	1,67	0,00	<10.00-<10.00	12	0	30	1	0	3
Snacks			3,80	11,00	1,67	0,00	<10.00-<10.00	6	0	18	1	0	2
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	1,67	0,00	<10.00-<10.00	24	0	81	3	0	9
Total intake											12		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,67	0,00	<10.00-<10.00	48	0	115	1	0	2
Malted Barley			0,03	0,03	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			532,90	1669,70	0,83	0,00	<5.00-<5.00	442	0	1411	6	0	18
Breakfast cereals			67,90	242,40	2,16	31,00	<10.00-31,00	147	2105	524	2	28	7
Biscuits			24,30	59,10	1,67	0,00	<10.00-<10.00	41	0	99	1	0	1
Bread			112,10	203,40	1,67	0,00	<10.00-<10.00	187	0	340	2	0	5
Cakes			50,50	116,60	1,67	0,00	<10.00-<10.00	84	0	195	1	0	3
Flour (1)			20,40	61,90	1,67	0,00	<10.00-<10.00	34	0	103	0	0	1
Polenta (2)			5,30	5,30	1,67	0,00	<10.00-<10.00	9	0	9	0	0	0
Snacks			11,90	26,60	1,67	0,00	<10.00-<10.00	20	0	45	0	0	1
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											8		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,67	0,00	<10.00-<10.00	41	0	141	1	0	3
Malted Barley			0,00	0,00	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			220,30	646,30	0,83	0,00	<5.00-<5.00	183	0	536	3	0	9
Breakfast cereals			46,50	146,70	2,16	31,00	<10.00-31,00	101	1442	317	2	23	5
Biscuits			20,20	49,60	1,67	0,00	<10.00-<10.00	34	0	83	1	0	1
Bread			80,90	148,40	1,67	0,00	<10.00-<10.00	135	0	248	2	0	4
Cakes			39,10	90,30	1,67	0,00	<10.00-<10.00	65	0	151	1	0	2
Flour (1)			17,40	49,60	1,67	0,00	<10.00-<10.00	29	0	83	0	0	1
Polenta (2)			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Snacks			8,80	26,10	1,67	0,00	<10.00-<10.00	15	0	44	0	0	1
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											5		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,67	0,00	<10.00-<10.00	29	0	96	1	0	5
Malted Barley			0,02	0,02	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			21,40	21,40	0,83	0,00	<5.00-<5.00	18	0	18	1	0	1
Breakfast cereals			29,60	67,70	2,16	31,00	<10.00-31,00	64	919	146	3	44	6
Biscuits			20,00	46,40	1,67	0,00	<10.00-<10.00	33	0	77	2	0	4
Bread			62,90	121,60	1,67	0,00	<10.00-<10.00	105	0	203	5	0	10
Cakes			26,50	59,80	1,67	0,00	<10.00-<10.00	41	0	93	2	0	4
Flour (1)			16,50	39,80	1,67	0,00	<10.00-<10.00	28	0	66	1	0	3
Polenta (2)			4,70	4,70	1,67	0,00	<10.00-<10.00	8	0	8	0	0	0
Snacks			16,30	34,60	1,67	0,00	<10.00-<10.00	27	0	58	1	0	3
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	1,67	0,00	<10.00-<10.00	31	0	101	2	0	6
Total intake											15		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,67	0,00	<10.00-<10.00	44	0	150	1	0	5
Malted Barley			0,10	0,10	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			9,30	12,60	0,83	0,00	<5.00-<5.00	8	0	11	0	0	0
Breakfast cereals			33,60	74,40	2,16	31,00	<10.00-31,00	73	1043	161	2	35	5
Biscuits			23,10	56,60	1,67	0,00	<10.00-<10.00	39	0	95	1	0	3
Bread			78,10	140,70	1,67	0,00	<10.00-<10.00	131	0	235	4	0	8
Cakes			30,50	77,10	1,67	0,00	<10.00-<10.00	47	0	120	2	0	4
Flour (1)			20,20	48,90	1,67	0,00	<10.00-<10.00	34	0	82	1	0	3
Polenta (2)			4,10	7,10	1,67	0,00	<10.00-<10.00	7	0	12	0	0	0
Snacks			18,40	40,80	1,67	0,00	<10.00-<10.00	31	0	68	1	0	2
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Total intake											1		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,67	0,00	<10.00-<10.00	65	0	221	1	0	5
Malted Barley			0,10	0,10	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			61,30	129,30	0,83	0,00	<5.00-<5.00	51	0	107	1	0	2
Breakfast cereals			36,60	81,40	2,16	31,00	<10.00-31,00	79	1133	176	2	25	4
Biscuits			20,80	53,10	1,67	0,00	<10.00-<10.00	35	0	89	1	0	2
Bread			86,20	162,40	1,67	0,00	<10.00-<10.00	144	0	271	3	0	6
Cakes			32,40	90,90	1,67	0,00	<10.00-<10.00	51	0	142	1	0	3
Flour (1)			24,60	64,00	1,67	0,00	<10.00-<10.00	41	0	107	1	0	2
Polenta (2)			8,20	19,60	1,67	0,00	<10.00-<10.00	14	0	33	0	0	1
Snacks			19,80	43,50	1,67	0,00	<10.00-<10.00	33	0	73	1	0	2
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	1,67	0,00	<10.00-<10.00	24	0	24	1	0	1
Total intake											9		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,67	0,00	<10.00-<10.00	74	0	232	1	0	3
Malted Barley			0,16	0,22	0,83	0,00	<5.00-<5.00	0	0	0	0	0	0
Beer			391,30	1108,60	0,83	0,00	<5.00-<5.00	325	0	920	5	0	15
Breakfast cereals			39,30	95,10	2,16	31,00	<10.00-31,00	85	1219	206	1	20	3
Biscuits			20,00	62,50	1,67	0,00	<10.00-<10.00	33	0	104	1	0	2
Bread			102,00	185,10	1,67	0,00	<10.00-<10.00	170	0	309	3	0	5
Cakes			29,60	82,50	1,67	0,00	<10.00-<10.00	47	0	124	1	0	2
Flour (1)			27,70	76,40	1,67	0,00	<10.00-<10.00	46	0	128	1	0	2
Polenta (2)			13,50	23,60	1,67	0,00	<10.00-<10.00	23	0	40	0	0	1
Snacks			17,60	43,70	1,67	0,00	<10.00-<10.00	29	0	73	0	0	1
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	1,67	0,00	<10.00-<10.00	22	0	33	0	0	1
Total intake											8		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 6A1: Summary of occurrence in wheat and wheat flour from data reported in table 6A

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	9	20	20	8	20	10	20	20
Wheat flour	9	20	20	9	n.d.	n.d.	n.d.	n.d.
Wheat flour	10	20	20	10	20	10	10	10
Durum wheat flour	9	20	20	1	153	90	95	92

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	27		10	27		5		5
Wheat	37		25	37		12,5		12,5
Wheat	35	50		35		8,3		8,3
Wheat	35	25/40		35		4,2		4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	30	20				3,3		3,3
Wheat	22	20				3,3		3,3
Wheat flour	12		20	12		10		10
Wheat flour	15		50	15		25		25
Wheat flour	2		20	0	26	23	23	23
Wheat flour	13		20	0	38	18	18	15
Soft wheat	31	20				3,3		3,3
Soft wheat	82	60	30	82		15		15
Soft wheat	72	60	30	72		15		15
Soft wheat	71	60	30	71		15		15
Durum wheat	16	80	40	16		20		20
Durum wheat	16	80	40	16		20		20
Durum wheat	13	80	40	13		20		20
Durum wheat	52	80	40	52		20		20
Soft wheat	208	10-80	30-40	189	40	20		20
Soft wheat	106	50-100	30-40	81	50	23		20

Country: Italy

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	3	6	2	1	15	8	11,5	8
White wheat flour	57		5		115	20	20	15
White wheat flour	20		5					
Wheat	18		5		160	40,4	40,4	31
Wheat	33		5					
Wheat semolina	11		5					
Wheat semolina	21		5		40	21,7	21,7	20

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat, no *	28	90	30	28		15	0	15
Wheat, imp	14	90	30	14		15	0	15
Wheat, no	25	90	30	25		15	0	15
Wheat, imp	10	90	30	10		15	0	15
Wheat, no	35	90	30	35		15	0	15
Wheat, imp	24	90	30	24		15	0	15
Wheat, no *	65	60	20	65		10	0	10
Wheat *	44	60	20	44		10	0	10
Wheat **	39	90	30	39		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Country: Portugal

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
wheat	9	112	37	9	0	0	0	0

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	29	10		29	<10	1,7	0,0	<10
Overall	**1417**					**15**	**28**	

Table 6A2: Summary of occurrence in Barley from data reported in table 6A

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	7		10	7		5		5
Barley	30		25	30		12,5		12,5
Barley	20	50		20		8,3		8,3
Barley	20	25/40		20		4,2		4,2
Barley malt	18		25	18		12,5		12,5
Barley malt	25	50		24	101	11,9	101	8,3
Barley malt	25	25/40		21	159	15,3	73,9	4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	9	20				3,3		3,3
Malting barley	30		40	30		20		20
Malting barley	52		40	52		20		20
Malting barley	44		40	44		20		20
Malting barley	68		40	68		20		20

Country: Italy

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	1	6	2		280	280	280	280

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	54	5		54	<5	0,8	0,0	<5
Barley	50	5		50	<5	0,8	0,0	<5
Barley	49	5		49	<5	0,8	0,0	<5

Table 6A3. Summary of occurrence in Oat from data reported in table 6A

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	96	100		73	550	68,3	232,2	<LOQ
Oat	96	100		93	190	20,7	146,7	<LOQ
Oat	40	100		40	<LOQ	16,7		<LOQ

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats	7		10	6	23	7,6	23	7,5
Oats	10		25	10		12,5		12,5
Oats	25	50		22	547	36,9	246,1	8,33
Oats	30	25/40		30		4,2		4,17

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats, no	14	90	30	7	317	49	112	17
Oats, no	14	90	30	6	195	55	83	40
Oats, no	22	90	30	12	42	20	38	15
Oats, no *	24	60	20	24		10	0	10
Oats *	58	60	20	38	196	39,1	94,3	10
Oat **	28	90	30	28		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Table 6A4: Summary of occurrence in Rye and rye flour from data reported in table 6A

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye flour	9	20	20	2	193	90	117	87
Rye flour	9	20	20	4	161	47	62	40
Rye flour	7	20	20	7				

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	6		10	6		5		5
Rye	2		25	2		12,5		12,5
Rye	15	50		14		14,84	106	8,33
Rye	10	25/40		10		4,17		4,17

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye, imp	4	90	30	4		15	0	15

Table 6A5: Summary of occurrence in Corn from data reported in table 6A

Trichothecene type A: T-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	46	100		45	255	21,8	255	<LOQ
Corn	58	100		58	<LOQ	16,7		<LOQ
Corn	48	100		46	150	21,8	140	<LOQ

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	29	20				3,3		3,3
Corn	25		40	25		20		20
Corn	17	10-40	30	7		20	14	
Corn	40	50	40	25		25	20	

Country: Italy

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	28		5	7	91	10,5	12,9	6,5
Corn	2		5					

Table 7A. Summary occurrence data by food group and country

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	1996	46	50		45					1			110	10,5	110	<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1997	58	50		58								<LOQ	8,3		<LOQ	y	Random	GC		y
Corn	GC2	03 01 B	1998	48	50		46				1	1			120	12,2	100	<LOQ	y	Random	GC		y
Oat	GC3	03 01 C	1999	96	50		42			3	2	4	8	37	1150	229,4	401,3	110	y	target	GC		y
Oat	GC3	03 01 C	2000	96	50		64			11	6	7	4	4	880	51,4	137,5	<LOQ	y	target	GC		y
Oat	GC3	03 01 C	2001	40	50		26			5	1	7		1	220	42,2	105	<LOQ	y	target	GC		y

Country: Denmark

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat flour	CF2	0201B	1998	9		20	5	3	1	0	0	0	0	0	33	11	14	10	yes	Random	GC-EDC	Limited	Few samples
Wheat flour	CF2		1999	7		20	6	0	1	0	0	0	0	0	31	13	17	10	yes	Random	GC-EDC	Limited	Few samples
Wheat flour	CF2		2000	10		20	9	0	1	0	0	0	0	0	26	12	14	10	yes	Random	GC-EDC	Limited	Few samples
Rye flour			1998	9		20	5	3	1	0	0	0	0	0	23	12	13	10	yes	random	GC-EDC	Limited	Few samples
Rye flour			1999	10		20	6	3	1	0	0	0	0	0	38	14	17	10	yes	random	GC-EDC	Limited	Few samples
Rye flour			2000	7		20	4	2	0	1	0	0	0	0	70	27	30	10	yes	random	GC-EDC	Limited	Few samples
Durum wheat flour	Durum		2000	10		20	10	0	0	0	0	0	0	0	n.d.	n.d.	n.d.	n.d.	yes	random	GC-EDC	Limited	Few Samples

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		10	27									5		5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	37									12,5		12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		35									8,33		8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		34								46,5	5,38	46,5	4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		10	4								41	12,9	23,3	5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	30									12,5		12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		18								46,5	8,2	44,7	4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18			18									12,5		12,5		Random	GC-MS	Good	Y
Barley malt			2000	25			22								287	30,6	193,6	8,33		Random	GC-MS	Good	Y
Barley malt			2001	25			15								186	31,2	71,8	4,17		Random	GC-MS	Good	Y
Oats			1998	7		10	5								95	35,4	58	19	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		17								822	90,9	266,3	8,33	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		24								184	24,1	104	4,17	Y	Random	GC-MS	Good	Y
Rye			1998	6		10	6									5		5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		15									8,33		8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0		3,33		3,30	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	29	20			29	0	0	0	0	0	0		3,33		3,3	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		40	25	0	0	0	0	0	0	0		20		20		T	GC-MS		
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
White wheat flour	CF2	02 01 B	1999	13		20	13	0	0	0	0	0	0	0		12		10	y	R			no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		1999	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	80	40	13	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	80	40	52	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		40	30	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		40	52	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		40	44	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		40	68	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y

								Level of contamination															
								< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Median					
Corn	GC2	03 01 B	2000	10	10-40	-	0	2	7	1	0	0	0	0	0	42	20	20		R	Chromato	L	Y
Corn	GC2	03 01 B	2001	45	50	40	25	4	41	0	0	0	0	0	0	25	20	20		R	Chromato	L	Y
Soft wheat	BT		2000	204	10-80	40	185	12	186	6	0	0	0	0	0	40	20	20		R	Chromato	L	Y
Soft wheat	BT		2001	108	10-50	40	77	5	94	9	0	0	0	0	0	50	22	20		R	Chromato	L	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: Norway

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat, no *	GC 1 *	0301 A		28	60	20	28									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		14	60	20	14									10	0	10	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A		25	60	20	25									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		10	60	20	10									10	0	10	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A		35	60	20	35									10	0	10	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A		24	60	20	24									10	0	10	yes	random	HPLC	good	yes
Wheat, no *	GC 1 *	0301 A		65	60	20	62	2	1						26	10,55	22	10	yes	random	HPLC	good	yes
Wheat *	GC 1	0301 A		44	60	20	44									10	0	10	yes	random	HPLC	good	yes
Wheat **	CG **	0201 B		39	90	30	39									15	0	15	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E		4	60	20	4									10	0	10	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		14	60	20			4	1	1	4		4	401	129	129	106	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		14	60	20		2	2	1	2	2		5	710	201	201	95	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C		22	60	20	6	2	5	5	2	1		1	522	66	86,3	38	yes	random	HPLC	good	yes
Oats, no *	GC 3 *	0301 C		24	60	20	24									10	0	10	yes	random	HPLC	good	yes
Oats *	GC 3	0301 C		58	60	20	30		3		2	7	3	13	711	107,33	211,6	10	yes	random	HPLC	good	yes
Oat **	GC3 **	0301 C		28	90	30	28									15	0	15	yes	random	HPLC	good	yes
Maize **	CH **	0201 C		19	90	30	19									15	0	15	yes	random	HPLC	good	yes
Rice **	GC7 **	0301 G		16	90	30	16									15	0	15	yes	random	HPLC	good	yes
Composite grain p	CF	0201 A		19	90	30	19									15	0	15	yes	random	HPLC	good	yes

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = The code that is used for rice and oat is for grasses, but the product is baby porridge.

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	0301G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		15	1	0	0	0				12	2,31	12,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	1999	54	5		54	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2000	50	5		50	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Barley	GC6	03 01F	2001	49	5		49	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Beer	DM1	02 05A	2000	28	5		28	0	0	0	0	0	0	0	<5	0,83	0,00	<5	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		14	1	0	0	0				11	2,29	11,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0	0	0	0				<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		9	3	1	0	1				77	13,86	35,80	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40																
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		7	1							17	3,58	17,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0	0	0	0				<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		5	1							<10	3,56	13,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		1	1							13	7,33	13,00	6,5	Y	Random	GC/MS	G	Y

Tabel 7B: Summary of occurence in cereals from data reported in tables1A

Trichothecene type A: HT-2 (Units: µg/kg)

Country: Austria

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Cereal grains	GC	03 01	384	1150	78,6	270,4	<LOQ

Country: Denmark

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat flour	CF2	0201B	26	33	12	15	10
Rye flour		0201 (?)	26	70	18	20	10
Durum wheat flour		0201 (?)	10	n.d.	n.d.	n.d.	n.d.

Country: France

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
Wheat	GC1	03 01 A	30		3,33		
Wheat	GC1	03 01 A	22		3,33		
Barley	GC6	03 01 F	9		3,33		
White wheat flour	CF2	02 01 B	13		12		
Corn	GC2	03 01 B	10	42	20		
Corn	GC2	03 01 B	45	25	20		
Corn	GC2	03 01 B	29		3,33		
Corn	GC2	03 01 B	25		20		
Malting barley	OB		30		20		
Malting barley	OB		52		20		
Malting barley	OB		44		20		
Malting barley	OB		68		20		
Durum wheat	BD		16		20		
Durum wheat	BD		16		20		
Durum wheat	BD		13		20		
Durum wheat	BD		52		20		
Soft wheat	BT		31		3,3		
Soft wheat	BT		82		15		
Soft wheat	BT		72		15		
Soft wheat	BT		71		15		
Soft wheat	BT		204	40	20		
Soft wheat	BT		108	50	22		

Country: Norway

Food product	Group	Code	N° samples	Max. value	Mean (1)	Mean (2)	Median
WHEAT	GC 1	0301 A	311	23,2	10	12	10
RYE	GC 5	0301 E	4		10	0	10
OATS	GC 3	0301 C	132	711	95	166	27
Maize baby porridge	CH	0201 C	19		15	0	15
Rice baby porridge	GC 7	0301 G	16		15	0	15
Oat baby porridge	GC 3	0301 C	28		15	0	15
Wheat baby porridge	CG	0201 B	39		15	0	15
Composite grain product	CF	02 01A	19		15	0	15

Table 7C: Estimated daily intake of trichothecenes in each member state

Trichothecene type A: HT-2

Country : Austria; whole population
Body Weight for average person (kg): 75 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Cereal grains	GC	03 01	102,1	360,0	78,6	270,9		8025	27659	28296	107	369	377
Total intake								8025	27659	28296	107	369	377

Country : Denmark; whole population
Body Weight for average person (kg): 70 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat bread white*			70,5	148,5	8,0	11,0				1188			
Wheat bread coarsely*			23,7	97,1	8,0	4,0							
Rye bread*			71,7	150,5	13,0	14,0							
Wheat flour			19,8	44,9	12,0	15,0							
Total intake								0	0	1188	0	0	0
* calculated as bread contain 70 % flour													

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	0301A	114,7		7,8	46,5		895	5334		12	69	
Rye	GC5	0301E	49,1		7,5			368	0		5		
Oat	GC3	0301C	4,45		40,7	142,8		181	635		2	8	
Barley*	GC6	0301F	4,45		11,2	34		50	151		1	2	
Total intake								1494	6120		19	79	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Country : France; adults
Body Weight for average person (kg): 66,4 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	117,4	278,6	8,8			1027			15		
pasta	CG3	0201B	36,1	100,0	7,6			274			4		
semolina	CG	0201B	1,7	14,3	8,0			13			0		
corn	CH	0201C	2,4	17,9	15,6			38			1		
biscuits	CG1	0201B	67,0	191,4	3,1			206			3		
pizzas and tarts	CG	0201B	73,3	400,0	3,1			225			3		
sandwiches	CG	0201B	13,8	74,3	3,1			42			1		
compound dishes with pasta	CG	0201B	9,0	50,0	3,8			34			1		
other compound dishes	CG	0201B	20,9	100,0	3,1			64			1		
beer	DM1	0205A	28,5	142,9	2,7			77			1		
Rye bread	E5		0,3	0,0									
buckwheat pancakes	E9		0,6	0,0									
breakfast cereals without corn cereals	A		3,9	28,6									
cooked rice	E7		19,1	65,0									
other products	A*		0,8	0,0	3,3			3			0		
Total intake								2003	0		30	0	

Country : France; male
Body Weight for average person (kg): 73,9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	147,92	340,50	8,8			1295			18		
pasta	CG3	0201B	42,11	118,23	7,6			320			4		
semolina	CG	0201B	1,62	14,29	8,0			13			0		
corn	CH	0201C	2,04	14,69	15,6			32			0		
biscuits	CG1	0201B	70,26	205,32	3,1			215			3		
pizzas and tarts	CG	0201B	46,53	300,00	3,1			143			2		
sandwiches	CG	0201B	18,90	97,14	3,1			58			1		
compound dishes with pasta	CG	0201B	10,65	60,36	3,8			40			1		
other compound dishes	CG	0201B	23,61	109,21	3,1			72			1		
beer	DM1	0205A	50,54	250,00	2,7								
Rye bread	E5		0,33	0,00									
buckwheat pancakes	E9		0,61	0,00									
breakfast cereals without corn cereals	A		3,72	28,57									
cooked rice	E7		20,62	73,66									
other products	A*		0,59	0,00	3,3			2			0		
Total intake								2190	0		30	0	

Country : France; female
Body Weight for average person (kg): 60,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	91,74	217,98	8,8			803			13		
pasta	CG3	0201B	31,04	85,71	7,6			236			4		
semolina	CG	0201B	1,72	14,29	8,0			14			0		
corn	CH	0201C	2,77	18,20	15,6			43			1		
biscuits	CG1	0201B	64,33	171,43	3,1			197			3		
pizzas and tarts	CG	0201B	95,76	498,86	3,1			294			5		
sandwiches	CG	0201B	9,52	48,57	3,1			29			0		
compound dishes with pasta	CG	0201B	7,64	46,39	3,8			29			0		
other compound dishes	CG	0201B	18,54	92,72	3,1			57			1		
beer	DM1	0205A	10,04	70,42	2,7								
Rye bread	E5		0,30	0,00									
buckwheat pancakes	E9		0,59	0,00									
breakfast cereals without corn cereals	A		4,01	28,57									
cooked rice	E7		17,86	57,14									
other products	A*		0,92	0,00	3,3			3			0		
Total intake								1705	0		28	0	

Country : France; children
Body Weight for average person (kg): 31,6 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
bread (without rye bread)	CG2	0201B	58,65	173,81	8,8			513			16		
pasta	CG3	0201B	37,02	100,00	7,6			281			9		
semolina	CG	0201B	2,03	20,21	8,0			16			1		
corn	CH	0201C	7,94	39,49	15,6			124			4		
biscuits	CG1	0201B	85,92	210,82	3,1			263			8		
pizzas and tarts	CG	0201B	19,59	68,79	3,1			60			2		
sandwiches	CG	0201B	10,24	45,89	3,1			31			1		
compound dishes with pasta	CG	0201B	13,95	57,68	3,8			53			2		
other compound dishes	CG	0201B	18,48	75,08	3,1			57			2		
beer	DM1	0205A	0,00	0,00	2,7								
Rye bread	E5		0,22	0,00									
buckwheat pancakes	E9		0,47	0,00									
breakfast cereals without corn cereals	A		12,31	51,43									
cooked rice	E7		19,28	57,14									
other products	A*		1,28	0,00	3,3			4			0		
Total intake								1403	0		44	0	

Country : Norway male, all participants
Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211,0	10,1	11,9	< LOD - 26	1232	1452	2131	15	18	26
WHEAT /wholewheat	GC 1	0301A	65	118,0	10,1	11,9	< LOD - 26	657	774	1192	8	10	15
RYE	GC 5	0301E	3	16,0	10,0	0,0	< LOD	30	0	160	0	0	2
OATS	GC 3	0301C	5	22,0	95,0	165,7	< LOD -711	475	829	2090	6	10	26
Total intake								2394	3054	5573	30	38	69

Country : Norway male, consumers
Body Weight for average person (kg): 81

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	122	211,0	10,1	11,9	< LOD - 26	1232	1452	2131	15	18	26
WHEAT /wholewheat	GC 1	0301A	65	119,0	10,1	11,9	< LOD - 26	657	774	1202	8	10	15
RYE	GC 5	0301E	3	16,0	10,0	0,0	< LOD	30	0	160	0	0	2
OATS	GC 3	0301C	8	25,0	95,0	165,7	< LOD -711	760	1326	2375	9	16	29
Total intake								2679	3551	5868	33	44	72

Country: Norway female, all participants
Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148,0	10,1	11,9	< LOD - 26	889	1047	1495	13	16	23
WHEAT /wholewheat	GC 1	0301A	45	77,0	10,1	11,9	< LOD - 26	455	536	778	7	8	12
RYE	GC 5	0301E	2	12,0	10,0	0,0	< LOD	20	0	120	0	0	2
OATS	GC 3	0301C	4	16,0	95,0	165,7	< LOD -711	380	663	1520	6	10	23
Total intake								1743	2246	3913	26	34	59

Country: Norway female, consumers

Body Weight for average person (kg): 66

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
WHEAT /siftet white flour	GC 1	0301A	88	148,0	10,1	11,9	< LOD - 26	889	1047	1495	13	16	23
WHEAT /wholewheat	GC 1	0301A	45	77,0	10,1	11,9	< LOD - 26	455	536	778	7	8	12
RYE	GC 5	0301E	2	12,0	10,0	0,0	< LOD	20	0	120	0	0	2
OATS	GC 3	0301C	6	20,0	95,0	165,7	< LOD -711	570	994	1900	9	15	29
Total intake								1933	2577	4293	29	39	65

Country: Norway, 6-months old babies, all participants.

Body Weight for average person (kg): 8

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
If all porridge consumed consisted of maize:													
Maize baby porridge	CH	0201C	90	210,0	15,0	0,0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of rice:													
Rice baby porridge	GC 7	0301G	90	210,0	15,0	0,0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of oat:													
Oat baby porridge	GC 3	0301C	90	210,0	15,0	0,0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of wheat:													
Wheat baby porridge	CG	0201B	90	210,0	15,0	0,0	< LOD	1350	0	3150	169	0	394
If all porridge consumed consisted of :													
Composite grain product	CF	0201A	90	210,0	15,0	0,0	< LOD	1350	0	3150	169	0	394

Country : UK, average male adult (16-64 years), consumers only

Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,9	1,7	0,0	<10.00-<10.00	59	0	190	1	0	3
Malted Barley			0,02	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			735,50	2138,9	0,8	0,0	<5.00-<5.00	610	0	1775	8	0	24
Breakfast cereals			41,20	109,4	4,8	28,9	<10.00-77,00	199	1189	529	3	16	7
Biscuits			20,10	56,7	1,7	0,0	<10.00-<10.00	34	0	95	0	0	1
Bread			135,30	262,7	1,7	0,0	<10.00-<10.00	226	0	439	3	0	6
Cakes			44,00	114,0	1,7	0,0	<10.00-<10.00	74	0	190	1	0	3
Flour (1)			21,30	56,6	1,7	0,0	<10.00-<10.00	36	0	95	0	0	1
Polenta (2)			22,50	34,7	1,7	0,0	<10.00-<10.00	38	0	58	1	0	1
Snacks			13,30	36,9	1,7	0,0	<10.00-<10.00	22	0	62	0	0	1
Cornflour			1,20	2,9	1,7	0,0	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,7	0,0	<10.00-<10.00						
Total intake											12		

(1) does not include cakes, bread, biscuits containing flour

(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,6	1,7	0,0	<10.00-<10.00	40	0	108	1	0	2
Malted Barley			0,03	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			193,10	738,0	0,8	0,0	<5.00-<5.00	160	0	613	3	0	10
Breakfast cereals			29,90	76,1	4,8	28,9	<10.00-77,00	145	863	368	2	14	6
Biscuits			17,40	46,9	1,7	0,0	<10.00-<10.00	29	0	78	0	0	1
Bread			85,00	159,0	1,7	0,0	<10.00-<10.00	142	0	266	2	0	4
Cakes			34,90	88,3	1,7	0,0	<10.00-<10.00	58	0	148	1	0	2
Flour (1)			16,70	43,4	1,7	0,0	<10.00-<10.00	28	0	72	0	0	1
Polenta (2)			7,30	7,3	1,7	0,0	<10.00-<10.00	12	0	12	0	0	0
Snacks			10,00	25,9	1,7	0,0	<10.00-<10.00	17	0	43	0	0	1
Cornflour			1,20	2,8	1,7	0,0	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,7	0,0	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,6	1,7	0,0	<10.00-<10.00	24	0	88	2	0	6
Malted Barley			0,01	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			7,80	16,8	0,8	0,0	<5.00-<5.00	7	0	14	0	0	1
Breakfast cereals			21,40	49,2	4,8	28,9	<10.00-77,00	104	617	238	7	44	17
Biscuits			16,90	41,1	1,7	0,0	<10.00-<10.00	28	0	69	2	0	5
Bread			42,00	89,2	1,7	0,0	<10.00-<10.00	70	0	149	5	0	10
Cakes			18,30	50,8	1,7	0,0	<10.00-<10.00	31	0	85	2	0	6
Flour (1)			13,00	36,3	1,7	0,0	<10.00-<10.00	22	0	61	2	0	4
Polenta (2)			6,50	13,8	1,7	0,0	<10.00-<10.00	11	0	23	1	0	2
Snacks			12,10	29,6	1,7	0,0	<10.00-<10.00	20	0	50	1	0	4
Cornflour			1,20	3,8	1,7	0,0	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,2	1,7	0,0	<10.00-<10.00	93	0	281	8	0	21
Total intake											18		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,1	1,7	0,0	<10.00-<10.00	12	0	30	1	0	4
Malted Barley			0,00	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			0,00	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Breakfast cereals			16,20	36,1	4,8	28,9	<10.00-77,00	79	468	175	8	49	18
Biscuits			7,20	19,6	1,7	0,0	<10.00-<10.00	12	0	33	1	0	3
Bread			16,90	46,9	1,7	0,0	<10.00-<10.00	28	0	78	3	0	8
Cakes			7,00	20,2	1,7	0,0	<10.00-<10.00	12	0	34	1	0	3
Flour (1)			11,20	32,5	1,7	0,0	<10.00-<10.00	19	0	54	2	0	6
Polenta (2)			7,30	18,0	1,7	0,0	<10.00-<10.00	12	0	30	1	0	3
Snacks			3,80	11,0	1,7	0,0	<10.00-<10.00	6	0	18	1	0	2
Cornflour			4,90	12,4	1,7	0,0	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,4	1,7	0,0	<10.00-<10.00	24	0	81	3	0	9
Total intake											16		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,0	1,7	0,0	<10.00-<10.00	48	0	115	1	0	2
Malted Barley			0,03	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			532,90	1669,7	0,8	0,0	<5.00-<5.00	442	0	1411	6	0	18
Breakfast cereals			67,90	242,4	4,8	28,9	<10.00-77,00	329	1960	1173	4	26	15
Biscuits			24,30	59,1	1,7	0,0	<10.00-<10.00	41	0	99	1	0	1
Bread			112,10	203,4	1,7	0,0	<10.00-<10.00	187	0	340	2	0	5
Cakes			50,50	116,6	1,7	0,0	<10.00-<10.00	84	0	195	1	0	3
Flour (1)			20,40	61,9	1,7	0,0	<10.00-<10.00	34	0	103	0	0	1
Polenta (2)			5,30	5,3	1,7	0,0	<10.00-<10.00	9	0	9	0	0	0
Snacks			11,90	26,6	1,7	0,0	<10.00-<10.00	20	0	45	0	0	1
Cornflour			2,00	4,3	1,7	0,0	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					1,7	0,0	<10.00-<10.00						
Total intake											9		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,6	1,7	0,0	<10.00-<10.00	41	0	141	1	0	3
Malted Barley			0,00	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			220,30	646,3	0,8	0,0	<5.00-<5.00	183	0	536	3	0	9
Breakfast cereals			46,50	146,7	4,8	28,9	<10.00-77,00	225	1343	710	4	21	12
Biscuits			20,20	49,6	1,7	0,0	<10.00-<10.00	34	0	83	1	0	1
Bread			80,90	148,4	1,7	0,0	<10.00-<10.00	135	0	248	2	0	4
Cakes			39,10	90,3	1,7	0,0	<10.00-<10.00	65	0	151	1	0	2
Flour (1)			17,40	49,6	1,7	0,0	<10.00-<10.00	29	0	83	0	0	1
Polenta (2)			0,00	0,0	1,7	0,0	<10.00-<10.00	0	0	0	0	0	0
Snacks			8,80	26,1	1,7	0,0	<10.00-<10.00	15	0	44	0	0	1
Cornflour			1,70	3,2	1,7	0,0	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					1,7	0,0	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,4	1,7	0,0	<10.00-<10.00	29	0	96	1	0	5
Malted Barley			0,02	0,0	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			21,40	21,4	0,8	0,0	<5.00-<5.00	18	0	18	1	0	1
Breakfast cereals			29,60	67,7	4,8	28,9	<10.00-77,00	144	855	328	7	42	14
Biscuits			20,00	46,4	1,7	0,0	<10.00-<10.00	33	0	77	2	0	4
Bread			62,90	121,6	1,7	0,0	<10.00-<10.00	105	0	203	5	0	10
Cakes			26,50	59,8	1,7	0,0	<10.00-<10.00	41	0	93	2	0	4
Flour (1)			16,50	39,8	1,7	0,0	<10.00-<10.00	28	0	66	1	0	3
Polenta (2)			4,70	4,7	1,7	0,0	<10.00-<10.00	8	0	8	0	0	0
Snacks			16,30	34,6	1,7	0,0	<10.00-<10.00	27	0	58	1	0	3
Cornflour			1,20	4,3	1,7	0,0	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,5	1,7	0,0	<10.00-<10.00	31	0	101	2	0	6
Total intake											19		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,7	1,7	0,0	<10.00-<10.00	44	0	150	1	0	5
Malted Barley			0,10	0,1	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			9,30	12,6	0,8	0,0	<5.00-<5.00	8	0	11	0	0	0
Breakfast cereals			33,60	74,4	4,8	28,9	<10.00-77,00	163	971	360	5	32	12
Biscuits			23,10	56,6	1,7	0,0	<10.00-<10.00	39	0	95	1	0	3
Bread			78,10	140,7	1,7	0,0	<10.00-<10.00	131	0	235	4	0	8
Cakes			30,50	77,1	1,7	0,0	<10.00-<10.00	47	0	120	2	0	4
Flour (1)			20,20	48,9	1,7	0,0	<10.00-<10.00	34	0	82	1	0	3
Polenta (2)			4,10	7,1	1,7	0,0	<10.00-<10.00	7	0	12	0	0	0
Snacks			18,40	40,8	1,7	0,0	<10.00-<10.00	31	0	68	1	0	2
Cornflour			0,80	1,8	1,7	0,0	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,0	1,7	0,0	<10.00-<10.00	0	0	0	0	0	0
Total intake											15		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,2	1,7	0,0	<10.00-<10.00	65	0	221	1	0	5
Malted Barley			0,10	0,1	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			61,30	129,3	0,8	0,0	<5.00-<5.00	51	0	107	1	0	2
Breakfast cereals			36,60	81,4	4,8	28,9	<10.00-77,00	177	1055	394	4	23	9
Biscuits			20,80	53,1	1,7	0,0	<10.00-<10.00	35	0	89	1	0	2
Bread			86,20	162,4	1,7	0,0	<10.00-<10.00	144	0	271	3	0	6
Cakes			32,40	90,9	1,7	0,0	<10.00-<10.00	51	0	142	1	0	3
Flour (1)			24,60	64,0	1,7	0,0	<10.00-<10.00	41	0	107	1	0	2
Polenta (2)			8,20	19,6	1,7	0,0	<10.00-<10.00	14	0	33	0	0	1
Snacks			19,80	43,5	1,7	0,0	<10.00-<10.00	33	0	73	1	0	2
Cornflour			1,00	2,2	1,7	0,0	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,3	1,7	0,0	<10.00-<10.00	24	0	24	1	0	1
Total intake											10		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,6	1,7	0,0	<10.00-<10.00	74	0	232	1	0	3
Malted Barley			0,16	0,2	0,8	0,0	<5.00-<5.00	0	0	0	0	0	0
Beer			391,30	1108,6	0,8	0,0	<5.00-<5.00	325	0	920	5	0	15
Breakfast cereals			39,30	95,1	4,8	28,9	<10.00-77,00	190	1134	461	3	18	7
Biscuits			20,00	62,5	1,7	0,0	<10.00-<10.00	33	0	104	1	0	2
Bread			102,00	185,1	1,7	0,0	<10.00-<10.00	170	0	309	3	0	5
Cakes			29,60	82,5	1,7	0,0	<10.00-<10.00	47	0	124	1	0	2
Flour (1)			27,70	76,4	1,7	0,0	<10.00-<10.00	46	0	128	1	0	2
Polenta (2)			13,50	23,6	1,7	0,0	<10.00-<10.00	23	0	40	0	0	1
Snacks			17,60	43,7	1,7	0,0	<10.00-<10.00	29	0	73	0	0	1
Cornflour			1,00	2,9	1,7	0,0	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,8	1,7	0,0	<10.00-<10.00	22	0	33	0	0	1
Total intake											9		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 7A1. Summary of occurrence in wheat and wheat flour from data reported in table 7A

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	9		20	5	33	11	14	10
Wheat flour	7		20	6	31	13	17	10
Wheat flour	10		20	9	26	12	14	10
Durum wheat flour	10		20	10	n.d.	n.d.	n.d.	n.d.

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	27		10	27		5		5
Wheat	37		25	37		12,5		12,5
Wheat	35	50		35		8,3		8,3
Wheat	35	25/40		34	46,5	5,4	46,5	4,2

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat	30	20				3,3		3,3
Wheat	22	20				3,3		3,3
Wheat flour	13		20	13		12		10
Soft wheat	31	20				3,3		3,3
Soft wheat	82	60	30	82		15		15
Soft wheat	72	60	30	72		15		15
Soft wheat	71	60	30	71		15		15
Durum wheat	16	80	40	16		20		20
Durum wheat	16	80	40	16		20		20
Durum wheat	13	80	40	13		20		20
Durum wheat	52	80	40	52		20		20
Soft wheat	204	10-80	40	185	40	20		20
Soft wheat	108	10-50	40	77	50	22		20

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat, no *	28	60	20	28		10	0	10
Wheat, imp	14	60	20	14		10	0	10
Wheat, no	25	60	20	25		10	0	10
Wheat, imp	10	60	20	10		10	0	10
Wheat, no	35	60	20	35		10	0	10
Wheat, imp	24	60	20	24		10	0	10
Wheat, no *	65	60	20	62	26	10,6	22	10
Wheat *	44	60	20	44		10	0	10
Wheat **	39	90	30	39		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Wheat flour	29	10		29	<10	1,7	0,00	<10

Overall **1213**

Table 7A2: Summary of occurrence in Barley from data reported in table 7A

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	7		10	4	41	12,9	23,3	5
Barley	30		25	30		12,5		12,5
Barley	20	50		20		8,3		8,3
Barley	20	25/40		18	46,5	8,2	44,7	4,17
Barley malt	18			18		12,5		12,5
Barley malt	25			22	287	30,6	193,6	8,33
Barley malt	25			15	186	31,2	71,8	4,17

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	9	20				3,3		3,3
Malting barley	30		40	30		20		20
Malting barley	52		40	52		20		20
Malting barley	44		40	44		20		20
Malting barley	68		40	68		20		20

Country: United Kingdom

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Barley	54	5		54	<5	0,8	0,0	<5
Barley	50	5		50	<5	0,8	0,0	<5
Barley	49	5		49	<5	0,8	0,0	<5

Table 7A3: Summary of occurrence in Oat from data reported in table 7A

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oat	96	50		42	1150	229,4	401,3	110
Oat	96	50		64	880	51,4	137,5	<LOQ
Oat	40	50		26	220	42,2	105	<LOQ

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats	7		10	5	95	35,4	58	19
Oats	10		25	10		12,5		12,5
Oats	25	50		17	822	90,9	266,3	8,33
Oats	30	25/40		24	184	24,1	104	4,17

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Oats, no	14	60	20		401	129	129	106
Oats, no	14	60	20		710	201	201	95
Oats, no	22	60	20	6	522	66	86,3	38
Oats, no *	24	60	20	24		10	0	10
Oats *	58	60	20	30	711	107,3	211,6	10
Oat **	28	90	30	28		15	0	15

no= norwegian , imp = imported

* = The products is divided into different grain products.

** = baby porridge.

Table 7A4: Summary of occurrence in Rye and rye flour from data reported in table 7A

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Denmark

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye flour	9		20	5	23	12	13	10
Rye flour	10		20	6	38	14	17	10
Rye flour	7		20	4	70	27	30	10

Country: Finland

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye	6		10	6		5		5
Rye	2		25	2		12,5		12,5
Rye	15	50		15		8,3		8,3
Rye	10	25/40		10		4,2		4,2

Country: Norway

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Rye, imp	4	60	20	4		10	0	10

no= norwegian , imp = imported

Table 7A5: Summary of occurrence in Corn from data reported in table 7A

Trichothecene type A: HT-2 (Units: µg/kg or µg/L)

Country: Austria

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	46	50		45	110	10,5	110	<LOQ
Corn	58	50		58	<LOQ	8,3		<LOQ
Corn	48	50		46	120	12,2	100	<LOQ

Country: France

Food product	N° of Samples	LOQ	LOD	N° samples < LOD	Max value	Mean(1)	Mean(2)	Median
Corn	29	20				3,3		3,3
Corn	25		40	25		20		20
Corn	10	10-40	-	0		42	20	20
Corn	45	50	40	25		25	20	20

Table 8A. Summary occurrence data by food group and country

Trichothecene type A: DAS (Units: µg/kg or µg/L)

Country: Finland

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat			1998	27		5	27									2,5		2,5	Y	Random	GC-MS	Good	Y
Wheat			1999	37		25	37									12,5		12,5	Y	Random	GC-MS	Good	Y
Wheat			2000	35	50		35									8,33		8,33	Y	Random	GC-MS	Good	Y
Wheat			2001	35	25/40		35									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley			1998	7		5	7									2,5		2,5	Y	Random	GC-MS	Good	Y
Barley			1999	30		25	30									12,5		12,5	Y	Random	GC-MS	Good	Y
Barley			2000	20	50		20									8,33		8,33	Y	Random	GC-MS	Good	Y
Barley			2001	20	25/40		20									4,17		4,17	Y	Random	GC-MS	Good	Y
Barley malt			1999	18		25	18									12,5		12,5		Random	GC-MS	Good	Y
Barley malt			2000	25	50		25									8,33		8,33		Random	GC-MS	Good	Y
Barley malt			2001	25	25/40		25									4,17		4,17		Random	GC-MS	Good	Y
Oats			1998	7		5	7									2,5		2,5	Y	Random	GC-MS	Good	Y
Oats			1999	10		25	10									12,5		12,5	Y	Random	GC-MS	Good	Y
Oats			2000	25	50		25									8,33		8,33	Y	Random	GC-MS	Good	Y
Oats			2001	30	25/40		30									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye			1998	6		5	6									2,5		2,5	Y	Random	GC-MS	Good	Y
Rye			1999	2		25	2									12,5		12,5	Y	Random	GC-MS	Good	Y
Rye			2000	15	50		15									8,33		8,33	Y	Random	GC-MS	Good	Y
Rye			2001	10	25/40		10									4,17		4,17	Y	Random	GC-MS	Good	Y
Rye organic			2001		25/40														Y	Random	GC-MS	Good	Y

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0		3,33		3,30	Y	R	GC	G	no
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	29	20			29	0	0	0	0	0	0		3,33		3,3	Y	R	GC	G	no
Corn	GC2	03 01 B	2001	25		30	25	0	0	0	0	0	0	0		15		15		T	GC-MS		
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,33		3,33	Y	R	GC	G	no
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		1999	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	13	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	52	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	52	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	44	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	68	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y

								Level of contamination							Max value	Mean(1)	Mean(2)	Median					
								< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200								
Corn	GC2	03 01 B	2000	17	10-30	30	7	5	12	0	0	0	0	0	0	15	12		15	R	Chromato	L	Y
Corn	GC2	03 01 B	2001	40	50	30	25	0	40	0	0	0	0	0	0	25	19		15	R	Chromato	L	Y
Soft wheat	BT		2000	204	10-60	30	192	6	198	0	0	0	0	0	0	30	15		15	R	Chromato	L	Y
Soft wheat	BT		2001	102	10-100	30	77	1	92	9	0	0	0	0	0	50	20		15	R	Chromato	L	Y

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		15								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 8C. Estimated daily intake of trichothecenes in each member state

Trichothecene type A: DAS (Units: µg/kg or µg/L)

Country : Finland; adults (24-64 years)
Body Weight for average person (kg): 77,1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Wheat	GC1	03 01 A	114,7		6,9			791			10		
Rye	GC5	03 01 E	49,1		6,9			339			4		
Oat	GC3	03 01 C	4,45		6,9			31			0,4		
Barley*	GC6	03 01 F	4,45		6,4			28			0,4		
Total intake								1189			15		

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Table 9A. Summary occurrence data by food group and country

Trichothecene type A: T2-triol (Units: µg/kg or µg/L)

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	2001	25		40	25	0	0	0	0	0	0	0		20		20		T	GC-MS		
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	y	T	GC-MS	g	y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	y	T	GC-MS	g	y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	y	T	GC-MS	g	y
Durum wheat	BD		1999	16	80	40	16	0	0	0	0	0	0	0		20		20	y	T	GC-MS	g	y
Durum wheat	BD		2000	16	80	40	16	0	0	0	0	0	0	0		20		20	y	T	GC-MS	g	y
Durum wheat	BD		2001	13	80	40	13	0	0	0	0	0	0	0		20		20	y	T	GC-MS	g	y
Durum wheat	BD		2002	52	80	40	52	0	0	0	0	0	0	0		20		20	y	T	GC-MS	g	y
Malting barley	OB		2001	30		40	30	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		40	52	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		40	44	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		40	68	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y

								Level of contamination														
								< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Median					
Corn	GC2	03 01 B	2000	17	10-40	30	7	4	13	0	0	0	0	0	0	20	14	15		R	Chromato	L	y
Corn	GC2	03 01 B	2001	40	50	40	25	0	40	0	0	0	0	0	0	25	20	20		R	Chromato	L	y
Soft wheat	BT		2000	208	10-80	30-40	189	13	189	6	0	0	0	0	0	40	20	20		R	Chromato	L	y
Soft wheat	BT		2001	106	50-10	30-40	81	0	97	9	0	0	0	0	0	50	23	20		R	Chromato	L	y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		15								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 9C: Estimated daily intake of trichothecenes in each member state

Trichothecene type A: T2-triol

Country : UK, average male adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			35,60	113,90	1,67	0,00	<10.00-<10.00	59	0	190	1	0	3
Breakfast cereals			41,20	109,40	1,67	0,00	<10.00-<10.00	69	0	183	1	0	2
Biscuits			20,10	56,70	1,67	0,00	<10.00-<10.00	34	0	95	0	0	1
Bread			135,30	262,70	1,67	0,00	<10.00-<10.00	226	0	439	3	0	6
Cakes			44,00	114,00	1,67	0,00	<10.00-<10.00	74	0	190	1	0	3
Flour (1)			21,30	56,60	1,67	0,00	<10.00-<10.00	36	0	95	0	0	1
Polenta (2)			22,50	34,70	1,67	0,00	<10.00-<10.00	38	0	58	1	0	1
Snacks			13,30	36,90	1,67	0,00	<10.00-<10.00	22	0	62	0	0	1
Cornflour			1,20	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average female adult (16-64 years), consumers only
Body Weight for average person (kg): 70.1 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			23,80	64,60	1,67	0,00	<10.00-<10.00	40	0	108	1	0	2
Breakfast cereals			29,90	76,10	1,67	0,00	<10.00-<10.00	50	0	127	1	0	2
Biscuits			17,40	46,90	1,67	0,00	<10.00-<10.00	29	0	78	0	0	1
Bread			85,00	159,00	1,67	0,00	<10.00-<10.00	142	0	266	2	0	4
Cakes			34,90	88,30	1,67	0,00	<10.00-<10.00	58	0	148	1	0	2
Flour (1)			16,70	43,40	1,67	0,00	<10.00-<10.00	28	0	72	0	0	1
Polenta (2)			7,30	7,30	1,67	0,00	<10.00-<10.00	12	0	12	0	0	0
Snacks			10,00	25,90	1,67	0,00	<10.00-<10.00	17	0	43	0	0	1
Cornflour			1,20	2,80	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											5		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average toddler (1.5-4.5 years), consumers only
Body Weight for average person (kg): 14.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			14,40	52,60	1,67	0,00	<10.00-<10.00	24	0	88	2	0	6
Breakfast cereals			21,40	49,20	1,67	0,00	<10.00-<10.00	36	0	82	3	0	6
Biscuits			16,90	41,10	1,67	0,00	<10.00-<10.00	28	0	69	2	0	5
Bread			42,00	89,20	1,67	0,00	<10.00-<10.00	70	0	149	5	0	10
Cakes			18,30	50,80	1,67	0,00	<10.00-<10.00	31	0	85	2	0	6
Flour (1)			13,00	36,30	1,67	0,00	<10.00-<10.00	22	0	61	2	0	4
Polenta (2)			6,50	13,80	1,67	0,00	<10.00-<10.00	11	0	23	1	0	2
Snacks			12,10	29,60	1,67	0,00	<10.00-<10.00	20	0	50	1	0	4
Cornflour			1,20	3,80	1,67	0,00	<10.00-<10.00	2	0	6	0	0	1
Baby food			55,70	168,20	1,67	0,00	<10.00-<10.00	93	0	281	8	0	21
Total intake											14		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average infant (6-12 months) consumers only
Body Weight for average person (kg): 8.7 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			7,20	21,10	1,67	0,00	<10.00-<10.00	12	0	35	1	0	4
Breakfast cereals			16,20	36,10	1,67	0,00	<10.00-<10.00	27	0	60	3	0	6
Biscuits			7,20	19,60	1,67	0,00	<10.00-<10.00	12	0	33	1	0	3
Bread			16,90	46,90	1,67	0,00	<10.00-<10.00	28	0	78	3	0	8
Cakes			7,00	20,20	1,67	0,00	<10.00-<10.00	12	0	34	1	0	3
Flour (1)			11,20	32,50	1,67	0,00	<10.00-<10.00	19	0	54	2	0	6
Polenta (2)			7,30	18,00	1,67	0,00	<10.00-<10.00	12	0	30	1	0	3
Snacks			3,80	11,00	1,67	0,00	<10.00-<10.00	6	0	18	1	0	2
Cornflour			4,90	12,40	1,67	0,00	<10.00-<10.00	8	0	21	1	0	2
Baby food			14,60	48,40	1,67	0,00	<10.00-<10.00	24	0	81	3	0	9
Total intake											11		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average free living male elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			28,50	69,00	1,67	0,00	<10.00-<10.00	48	0	115	1	0	2
Breakfast cereals			67,90	242,40	1,67	0,00	<10.00-<10.00	113	0	405	2	0	5
Biscuits			24,30	59,10	1,67	0,00	<10.00-<10.00	41	0	99	1	0	1
Bread			112,10	203,40	1,67	0,00	<10.00-<10.00	187	0	340	2	0	5
Cakes			50,50	116,60	1,67	0,00	<10.00-<10.00	3	0	38	0	0	1
Flour (1)			20,40	61,90	1,67	0,00	<10.00-<10.00	34	0	103	0	0	1
Polenta (2)			5,30	5,30	1,67	0,00	<10.00-<10.00	9	0	9	0	0	0
Snacks			11,90	26,60	1,67	0,00	<10.00-<10.00	20	0	45	0	0	1
Cornflour			2,00	4,30	1,67	0,00	<10.00-<10.00	3	0	7	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											5		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average free living female elderly person (age 65 years and over) consumers only
Body Weight for average person (kg): 70.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			24,40	84,60	1,67	0,00	<10.00-<10.00	41	0	141	1	0	3
Breakfast cereals			46,50	146,70	1,67	0,00	<10.00-<10.00	78	0	245	1	0	4
Biscuits			20,20	49,60	1,67	0,00	<10.00-<10.00	34	0	83	1	0	1
Bread			80,90	148,40	1,67	0,00	<10.00-<10.00	135	0	248	2	0	4
Cakes			39,10	90,30	1,67	0,00	<10.00-<10.00	3	0	23	0	0	0
Flour (1)			17,40	49,60	1,67	0,00	<10.00-<10.00	29	0	83	0	0	1
Polenta (2)			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Snacks			8,80	26,10	1,67	0,00	<10.00-<10.00	15	0	44	0	0	1
Cornflour			1,70	3,20	1,67	0,00	<10.00-<10.00	3	0	5	0	0	0
Baby food (3)					1,67	0,00	<10.00-<10.00						
Total intake											4		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey

Country : UK, average young person (4-6 years) consumers only
Body Weight for average person (kg): 20.5 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			17,50	57,40	1,67	0,00	<10.00-<10.00	29	0	96	1	0	5
Breakfast cereals			29,60	67,70	1,67	0,00	<10.00-<10.00	50	0	113	2	0	5
Biscuits			20,00	46,40	1,67	0,00	<10.00-<10.00	33	0	77	2	0	4
Bread			62,90	121,60	1,67	0,00	<10.00-<10.00	105	0	203	5	0	10
Cakes			26,50	59,80	1,67	0,00	<10.00-<10.00	44	0	100	2	0	5
Flour (1)			16,50	39,80	1,67	0,00	<10.00-<10.00	28	0	66	1	0	3
Polenta (2)			4,70	4,70	1,67	0,00	<10.00-<10.00	8	0	8	0	0	0
Snacks			16,30	34,60	1,67	0,00	<10.00-<10.00	27	0	58	1	0	3
Cornflour			1,20	4,30	1,67	0,00	<10.00-<10.00	2	0	7	0	0	0
Baby food			18,50	60,50	1,67	0,00	<10.00-<10.00	31	0	101	2	0	6
Total intake											14		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (7-10 years) consumers only
Body Weight for average person (kg): 30.9 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			26,10	89,70	1,67	0,00	<10.00-<10.00	44	0	150	1	0	5
Breakfast cereals			33,60	74,40	1,67	0,00	<10.00-<10.00	56	0	124	2	0	4
Biscuits			23,10	56,60	1,67	0,00	<10.00-<10.00	39	0	95	1	0	3
Bread			78,10	140,70	1,67	0,00	<10.00-<10.00	131	0	235	4	0	8
Cakes			30,50	77,10	1,67	0,00	<10.00-<10.00	51	0	129	2	0	4
Flour (1)			20,20	48,90	1,67	0,00	<10.00-<10.00	34	0	82	1	0	3
Polenta (2)			4,10	7,10	1,67	0,00	<10.00-<10.00	7	0	12	0	0	0
Snacks			18,40	40,80	1,67	0,00	<10.00-<10.00	31	0	68	1	0	2
Cornflour			0,80	1,80	1,67	0,00	<10.00-<10.00	1	0	3	0	0	0
Baby food			0,00	0,00	1,67	0,00	<10.00-<10.00	0	0	0	0	0	0
Total intake											12		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (11-14 years) consumers only
Body Weight for average person (kg): 48.0 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			39,10	132,20	1,67	0,00	<10.00-<10.00	65	0	221	1	0	5
Breakfast cereals			36,60	81,40	1,67	0,00	<10.00-<10.00	61	0	136	1	0	3
Biscuits			20,80	53,10	1,67	0,00	<10.00-<10.00	35	0	89	1	0	2
Bread			86,20	162,40	1,67	0,00	<10.00-<10.00	144	0	271	3	0	6
Cakes			32,40	90,90	1,67	0,00	<10.00-<10.00	54	0	152	1	0	3
Flour (1)			24,60	64,00	1,67	0,00	<10.00-<10.00	41	0	107	1	0	2
Polenta (2)			8,20	19,60	1,67	0,00	<10.00-<10.00	14	0	33	0	0	1
Snacks			19,80	43,50	1,67	0,00	<10.00-<10.00	33	0	73	1	0	2
Cornflour			1,00	2,20	1,67	0,00	<10.00-<10.00	2	0	4	0	0	0
Baby food			14,30	14,30	1,67	0,00	<10.00-<10.00	24	0	24	1	0	1
Total intake											8		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Country : UK, average young person (15-18 years) consumers only
Body Weight for average person (kg): 63.8 kg

Food product	Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1 x High level	Mean 1	Mean 2	Mean1 x High level
Rice			44,40	138,60	1,67	0,00	<10.00-<10.00	74	0	232	1	0	3
Breakfast cereals			39,30	95,10	1,67	0,00	<10.00-<10.00	66	0	159	1	0	3
Biscuits			20,00	62,50	1,67	0,00	<10.00-<10.00	33	0	104	1	0	2
Bread			102,00	185,10	1,67	0,00	<10.00-<10.00	170	0	309	3	0	5
Cakes			29,60	82,50	1,67	0,00	<10.00-<10.00	49	0	138	1	0	2
Flour (1)			27,70	76,40	1,67	0,00	<10.00-<10.00	46	0	128	1	0	2
Polenta (2)			13,50	23,60	1,67	0,00	<10.00-<10.00	23	0	40	0	0	1
Snacks			17,60	43,70	1,67	0,00	<10.00-<10.00	29	0	73	0	0	1
Cornflour			1,00	2,90	1,67	0,00	<10.00-<10.00	2	0	5	0	0	0
Baby food			13,10	19,80	1,67	0,00	<10.00-<10.00	22	0	33	0	0	1
Total intake											6		

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

Table 10A. Summary occurrence data by food group and country

Trichothecene type A: Neosolaniol (Units: µg/kg or µg/L)

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state		
Corn	GC2	03 01 B	2001	25		40	25	0	0	0	0	0	0	0		20		20		T	GC-MS				
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y		
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y		
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y		
Durum wheat	BD		1999	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y		
Durum wheat	BD		2000	16	80	40	16	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y		
Durum wheat	BD		2001	13	80	40	13	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y		
Durum wheat	BD		2002	52	80	40	52	0	0	0	0	0	0	0		20		20	Y	T	GC-MS	G	Y		
Malting barley	OB		2001	30		40	30	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y	France	C
Malting barley	OB		2001	52		40	52	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y		
Malting barley	OB		2002	44		40	44	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y		
Malting barley	OB		2002	68		40	68	0	0	0	0	0	0	0		20		20	Y	R	GC-MS	G	Y		

							Level of contamination																	
							< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Median							
Corn	GC2	03 01 B	2000	10	10-40		0	5	5	0	0	0	0	0	20	12	12		R	Chromato	L	Y		
Corn	GC2	03 01 B	2001	25	-	40	25	0	25	0	0	0	0	0	20	20	20		R	Chromato	L	Y		
Soft wheat	BT		2000	193	10-80	40	185	6	185	2	0	0	0	0	40	20	20		R	Chromato	L	Y		
Soft wheat	BT		2001	77	-	40	77	0	77	0	0	0	0	0	20	20	20		R	Chromato	L	Y		

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Country: United Kingdom

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Rice	GC7	03 01G	1/2000	100	10		100								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	16	10		16	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Ceral fractions	CF	02 01A	2/2000	11	10		11								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	15	10		15	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	30	10		30								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2001	24	10		24								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Corn products	CH	02 01C	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		14	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	14	10		13	1							11	2,33	11,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2001	13	10		13								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat products	CG	02 01B	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Wheat flour	CF2	02 01B	2/2000	29	10		29								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
flour	CF3D	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Polenta	CH1	02 01C	2/2000	8	10		8								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Biscuits	CG1	02 01B	2/2000	54	10		54								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	40	10		40								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Bread	CG2	02 01B	2/2000	16	10		16								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1	0							<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	3	10		3								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	4	10		4								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	1	10		1								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2001	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	6	10		6								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y
Mixed	CP	03 01	2/2000	2	10		2								<10	1,67	0,00	<10	Y	Random	GC/MS	G	Y

Table 11A. Summary occurrence data by food group and country

Trichothecene type A: Monoacetoxyscirpenol (Units: µg/kg or µg/L)

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Corn	GC2	03 01 B	2001	25		30	25	0	0	0	0	0	0	0		15		15		T	GC-MS		
Soft wheat	BT		2000	82	60	30	82	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2001	72	60	30	72	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Soft wheat	BT		2002	71	60	30	71	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		1999	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2000	16	60	30	16	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2001	13	60	30	13	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Durum wheat	BD		2002	52	60	30	52	0	0	0	0	0	0	0		15		15	Y	T	GC-MS	G	Y
Malting barley	OB		2001	30		30	30	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2001	52		30	52	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	44		30	44	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
Malting barley	OB		2002	68		30	68	0	0	0	0	0	0	0		15		15	Y	R	GC-MS	G	Y
								Level of contamination															
								< 10	10-29.9	30-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Median					
Corn	GC2	03 01 B	2000	12	30	30	7	0	12	0	0	0	0	0	0	15	15	15		R	Chromato	L	Y
Corn	GC2	03 01 B	2001	25	-	20	25	25	0	0	0	0	0	0	0	10	10	10		R	Chromato	L	Y
Soft wheat	BT		2000	198	60	30	192	0	198	0	0	0	0	0	0	30	15	15		R	Chromato	L	Y
Soft wheat	BT		2001	77	-	30	77	0	77	0	0	0	0	0	0	15	15	15		R	Chromato	L	Y

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Table 12A. Summary occurrence data by food group and country

Trichothecene type A: Verrucarol (Units: µg/kg or µg/L)

Country: France

Food product	Group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state		
Wheat	GC1	03 01 A	2001	30	20			30	0	0	0	0	0	0		3,3		3,3	Y	R	GC	G	no	C	France
Wheat	GC1	03 01 A	2001	22	20			22	0	0	0	0	0	0		3,3		3,3	Y	R	GC	G	no	B	France
Corn	GC2	03 01 B	2001	29	20			29	0	0	0	0	0	0		3,3		3,3	Y	R	GC	G	no	C	France
Barley	GC6	03 01 F	2001	9	20			9	0	0	0	0	0	0		3,3		3,3	Y	R	GC	G	no	C	France
Soft wheat	BT		2001	31	20			31	0	0	0	0	0	0		3,3		3,3	Y	R	GC	G	no	C	France

E3 = oat derived products, D5 = rye flour, E6 = barley derived products, D7 = rice flour, E7 and F7 = rice derived products, D9 = buckwheat
A = cereals for breakfast, A* = Mixed cereals; derived products, BD = durum wheat, BT = soft wheat, OB = malting barley

Table 13: Total number of samples for each trichothecene from each country

Country	Trichothecene											
	DON	NIV	HT-2	T-2	3-AcDON	15-AcDON	DAS	NEOSOL	Fus-X	T2-Triol	MAS	VOL
Austria	549	550	384	384	550	550						
Belgium	139											
Denmark	190	189	62	62								
Finland	391	384	384	384	384		384		384			
France	3261	971	1042	1075	1043	878	1025	846	1011	912	853	121
Germany	559											
Italy				405								
The Netherlands	3652											
Norway	1364	1303	502	502	857							
Portugal	20			20								
Sweden	240	121			229							
UK	657	648	658	652	658	526	477	477	477	477		
Total number of samples	11022	4166	3032	3484	3721	1954	1886	1323	1872	1389	853	121

Table 14: Summary of food consumption data by country

Country: Austria; whole population **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
	GC	03 01		DS	diary	all foods	2580	24h	national	102,1	50	360	yes

Country: Belgium; adolescents 13-18 years **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
bread	CG2	02 01B	1997	DS	diary (7 d)	all foods and beverages	341		Ghent*	165,3	160	360	No
pasta	CG3	02 01B	1997	DS	diary (7 d)	all foods and beverages	341		Ghent*	24,7	0	200	No
bran	CF1	02 01B	1997	DS	diary (7 d)	all foods and beverages	341		Ghent*	0,1	0	0	No

* = region of Ghent

Country: Denmark; whole population **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Wheat bread white	CG2		2000	DS	diary (7 d)		1837		National	70,5	64,3	148,5	yes
Wheat bread coarse	CG2						1837		National	23,7	11,4	97,1	yes
Rye bread	CH3						1837		National	71,7	65,9	150,5	yes
Wheat flour	CF2						1837		National	19,8	17,4	44,9	yes

Country: Finland; adults (aged 24 - 64 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rye (flour +bread)			2002	DS	Recall	All foods	2007	24 h	national	49,1			y
White wheat flour	CF2	02 01 B	2002	DS	Recall	All foods	2007	24 h	national	68,7			y
Wheat bread			2002	DS	Recall	All foods	2007	24 h	national	46,0			y
Flour*			2002	DS	Recall	All foods	2007	24 h	national	8,9			y

*other than rye and wheat

Country: France; adults **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
bread (without rye	CG2	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	117,4	98,8	278,6	Yes
pasta	CG3	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	36,1	28,6	100,0	Yes
semolina	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	1,7	0,0	14,3	Yes
corn	CH	02 01 C	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	2,4	0,0	17,9	Yes
biscuits	CG1	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	67,0	51,4	191,4	Yes
pizzas and tarts	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	73,3	0,0	400,0	Yes
sandwiches	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	13,8	0,0	74,3	Yes
compound dishes	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	9,0	0,0	50,0	Yes
other compound	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	20,9	0,0	100,0	Yes
beer	DM1	02 05 A	1999	DS	diary (7 d)	all food and beverages consumed	1474	One year	national	28,5	0,0	142,9	Yes

* category corn contains: flakes, maizena, cooked corn, popcorn

Country: France; Male **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
bread (without rye	CG2	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	147,9	135,6	340,5	Yes
pasta	CG3	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	42,1	28,6	118,2	Yes
semolina	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	1,6	0,0	14,3	Yes
corn	CH	02 01 C	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	2,0	0,0	14,7	Yes
biscuits	CG1	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	70,3	51,4	205,3	Yes
pizzas and tarts	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	46,5	0,0	300,0	Yes
sandwiches	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	18,9	0,0	97,1	Yes
compound dishes	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	10,6	0,0	60,4	Yes
other compound	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	23,6	0,0	109,2	Yes
beer	DM1	02 05 A	1999	DS	diary (7 d)	all food and beverages consumed	672	One year	national	50,5	0,0	250,0	Yes

* category corn contains: flakes, maizena, cooked corn, popcorn

Country: France; Female **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
bread (without rye	CG2	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	91,7	77,1	218,0	Yes
pasta	CG3	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	31,0	28,6	85,7	Yes
semolina	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	1,7	0,0	14,3	Yes
corn	CH	02 01 C	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	2,8	0,0	18,2	Yes
biscuits	CG1	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	64,3	51,1	171,4	Yes
pizzas and tarts	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	95,8	2,9	498,9	Yes
sandwiches	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	9,5	0,0	48,6	Yes
compound dishes	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	7,6	0,0	46,4	Yes
other compound	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	18,5	0,0	92,7	Yes
beer	DM1	02 05 A	1999	DS	diary (7 d)	all food and beverages consumed	802	One year	national	10,0	0,0	70,4	Yes

* category corn contains: flakes, maizena, cooked corn, popcorn

Country: France; Children **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
bread (without rye	CG2	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	58,6	40,0	173,8	Yes
pasta	CG3	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	37,0	28,6	100,0	Yes
semolina	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	2,0	0,0	20,2	Yes
corn	CH	02 01 C	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	7,9	0,0	39,5	Yes
biscuits	CG1	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	85,9	72,7	210,8	Yes
pizzas and tarts	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	19,6	10,0	68,8	Yes
sandwiches	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	10,2	0,0	45,9	Yes
compound dishes	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	13,9	0,0	57,7	Yes
other compound	CG	02 01 B	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	18,5	0,0	75,1	Yes
beer	DM1	02 05 A	1999	DS	diary (7 d)	all food and beverages consumed	1018	One year	national	0,0	0,0	0,0	Yes

* category corn contains: flakes, maizena, cooked corn, popcorn

Country: Italy; all population **Units: g or ml**

Food product	Group	Code	Ref. Year	Method*	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Barley	GC6	03 01F	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	0,2		-	Yes
White wheat flour	CF2	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	5,2		28,6	Yes
Bran	CF1	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	0,1		0,0	Yes
Whole meal	CF	02 01A	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	0,1		0,0	Yes
Durum wheat paste	CG3	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	42,7		97,3	Yes
Corn Flour	CF3D	02 01 C	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	1,5		9,0	Yes
Wheat semolina	CF	02 01A	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	0,2		0,0	yes
Bakery products			4-94/96	HID	Diary	All food consumed	1982	Cont. (3x)	National	0,1		0,0	yes

*; HID = Household individual data

Country: Italy; all consumers only **Units: g or ml**

Food product	Group	Code	Ref. Year	Method*	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Barley	GC6	03 01F	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	8,2		-	Yes
White wheat flour	CF2	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	15,4		46,7	Yes
Bran	CF1	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	12,3		24,6	Yes
Whole meal	CF	02 01A	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	26,8		54,4	Yes
Durum wheat paste	CG3	02 01B	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	46,1		99,6	Yes
Corn Flour	CF3D	02 01 C	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	25,9		60,8	Yes
Wheat semolina	CF	02 01A	4-94/96	HID	Diary	All food consumed	1978	Cont. (3x)	National	11,8		34,9	yes
Bakery products			4-94/96	HID	Diary	All food consumed	1982	Cont. (3x)	National	140,0		140,0	yes

*; HID = Household individual data

Country: The Netherlands; whole population **Units: g or ml per**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size**	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
infant food	CGX		1998	DS	diary (2 d)	children's cereals	283	every 5 yr	National	0,5			
wheat flour*	CF2		1998	DS	diary (2 d)	flour (for baking cakes, bread), breadcrumbs	1355	every 5 yr	National	2,1			
bread	CG2		1998	DS	diary (2 d)	bread, crackers	27184	every 5 yr	National	132,3			
pasta	CG3, 4		1998	DS	diary (2 d)	pasta, pizza	1505	every 5 yr	National	24,6			
barley`*	GC6		1998	DS	diary (2 d)	beer, gruel	2808	every 5 yr	National	21,9			
oat*	GC3		1998	DS	diary (2 d)	oatmeal, oatcake	136	every 5 yr	National	0,3			
biscuits	CG1		1998	DS	diary (2 d)	biscuits, cakes, pastry	12785	every 5 yr	National	38,6			
muesli	CP		1998	DS	diary (2 d)	muesli, muesli crackers	820	every 5 yr	National	2,0			
rye*	GC5		1998	DS	diary (2 d)	rye bread, gingerbread	2490	every 5 yr	National	3,6			
wheat*	GC1		1998	DS	diary (2 d)	breakfast cereals	2708	every 5 yr	National	2,8			
wheatbran*	CF1		1998	DS	diary (2 d)	wheat bran, high fibre crackers	134	every 5 yr	National	0,1			
starch*	CF3A		1998	DS	diary (2 d)	binding agents, blancmange powder	1383	every 5 yr	National	0,8			
complex dishes	CP		1998	DS	diary (2 d)	soups, ready-to-eat meals	1136	every 5 yr	National	29,9			
corn*	GC2		1998	DS	diary (2 d)	total corn	6250***	every 5 yr	National	3,0			

* = figures are expressed as consumed primary products (e.g. consumption of barley and not beer)
** number of intakes from 6250 subjects in two days
***total number of subjects

Country: The Netherlands; children 1-4 year **Units: g or ml per day**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size**	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
infant food	CGX		1998	DS	diary (2 d)	children's cereals	171	every 5 yr	National	6,4			
wheat flour*	CF2		1998	DS	diary (2 d)	flour (for baking cakes, bread), breadcrumbs	127	every 5 yr	National	1,4			
bread	CG2		1998	DS	diary (2 d)	bread, crackers	2240	every 5 yr	National	68,0			
pasta	CG3, 4		1998	DS	diary (2 d)	pasta, pizza	125	every 5 yr	National	11,0			
barley`*	GC6		1998	DS	diary (2 d)	beer, gruel	4	every 5 yr	National	0,04			
oat*	GC3		1998	DS	diary (2 d)	oatmeal, oatcake	15	every 5 yr	National	0,4			
biscuits	CG1		1998	DS	diary (2 d)	biscuits, cakes, pastry	1002	every 5 yr	National	18,4			
muesli	CP		1998	DS	diary (2 d)	muesli, muesli crackers	30	every 5 yr	National	0,4			
rye*	GC5		1998	DS	diary (2 d)	rye bread, gingerbread	159	every 5 yr	National	2,3			
wheat*	GC1		1998	DS	diary (2 d)	breakfast cereals	91	every 5 yr	National	4,5			
wheatbran*	CF1		1998	DS	diary (2 d)	wheat bran, high fibre crackers	1	every 5 yr	National	0			
starch*	CF3A		1998	DS	diary (2 d)	binding agents, blancmange powder	109	every 5 yr	National	0,3			
complex dishes	CP		1998	DS	diary (2 d)	soups, ready-to-eat meals	576	every 5 yr	National	15,3			
corn*	GC2		1998	DS	diary (2 d)	total corn	347***	every 5 yr	National	2,2			

* = figures are expressed as consumed primary products (e.g. consumption of barley and not beer)
** number of intakes from 6250 subjects in two days
***total number of subjects

Country: The Netherlands; children 1-6 year **Units: g or ml per day**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size**	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
infant food	CGX		1998	DS	diary (2 d)	children's cereals	171	every 5 yr	National	3,2			
wheat flour*	CF2		1998	DS	diary (2 d)	flour (for baking cakes, bread), breadcrumbs	127	every 5 yr	National	1,6			
bread	CG2		1998	DS	diary (2 d)	bread, crackers	2240	every 5 yr	National	81,7			
pasta	CG3, 4		1998	DS	diary (2 d)	pasta, pizza	125	every 5 yr	National	12,0			
barley`*	GC6		1998	DS	diary (2 d)	beer, gruel	4	every 5 yr	National	0,02			
oat*	GC3		1998	DS	diary (2 d)	oatmeal, oatcake	15	every 5 yr	National	0,4			
biscuits	CG1		1998	DS	diary (2 d)	biscuits, cakes, pastry	1002	every 5 yr	National	20,9			
muesli	CP		1998	DS	diary (2 d)	muesli, muesli crackers	30	every 5 yr	National	0,5			
rye*	GC5		1998	DS	diary (2 d)	rye bread, gingerbread	159	every 5 yr	National	2,2			
wheat*	GC1		1998	DS	diary (2 d)	breakfast cereals	91	every 5 yr	National	3,5			
wheatbran*	CF1		1998	DS	diary (2 d)	wheat bran, high fibre crackers	1	every 5 yr	National	0,03			
starch*	CF3A		1998	DS	diary (2 d)	binding agents, blancmange powder	109	every 5 yr	National	0,4			
complex dishes	CP		1998	DS	diary (2 d)	soups, ready-to-eat meals	576	every 5 yr	National	15,6			
corn*	GC2		1998	DS	diary (2 d)	total corn	530***	every 5 yr	National	2,5			

* = figures are expressed as consumed primary products (e.g. consumption of barley and not beer)
** number of intakes from 6250 subjects in two days
***total number of subjects

Country: Norway, male, all participants. **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Wheat flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1298		National	122,0	114	211	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1298		National	65,0	62	118	Yes
Rye	GC 5	0301 E	1997	DS	FFQ	All foods & bev.	1298		National	3,0	1	16	Yes
Barley	GC 6	0301 F	1997	DS	FFQ	All foods & bev.	1298		National	3,0	0	16	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ	All foods & bev.	1298		National	5,0	1	22	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ	All foods & bev.	1298		National	1,0	0	5	Yes
Rice	GC 7	0301 G	1997	DS	FFQ	All foods & bev.	1298		National	10,0	5	32	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ	Certain foods	2874		National	0,5	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ	Certain foods	2874		National	0,7	0,1	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ	All foods & bev.	1298		National	15,0	0	90	Yes
Imported beer	DM3	0205A	1997	DS	FFQ	All foods & bev.	1298		National	3,0	0	7	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ	All foods & bev.	1298		National	111,0	49	540	Yes

*; FFQ = Food frequency questionnaire

Country: Norway, male, consumers. **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Wheat flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1298		National	122,0	114	211	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1289		National	65,0	62	119	Yes
Rye	GC 5	0301 E	1997	DS	FFQ	All foods & bev.	1291		National	3,0	1	16	Yes
Barley	GC 6	0301 F	1997	DS	FFQ	All foods & bev.	527		National	6,0	3	23	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ	All foods & bev.	777		National	8,0	5	25	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ	All foods & bev.	417		National	2,0	1	7	Yes
Rice	GC 7	0301 G	1997	DS	FFQ	All foods & bev.	1154		National	11,0	7	38	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ	Certain foods	1669		National	0,9	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ	Certain foods	1952		National	1,1	0,1	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ	All foods & bev.	335		National	60,0	25	186	Yes
Imported beer	DM3	0205A	1997	DS	FFQ	All foods & bev.	128		National	33,0	7	173	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ	All foods & bev.	871		National	165,0	105	540	Yes

*; FFQ = Food frequency questionnaire

Country: Norway, female, all participants. **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Wheat flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1374		National	88,0	83	148	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1374		National	45,0	44	77	Yes
Rye	GC 5	0301 E	1997	DS	FFQ	All foods & bev.	1374		National	2,0	1	12	Yes
Barley	GC 6	0301 F	1997	DS	FFQ	All foods & bev.	1374		National	2,0	0	12	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ	All foods & bev.	1374		National	4,0	1	16	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ	All foods & bev.	1374		National	1,0	0	4	Yes
Rice	GC 7	0301 G	1997	DS	FFQ	All foods & bev.	1374		National	7,0	5	25	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ	Certain foods	3091		National	0,8	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ	Certain foods	3091		National	1,1	0,3	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ	All foods & bev.	1374		National	6,0	0	39	Yes
Imported beer	DM3	0205A	1997	DS	FFQ	All foods & bev.	1374		National	1,0	0	0	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ	All foods & bev.	1374		National	38,0	0	180	Yes

*; FFQ = Food frequency questionnaire

Country: Norway, female, consumers. **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Wheat flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1374		National	88,0	83	148	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ	All foods & bev.	1362		National	45,0	44	77	Yes
Rye	GC 5	0301 E	1997	DS	FFQ	All foods & bev.	1363		National	2,0	1	12	Yes
Barley	GC 6	0301 F	1997	DS	FFQ	All foods & bev.	553		National	5,0	3	16	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ	All foods & bev.	870		National	6,0	3	20	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ	All foods & bev.	413		National	2,0	1	6	Yes
Rice	GC 7	0301 G	1997	DS	FFQ	All foods & bev.	1275		National	8,0	5	26	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ	Certain foods	2222		National	1,2	0,3	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ	Certain foods	2535		National	1,4	0,3	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ	All foods & bev.	262		National	34,0	25	126	Yes
Imported beer	DM3	0205A	1997	DS	FFQ	All foods & bev.	61		National	31,0	5	160	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ	All foods & bev.	652		National	80,0	49	252	Yes

*; FFQ = Food frequency questionnaire

Country: Norway, 6-months old babies, consumers. **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Porridge (content of flour)			1998-99	DS	FFQ		2383		National	90,0	200	210	Yes

*; FFQ = Food frequency questionnaire

Country: Portugal; adults **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
wheat	GC1	0301A	2002	HPLC			3	spot	National	3,01			yes
white wheat flour	CF2	0201B	2002	HPLC			3	spot	National	185,6			yes
wheat bran	CF1	0201B	2002	HPLC			4	spot	National	0,25			yes
cereal breakfast	CF4	0201D	2002	HPLC			10	spot	National	3			yes

Country: Sweden; all population 18-74 year **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
wheat	GC 1	0301A	1997/98	DS	diary	all foods	1200	spot	National	89,0	81	168	yes
oats	GC 3	0301C	1997/98	DS	diary	all foods	1200	spot	National	4,0	0	27	yes
rye	GC 5	0301E	1997/98	DS	diary	all foods	1200	spot	National	33,0	29	75	yes

Country: UK; average male adult (aged 16-64 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1990	DS	diary (7 d)	all foods and beverages consumed	597	Spot	National	35,6	22,6	113,9	Yes
Malted Barley			1990	DS	diary (7 d)	all foods and beverages consumed	4	Spot	National	0,0	0,0	0,0	Yes
Milk			1990	DS	diary (7 d)	all foods and beverages consumed	1085	Spot	National	268,3	239,8	593,8	Yes
Beer			1990	DS	diary (7 d)	all foods and beverages consumed	697	Spot	National	735,5	533,0	2138,9	Yes
Breakfast cereals			1990	DS	diary (7 d)	all foods and beverages consumed	615	Spot	National	41,2	31,4	109,4	Yes
Biscuits			1990	DS	diary (7 d)	all foods and beverages consumed	800	Spot	National	20,1	14,6	56,7	Yes
Bread			1990	DS	diary (7 d)	all foods and beverages consumed	1082	Spot	National	135,3	125,8	262,7	Yes
Cakes			1990	DS	diary (7 d)	all foods and beverages consumed	807	Spot	National	44,0	32,5	114,0	Yes
Flour (1)			1990	DS	diary (7 d)	all foods and beverages consumed	1034	Spot	National	21,3	16,6	56,6	Yes
Polenta (2)			1990	DS	diary (7 d)	all foods and beverages consumed	2	Spot	National	22,5	22,5	34,7	Yes
Snacks			1990	DS	diary (7 d)	all foods and beverages consumed	532	Spot	National	13,3	9,3	36,9	Yes
Cornflour			1990	DS	diary (7 d)	all foods and beverages consumed	172	Spot	National	1,2	0,9	2,9	Yes
Baby food (3)													
Corn (4)			1990	DS	diary (7 d)	all foods and beverages consumed	146	Spot	National	12,4	9,5	41,0	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) Baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average female adult (aged 16-64 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1990	DS	diary (7 d)	all foods and beverages consumed	557	Spot	National	23,8	17,1	64,6	Yes
Malted Barley			1990	DS	diary (7 d)	all foods and beverages consumed	4	Spot	National	0,0	0,0	0,0	Yes
Milk			1990	DS	diary (7 d)	all foods and beverages consumed	1104	Spot	National	229,3	204,9	504,9	Yes
Beer			1990	DS	diary (7 d)	all foods and beverages consumed	247	Spot	National	193,1	101,2	738,0	Yes
Breakfast cereals			1990	DS	diary (7 d)	all foods and beverages consumed	649	Spot	National	29,9	23,0	76,1	Yes
Biscuits			1990	DS	diary (7 d)	all foods and beverages consumed	885	Spot	National	17,4	12,6	46,9	Yes
Bread			1990	DS	diary (7 d)	all foods and beverages consumed	1102	Spot	National	85,0	80,9	159,0	Yes
Cakes			1990	DS	diary (7 d)	all foods and beverages consumed	874	Spot	National	34,9	28,3	88,3	Yes
Flour (1)			1990	DS	diary (7 d)	all foods and beverages consumed	1062	Spot	National	16,7	12,8	43,4	Yes
Polenta (2)			1990	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	7,3	7,3	7,3	Yes
Snacks			1990	DS	diary (7 d)	all foods and beverages consumed	579	Spot	National	10,0	7,8	25,9	Yes
Cornflour			1990	DS	diary (7 d)	all foods and beverages consumed	153	Spot	National	1,2	0,9	2,8	Yes
Baby food (3)													
Corn (4)			1990	DS	diary (7 d)	all foods and beverages consumed	186	Spot	National	8,4	5,4	23,4	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) Baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average toddler (aged 1.5-4.5 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1990	DS	diary (4 d)	all foods and beverages consumed	942	Spot	National	14,4	6,9	52,6	Yes
Malted Barley			1990	DS	diary (4 d)	all foods and beverages consumed	2	Spot	National	0,0	0,0	0,0	Yes
Milk			1990	DS	diary (4 d)	all foods and beverages consumed	1671	Spot	National	295,5	255,8	680,8	Yes
Beer			1990	DS	diary (4 d)	all foods and beverages consumed	5	Spot	National	7,8	4,2	16,8	Yes
Breakfast cereals			1990	DS	diary (4 d)	all foods and beverages consumed	1536	Spot	National	21,4	18,1	49,2	Yes
Biscuits			1990	DS	diary (4 d)	all foods and beverages consumed	1479	Spot	National	16,9	14,0	41,1	Yes
Bread			1990	DS	diary (4 d)	all foods and beverages consumed	1657	Spot	National	42,0	37,8	89,2	Yes
Cakes			1990	DS	diary (4 d)	all foods and beverages consumed	939	Spot	National	18,3	13,4	50,8	Yes
Flour (1)			1990	DS	diary (4 d)	all foods and beverages consumed	1559	Spot	National	13,0	9,5	36,3	Yes
Polenta (2)			1990	DS	diary (4 d)	all foods and beverages consumed	3	Spot	National	6,5	2,0	13,8	Yes
Snacks			1990	DS	diary (4 d)	all foods and beverages consumed	1303	Spot	National	12,1	10,0	29,6	Yes
Cornflour			1990	DS	diary (4 d)	all foods and beverages consumed	61	Spot	National	1,2	0,6	3,8	Yes
Baby food			1990	DS	diary (4 d)	all foods and beverages consumed	38	Spot	National	55,7	35,2	168,2	Yes
Corn (3)			1990	DS	diary (4 d)	all foods and beverages consumed	206	Spot	National	7,5	4,6	23,1	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average infant (aged 6-12 months) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1992	DS	diary (7 d)	all foods and beverages consumed	369	Spot	National	7,2	5,1	21,1	yes
Malted Barley			1992	DS	diary (7 d)	all foods and beverages consumed	0	Spot	National	0,0	0,0	0,0	yes
Milk			1992	DS	diary (7 d)	all foods and beverages consumed	483	Spot	National	320,4	307,2	770,7	yes
Beer			1992	DS	diary (7 d)	all foods and beverages consumed	0	Spot	National	0,0	0,0	0,0	yes
Breakfast cereals			1992	DS	diary (7 d)	all foods and beverages consumed	380	Spot	National	16,2	14,5	36,1	yes
Biscuits			1992	DS	diary (7 d)	all foods and beverages consumed	325	Spot	National	7,2	5,7	19,6	yes
Bread			1992	DS	diary (7 d)	all foods and beverages consumed	388	Spot	National	16,9	13,3	46,9	yes
Cakes			1992	DS	diary (7 d)	all foods and beverages consumed	146	Spot	National	7,0	4,3	20,2	yes
Flour (1)			1992	DS	diary (7 d)	all foods and beverages consumed	449	Spot	National	11,2	9,0	32,5	yes
Polenta (2)			1992	DS	diary (7 d)	all foods and beverages consumed	140	Spot	National	7,3	5,7	18,0	yes
Snacks			1992	DS	diary (7 d)	all foods and beverages consumed	95	Spot	National	3,8	2,0	11,0	yes
Cornflour			1992	DS	diary (7 d)	all foods and beverages consumed	293	Spot	National	4,9	3,7	12,4	yes
Baby food			1992	DS	diary (7 d)	all foods and beverages consumed	317	Spot	National	14,6	9,4	48,4	yes
Corn (3)			1992	DS	diary (7 d)	all foods and beverages consumed	35	Spot	National	3,3	2,4	7,9	yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average male free living elderly person (aged 65 years and over) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1998	DS	diary (4 d)	all foods and beverages consumed	145	Spot	National	28,5	26,2	69,0	Yes
Malted Barley			1998	DS	diary (4 d)	all foods and beverages consumed	1	Spot	National	0,0	0,0	0,0	Yes
Milk			1998	DS	diary (4 d)	all foods and beverages consumed	627	Spot	National	260,3	238,7	545,8	Yes
Beer			1998	DS	diary (4 d)	all foods and beverages consumed	204	Spot	National	532,9	287,0	1669,7	Yes
Breakfast cereals			1998	DS	diary (4 d)	all foods and beverages consumed	450	Spot	National	67,9	38,8	242,4	Yes
Biscuits			1998	DS	diary (4 d)	all foods and beverages consumed	444	Spot	National	24,3	18,6	59,1	Yes
Bread			1998	DS	diary (4 d)	all foods and beverages consumed	627	Spot	National	112,1	107,3	203,4	Yes
Cakes			1998	DS	diary (4 d)	all foods and beverages consumed	459	Spot	National	50,5	41,1	116,6	Yes
Flour (1)			1998	DS	diary (4 d)	all foods and beverages consumed	532	Spot	National	20,4	15,7	61,9	Yes
Polenta (2)			1998	DS	diary (4 d)	all foods and beverages consumed	1	Spot	National	5,3	5,3	5,3	Yes
Snacks			1998	DS	diary (4 d)	all foods and beverages consumed	78	Spot	National	11,9	7,5	26,6	Yes
Cornflour			1998	DS	diary (4 d)	all foods and beverages consumed	31	Spot	National	2,0	1,5	4,3	Yes
Baby food (3)													
Corn (4)			1998	DS	diary (4 d)	all foods and beverages consumed	31	Spot	National	11,6	4,8	24,5	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) Baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average female free living elderly person (aged 65 years and over) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			1998	DS	diary (4 d)	all foods and beverages consumed	123	Spot	National	24,4	13,3	84,6	Yes
Malted Barley			1998	DS	diary (4 d)	all foods and beverages consumed	0	Spot	National	0,0	0,0	0,0	Yes
Milk			1998	DS	diary (4 d)	all foods and beverages consumed	641	Spot	National	238,1	213,6	497,5	Yes
Beer			1998	DS	diary (4 d)	all foods and beverages consumed	44	Spot	National	220,3	139,5	646,3	Yes
Breakfast cereals			1998	DS	diary (4 d)	all foods and beverages consumed	424	Spot	National	46,5	29,5	146,7	Yes
Biscuits			1998	DS	diary (4 d)	all foods and beverages consumed	461	Spot	National	20,2	16,4	49,6	Yes
Bread			1998	DS	diary (4 d)	all foods and beverages consumed	633	Spot	National	80,9	77,0	148,4	Yes
Cakes			1998	DS	diary (4 d)	all foods and beverages consumed	434	Spot	National	39,1	32,0	90,3	Yes
Flour (1)			1998	DS	diary (4 d)	all foods and beverages consumed	523	Spot	National	17,4	12,7	49,6	Yes
Polenta (2)			1998	DS	diary (4 d)	all foods and beverages consumed	0	Spot	National	0,0	0,0	0,0	Yes
Snacks			1998	DS	diary (4 d)	all foods and beverages consumed	84	Spot	National	8,8	7,0	26,1	Yes
Cornflour			1998	DS	diary (4 d)	all foods and beverages consumed	30	Spot	National	1,7	1,2	3,2	Yes
Baby food (3)													
Corn (4)			1998	DS	diary (4 d)	all foods and beverages consumed	31	Spot	National	14,9	9,7	37,1	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) Baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average young person (aged 4-6 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			2000	DS	diary (7 d)	all foods and beverages consumed	271	Spot	National	17,5	9,4	57,4	Yes
Malted Barley			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	0,0	0,0	0,0	Yes
Milk			2000	DS	diary (7 d)	all foods and beverages consumed	354	Spot	National	240,1	222,1	536,7	Yes
Beer			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	21,4	21,4	21,4	Yes
Breakfast cereals			2000	DS	diary (7 d)	all foods and beverages consumed	346	Spot	National	29,6	26,7	67,7	Yes
Biscuits			2000	DS	diary (7 d)	all foods and beverages consumed	328	Spot	National	20,0	16,7	46,4	Yes
Bread			2000	DS	diary (7 d)	all foods and beverages consumed	354	Spot	National	62,9	59,4	121,6	Yes
Cakes			2000	DS	diary (7 d)	all foods and beverages consumed	291	Spot	National	26,5	22,2	59,8	Yes
Flour (1)			2000	DS	diary (7 d)	all foods and beverages consumed	348	Spot	National	16,5	13,9	39,8	Yes
Polenta (2)			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	4,7	4,7	4,7	Yes
Snacks			2000	DS	diary (7 d)	all foods and beverages consumed	333	Spot	National	16,3	15,1	34,6	Yes
Cornflour			2000	DS	diary (7 d)	all foods and beverages consumed	30	Spot	National	1,2	0,6	4,3	Yes
Baby food			2000	DS	diary (7 d)	all foods and beverages consumed	5	Spot	National	18,5	7,4	60,5	Yes
Corn (3)			2000	DS	diary (7 d)	all foods and beverages consumed	95	Spot	National	7,6	5,8	18,8	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average young person (aged 7-10 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			2000	DS	diary (7 d)	all foods and beverages consumed	360	Spot	National	26,1	15,4	89,7	Yes
Malted Barley			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	0,1	0,1	0,1	Yes
Milk			2000	DS	diary (7 d)	all foods and beverages consumed	482	Spot	National	208,0	179,3	483,4	Yes
Beer			2000	DS	diary (7 d)	all foods and beverages consumed	2	Spot	National	9,3	7,4	12,6	Yes
Breakfast cereals			2000	DS	diary (7 d)	all foods and beverages consumed	442	Spot	National	33,6	29,7	74,4	Yes
Biscuits			2000	DS	diary (7 d)	all foods and beverages consumed	442	Spot	National	23,1	19,7	56,6	Yes
Bread			2000	DS	diary (7 d)	all foods and beverages consumed	481	Spot	National	78,1	72,0	140,7	Yes
Cakes			2000	DS	diary (7 d)	all foods and beverages consumed	401	Spot	National	30,5	27,9	77,1	Yes
Flour (1)			2000	DS	diary (7 d)	all foods and beverages consumed	470	Spot	National	20,2	16,0	48,9	Yes
Polenta (2)			2000	DS	diary (7 d)	all foods and beverages consumed	3	Spot	National	4,1	2,3	7,1	Yes
Snacks			2000	DS	diary (7 d)	all foods and beverages consumed	447	Spot	National	18,4	16,7	40,8	Yes
Cornflour			2000	DS	diary (7 d)	all foods and beverages consumed	48	Spot	National	0,8	0,7	1,8	Yes
Baby food			2000	DS	diary (7 d)	all foods and beverages consumed	0	Spot	National	0,0	0,0	0,0	Yes
Corn (3)			2000	DS	diary (7 d)	all foods and beverages consumed	122	Spot	National	9,7	7,1	30,2	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average young person (aged 11-14 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			2000	DS	diary (7 d)	all foods and beverages consumed	356	Spot	National	39,1	21,9	132,2	Yes
Malted Barley			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	0,1	0,1	0,1	Yes
Milk			2000	DS	diary (7 d)	all foods and beverages consumed	475	Spot	National	199,3	169,1	493,7	Yes
Beer			2000	DS	diary (7 d)	all foods and beverages consumed	12	Spot	National	61,3	38,9	129,3	Yes
Breakfast cereals			2000	DS	diary (7 d)	all foods and beverages consumed	398	Spot	National	36,6	32,3	81,4	Yes
Biscuits			2000	DS	diary (7 d)	all foods and beverages consumed	400	Spot	National	20,8	15,0	53,1	Yes
Bread			2000	DS	diary (7 d)	all foods and beverages consumed	471	Spot	National	86,2	80,4	162,4	Yes
Cakes			2000	DS	diary (7 d)	all foods and beverages consumed	372	Spot	National	32,4	24,3	90,9	Yes
Flour (1)			2000	DS	diary (7 d)	all foods and beverages consumed	460	Spot	National	24,6	19,8	64,0	Yes
Polenta (2)			2000	DS	diary (7 d)	all foods and beverages consumed	4	Spot	National	8,2	1,0	19,6	Yes
Snacks			2000	DS	diary (7 d)	all foods and beverages consumed	427	Spot	National	19,8	16,7	43,5	Yes
Cornflour			2000	DS	diary (7 d)	all foods and beverages consumed	55	Spot	National	1,0	0,7	2,2	Yes
Baby food			2000	DS	diary (7 d)	all foods and beverages consumed	1	Spot	National	14,3	14,3	14,3	Yes
Corn (3)			2000	DS	diary (7 d)	all foods and beverages consumed	135	Spot	National	8,9	6,3	23,2	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Country: UK; average young person (aged 15-18 years) **Units: g or ml**

Food product	Group	Code	Ref. Year	Method	Survey Methods*	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Rice			2000	DS	diary (7 d)	all foods and beverages consumed	275	Spot	National	44,4	29,2	138,6	Yes
Malted Barley			2000	DS	diary (7 d)	all foods and beverages consumed	2	Spot	National	0,2	0,1	0,2	Yes
Milk			2000	DS	diary (7 d)	all foods and beverages consumed	386	Spot	National	194,5	163,4	489,4	Yes
Beer			2000	DS	diary (7 d)	all foods and beverages consumed	108	Spot	National	391,3	227,1	1108,6	Yes
Breakfast cereals			2000	DS	diary (7 d)	all foods and beverages consumed	269	Spot	National	39,3	31,6	95,1	Yes
Biscuits			2000	DS	diary (7 d)	all foods and beverages consumed	276	Spot	National	20,0	12,6	62,5	Yes
Bread			2000	DS	diary (7 d)	all foods and beverages consumed	43	Spot	National	102,0	96,8	185,1	Yes
Cakes			2000	DS	diary (7 d)	all foods and beverages consumed	260	Spot	National	29,6	21,2	82,5	Yes
Flour (1)			2000	DS	diary (7 d)	all foods and beverages consumed	380	Spot	National	27,7	21,6	76,4	Yes
Polenta (2)			2000	DS	diary (7 d)	all foods and beverages consumed	2	Spot	National	13,5	13,5	23,6	Yes
Snacks			2000	DS	diary (7 d)	all foods and beverages consumed	313	Spot	National	17,6	14,7	43,7	Yes
Cornflour			2000	DS	diary (7 d)	all foods and beverages consumed	43	Spot	National	1,0	0,7	2,9	Yes
Baby food			2000	DS	diary (7 d)	all foods and beverages consumed	3	Spot	National	13,1	7,8	19,8	Yes
Corn (3)			2000	DS	diary (7 d)	all foods and beverages consumed	111	Spot	National	10,4	4,8	35,0	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Table 15: Summary of mean intake data by country (ng/kg body weight/day)

		DON		NIV		HT-2		T-2		3-AcDON		15-AcDON		T2-Triol		FUS-X		DAS	
Country	**Population group**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**	**mean1**	**high level**
Austria	Whole population	294	1037	78	274	107	377	43	153	21	74	54	191						
Belgium	Adolescents 13-18 years	245	840																
Denmark	Whole population	171	743	30	72			50	105										
Finland	Adults 24 - 64 years	144		27		19		18		17						15		15	
France	Adults	461	1667	58	199	30	98	45	156										
	Male	443	1527	58	191	30	98	43	140										
	Female	480	1806	58	205	28	94	45	159										
	Children	725	2430	94	307	44	143	67	207										
Germany	Adults	274	548																
	Young child	959	1917																
	4 month baby	510	1020																
Italy	Whole population							11	28										
	Consumers only							104	114										
The Netherlands	Whole population	338																	
	Children 1-4 years	853																	
	Children 1-6 years	764																	
Norway	Male, all participants	343	628	57	110	30	69	34	67	50	95								
	Male, consumers	348	636	59	113	33	72	35	68	51	97								
	Female, all participants	300	530	50	93	26	59	30	57	44	81								
	Female, consumers	304	537	52	96	29	65	31	59	45	83								
	6-months old babies, all participants.																		
	*If all porridge consumed consisted of maize:	5073	11837	158	368	169	394	169	394										
	*If all porridge consumed consisted of rice:	113	263	113	263	169	394	169	394										
	*If all porridge consumed consisted of oat:	113	263	113	263	169	394	169	394										
	*If all porridge consumed consisted of wheat:	313	729	113	263	169	394	169	394										
	*If all porridge consumed consisted of : Composite grain product	286	667	113	263	169	394	169	394										
Portugal	Adults	363																	
Sweden	All population 18-74 year	78	155	6	13					4	7								
UK	Average male adult (16-64 years),	176		25		12		11		16		14		6					
(consumers only)	Average female adult (16-64 years)	142		17		6		6		6		12		5					
	Average toddler (1.5-4.5 years)	483		64		18		14		15		58		14					
	Average infant (6-12 months)	369		62		16		12		12		42		11					
	Average free living male elderly person (age > 65)	174		27		9		8		10		18		5					
	Average free living female elderly person (age > 65)	143		21		6		5		5		14		4					
	Average young person (4-6 years)	496		64		19		15		16		61		14					
	Average young person (7-10 years)	395		50		15		1		13		47		12					
	Average young person (11-14 years)	275		34		10		9		9		32		8					
	Average young person (15-18 years)	205		26		9		8		9		21		6					

Table 16. Occurrence data in body fluids

Trichothecene / metabolites: T-2 toxin/T-2 Tetraol

Country: Germany

Fluid	Ref and year	N° of samples	Toxin	Concentration	Evidence of QA	Random or target	Analyt. method
Urine	Gareis, M. & Gedek, B. (1991) A case of suicide with the type A trichothecenes T-2 toxin and T-2 tetraol. 13. Mycotoxin-Workshop, 27.-29.05.1991, Hohenheim, Germany*	5	HT-2 toxin	< 0.5-3.2 ng/ml		Target	GC-MS
			T-2 Tetraol	<0.05 - 21.2 ng/ml			GC-MS
			T-2 Triol	< 0.5 ng/ml			GC-MS
Stomach (lavage)	Gareis, M. & Gedek, B. (1991) A case of suicide with the type A trichothecenes T-2 toxin and T-2 tetraol. 13. Mycotoxin-Workshop, 27.-29.05.1991, Hohenheim, Germany*	1	HT-2 toxin	2.6 ng/ml			GC-MS
			T-2 Tetraol	4.2 ng/ml			GC-MS

*Samples originated from a 28 year old man (lab assistant) who swallowed 20-25 mg T-2 toxin plus 5 mg T-tetraol (stock solutions)

Table 17: Dietary intake in each memberstate by commodity (ng/kg bw/day)

Trichothecene type B: Deoxynivalenol

Country	Wheat	barley	Rye	oats	wheat flour	Bread	Pasta	Baby Food	Biscuits	Breakfast cereals	Other
Austria; whole population											294
Belgium; Adolescents 13-18 years						193	52				0
Denmark; Whole population					32	139					
Finland, adults 24 - 64 years	110	4	7	23							
France; Adults						196	55		46	12	152
France; male						222	58		44	10	109
France; Female						170	52		50	14	194
France; Children						206	118		126	80	195
Germany; Adults						211	63				
Germany; Young child						740	219				
Germany; 4 month baby								510			
The Netherlands; Whole population	10,3	25	6	0	4	177	34	0	29		53
The Netherlands; Children 1-4 years	77	0	17	1	11	434	73	16	80		144
The Netherlands; Children 1-6 years	49	0	14	1	10	423	65	7	71		125
Norway; Male all	334	1	2	6							
Norway; Male consumers	334	2	2	9							
Norway, Female all	292	1	1	6							
Norway; Female consumers	292	2	1	8							
Norway; 6-months old babies								286			
Portugal; Adults	12				341					8	3
Sweden; All population 18-74 year	71		6	1							
UK: Average male adult (16-64 years),					16	100		0	7	54	99
UK; Average female adult (16-64 years)					15	75		0	8	48	49
UK; Average toddler (1.5-4.5 years)					50	161		176	32	147	230
UK; Average infant (6-12 months)					64	97		61	20	165	193
UK; Average male elderly person (age > 65)					15	82			9	88	54
UK; Average female elderly person (age > 65)					15	71			9	72	33
UK; Average young person (4-6 years)					43	167		39	26	138	177
UK; Average young person (7-10 years)					37	141			21	10	125
UK; Average young person (11-14 years)					29	103			13	77	114
UK; Average young person (15-18 years)					24	90		8	9	61	95

Trichothecene type B: Nivalenol

Country	Wheat	barley	Rye	oats	wheat flour	Bread	Pasta	Baby Food	Biscuits	Breakfast cereals	Other
Austria; whole population											78
Denmark; Whole population					5	25					
Finland, adults 24 - 64 years	20	1	5	1							
France; Adults						24	10		8		16
France; male						27	10		7		14
France; Female						20	9		8		21
France; Children						25	21		21		27
Norway; Male all	54	1	1	1							
Norway; Male consumers	54	2	1	2							
Norway, Female all	47	1	1	1							
Norway; Female consumers	47	2	1	2							
Norway; 6-months old babies								113			
Sweden; All population 18-74 year	5			1							
UK: Average male adult (16-64 years),					2	7			1	14	16
UK; Average female adult (16-64 years)					2	6			1	12	6
UK; Average toddler (1.5-4.5 years)					5	12		42	5	37	18
UK; Average infant (6-12 months)					7	7		15	3	42	16
UK; Average male elderly person (age > 65)					2	6			1	23	10
UK; Average female elderly person (age > 65)					2	5			1	18	6
UK; Average young person (4-6 years)					5	12		9	4	35	14
UK; Average young person (7-10 years)					4	10			3	8	10
UK; Average young person (11-14 years)					3	8		3	2	20	8
UK; Average young person (15-18 years)					3	7		2	1	16	12

Trichothecene type A: T-2 toxin

Country	Wheat	barley	Rye	oats	wheat flour	Bread	Pasta	Baby Food	Biscuits	Breakfast cereals	Other
Austria; whole population											43
Denmark; Whole population						50					
Finland, adults 24 - 64 years	11	0	6	1							
France; Adults						19	4		7		15
France; male						21	4		7		11
France; Female						16	4		8		17
France; Children						20	9		20		18
Italy; Whole population		1			1		8				1
Italy; Consumers only		33			4		9				58
Norway; Male all	31		1	2							
Norway; Male consumers	31		1	3							
Norway, Female all	27			2							
Norway; Female consumers	27			3							
Norway; 6-months old babies								169			
UK: Average male adult (16-64 years),					0	3			0	1	12
UK; Average female adult (16-64 years)					0	2				1	6
UK; Average toddler (1.5-4.5 years)					2	5		8	2	3	6
UK; Average infant (6-12 months)					2	3		3	1	4	5
UK; Average male elderly person (age > 65)					0	3			1	2	8
UK; Average female elderly person (age > 65)					0	2			1	2	5
UK; Average young person (4-6 years)					1	5		2	2	3	6
UK; Average young person (7-10 years)					1	4			1	2	6
UK; Average young person (11-14 years)					1	3		1	1	2	4
UK; Average young person (15-18 years)					1	3		0	1	1	8

Trichothecene type A: HT-2 toxin

Country	Wheat	barley	Rye	oats	wheat flour	Bread	Pasta	Baby Food	Biscuits	Breakfast cereals	Other
Austria; whole population											107
Finland, adults 24 - 64 years	12	1	5	2							
France; Adults						15	4		3		8
France; male						18	4		3		8
France; Female						13	4		3		8
France; Children						16	9		8		13
Norway; Male all	23			6							
Norway; Male consumers	23			9							
Norway, Female all	20			6							
Norway; Female consumers	20			9							
Norway; 6-months old babies								169			
UK: Average male adult (16-64 years),					0	3			0	3	11
UK; Average female adult (16-64 years)					0	2			0	2	6
UK; Average toddler (1.5-4.5 years)					2	5		8	2	7	4
UK; Average infant (6-12 months)					2	3		3	1	8	6
UK; Average male elderly person (age > 65)					0	3			1	4	8
UK; Average female elderly person (age > 65)					0	2			1	4	5
UK; Average young person (4-6 years)					1	5		2	2	7	6
UK; Average young person (7-10 years)					1	4			1	5	6
UK; Average young person (11-14 years)					1	3		1	1	4	4
UK; Average young person (15-18 years)					1	3		0	1	3	9

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TASK 3.2.10 "COLLECTION OF OCCURRENCE DATA OF FUSARIUM TOXINS IN FOOD AND ASSESSMENT OF DIETARY INTAKE BY THE POPULATION OF EU MEMBER STATES"

Subtask II: ZEARALENONE

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CONTENTS

1 GENERAL

Basic information on Zearalenone is given in Annex 1.

A timetable of the Task 3.2.10 "COLLECTION OF OCCURRENCE DATA OF FUSARIUM TOXINS IN FOOD AND ASSESSMENT OF DIETARY INTAKE BY THE POPULATION OF EU MEMBER STATES" are attached in Annex I.

Thirteen countries were asked to provide information on the exposure of the population to Zearalenone in their country. Nine countries provided data on Zearalenone. Instruction and guidelines for the participating countries to this task are described in Annex II: “INFORMATION TO PARTICIPATING INSTITUTE and FOOD CATEGORISATION SYSTEM”. According to this request the participants have sent their information on the occurrence of zearalenone in food generally by following the Food Categories provided by the co-ordinators. France has also added a new categorisation system for other derived products of plant origin that they have reported.

In order to allow the co-ordinators to better harmonize the occurrence data by each Member State, participants were asked to send, whenever possible, also the individual data for each group or subgroup. The co-ordinators decided in the tables for the occurrence of zearalenone in selected commodities to omit the provided information on reference and year, contamination ranges, evidence of quality assurance, sampling strategies, analytical methods and if the samples were representative for the member states.

All occurrence data that are given by the participant countries are attached in Annex 3-6. Other information from the participating countries is given in Annex 7.

Glossaries of the employed terms are given in Annex VI.

None of the participating countries have provided occurrence data in body-fluids or other sources, form 4, Annex II. The tables to this form are therefore not included in this document.

General comments regarding the tables in Annex II:

Calculation of the mean 1 and mean 2

Mean 1 arithmetic mean value for all samples (both positive and negative samples) according to the following criteria:

1) If LOD and LOQ are available, participants were requested to calculate mean level using LOD/2 for results lower than the LOD.
2) If only LOQ is available, the values less than LOQ must be considered as LOQ/6 (considered to be equivalent to LOD/2).

Mean 2 arithmetic mean values for all positive samples above LOD values and it accounts for the distribution and level of positive results.

Range of contamination

The ranges of concentrations were chosen in order to provide a wide spectrum of the low region of concentration.

Median value

The median value, corresponding to the 50th percentile, provides an indication on the distribution of data population, along with mean 1.

2 ZEARALENONE OCCURRENCE IN FOOD

Nine countries have provided occurrence data for selected commodities. The contribution and participating countries are Austria (390 samples), Finland (385 samples), France (1249 samples), Germany (712 samples), Italy (682 samples), the Netherlands (36 samples), Norway (793 samples), Portugal (15 samples) and United Kingdom (750 samples).

The total number of reported occurrence data in Task 3.2.10 on zearalenone are N = 5018 samples, 1594 of these are positive/value over the detection limit (32 % positive). Almost all of the present samples were cereal products, only 100 samples were milk products. Table 1A and Table 1C in Annex 5 present the occurrence data as provided by participants (N = 9). These two tables present the data country by country and are nearly the same, but at the bottom of table 1C the total contribution from all countries and the number of positive samples in each country are calculated.

Table 1B1, 1B2 calculate the best estimate of table 1A. Not all countries have provided this information.

Table 1D presents a summary of individual occurrence data by food groups. Cereals are in this table divided into wheat and wheat products, maize and maize products, rice, oat, rye, barley and derived products of these, baby food and derived cereal products. All of these products are divided into cereal grains, milling fractions and derived products as in the Food Categorisation System. Milk samples are also reported in this table. At the bottom of the individual tables the sums of the total samples are reported, the number of occurrence of zearalenone over the detection limits are calculated (included the percentage of positive samples) and the maximum values that are found are included.

Some participants have presented all raw data from their country, as shown in Table 7.

2.1 Cereals

The total numbers of contribution from the nine participating countries on zearalenone are 4918 cereals samples and 1591 of these samples are contaminated with zearalenone (32 % positive).

As mention above, the cereals were divided into wheat and wheat products, maize and maize products, rice, oat, rye, barley and derived products of these, baby food and derived cereal products. And these groups are divided into cereal grains, milling fractions and derived products as in the Food Categorisation System. All available occurrence data were used in the calculations, even though the corresponding consumption data were not available in some cases.

The occurrence data for cereal grains (wheat, maize, rice, rye, oats and barley) are shown in Figure 1. This figure shows that most data are given on wheat cereal grains and maize cereal grains. Seven countries provided cereal grain samples for wheat (N = 847; 30 % positive). The mean 1 ranged from 0,083 µg/kg (Finland) to 26 µg/kg (France). Maize cereal grains (N = 824) were provided by 5 countries, and the mean 1 ranged from 5,2 µg/kg (Austria) and up to 627 µg/kg (Italy). The numbers of samples are rather small on rice cereal grains (N = 74) and rye cereal grains (N = 84). The total number of oats samples are 377 and 69 of these are contaminated with zearalenone. The mean 1 ranged from 1,4 µg/kg (Norway) and up to 640 µg/kg (Finland). Only 11 of the barley cereal grain samples were zearalenone positive (N = 226). The mean 1 ranged between 0,083 (Finland) µg/kg to 15 µg/kg (Italy).

- ***Wheat and wheat based products***

Eight out of nine countries provided data on these products. The total amount of samples was N = 1900 samples. As shown in Figure 2 these samples are divided into cereal grains (N = 847; 30 % positive), milling wheat fractions (N = 768; 24 % positive) and wheat based products (N = 285; 10,5 % positive).

Durum wheat, soft wheat and buckwheat are included into cereal grains. These products had a maximum value of 152 µg/kg (France). The mean 1 value ranged between 0,083 µg/kg (Finland) to 26 µg/kg (France). The LOD ranged from 1 to 30 µg/kg.

Milling wheat fractions include wheat gluten, semolina, whole meal, wheat bran and white wheat flour. The mean 1 value ranged from 0,83 µg/kg (France) to 122 µg/kg (France). The maximum value ranged from 1,7 and up to 510 µg/kg (Italy).

Wheat based products such as pasta and pizza had a maximum value of 72 µg/kg (Germany). The mean 1 ranged from 0,83 µg/kg (France) to 25 µg/kg (France). The lowest and highest value on LOD was 2 µg/kg and 50 µg/kg.

- ***Maize, maize fractions and maize based products***

Seven countries provided data (France, Germany, Italy, Norway, Austria, the Netherlands and UK). The total number of analyzed samples were N = 1265. Figure 3 shows the total number of samples and the percentage of positive samples in maize and maize products.

Maize cereal grains with 824 samples (79 % positive) had a maximum value that ranged from 22 µg/kg (the Netherlands, LOD = 10) and up to 6492 µg/kg (Italy, LOD = 10). The mean 1 ranged from 5,2 µg/kg (Austria) to 627 µg/kg (Italy).

Maize fractions are maize derived products and include maize gluten, maize starch, maize meal, maize grits and maize flour. The mean 1 ranged from 0,83 µg/kg (France) and up to 1328 µg/kg (Italy).The lowest maximum value were 2,5 µg/kg (France; LOQ = 5), and the highest value were 6075 µg/kg (Italy; LOD = 10).

Cornflakes, polenta, maize bread, popcorn, sweet corn and maize snacks are included in the group Maize based products. Four countries provided data to this group. About 53 % of 246 samples were positive. The mean 1 ranged between 0,83 µg/kg (France) to 26,78 µg/kg (U.K.). The maximum value ranged from 4,2 µg/kg (Norway; LOD = 1,94) and up to 171,7 µg/kg (U.K.; LOQ = 8).

- ***Rice and rice derived products***

Only three countries provided information on rice and rice-derived products. The total number of samples were N = 208 samples. Data on rice cereal grains were provided from France. Numbers of analyzed samples were 74 (0 positive). The mean 1 ranged from 5 µg/kg to 10 µg/kg. France, Germany and U.K provided data on rice derived products. The food commodities that are included in this group are not described. The total numbers of samples were 134, with 9 % positive. The mean 1 ranged between 0,83 µg/kg (France) and 2 µg/kg (Germany).

In Fig.4 the total number of rice samples including rice and rice-derived products are presented. The percentages of zearalenone-contaminated samples are also included in the figure.

- ***barley and barley derived products***

Six countries (Finland, France, Germany, Italy, UK and Norway) provided data on barley (N = 231). As shown in Figure 5 this group are divided into barley cereal grains and derived barley products. The figure also includes the percentage of zearalenone-contaminated samples.

Maltered barley is included in barley cereal grains, and this group consists of 226 samples (4,9 % positive). The mean 1 ranged from 0,083 µg/kg (France) to 15 µg/kg (Italy). The lowest and highest maximum value were 4,4 µg/kg (Finland; LOD = 2) and 53,4 µg/kg (Finland; LOQ = 0,5).

Only five of these samples were derived barley products, all from France. The mean 1 was 0,83 µg/kg for all of these samples.

- ***Oats and oats derived products***

Four European countries provide data on this food commodity (Austria, Finland, Norway and France). The total numbers of analyzed samples were 384. As shown in Figure 6 the oat samples are divided into cereal grains and derived oat products, the percentages of positive oat samples are also presented.

The total numbers of samples of oats cereal grains were 377 samples, with almost 20 % positive. The mean 1 ranged from 1,4 µg/kg (Norway) and up to 640,4 µg/kg (Finland). The maximum zearalenone concentrations range from 2 µg/kg (Norway; LOD = 2 µg/kg) and up to 1310 µg/kg (Finland; LOQ = 0,5).

Only seven of these samples, all from France, were derived oats products. The food commodities that are included in this group are not described. Of these samples 57 % were positive. The mean 1 value ranged between 0,83 µg/kg to 1,67 µg/kg.

- ***Rye and rye derived products***

Five countries provide data (Finland, Germany, Norway, France and UK). The total numbers of analyzed samples are 94. These samples were divided into cereal grains and rye derived products, as shown in Figure 7. The cereal grains consisted of 84 samples (4,8 % positive). The mean 1 ranged from 1 µg/kg (Germany and Finland) to 10 µg/kg (Norway; LOD = 20 µg/kg). The maximum value ranged between 5 µg/kg (Norway; LOD = 5 µg/kg) and 23,7 µg/kg (Germany; LOD = 5 µg/kg). Only 10 samples (70 % positive) were derived rye products. In this group food like rye bread and rye meal were included. The highest mean 1 value was 1,67 µg/kg (France).

- ***Baby food***

Three out of nine countries provided occurrence data on baby food (Germany, U.K. and Norway). The total number of data were N = 356, with 23,3 % positive samples, as shown in Figure 8. The levels of contamination ranged from 1,9 µg/kg (Norway; LOD = 0,5 µg/kg) and up to 305 µg/kg

(Norway; LOD = 0,5 µg/kg). The sample with the lowest value was taken from wheat based baby porridge, and the samples from the highest value were from maize based baby porridge. The mean 1 ranged between 0,6 µg/kg (Norway) to 70,2 µg/kg (Norway).

- ***Cereal Products and other products of plant origin***

Five countries provided data on cereal products. These groups include derived cereal products N = 386 (11,4 % positive), cereal grain and other grasses N = 90 (3,3 % positive), other derived products of plant origin N = 1 (0 positive) and manufactured foods of plant origin N = 2 (0 positive). These food groups are present in Figure 9.

Derived cereal products include breakfast cereals, biscuits, bread, snacks, cakes and beer. The maximums value for this group ranged from 11 µg/kg (Portugal; LOD 2,5 µg/kg) to 232 µg/kg (U.K.; LOQ = 8). The mean 1 ranged from 0,83 µg/kg (France) to 37,20 µg/kg (U.K.).

Italy provided 85 samples on cereal grains, the mean 1 value for these samples were 6 µg/kg. The maximum value was 80 µg/kg.

The occurrence data for the two last groups provided from Germany, were rather small. The levels were under the detection limits.

2.2 Number of samples and zearalenone positive samples per country

Figure 10 shows the occurrence data on zearalenone in all commodities for this task. Nine countries provided data. The total number of reported analyzed samples are 5018 samples, 1594 of these are positive (≈ 32 % positive). Almost all of the present samples were cereal products; only 100 samples from U.K. were milk products.

- **Total number of samples for raw wheat, maize, oats and barley**

Figure 11 A-D show the contribution of all samples, include zearalenone positive samples for raw cereals of wheat, maize, barley and oats, per country. These figures are included so they can give an opinion on the variation of number of analyzed samples and zearalenone positive samples per country.

2.3 Information regarding the analyses

The information from the participating countries is gathered in Annex 9. It is accepted that not all participants have been able to provide the information that were requested.

- ***References***

The majority of the references to the occurrence data that are used in this task are given in the Forms, except in a few cases were the data are unpublished.

- ***Analytical methods***

The participating countries used modified and validated methods for detection of zearalenone. The description of the methods was in most cases based on clean-up procedures with immunoaffinity

columns followed by HPLC and fluorescence detection. Also, in a few cases ELISA (France and Germany) and GC-MS (France and U.K.) were used. Most of the laboratories were accredited for the analyses.

The limits of detection (LOD) and the limits of quantification (LOQ) of the analyses are changing between the participating countries. Some countries have just quoted the LOQ value.

Table 1A and 1B collect some the information the participants have given in Annex 5 and Annex 9. The tables present the LOD and LOQ values, together with the methods of analyses and if the data are representative for the Member State. The tables gathered all raw data for wheat (1A) and maize (1B).

Table 1 A; Overview over the LOD, LOQ and analytical methods that is used in the detection for zearalenone in raw wheat.

OVERVIEW LOD/LOQ AND ANALYTICAL METHODS FOR WHEAT (CEREAL GRAINS)

	LOD	LOQ	Number of samples	Max. value	Median	Analytic.method	Representative for the Member State
AUSTRIA	NO SAMPLES						
FINLAND	.-	0,5	37	< LOQ	0,083	HPLC	YES
	.-	0,5	35	12,1	0,083	HPLC	YES
	.-	0,5	39	0,5	0,083	HPLC	YES
	2	.-	25	5,3	1	HPLC	YES
FRANCE	.-	10	5	20	1,67	HPLC	NO
	1	2	16	<LOD	0,5	HPLC	YES
	1	2	16	< LOD	0,5	HPLC	YES
	.-	5	5	6,5	0,83	HPLC	YES
	.-	10	10	5,1	1,67	HPLC	YES
	.-	10	5	.-	1,67	HPLC	NO
	20	..10-80	74	135	50	GC or HPLC	YES
	.-	15-100	100	152	5	GC or HPLC	YES
GERMANY	5	10	1	< LOD	< LOD	HPLC	YES
	5	10	6	<LOQ	< LOD	HPLC	YES
	< 2	< 5	15	40,7	.-	HPLC	.-
	4	10	25	11,4	11,4	HPLC-FD	YES
ITALY	30	90	2	15	.-	HPLC	NO
	10	.-	51	<LOD	5	HPLC	YES
THE NETHERLANDS	10	.-	2	55	.-	IA HPLC-FD	.-
	10	.-	5	< LOD	<10	IA HPLC-FD	.-
	5	.-	13	45,3	<5	IA HPLC-FD	.-
NORWAY	5	15	138	11	2,5	HPLC	YES
	5	15	27	5	2,5	HPLC	YES
	3	9	32	68	1,5	HPLC	YES
	3	9	13	3	1,5	HPLC	YES
	20	60	28	< LOD	10	HPLC	YES
	20	60	14	< LOD	10	HPLC	YES
	1	3	25	21,2	0,5	HPLC	YES
	1	3	10	13,2	0,5	HPLC	YES
	2	6	35	13	1	HPLC	YES
	2	6	24	4	1	HPLC	YES
PORTUGAL	2,5	5	1	<LOD	.-	HPLC	YES
UNITED KINGDOM	NO SAMPLES						

Table 1 B; Overview over the LOD, LOQ and analytical methods that is used in the detection for zearalenone in raw maize.

OVERVIEW LOD/LOQ AND ANALYTICAL METHODS FOR MAIZE (CEREAL GRAINS)

	LOD	LOQ	Number of samples	Max. value	Median	Analytic.method	Representative for the Member State
AUSTRIA	.-	10	92	275	20	HPLC	YES
	.-	10	58	140	<LOQ	HPLC	YES
	.-	10	48	340	<LOQ	HPLC	YES
FINLAND	NO SAMPLES						
FRANCE	.-	10	55	1500	25	HPLC	NO
	.-	10	29	560	1,67	HPLC	NO
	.-	8	25	569	.-	ELISA	YES
	.-	8	25	569	.-	ELISA	YES
	20	..10-40	164	998	27	GC or HPLC	YES
	..5-30	40-50	116	1817	75	GC or HPLC	YES
GERMANY	NO SAMPLES						
ITALY	10	.-	48	6492	235	HPLC	YES
	20	.-	5	<LOD	10	HPLC	YES
	3	.-	15	150	37	HPLC	NO
THE NETHERLANDS	10	.-	4	22	<10	IA HPLC-FD	.-
NORWAY	NO SAMPLES						
PORTUGAL	NO SAMPLES						
UNITED KINGDOM	.-	10	92	391	57,5	HPLC	YES
	.-	10	47	584	106	HPLC	YES

Whether correction for recovery has been performed or not is one factor that can influence on the results. This information is not given for all analyzed samples. In addition the use of a random or target sampling procedure can affect the results, but in most cases a random sampling procedure was applied.

In most cases the participating countries informed us that the provided data were representative for the Member state and that they was derived from good sampling procedures and reliability.

2.4 Comments on zearalenone occurrence in cereals

A high number of data were provided. Figure 1 presents the total number of cereal grain samples, the distribution shows that much of these data are on wheat cereal grains and maize cereal grains. Seven countries provided occurrence data on raw wheat (cereal grain), while five countries provided data on raw maize.

- The mean 1 ranged from 0,083 µg/kg (Finland) to 26 µg/kg (France) for wheat
- The mean 1 ranged from 5,2 µg/kg (Austria) to 627 µg/kg (Italy) for maize

Maize and maize products were the food commodities with the highest level of contamination. Figure 3 presents the total contributions from maize and maize products. The total numbers of samples were 1265 and most of these are raw maize samples (N = 824; 79 % positive). Only 195 samples (51 % positive) represented the maize fractions (maize derived products) and 246 samples (53 % positive) represented the maize based products.

- The mean 1 for Maize cereal grains ranged from 5,2 µg/kg (Austria) to 627 µg/kg (Italy)
- The mean 1 for Maize fractions ranged from 0,83 µg/kg (France) and up to 1328 µg/kg (Italy).
- The mean 1 for Maize based products ranged between 0,83 µg/kg (France) to 27 µg/kg (U.K.).

It has to be notified that there were provided rather small number of data for some of the food groups, for instance rice and rye.

The 9 participating countries contributed different number on occurrence data. France had the largest contribution with 1249 samples. The highest contaminated food group; maize and maize products, had the largest maximum values in five countries.

- Italy – Mean 1 ranged from 5 µg/kg (wheat) to 1328 µg/kg (maize gluten)
- Norway – Mean 1 ranged from 0,3 µg/kg (sweet corn) to 70,2 µg/kg (maize baby porridge)
- United Kingdom – Mean 1 ranged from 0,01 µg/kg (beer) to 150 µg/kg (imported maize)
- Austria – Mean 1 ranged from 3,3 µg/kg (Oats) to 28 µg/kg (maize)
- France – Mean 1 ranged from 0,33 µg/kg (wheat based products) to 156 µg/kg (maize). France had also high levels of zearalenone in wheat products.

The next food commodities with high zearalenone contamination were wheat and wheat products. Three countries had high maximums levels for this food group.

- Germany – Mean 1 ranged from < LOD (many products) and up to 16 µg/kg (wheat).
- Portugal – Mean 1 ranged from 1 µg/kg (wheat) to 13 µg/kg (wheat), non maize samples were provided.
- The Netherlands – Mean 1 ranged from 5 µg/kg (durum wheat) to 24 µg/kg (wheat)., only five maize samples were provided.

Finland did not provide data on maize or maize products. The food commodity with the highest level of zearalenone contamination from Finland is oats. The mean 1 for oats from Finland ranged from 1,64 µg/kg (organic oats year 1998) to 640 µg/kg (oats year 2001). They have also a mean 1 value of 222 µg/kg (oats year 1999). Only four countries provided data on oats. The highest mean 1 value in the others countries are Norway, 10 µg/kg, Austria, 4,1 µg/kg and France, 1,67 µg/kg.

2.5 Milk

Only U.K. provides data on milk (N = 100; 3,0 % positive). The mean 1 was 0,50 µg/kg and 0,63 µg/kg. The highest value was 5,5 µg/kg. Figure 12 presents the data U.K provide on milk.

2.6 Comments on Zearalenone Occurrence in Milk

The number of reported results was rather small and only 3 % were contaminated with zearalenone.

3 CONSUMPTION DATA

Food consumption data as requested in table 2A1 of the "Information to participating institutes" (Annex 3) were provided by 9 countries.

To be followed are some background information about the consumption data used in the assessment:

Austria: It was not indicated if data refer to "All population" or "Consumers". As for the body weight 75 kg was used.
Portugal: The food consumption data is based on the survey from the study: "Instituto Nacional de Estatística - Balança Alimentar Portugues (BAP), Estudo nº 79, 1990 - 1997". In this study the group of subjects was for averaged persons (adults), the body weight was 65 kg.
Germany: consumers. The group of subjects was adults >14 years. As for the body weight 70,4 kg was used.
Finland: Consumption data is derived from the 2002 Dietary Survey of Finnish Adults and refer to the in the age of 24-64 years (n = 2007). The methodology used was a 24-hours recall. As for the body weight 77.1 kg was used. However, it was not indicated if data refer to "All population" or "Consumers".
France: The food consumption data is based on the INCA survey (Individual and national French food intake survey). The total sample (3003 persons) is composed of 1985 adults 15 years and over and 1018 children and young teenagers (3-14 years old). In this survey, body weight of almost all the participants was collected. The calculation of the intake of zearalenone toxins by kg of body weight was therefore based on the real weight of each person and not with a fixed weight. It was not clearly indicated if data correspond to all population or consumers.
Italy: Sampled subjects were 1147 households randomly selected to be consider representative of the four main geographical areas (North-West, North-East, Centre, South). Analysed subjects were 1978 individuals out of 2734 initially collected in 15 Collaborative Centres strategically scattered through the national territory. The survey used a 7-day weighed record. A food inventory, a purchase/waste diary and a recipes form (weighed ingredients and cooking method) were filled in at household level, whereas the individuals recorded a consumption diary. Data were reported for all population and consumers. As for the body weight 70 kg was used.
Norway: In the national representative dietary survey NORKOST 1997, 2 672 persons in the age of 16 to 79 years participated. The method used in NORKOST was a quantitative food frequency questionnaire, which was distributed and collected in four different periods spread through the year. The result from the survey describes the usual diet among the participants. More specifically, 1291 males 16-79 years old and 1381 females 16-79 years old were contacted. The corresponding body weights were 81 kg and 66 kg.
The Netherlands: Each participant kept a diary for him (her) and for the members of the family during 2 consecutive days.
Data referred to all population within adults and children. The corresponding body weights were 65,8 kg, 17,1 kg (1-6 years), and 13,8 (1-4 years).
The United Kingdom: Intake figures for selected foods and beverages (i.e. items where zearalenone occurrence has been identified) were based on survey data from various years: 1986/87 adults (16-64 years); 1992/93 toddlers (1½ - 4½); 1986 infants (6-12 months); 1994/95 elderly (65 years and over) and 1997 young people (4-18 years). A 7 days weighted record was used for all groups, except for the group of 6-12 months infants (7-day estimated weight consumed) and for the group of the elderly and 1.5-4.5 years old children (4 day diary). The calculation of the intake of zearalenone toxins by kg of body weight was based on the real weight of each person.

Except from Norway and the UK, the participating countries provided consumption data referring to "All population". The UK provided data for consumers among males and females (adults and elderly), infants, toddlers and young people (4-18 years) whereas Norway provided data for males and females separately (all and consumers). In the instruction to the participating countries it was requested, whenever possible, to provide food consumption data also for specific groups of consumers (consumers and by age, gender and living area). Italy, the Netherlands, the UK and Norway provided information in this respect.

Tables 2a-i show the mean consumption in the participating countries.

Table 2a; Austria, mean consumption (g/day).

Food group	Adults
Cereals	102.1

Table 2b; Finland, mean consumption (g/day).

Food group	Adults
Wheat bread	46.0
Wheat flour	68.7
Rye flour (includes rye flour used in bread	46.0
Flour*	8.9

*Includes oats and barley except malting barley and forage barley

Table 2c; France, mean consumption (g/day).

Food group	Population (15- yrs)	Male adults (15- yrs)	Female adults (15- yrs)	Children (3-15 yrs)
Bread, excl. rye bread	117.4	147.9	91.7	11.3
Rye bread	0.3	0.3	0.3	0.2
Semolina	1.7	1.6	1.7	2.0
Breakfast cereals, excl. maize cereals	3.9	3.7	4.0	12.3
Maize	2.4	2.0	2.8	7.9
Biscuits	67.0	70.3	64.3	85.9
Buckwheat pancakes	0.6	0.6	0.6	0.5
Sandwiches	13.8	18.9	9.5	10.2
Pasta	36.1	42.1	31.0	37.0
Pizzas and tarts	73.3	70.3	95.8	19.6
Cooked rice	19.1	20.6	17.9	19.3
Compound dishes w/ pasta	9.0	10.6	7.6	14.0
Other compound dishes	20.8	23.6	18.5	18.5
Other products containing cereals: oat flakes, puff-paste, wheat germ	0.8	0.6	0.9	1.3
Beer	28.5	50.5	10.0	0.0

Table 2d; Germany, mean consumption (g/day).

Food group	Adults	Infants	Children
Bread	170.0		
Pasta	20.0		
Baby food		50	

Table 2e; Italy, mean consumption (g/day).

Food group	Adults, population	Adults, consumers
White wheat flour	5.2	15.4
Maize Starch	0.0	1.1
Wheat bran	0.1	12.3
Maize flour	1.5	25.9
Bakery products	0.1	140.0
Wheat Semolina	0.2	11.8
Whole meal	0,1	26.8

Table 2f; Netherlands, mean consumption (g/day).

Food group	Adults, population	Children 1-4 yrs, population	Children 1-6 yrs, population
Wheat	130.6	60.7	81.1
Maize	3.0	2.2	2.5

Table 2g; Norway, mean consumption (g/day).

Food group	Male adults (16-79 yrs), population	Male adults (16-79 yrs), consumers	Female adults (16-79 yrs), population	Female adults (16-79 yrs), consumers	Infants (6 mnths)
Wheat, sifted white flour	122	122	88	88	
Wheat, whole meal	65	65	45	45	
Rye	3	3	2	2	
Barley	3	6	2	5	
Oats	5	8	4	6	
Maize fractions					
Polenta					
Corn flakes	1	2	1	2	
Sweet Corn					
Baby food					172*

*Refers to porridge made of formula and water/milk. 172 g porridge consists of 60% formula, which is equal to 90 g formula.

Table 2h; Portugal, mean consumption (g/day).

Food group	Adults, population
White wheat flour	185.6
Wheat bran	0,25
Wheat	3.01
Breakfast cereals	3.0

Table 2i; UK, mean consumption (g/day). Consumers.

Food group	Male adults (16-64 yrs)	Female adults (16-64 yrs)	Infants (6-12 mnths)	Children (1.5-4.5 yrs)	Children (4-6 yrs)	Children (7-10yrs)	Children (11-14 yrs)	Adolescent (15-18 yrs)	Elderly Male (65-)	Elderly female (65-)
Rice	35.6	23.8	7.2	14.4	17.5	26.1	39.1	44.4	28.5	24.4
Malted barley	0.02	0.03	0.0	0.01	0.02	0.1	0.1	0.16	0.03	0.0
Milk	268.3	229.3	320.0	295.5	240.1	208.0	199.3	194.5	260.3	238.1
Beer	735.5	193.1	0.0	7.8	21.4	9.3	61.3	391.3	532.9	220.3
Breakfast cereals	41.2	29.9	16.2	21.4	29.6	33.6	36.6	39.3	67.9	46.5
Biscuits	20.1	17.4	7.2	16.9	20.0	23.1	20.8	20.0	24.3	20.2
Bread	135.3	85.0	16.9	42.0	62.9	78.1	86.2	102.0	112.1	80.9
Cakes	44.0	34.9	7.0	18.3	26.5	30.5	32.4	29.6	50.5	39.1
Flour	21.3	16.7	11.2	13.0	16.5	20.2	24.6	27.7	20.4	17.4
Polenta	22.5	7.3	7.3	6.5	4.7	4.1	8.2	13.5	5.3	0.0
Snacks	13.3	10.0	3.8	12.1	16.3	18.4	19.8	17.6	11.9	8.8
Maize flour	1.2	1.2	4.9	1.2	1.2	0.8	1.0	1.0	2.0	1.7
Baby food			14.6	55.7	18.5		14.3	13.1		
Maize	12.4	8.4	3.3	7.5	7.6	9.7	8.9	10.4	11.6	14.9

The number of food and food groups for which consumption data were provided varied between the participating countries. Austria, Germany and the Netherlands provided data for one to three food groups, respectively, whereas the UK and France provided data for 14 and 15 food groups, respectively. It is important to notice that the Italian consumption data for grain did not comprise the consumption of flour used in cereal products, such as bread and pasta. The consumption of cereal is therefore underestimated.

Different methods were used when collecting the consumption data. Portugal obtained data from Food Balance Sheets, Norway used a quantitative food frequency questionnaire (adults) and diet diary (infants), the Netherlands used a 2-day diet diary, France a 7-days diet record (including a picture booklet of foods and portion sizes), whereas the UK used a 7-days weighted diet diary.

In some of the countries analytical data for processed foods, such as bread, were available. However, in Norway and France only data for grain were available and not for processed cereal products. Since consumption data refer to food as eaten, the amount of bread consumed had to be converted into amount of flour consumed. The procedure for converting the amount of flour eaten to the amount of grain is explained in Annex 6.

In many cases when the consumption data referred to bread, porridge or breakfast cereals, no further information about what kind of cereals that the product was made of was submitted.

4 ZEARALENONE DIETARY INTAKE

All of the nine countries provided intake data on zearalenone.

4.1 Best estimate of the dietary intakes

In order to obtain the overall European scenario of the exposure to zearalenone, the zearalenone occurrence data were combined with the consumption data for the corresponding food groups for each Member State. The dietary intakes from each country are only based on those commodities for which both occurrence and consumption data were submitted. The best estimates of *total dietary intake* were calculated by summing up the contributions from each commodity (a deterministic approach) for each country. UK used a method, where the estimated intake from each food was totaled for each individual. The resulting distribution of the daily intake of zearalenone was used to derive the average and high daily intake.

In general on the basis of the provided data, four different estimates of dietary intakes from each food commodity, as derived by the combination of the above sets of data, may be calculated:

A. Mean food consumption and mean 1 occurrence data
B. Mean food consumption and mean 2 occurrence data
C. 95^{th} percentile food consumption (if available) and mean 1 occurrence data
D. 95^{th} percentile food consumption (if available) and mean 2 occurrence data

4.2 Total dietary intake in participating countries

A summary for all Member States of the best estimates of daily intake of zearalenone for all population is given in Table 3, Annex 7**.** Included are the calculated intakes A, B and C. Dietary intake D was not calculated, since it would represent a gross overestimation. However, not all countries provided data on mean 2 occurrence data or 95^{th} percentile food consumption, thus, *mean dietary intake B and C* could not be reached in all cases. The daily intake estimates were calculated as referred both to *ng per person* and *ng per kg of body weight (bw) per person,* the latter being calculated based on the values of the average body weight as submitted by the participants. Information on the main contributing food commodity is also given.

Most countries calculated the best estimates for "All population". For countries that had submitted consumption data for different sub-groups of the population, the exposure to zearalenone among these sub-groups was assessed using the same approach (see Table 3, Annex 7). Main categories considered by participants included adults-all population, adults-consumers, male/female, infants, children, adolescents and elderly. Dietary intakes for these groups of population allow for the recommendations outlined in the CODEX guidelines (1999), related to the evaluation of dietary intake of food chemicals. According to these recommendations "……as appropriate, risk assessors and risk managers should consider differences in food consumption patterns across population and in vulnerability to toxicity within population as they estimate exposure to, and potential human health consequences resulting from exposure to chemicals found in foods……..".

Table 3; Average dietary intake of zearalenone in all population of the participating countries. The intake values in brackets refer to consumers.

Country	Population group	Survey method	Body weight (kg)	Mean 1 intake ng/kg b.w./day (A)	Mean 2 intake ng/kg b.w./day (B)
Austria	Adults	24 h recall	75	28.4	116.3
Finland	Adult (25-64 yrs)	24 h recall	77.1	27.0	35.6
France	All population	7-d diary records	66.4	26.7	49.6
	Adults, male	7-d diary records	73.9	29.0	50.0
	Adults, female	7-d diary records	60.1	24.3	49.2
	Children (3-15 yrs)	7-d diary records	31.6	41.8	84.2
Germany	Adults	estimate	70	5.0*	18.0
	Infant (4-mnths)	estimate	10	6.5*	27.0
	Children	estimate	20	17.0*	62.0
Italy	Adults	7-d weighed record	70	0.8 (27.4)	1.9 (112.7)
Netherlands	Adults	2-d diet diary	65.8	20.7	
	Children (1-4 yrs)	2-d diet diary	13.8	46.4	
	Children (1-6yrs)	2-d diet diary	17.1	49.8	
Norway	Adults, male	Quantitative food frequency questionnaire	81	8.0 (8.0)	19.0 (20.0)
	Adults, female	Quantitative food frequency questionnaire	66	7.0 (7.0)	17.0 (18.0)
	Infants (6-mnths)	Diet diary	8	12-1508**	22-1508**
Portugal	Adults	Food Balance Sheets	65	4.05	
United Kingdom	Adult male (16-64 yrs)	7-d weighted record	70.1	14.06 ***	
	Adult female (16-64 yrs)	7-d weighted record	70.1	12.98 ***	
	Infant (6-12 mnths)	7-d estimated weight consumed	8.7	49.79 ***	
	Toddler (1.5-4.5 yrs)	4 day diary	14.5	53.85 ***	
	Young people (4 -6 yrs)	7-d estimated weight consumed	20.5	54.81 ***	
	Young people (7 - 10 yrs)	7-d weighted record	30.9	41.37 ***	
	Young people (11 - 14 yrs)	7-d weighted record	48.0	28.35 ***	
	Young people (15 - 18 yrs)	7-d weighted record	63.8	20.35 ***	
	Elderly male (65 yrs and over)	4 day diary	70.8	14.25 ***	
	Elderly female (65 yrs and over)	4 day diary	70.8	12.42 ***	

* Estimated intake from data compiled in the German Nationale Verzehrsstudie plus data obtained during the German Ochratoxin A project (3-day diary)

** In Norway, the data for consumption of porridge meant for infants did not give any specification about the kind of porridge that was used. When calculating the intake of zearalenone among infants three calculations were made, one where it was assumed that the entire amount of porridge that was consumed during the day consisted of wheat, one where it was assumed that it consisted of oat and one where it was assumed that it consisted of maize. The variations in the intake estimate were due to these assumptions.

*** Estimated intake based on the average exposure to zearalenone for a give individual within the consumer group who consumes one or more food groups accounted for in the exposure assessment.

The average daily intakes ranged among adults from 4 to 29 ng/kg body weight. Small children had the highest average daily intakes ranging from 6 to 55 ng/kg bodyweight. Norway submitted intake data for a worst-case scenario where infants may ingest up to 1800 ng/kg body weight. Figure 13 shows the average daily intakes among adults in the European countries.

The estimated Mean 1-intakes of zearalenone in Austria and France were 28-29 ng/kg body weight/ day and were the highest in relation to the other participating country. Mean 2-intake was as high as 116 ng/kg body weight/day in Austria. The estimated average daily intakes of zearalenone were lowest in Italy, where the Mean 1- and Mean 2-intake were approx. 1-2 ng/kg body weight.

4.3 Estimated dietary intake from susceptible food commodities

The estimated dietary intakes from each commodity were calculated, with the aim to evaluate the contribution to the zearalenone dietary intake by European population from each food matrix (Annex 7).

Table 4 and Figure 14 A and 14 B present the contribution from some of the main groups (Mean1- and 95th percentile intakes). Due to the lack of description of certain food items, which the consumption- and concentration data referred to, certain assumption had to be made when grouping the food items. For instance, the food groups "Bakery products", "Bread" and "Flour" have been grouped together with "Wheat and wheat products", although it was not certain that the flour and all the baking goods were made of wheat flour. Mean2-intakes are not presented in Table 4 and Figure 13, however, in some cases Mean2-intakes were actually higher than the 95th percentile. In order to get the whole picture of the contribution of each of the food items to the dietary intake of zearalenone, it is recommended to take a closer look at the Annex 7.

Table 4; The contribution of some of the food groups to the dietary intake of zearalenone (Mean1 intake/95th percentile-intake).

Country	**Population group**	**Wheat/wheat products** *ng/kg bw/day*	**Maize** *ng/kg bw/day*	**Polenta** *ng/kg bw/day*	**Rye** *ng/kg bw/day*	**Oats** *ng/kg bw/day*	**Rice** *ng/kg bw/day*	**Milk** *ng/kg bw/day*	**Beer** *ng/kg bw/day*
Austria	Adults	28.4/100.3							
Finland	Adult (25-64 yrs)	0.8/-			0.2/-	26.0*/-			
France	All population	23.4/57.4	0.9/6.3		0.0/0.0		0.4/1.2		
	Adults, male	25.8/61.7	0.6/4.7		0.0/0.0		0.3/1.2		
	Adults, female	20.8/50.9	1.1/7.1		0.0/0.0		0.4/1.2		
	Children (3-15 yrs)	29.9/85.3	5.9/29.4		0.0/0.0		0.7/2.2		
Germany	Adults	5.0/10.0							
	Infant (4-mnths)								
	Children	17.0/34.0							
Italy	Adults, all population	0.5/2.0	0.4/2.2						
	Adults, consumers	20.9/33.2	6.5/14.9						
Netherlands	Adults	20.3/-	0.4/-						
	Children (1-4 yrs)	45.1/-	1.3/-						

Country	Population group	Wheat/wheat products *ng/kg bw/day*	Maize *ng/kg bw/day*	Polenta *ng/kg bw/day*	Rye *ng/kg bw/day*	Oats *ng/kg bw/day*	Rice *ng/kg bw/day*	Milk *ng/kg bw/day*	Beer *ng/kg bw/day*
	Children (1-6yrs)	48.6/-	1.2/-						
Norway	Adults, male	8.0/9.0	0.0/0.0		0.0/1.0	0.0/1.0			
	Adults, male, consumers only	8.0/14.0	0.0/0.0		0.0/1.0	0.0/1.0			
	Adults, female	6.0/11.0	0.0/0.0		0.0/1.0	0.0/1.0			
	Adults, female, consumers	6.0/11.0	0.0/0.0		0.0/1.0	0.0/1.0			
	Infants (6-mnths)**	9.0/20.0	789.0 /1841.0			7.0/15.0	14.0 /33.0		
Portugal	Adults	3.7/-							
United Kingdom (Consumers)	Adult male (16-64 yrs)	4.5/10.2	19.8/64.3	3.5/5.5			0.5/1.7	2.0/4.7	0.1/0.3
	Adult female (16-64 yrs)	3.7/8.3	16.5/47.0	0.9/0.9			0.4/1.1	2.1/4.8	0.0/0.1
	Infant (6-12 mnths)	6.5/18.0	46.1/118.0	7.9/19.8			0.8/2.4	18.9/46 .5	
	Toddler (1.5-4.5 yrs)	9.4/22.1	61.2/206.1	5.2/11.0			1.0/3.8	12.0/29 .3	
	Young people (4 -6 yrs)	9.1/19.6	45.8/115.8	2.4/2.4			0.8/2.7	6.6/14. 3	
	Young people (7 - 10 yrs)	7.6/16.3	39.0/125.0	1.1/1.6			0.9/3.1	3.9/9.0	
	Young people (11 - 14 yrs)	5.3/11.5	24.6/72.8	1.4/3.3			0.8/2.7	2.5/6.3	
	Young people (15 - 18 yrs)	4.3/9.7	20.0/68.2	2.5/4.4			0.7/2.0	1.8/4.3	0.1/0.2
	Elderly male (65 yrs and over)	4.2/8.8	18.0/48.2	0.9/0.9			0.4/0.9	2.0/4.1	0.1/0.2
	Elderly female (65 yrs and over)	3.7/8.1	27.7/69.0	0.0/0.0			0.4/1.6	2.1/4.5	0.0/0.1

* Includes oats and barley.

** In Norway, the data for consumption of porridge meant for infants did not give any specification about the kind of porridge that was used. When calculating the intake of zearalenone among infants three calculations were made, one where it was assumed that the entire amount of porridge that was consumed during the day consisted of wheat, one where it was assumed that it consisted of oat and one where it was assumed that it consisted of maize.

Comments on the contribution of some of the food groups to the dietary intake of zearalenone (Table 4 and Figure 14):

- ***Wheat and wheat products***

The zearalenone dietary intake from wheat has been calculated by summing up the dietary intakes from each subgroup of wheat, whole wheat and wheat bran. As already mentioned the intakes of this particular substance from bread, cakes and pasta were included.

- All population, consumers, males, females: All countries provided consumption data for wheat/wheat products. UK provided only consumption data for consumers. The dietary intake from wheat ranged from 0.5 ng/kg bw/day (Italy) to 61.7 ng/kg bw/day (France, males).
- Other groups of population: Dietary intake of zearalenone among children/youngsters varied between 4.3 ng/kg bw/day (UK, young people aged 15-18 years, consumers) to 85.3

ng/kg bw/day (France, children 3-15 years). As a general trend, estimated intakes on a body weight basis were higher in the young than in the adult population.

- ***Maize***

The zearalenone dietary intake from maize has been calculated by summing up the dietary intakes from each subgroup of maize products.

- All population, consumers, males, females: The dietary intake from maize ranged from below zero ng/kg bw/day (Norway, Italy and the Netherlands, France, all population) to 64.3 ng/kg bw/day (The UK, males, consumers).
- Other groups of population: Dietary intake of zearalenone among children varied between approx.1 ng/kg bw/day (The Netherlands, children aged 1.5-6 years) and 29.4 ng/kg bw/day (France, children 3-15 years), 206.1 ng/kg bw/day (UK, children aged 1.5-4.5 years, consumers) and up to as high as approx. 1840 ng/kg bw/day from porridge made of maize flour (Norway, 6-month old infants. In Norway, the data for consumption of porridge meant for infants did not give any specification about the kind of porridge that was used. This estimate is based on the assumption that the amount of porridge consumed during the day consisted only of maize porridge). In the UK the elderly (aged 65 years and over, consumers) had an estimated daily intake of zearaleone of approx. 18.0 ng/kg bw/day up to 69.0 ng/kg bw/day.

- ***Polenta***

- All population, consumers, males, females: No country had consumption data for polenta. However, the UK submitted consumption data for maize meal as a substitute for polenta. The dietary intake from "polenta" was then estimated to range between 0.9 to 5.5 ng/kg bw/day among consumers.
- Other groups of population: Dietary intake of zearalenone from "polenta" among the younger age groups varied between 1.1 ng/kg bw/day (7-10 year old children) to 19.8 ng/kg bw/day (infants aged 6-12 months). The estimated intake of zearalenone from polenta among elderly in the UK was below zero ng/kg bw/day.

- ***Rye***

- All population, consumers, males, females: Finland, France and Norway provided specific data for the intake of zearalenone from rye and rye bread. The estimated daily intake from rye flour or bread made of rye was low: below 0 ng/kg bw/day to approx. 1.0 ng/kg bw/day (Norway).

- ***Oats***

- All population, consumers, males, females: Norway provided specific data for the intake of zearalenone from oats, whereas Finland provided aggregated data for zearalenone from oats and barley. The estimated daily intake from oats in Norway was below 0 ng/kg bw/day to approx. 1.0 ng/kg bw/day. The aggregated estimated intake from oats and barley in Finland was 26.0 ng/kg bw/day.
- Other groups of population: Dietary intake of zearalenone from oats among Norwegian infants varied between 7.0 to 15.0 ng/kg bw/day. (As already mentioned, in Norway, the data for consumption of porridge meant for infants did not give any specification about the

kind of porridge that was used. This estimate is based on the assumption that the amount of porridge consumed during the day consisted only of oatmeal porridge).

- ***Rice***

- All population, consumers, males, females: UK and French submitted consumption data for rice. The dietary intake from rice varied between below zero ng/kg bw/day to 1.7 ng/kg bw/day (UK, adult male, consumers).
- Other groups of population: Dietary intake of zearalenone from rice among the younger age groups was about 0.7 ng/kg bw/day (Germany) to 3.8 ng/kg bw/day (UK toddlers, consumers). The intake of zearalenone from rice among elderly males and females was between 0.4 ng/kg bw/day and 1.6 ng/kg bw/day (UK, consumers).

- ***Milk***

- All population, consumers, males, females: UK was the only country that submitted consumption data for milk. The dietary intake from milk varied between 2.0 and 4.8 ng/kg bw/day among adult consumers.
- Other groups of population: Dietary intake of zearalenone from milk among the younger age groups varied between approx.1.8 ng/kg bw/day (15-18 year old adolescents) to 46.5 ng/kg bw/day (infants aged 6-12 months). The estimated intake from milk among the elderly ranged between 2.0 to 4.5 ng/kg bw/day. Data refer to intakes among consumers.

- ***Beer***

- All population, consumers, males, females, elderly: UK was the only country that submitted consumption data for beer. The dietary intake from beer varied between 0.0 and 0.3 ng/kg bw/day among consumers.

- ***Other food commodities***

UK, France and Portugal provided occurrence and consumption data necessary for calculating the intake of zearalenone from breakfast cereals, whereas UK and Germany provided such data for the intake from baby foods. However, additional information of what kind of breakfast cereals and baby foods these data referred to was not submitted. Among adults breakfast cereals contributed with 0.3 (Portugal, France) to approx.16.8 ng/kg bw/day (UK, males, consumers), whereas the contribution from breakfast cereals among infants and children varied between approx. 2.2 (France) and 42.5 ng/kg bw/day (UK, 6-12 months old).
Baby food contributed with 3.1 ng/ kg bw/day (UK, 6-12 months old babies) to 26 ng/kg bw/day (Germany, 4 months old babies). Austria submitted unspecified intake data for “Grain”. The daily intake in Austria from grain as such was 28.4 ng/kg bw, whereas the high intake was 100.3 ng/kg bw.

5 DISCUSSION / FACTORS HAVING AN EFFECT ON THE INTERPRETATION OF THE RESULTS

5.1 Missing data

The great variation in the number of foods included in the intake calculation between the countries reveals that some countries lack sufficient data for a full intake study. Intake data from these countries should be handled with care, since it is a high possibility that the intake estimate is underestimated. However, most countries did not provide information on all food products potentially affected by zearalenone contamination; therefore the total dietary intake in the different countries, as shown in Table 3 (Annex 7), should generally be considered as underestimated.

5.2 Analytical data

The quality of the intake estimate is highly linked to the representativeness of the data on which the exposure assessment are based. Some of the participating countries, for instance France and Germany, were of the opinion that the number of data available for the content of zearalenone in certain foods was too small to be representative for the country.

Great variations were found between countries in the content of zearalenone in certain foods. For instance, oats harvested in Finland in 2001 contained many times greater concentration of zearalenone (640µg/kg) than oats from Austria (4µg/kg) and Norway (10µg/kg). The reason for these high levels in Finnish oats has not yet been elucidated but is under investigation. One reason may be the weather conditions in Finland during the summer of 2001. The observed differences between different years and countries calls for more monitoring data and further research in order to explain this phenomena.

Of all products included in this task maize seems to be the commodity which is most often contaminated by zearalenone and in the highest concentrations. However, very few data for the content of zearalenone in some of the grains, for instance barley, were submitted, thus it is uncertain if there are commodities that should have been paid more attention to. There may also be other products which are not yet being analysed that could be a source to the human ingestion of zearalenone. As long as no complete overview of foods that might be contaminated by zearalenone exists, the estimated intake of the substance presented in this report may be underestimated.

5.3 Consumption data

There are various types of data describing food consumption. Data from Food Balance Sheets cover amount of food that is available in the country on a per capita basis. These data does not provide information on the actually consumption in the population, but is considered to give a very rough estimate of the average food consumption. In individual dietary surveys different methods are used covering short periods or more long-term consumption. Each survey method is afflicted with uncertainties which will affect the interpretation of the intake estimate. There is no common approach for the acquisition of consumption data within the EC. Portugal has based the intake estimation on Food Balance Sheets, whereas the other participating countries have based it on consumption data obtained by national dietary surveys. Differences in methodology make a comparison of food consumption between the countries difficult.

5.4 Intake of zearalenone

The results from this task showed that the *Mean 1-intakes* of zearalenone among adults ranged from approx. *1 ng/kg body weight/day (Italy) to 29 ng/kg body weight/day (France)*. *Mean 2-intakes* of the substance ranged from approx. *2 ng/kg body weight/day (Italy) to 116 ng/kg body weight/day (Austria*). If a TDI of 200ng/kg body weight were selected as an example, the average intakes of zearalenone among the participating countries would range from *1% to 58% of the TDI*. Bread was one of the most important sources to the dietary intake of zearalenone. Among those who had a high consumption of this product (95th percentile) the intake from bread would make up to 24% of the TDI (France). In Italy derived products of maize contributed also significantly to the daily intake of zearalenone. Those who had a high consumption of such products had an intake from maize products that would make up to approx. 7% of the TDI. For those countries that had submitted intake data for children the *Mean 1-intakes* of zearalenone in this particular sub-group ranged from approx. *6 ng/kg body weight/day (Germany, infants) to 55 ng/kg body weight/day (UK, children 4-6 years)*. The main contributor to the zearalenone intake among this group of UK children were maize, breakfast cereals and snacks. The intake of zearalenone from porridge made of maize among Norwegian infants was high (up to 1500 ng/kg body weight/day). However, the intake estimate was based on the assumption that the entire amount of porridge given to the baby during the day consisted of maize porridge. In most cases infants are also fed with porridge/baby food that are made of other kinds of cereals containing lower level of zearalenone, thus leading to a lower level of intake of that particular substance. In spite that this intake may have been overestimated, the estimated intake indicated that children who have a regularly consumption of products, where the main ingredient is maize, may be at risk of having a high intake of zearalenone in relation to the TDI. It is likely that such a high consumption of this product occurs only in a limited period of time, but it should be considered if a maximum limit for zearalenone in food aimed for children should be established.

It should be emphasized that to base the risk assessment only on the average intake estimates would lead to an underestimation of the risk. It is important to study the intake among those population groups that consume the highest amounts of the foods in question, since they are at risk of having an intake of zearalenone that exceeds the TDI. Unfortunately, it was not possible in this task to determine a high estimated intake among most of the participating countries.

A large variation was found in the estimated daily intake of zearalenone between the participating countries. It is difficult to determine how great the real differences are in the daily intake and to what degree the variation is due to lack of analytical data and consumption data (i.e. variation in the number of foods that are included in the exposure assessment), the method used in the dietary survey on which the consumption data are based, differences in sampling and analysing procedure, the use of different LOD/LOQ, etc.

The average intake in France was found to be higher compared with the estimated intake in many of the other participating countries. The French levels of zearalenone in wheat were somewhat higher than the levels found by the other countries. Since wheat is consumed in relatively high amounts, this may have an impact on the result. As already mentioned, the number of foods included in the intake calculation varied between the countries, as such a difference may be the major cause to a higher estimated intake of zearalenone in France. The number of foods included in the French exposure assessment was greater (15 food items) compared with some of the other countries. Italy did not submit consumption or intake data

for relevant food such as bread. By omitting the intake of zearalenone from bread, the estimated intake of zearalenone in Italy is probably lower than what is the actual intake.

The exposure assessments performed by the participating countries was not always transparent enough in order to draw relevant conclusions. For instant, Austria submitted intake estimate for "cereals" but did not specify what kind of cereals that were included in this estimate.

Most of the countries chose to base the intake estimate on single point values for the content of zearalenone in the relevant products (Mean1- or Mean2-values) and for the consumption of these products (mean or 95th percentile). The intakes of zearalenone from each of the foods were then summed to a total daily intake of zearalenone. This method provides a good estimate of the particular substance among the average population. However, when studying the intakes among population-groups, for instance consumers and high consumers, the method often overestimates the actual intake grossly. UK used a method where consumption estimates were multiplied with corresponding concentration estimate (single point estimate) and totalled for each individual. The resulting distribution of the individual daily intakes of zearalenone was used to derive the average and the high daily intake. When studying the intake among groups other than "All population (average)" the method used by the UK is considered to provide a result which is closer to "actual" intake than the method using single point estimates for both the food content and consumption. However, when using single point estimate for the concentration of the particular substance in foods (often mean values) no consideration is taken for the whole range of concentrations found in foods. Consumption of foods containing above-average concentration of zearalenone could also be of interest. More sophisticated models that can incorporate the probability of selecting foods with different concentration levels, for instance a probabilistic models such as Monte-Carlo simulation, would provide an even better estimate of dietary exposure.

6 CONCLUSIONS

The average daily intake of zearalenone amoung the adult population in the European countries is lower than the TDI.

However, the results are afflicted by uncertainties due to:

- Limitations in the number of food commodities analysed per country.
- Limitations in the number of analyses performed on the different food commodities per country.
- Limited consumption data.
- The dietary intake from each country are only based on those commodities for which both occurrence and consumption data were submitted.
- People not identified within this task might have regularly high consumption of products contaminated by zearalenone.
- Although higher zearalenone values and higher percentage of positive samples were found in maize and maize products compared to wheat and wheat products, a higher consumption of wheat might result in high intake also from this food commodity.
- Attention should be given to food aimed for consumption among children, since the diversity of the diet is limited among children.
- Lack of analysed samples of oats, barley and rye, and a high variation of the occurrence of zearalenone in especially oats, shows the need for further investigation of the occurrence of zearalenone in these food commodities.
- Variations in climate and weather conditions can also influence on the occurrence and intake of toxins.

7 FUTURE NEEDS

The participating countries have tried to use the data available in the best way in order to estimate a dietary intake of zearalenone in the population. However, the outcome of this SCOOP-task has disclosed several elements that need to be focused on in order to improve future dietary exposure assessment of the substance.

- Harmonisation regarding sampling, methods of analyses, quality assurance of data and number of and type of analysed food commodities are needed.
- A common approach to assess the dietary intake in the European Countries should be elaborated. In order to improve the transparency of the assessment, the participating countries should also be requested to give a more detailed description of how the intake calculation were made. This approach should involve exposure assessment based on individual intake in order to identify people at risk of having a high intake in relation to the TDI.
- More analytical activities are needed to test and identify all food commodities that may be susceptible to zearalenone content.
- More attention should be given to the different climates from year to year in different countries and dependent on different sort of grain.
- More research is needed to study the effect of food processing on the content of zearalenone in foods.
- It should be more focus on the importance of using target or random sampling in the interpretation of data.

Annex 1

Basic information on zearalenone

Introduction

- Zearalenone is an important mycotoxin in temperate and warm regions of the world. It is produced by fungi of the genus *Fusarium*. The toxin occurs in maize and small grains like barley, wheat, sorghum, millet and rice, but has also been found in soybeans. In maize the toxin is common, but very high levels (11-15 mg/kg) has also been detected in barley samples from Japan (19).
- In addition, the toxin has been detected in cereal products like flour, malt, beer, soybeans and products thereof (1, 3, 4). While samples of African beer have been found to contain high levels of zearalenone, very few samples of beer from Europe and Canada contained a low level of the mycotoxin (1, 2, 18). Occurrences in mixed feeds associated with hyperoestrogenism and other problems in swine and cattle in various countries have been reported.
- Fusarium taxonomy is a complex matter and classification a difficult task. Because of this complexity, many isolates have been misidentified. Many earlier reports have been reviewed and most errors corrected. Zearalenone is now considered being produced by *F. graminearum, F. culmorum, F. cerealis, F. equiseti*, and *F. semitectum.* Reports of production of zearalenone by other species have been questioned (5, 6, 7).
- Fungi of the genus *Fusarium* infect cereals in the field. Toxin production mainly takes place before harvesting, but may also occur post harvest if the crop is not handled and dried properly.

Chemistry

- Zearalenone is a resorcyclic acid lactone chemically described as 6-(10-hydroxy-6-oxo-trans-1-undecenyl)- β -resorcyclic acid lactone ($C_{18}H_{22}O_5$, MW: 318.36, CAS 17924-92-4). In mammals, the keto group at C-6 is reduced to two stereoisomeric metabolites of zearalenone (α and β isomers). These metabolites are also produced by the fungi, but at much lower concentrations than for zearalenone. Another compound with structural similarity is zearalanol, which is used as a growth promoter. This compound is only distinguished from zearalenone by its lack of a C1-C2 double bond and a hydroxy group at C6 instead of a keto group (3, 4).
- Zearalenone is a stable compound, both during storage/milling and the processing/cooking of food, and it does not degrade at high temperatures.
- Various analytical methods for the identification and quantification of zearalenone have been developed. Early methods were generally based on thin-layer chromatography (TLC). Today, methods using HPLC with fluorescence detection are most common, although UV and electrochemical detection are also used (3, 7, 8). Newer more sensitive methods employs GC or HPLC combined with a mass spectrograph (24).
  ELISA methods for the determination of zearalenone are also available (23).

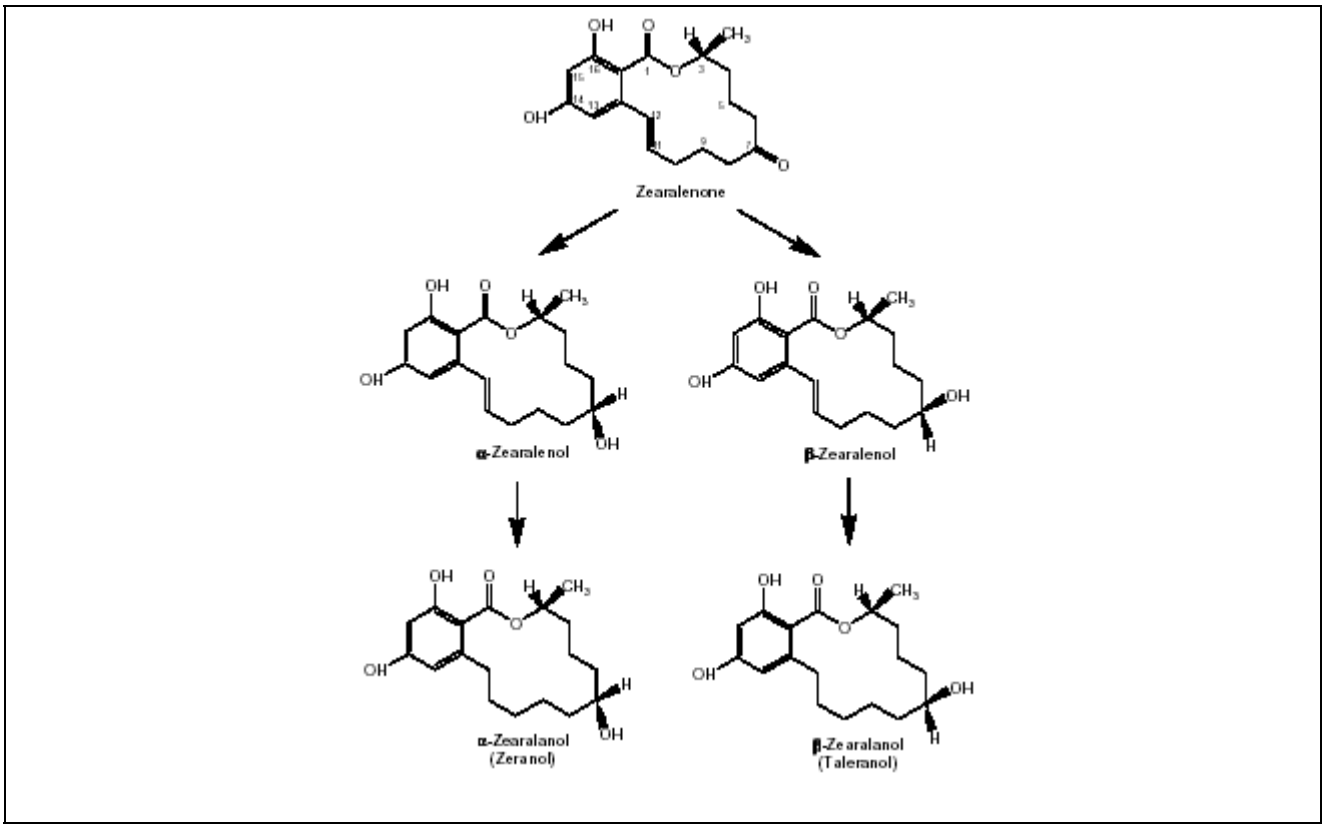

Figure 8: Biotransformation of zearalenone.
Studies of pharmacokinetics and metabolism indicate that zearalenone is rapidly absorbed following oral administration and can be metabolised by intestinal tissue in pigs and possibly in humans during its absorption, with the formation of α- and ß-zearalenol and α- and ß-zearalanol.

Toxicological evaluations

- The International Agency for Research on Cancer (IARC) evaluated the carcinogenic potential of zearalenone and concluded that there was limited evidence of carcinogenicity of zearalenone in experimental animals and that zearalenone was not classifiable according to their human carcinogenicity criteria (Group 3) (4). In a 2 year US NTP-study, a statistical significant increase in hepatocellular adenomas was seen in female mice. Furthermore, a statistically significant increase in pituitary adenomas and a small non-statistically significant increase in pituitary carcinomas, were found in mice, but not in rats (9). An increase in the incidence of pituitary adenomas in rats would, however, be difficult to detect due to a high natural incidence in this species. No carcinogenic effects were found in another 2 year study with rats (10). Subsequently, formation of DNA-adducts has been found in mice, but not in rats, after a single exposure to zearalenone (11). Evidence of DNA-damage has also been found using the ^{32}P - postlabelling method (12). This corresponds well with the results from the two-year US NTP study showing a carcinogenic effect of zearalenone in mice, but not in rats. Altogether, this indicates that zearalenone may have a species-dependent carcinogenic effect possibly secondary to the hormonal effect. No information about formation of DNA-adducts in humans is available.
- An extensive review of the occurrence and toxicity of zearalenone and risk assessment was made in Canada in 1987 (3). The risk assessment concluded that oestrogenic and possible carcinogenic effects are the critical effects of zearalenone. Deriving a TDI from the possible carcinogenic effect using a mathematical linear extrapolation with a risk level of $1:10^{-6}$ would lead to a virtually safe dose of 0.05 µg/kg b.w. per day. In a study exposing monkeys to zearalanol, which has a higher oestrogenic activity than zearalenone, a no-hormone-effect level

of 50 µg/kg b.w per day was found. Deriving a TDI from this study, using a safety factor of 500 due to the uncertainties in the animal model, lead to an estimated safe intake of 0.10 µg/kg b.w per day. After an overall evaluation, a temporary TDI of 0.1 µg/kg b.w. per day was proposed, based on an estimated no-hormonal-effect level and a virtually safe dose with respect to carcinogenicity estimated with a conservative model with a risk level of $1:10^{-6}$.

- A Nordic expert group considered in 1998 the Canadian TDI as still valid since no relevant additional *in vivo* information on the dose-effect relations of hormonal effects and no more data concerning the possible carcinogenic effect of zearalenone were available (7).
- Zearalenone or the similar growth promotor zearalanol was suspected to be the causative agent in an epidemic of precocious pubertal changes in young children in Puerto Rico (13, 14). Zearalenone or metabolites were detected in blood plasma. The authors reported high levels of the growth promotor zearalanol in locally produced meat, but later studies by FDA failed to detect any oestrogenic growth promotor. Natural sources of oestrogen-acting compounds, like plant metabolites or mycotoxins as a cause of the epidemic have not been ruled out.
- Zearalenone has been evaluated by JECFA (20). The Committee observed that the test for genotoxicity in a variety of test systems covering several endpoints, including point mutations, unscheduled DNA synthesis and chromosomal aberrations were negative, except for the induction of chromosomal aberrations after exposure of mammalian cells *in vitro* to very high concentrations. In a ^{32}P-postlabelling assay, evidence for DNA modification by zearalenone was reported. However, the Committee concluded that these results do not unequivocally demonstrate covalent binding to DNA by zearalenone and/or its metabolites and most likely reflect oxidative damage to DNA, since the DNA damage was greatly reduced by co-administration of the antioxidant α-tocopherol.
  Hepatocellular adenomas and pituitary tumours observed in long-term studies of carcinogenicity in mice were observed only at doses greatly in excess of the concentrations that have hormonal effects i.e. at levels 8-9 mg/kg of body weight or more. The Committee concluded that these tumours are a consequence of the oestrogenic effects of zearalenone. A similar conclusion was drawn by the Committee at its thirty-second meeting in the evaluation of α-zearalanol. In rats, there was no treatment-related increase in the incidence of tumours at doses of 1-3 mg/kg of body weight per day.
  The Committee concluded that the safety of zearalenone could be evaluated on the basis of the dose that had no hormonal effects in pigs, the most sensitive species. Using a safety factor of about 100, the Committee established a provisional maximum tolerable daily intake (PMTDI) for zearalenone of 0.5 µg/kg of body weight. This decision was based on the NOEL of 40 µg/kg of body weight per day obtained in a 15-day study in pigs. The Committee also took into account the lowest observed effect level of 200 µg/kg body weight per day in this pig study and the previously established ADI of 0-0.5 µg/kg body weight for the metabolite α-zearalanol, evaluated as a veterinary drug. The Committee recommended that the total intake of zearalenone and its metabolites (including
  α-zearalanol) should not exceed this value.
- Zearalenone has also been evaluated by the Scientific Committee on Food, European Commission (22). The Committee concluded that the safety of zearalenone could be evaluated on the basis of the dose that had no hormonal effects in pigs, the most sensitive species, and established a temporary TDI for zearalenone of 0,2 µg/kg of body weight per day. This decision was based on the NOEL of 40 µg/kg of body weight per day obtained in a 15-day study in pigs and the lowest observed effect level of 200 µg/kg body weight per day in this study. A safety factor of 200 was used because it is a temporary TDI due to some deficiencies in the database.

Dietary intakes

- Due to the rapid biotransformation and excretion of zearalenone in animals, the dietary intake from meat and products thereof is probably of little significance (3,4,17). After exposure to low doses of zearalenone, only low transmission of zearalenone to milk of dairy cows has been found (15). Publications have reported low levels of zearalenone in cattle and sheep liver (21) and in meat, milk and cheese (25). But it is assumed that the main dietary sources of zearalenone are cereals and products thereof, while liver, meat, egg and milk probably are of lower significance.
- Estimates of average dietary intakes of zearalenone presented by JECFA are based on the five FAO regional diets range from 1.5 to 3.5 µg/day (for «European» and «Middle Eastern» diets, respectively). The zearalenone values, used by JECFA, were based only on analytical values from Canada. Assuming a mean body mass of 60 kg, these intakes correspond to 0.03 and 0.06 µg/kg of body weight per day respectively. Estimates of average dietary intakes of zearalenone based on individual diet records are <0.98 µg/day (0.02 µg/kg bw per day) for Canada, 1.2 µg/day (0.02 µg/kg bw per day) for Denmark, 1.1 µg/day (0.02 µg/kg bw per day) for Norway and <2.1 µg/day (0.03 µg/kg bw per day) for USA. For α-zearalanol used as a veterinary drug, a theoretical maximum daily intake is calculated to be 1.6 µg per day (0.02 µg/kg bw per day) on the basis of the recommended maximum residue limits of 10 µg/kg in bovine liver and 2 µg/kg in bovine muscle. All these values are well below the PMTDI set by JECFA.
- Accent investigations of maize shows that high zearalenone levels can. Levels of zearalenone up to 330 µg/kg in maize products intended for baby food have also been found. Intake calculations show the risk of infants exceeding the JECFA PMTDI values.

Suggestions for future studies

- Additional studies to determine the no hormonal effect level in prepubertal pigs should be performed (See Bauer et al 1987 (26)).
- Additional studies are needed on the potential genotoxicity of zearalenone, especially to clarify its ability to bind covalently to DNA.
- There is a need for comparative studies on species differences (including use of human cells) in the metabolism of zearalenone to elucidate the differential findings in long term carcinogenicity studies in rats and mice with respect to tumour formation as well as the difference between rats and mice with respect to DNA-adduct formation as measured by the ^{32}P-postlabeling method.
- Studies on blood levels of zearalenone in humans with known dietary zearalenone -intake could help to clarify the toxicokinetic behaviour of zearalenone.

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Annex 2

Figures

Figure 1: The total number of samples and positive samples of all cereal grains (Food categorisation group GC, Annex 3). The cereal grains are divided into wheat, maize, rice, oats, rye and barley.

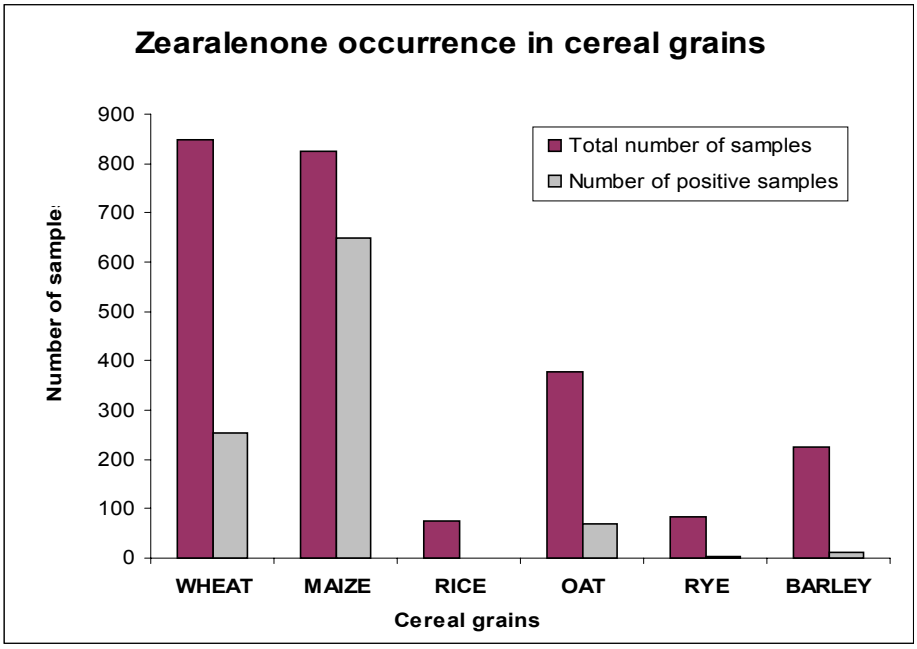


Figure 2: The total numbers of samples of wheat and wheat-based products. The percentages of zearalenone positive samples are given over the columns of number of positive samples.

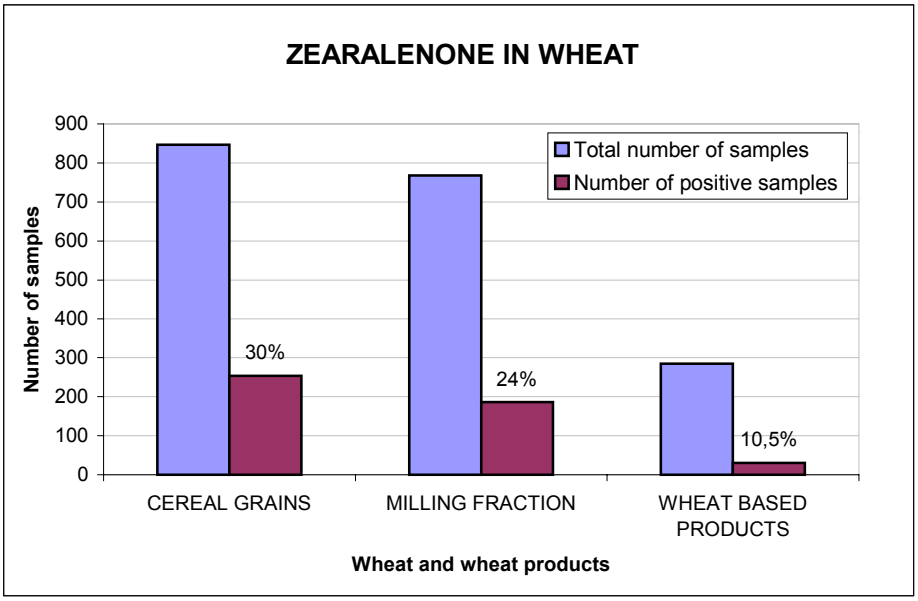


Figure 3: The total number of samples of Maize and maize products. The percentages of zearalenone positive samples are given over the columns of number of positive samples

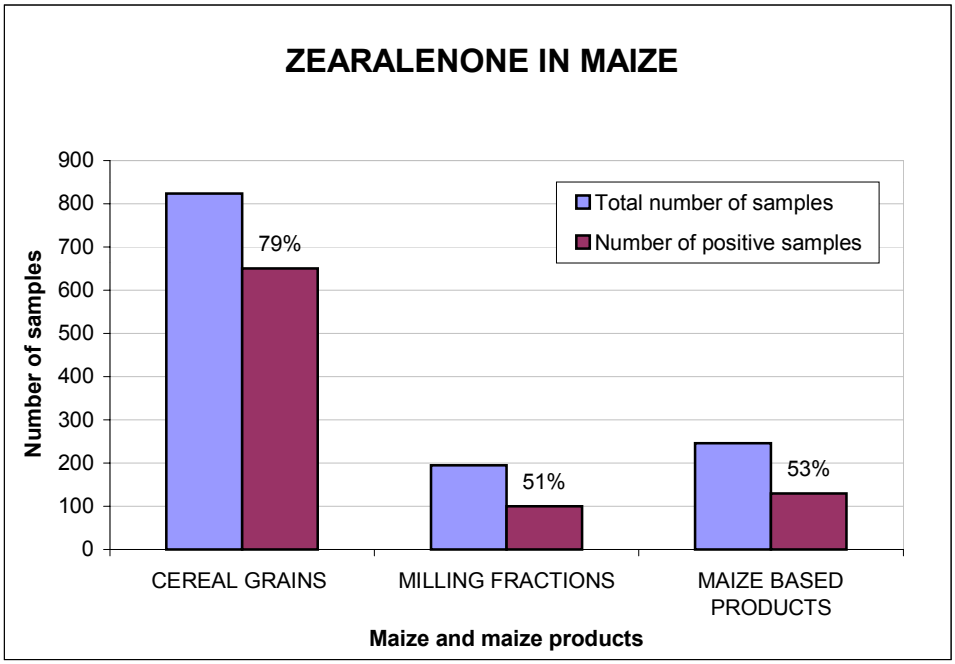


Figure 4: The total number of rice and rice-derived products. The percentages of zearalenone positive samples are given over the columns of number of positive samples.

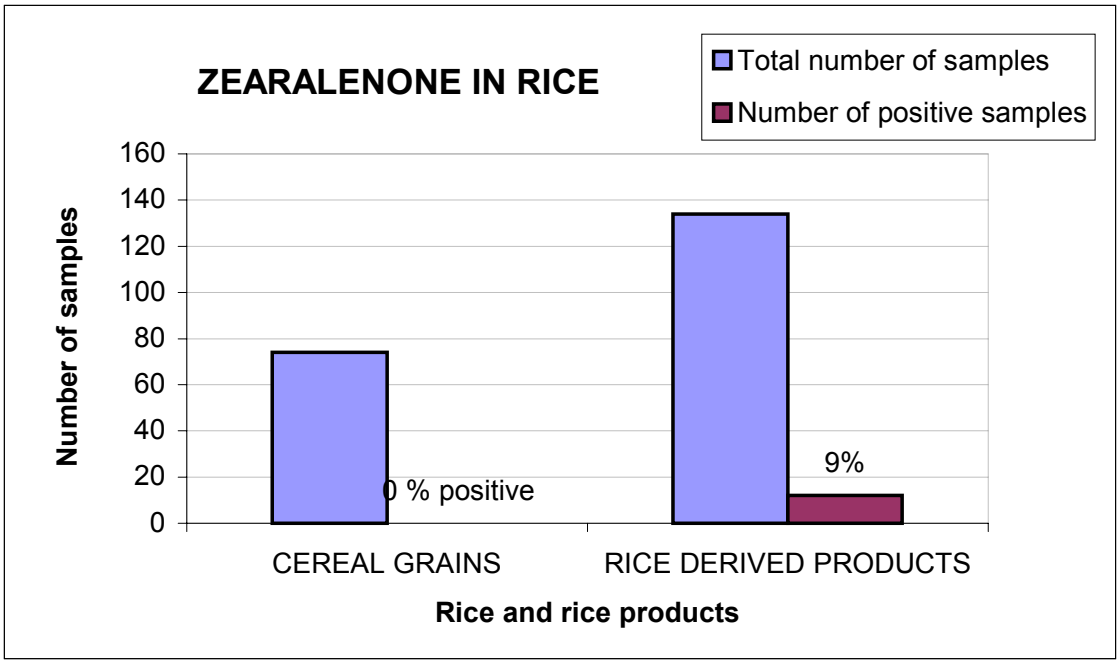


Figure 5: The total number of Barley and barley-derived products. The percentages of zearalenone positive samples are given over the columns of number of positive samples.

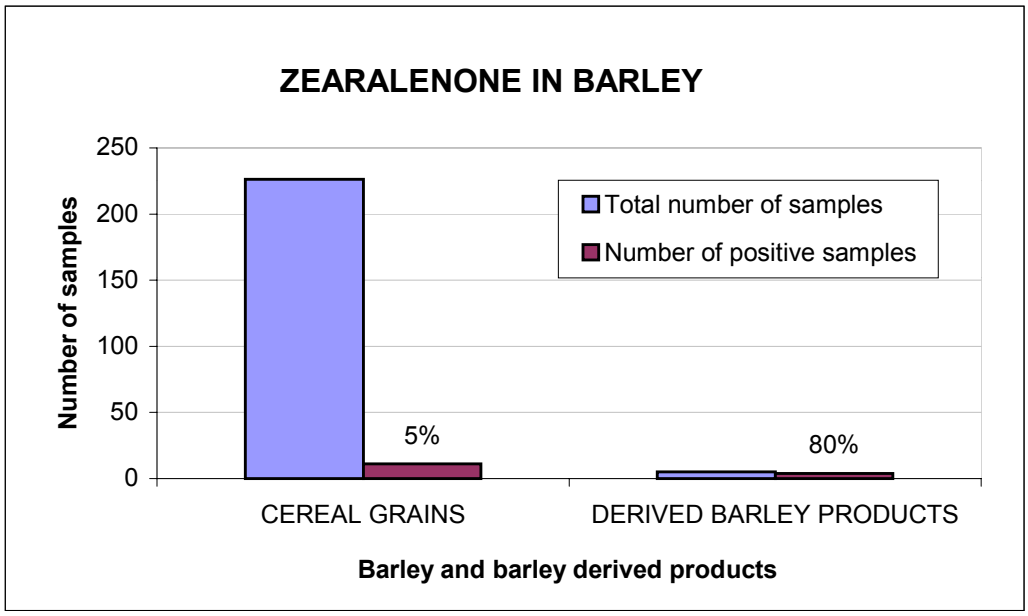


Figure 6;
The total number of oats samples. The percentages of zearalenone positive samples are given over the columns of number of positive samples.

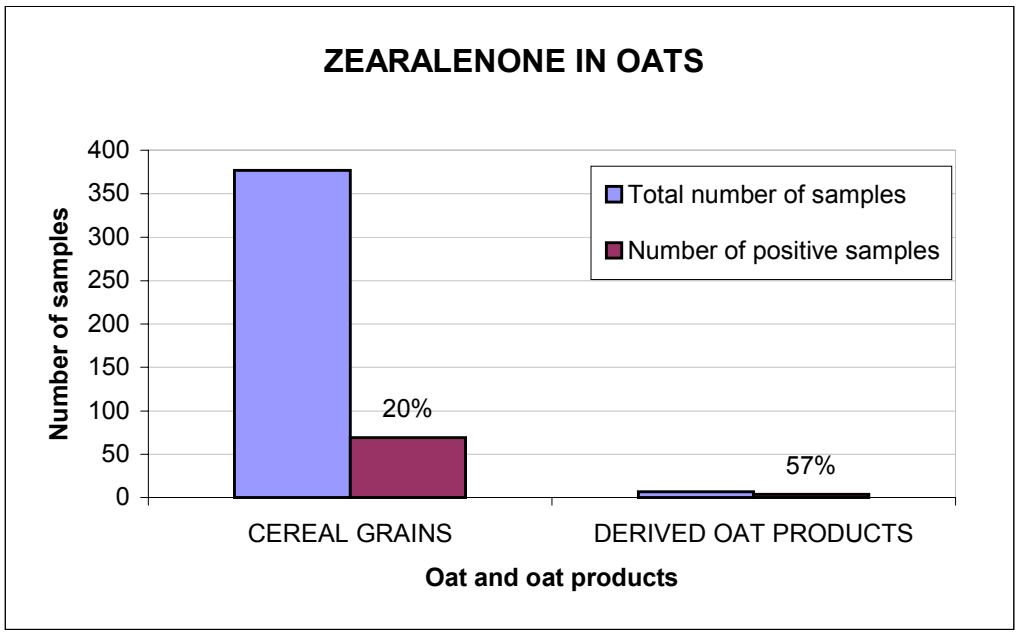


Figure 7: The total number of rye and rye derived products. The percentages of zearalenone positive samples are given over the columns of number of positive samples.

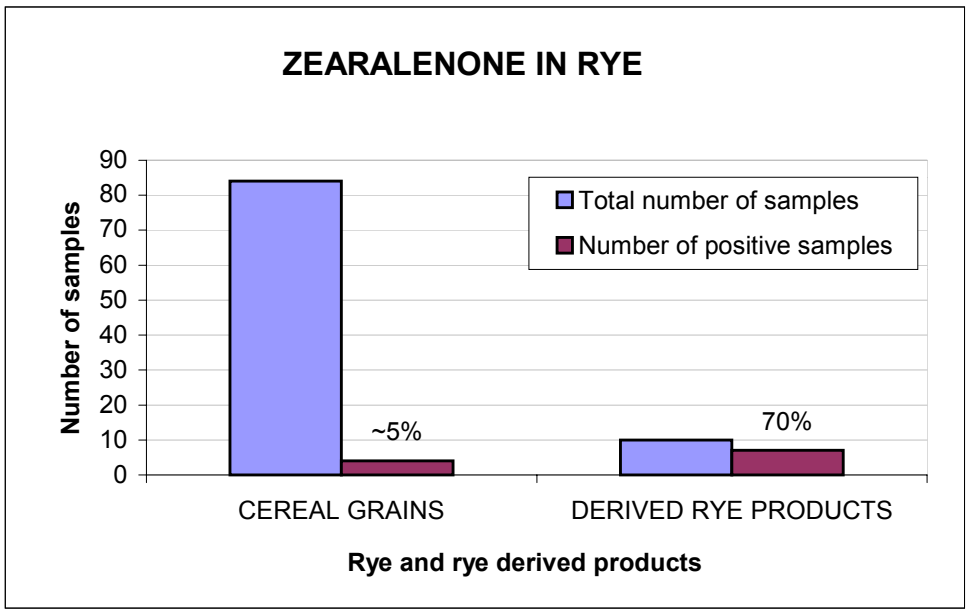


Figure 8: The total number of samples of baby food, and the percentage of zearalenone positive samples.

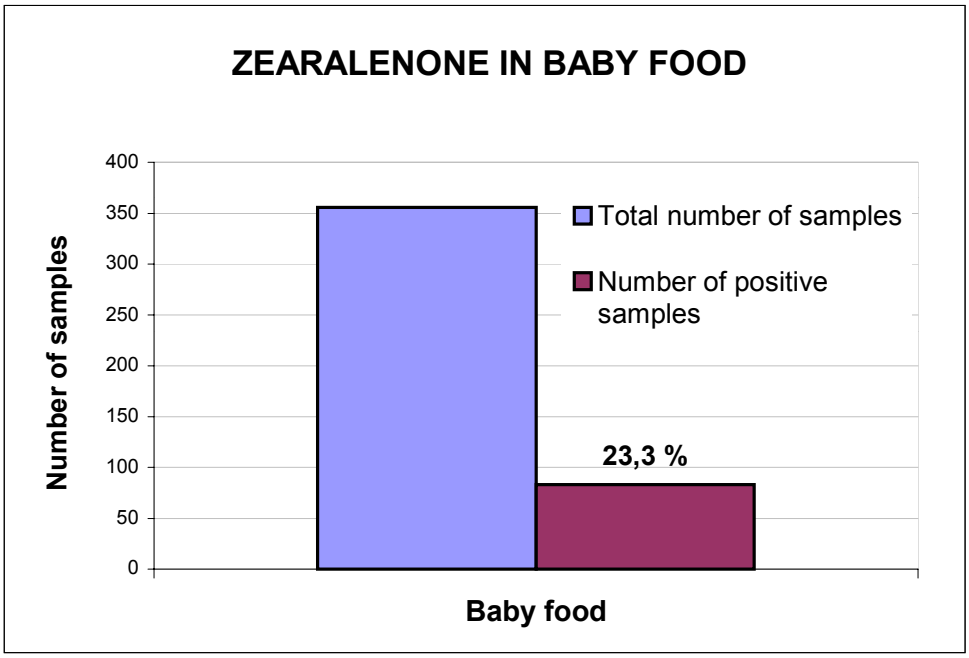


Figure 9: The total number of samples of cereal products. Some of the numbers and the percentages of zearalenone positive samples are given over the columns.

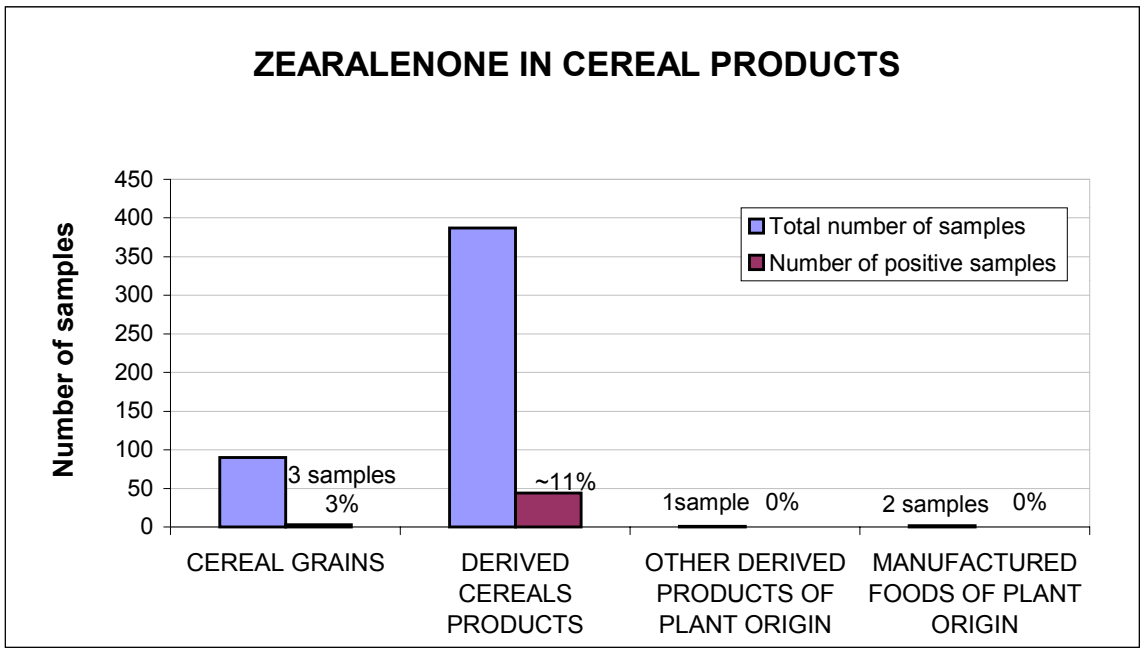


Figure 10: The total contribution from the participating countries. Both number of all samples and number of zearalenone positive samples per country are presented in the diagram.

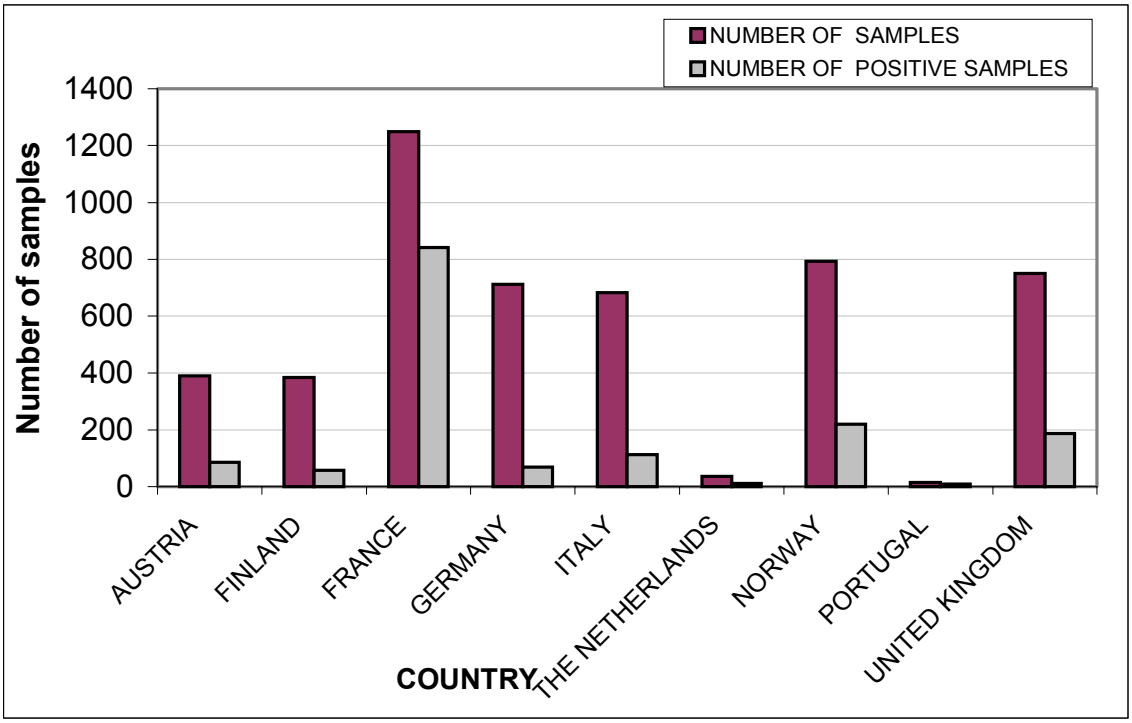


Figure 11: The total numbers of raw wheat (**A**), raw maize (**B**), raw oats (**C**) and raw barley (**D**) samples and the zearalenone positives samples per country.

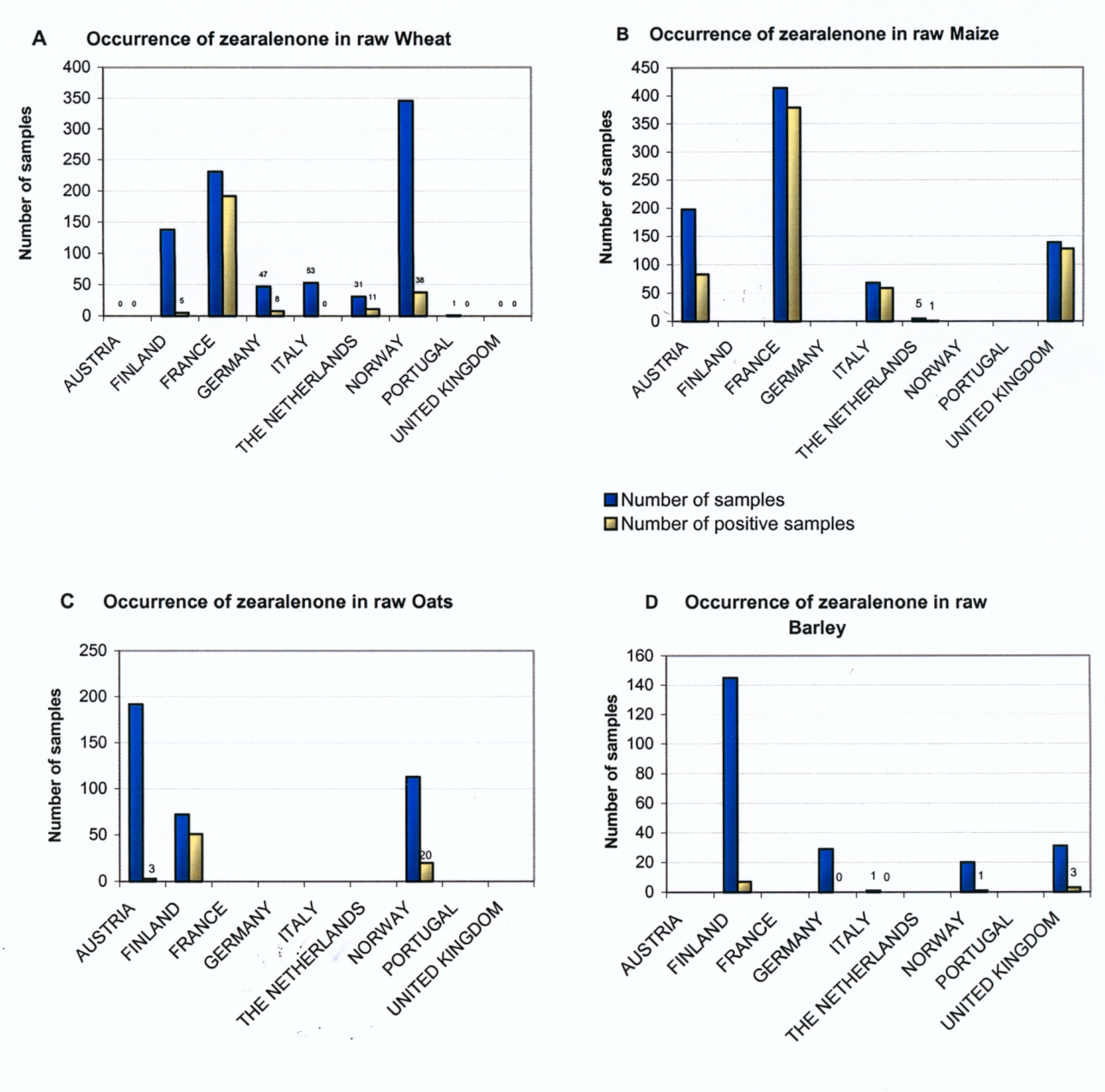


Figure 12: The total number of samples of milk, the percentage of zearalenone positive samples are given over the number of positive samples column.

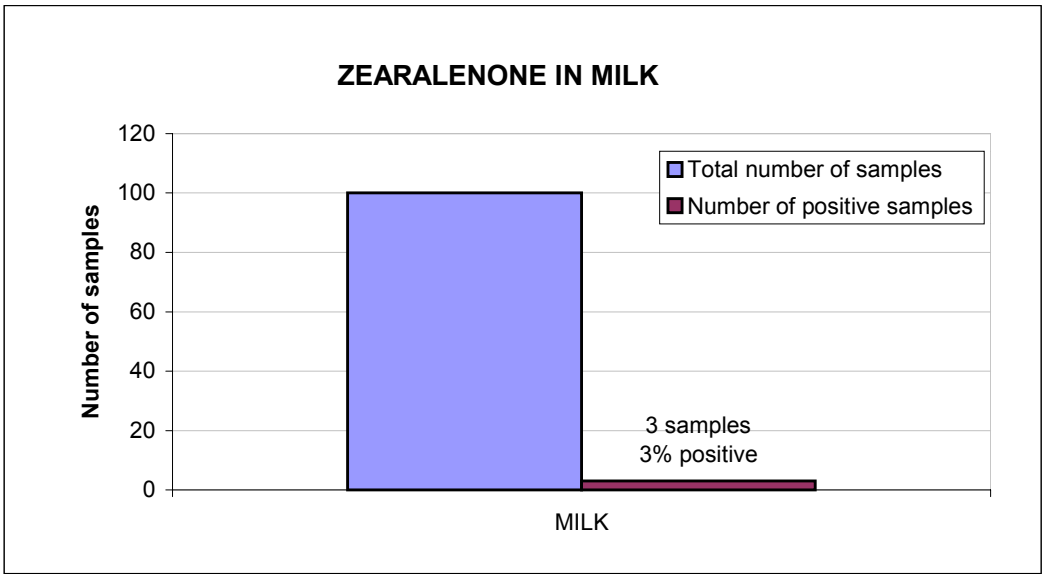


Figure 13: Estimated average (Mean 1 and Mean 2) daily intake of zearalenone among adults from the participating countries.

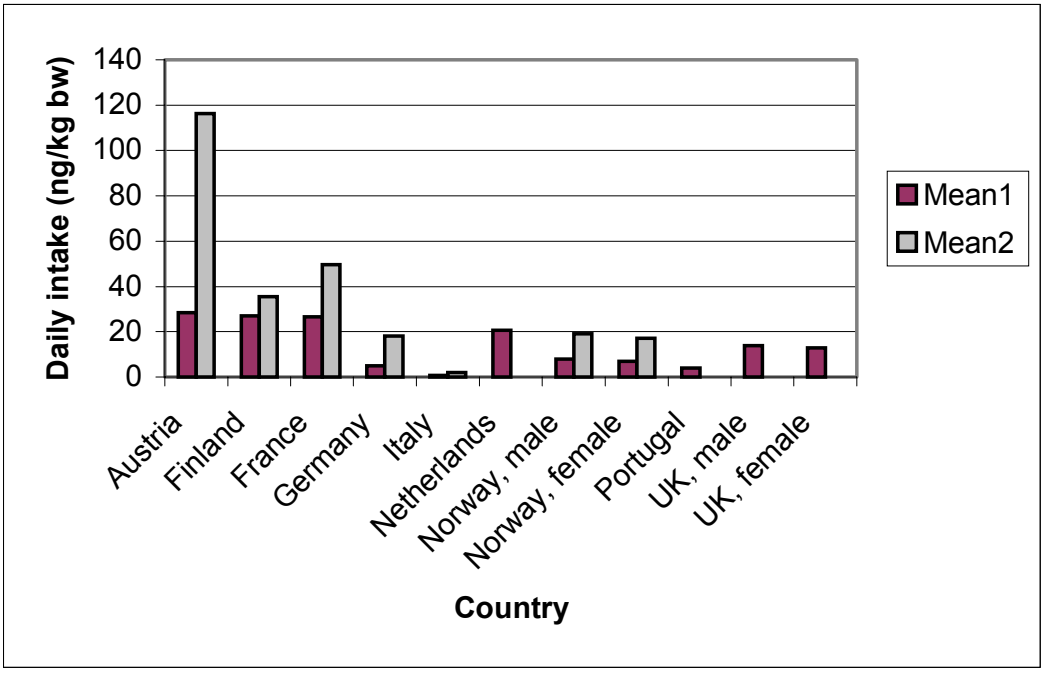
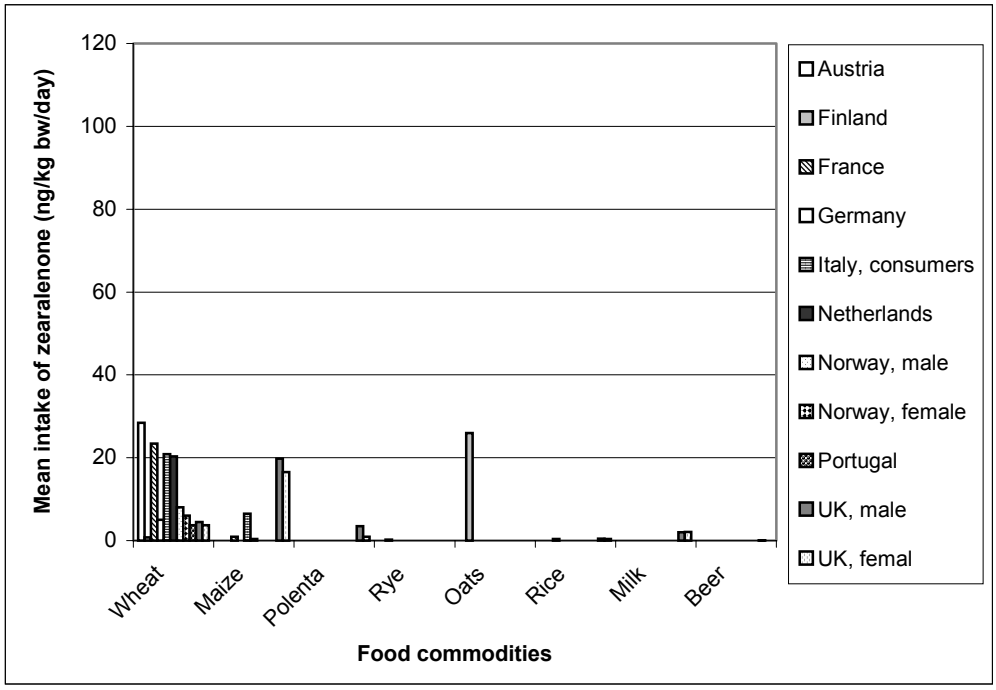
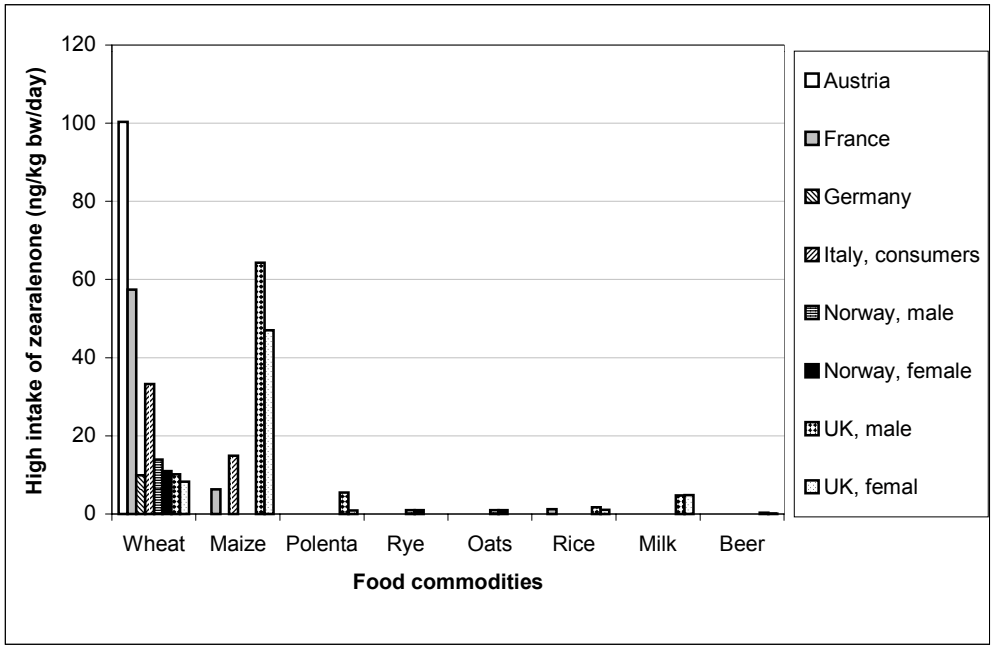


Figure 14: The contribution of some of the food groups to the dietary intake of zearalenone among adults. **A;** The Mean1 intake of zearalenone. **B;** The high intake of zearalenone (95th percentile-intake).

A



B



Annex 3

Occurrence data from the participant countries, Tables 1 and 7

Table 1A. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
AUSTRIA																							
Maize	GC2	03 01 B	1996	92	10		34		16	6	6	6	20	4	275	63	99	20	y	Random	HPLC		y
Maize	GC2	03 01 B	1997	58	10		53		4				1		140	5,2	43	<LOQ	y	Random	HPLC		y
Maize	GC2	03 01 B	1998	48	10		28	2	6	4	3	3	1	1	340	28,3	65,5	<LOQ	y	Random	HPLC		y
Oats	GC 3	03 01 C	1999	96	20		96									3,3		<LOQ	y	target	HPLC		y
Oats	GC 3	03 01 C	2000	96	20		93		3						30	4,1	26,7	<LOQ	y	target	HPLC		y
FINLAND	**Data from the english summary of mycotoxins in Finnish cereals from 1998 to 2001**																						
Wheat Organic)			1998	27		2	25	2							5,3	1,30	5,1	1	Yes	Random	HPLC	GOOD	Yes
Barley			1998	7		2	6	1							4,4	1,49	4,4	1	Yes	Random	HPLC	GOOD	Yes
Oats (organic)			1998	7		2	6	1							5,5	1,64	5,5	1	Yes	Random	HPLC	GOOD	Yes
Rye			1998	6		2	6									1		1	Yes	Random	HPLC	GOOD	Yes
Wheat			1999	37	0,5		37								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Barley			1999	30	0,5		30								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Barley,malt			1999	18	0,5		18								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Oats			1999	10	0,5		0						3	7	299	221,5	221,5	231,5	Yes	Random	HPLC	GOOD	Yes
Rye			1999	2	0,5		2								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Wheat			2000	35	0,5		33	1	1						12,1	0,6	9,8	0,083	Yes	Random	HPLC	GOOD	Yes
Barley,malt			2000	25	0,5		24	1							6,39	0,3	6,4	0,083	Yes	Random	HPLC	GOOD	Yes
Barley, feed			2000	20	0,5		20								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Oats			2000	25	0,5		20		2	1	2				64	8,5	42,3	0,083	Yes	Random	HPLC	GOOD	Yes
Rye			2000	15	0,5		15								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Wheat			2001	39	0,5		38			1					0,5	0,094	0,5	0,083	Yes	Random	HPLC	GOOD	Yes
Barley			2001	20	0,5		15		2	2	1				53,4	7,8	30,9	0,083	Yes	Random	HPLC	GOOD	Yes
Barley,malt			2001	25	0,5		25								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Oats			2001	30	0,5		0		1		1		3	25	1310	640,4	640,4	687,5	Yes	Random	HPLC	GOOD	Yes
Rye			2001	12	0,5		12								.-	0,083	.-	0,083	Yes	Random	HPLC	GOOD	Yes
Rye, organic			2001	1	0,5		1								.-	0,083	.-	.-	Yes	Random	HPLC	GOOD	Yes
FRANCE																							
C (French code)																							
Maize	GC2	03 01 B	2000	55	10			18	10	6	3	3	5	10	1500	156,45	231,76	25,00	yes	R	HPLC	G	no
Maize	GC2	03 01 B	2001	29	10			21	1	2	1	0	2	2	560	43,10	151,88	1,667	yes	R	HPLC	G	no
Wheat	GC1	03 01 A	2001	5	10			4	1						20	5,33	20	1,667	yes	R	HPLC	G	no
Groups of derived products containing cereals; D (French code)																							
Wheat bran	CF1	02 01 B	2000	2	2			2							6	3,16	6	3,165	Y	R	HPLC	G	no
Wheat bran	CF1	02 01 B	2002	5	5			3	2						23,4	7,5	17,45	0,83	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2002	2	5			2								0,83		0,83	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2002	6	5			4	2						21,3	8,4	12,2	7,35	Y	R	HPLC	G	no
Maize fractions	CF3	02 01C	2000	1	5			1							5	5	5	5	Y	R	HPLC	G	no
Maize fractions	CF3	02 01 C	2000	2	5			2							2,5	1,4	2,5	1,415	Y	R	HPLC	G	no
Maize fractions	CF3	02 01 C	2001	1						1					36	36	36	36	Y	R	HPLC	G	no
Maize fractions	CF3	02 01 C	2001	1									1		154	154	154	154	Y	R	HPLC	G	no
Maize Stardh	CF3A	02 01 C	2001	1	5			1								0,83		0,83	Y	R	HPLC	G	no
Maize Meal	CF3B	02 01 C	2000	5	5			4		1					31	11,3	14,275	9,25	Y	R	HPLC	G	no
Maize Meal	CF3B	02 01 C	2001	2							1	1			83	68	68	68	Y	R	HPLC	G	no
Maize Meal	CF3B	02 01 C	2001	4	5			3					1		156	40,9	81	3,415	Y	R	HPLC	G	no
Maize Meal	CF3B	02 01 C	2002	1					1						20	20	20	20	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2001	2	5			2								0,83		0,83	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2001	6	5		2	4								0,83		0,83	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2002	7	5			5	2						15,3	4,6	14	0,83	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2002	1	5			1								0,83		0,83	Y	R	HPLC	G	no

Table 1A. Summary of individual occurrence data by food group
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Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples LOD-9,9	in the range 10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
FRANCE cont.																							
Groups of derived products containing cereals; D (French code)																							
Pizza	CG4	02 01 B	2000	1		3	1									1,5		1,5	Y	R	HPLC	G	no
Maize based products	CH	02 01 C	2001	2	5			2								0,83		0,83	Y	R	HPLC	G	no
Maize based products	CH	02 01 C	2000	2	5			1	1						12,7	6,5	12,7	6,765	Y	R	HPLC	G	no
Maize based products	CH	02 01 C	2001	1	5			1								0,83		0,83	Y	R	HPLC	G	no
Maize based products	CH	02 01 C	2001	8	5		1	4	2	1					37	11,2	21,625	21,5	Y	R	HPLC	G	no
Maize based products	CH	02 01 C	2002	1				1							4,4	4,4	4,4	4,4	Y	R	HPLC	G	no
Polenta	CH1	02 01 C	2000	5	5			3	2						18,7	6,5	10,767	2,3	Y	R	HPLC	G	no
Polenta	CH1	02 01 C	2001	2	5			2							5,6	2,9	5,6	2,9	Y	R	HPLC	G	no
Polenta	CH1	02 01 C	2002	3	10		2	1							6,6	3,31	6,6	1,67	Y	R	HPLC	G	no
Popcorn	CH4	02 01 C	2000	4	5			3	1						15	5,665	10,5	3,415	Y	R	HPLC	G	no
Popcorn	CH4	02 01 C	2001	3	5			3							5	2,61	3,5	2	Y	R	HPLC	G	no
SweetCorn	CH5	02 01 C	2002	9	5		1	8								0,83		0,83	Y	R	HPLC	G	no
SweetCorn	CH5	02 01 C	2000	1	5			1								0,83		0,83	Y	R	HPLC	G	no
SweetCorn	CH5	02 01 C	2002	4	5		1	3								0,83		0,83	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2000	6	2			6								0,33		0,33	Y	R	HPLC	G	no
Wheat based products	CG	02 01 B	2000	3		2	3									1,5		1,5	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2001	9	10		2	7								1,67		1,67	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2000	16	10		12	4							3	1,75	3	1,75	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2000	8	2			8								0,33		0,33	Y	R	HPLC	G	no
White wheat flour	CF2	02 01 B	2001	34	5		21	8	5						28,9	3,965	14,267	1,5	Y	R	HPLC	G	no
F (French code)																							
Maize	GC2	03 01 B	2000	25	8		0	2	8	5	0	4	3	3	569	97	97		Y	T	ELISA	good	yes
Maize	GC2	03 01 B	2001	25	8		1	2	3	3	4	5	4	3	569	97	101		Y	T	ELISA	good	yes
A (French code)																							
Wheat	CF2	02 01 B	94 - 98	37		20	37	0	0	0	0	0	0	0		10		10	Y	R			no
Wheat	CF2	02 01 B	1999	18		20	18	0	0	0	0	0	0	0		10		10	Y	R			no
Wheat	CF2	02 01 B	2000	28		10	24	0	2	0	1	0	1	0	100	13	43	5	Y	R			no
Wheat	CF2	02 01 B	2001	19		50	18	0	1	0	0	0	0	0	27	25	27	25	Y	R			no
Wheat	CF2	02 01 B	2002	24		50	22	2	0	0	0	0	0	0	8	18	7	25	Y	R			no
Wheat bran	CF1	02 01 B	94 - 98	5		20	5	0	0	0	0	0	0	0		10		10	Y	R			no
Wheat bran	CF1	02 01 B	1999	10		50	10	0	0	0	0	0	0	0		20		20	Y	R			no
Wheat bran	CF1	02 01 B	2000	2		20	0	0	0	0	1	0	1	0	174	122	122	122	Y	R			no
Wheat bran	CF1	02 01 B	2001	5		10	3	0	0	0	0	1	1	0	115	44	102	5	Y	R			no
Wheat bran	CF1	02 01 B	2002	7		10	7	0	0	0	0	0	0	0		5		5	Y	R			no
Other wheat derived products	CG	02 01 B	94 - 98	8		20	8	0	0	0	0	0	0	0		10		10	Y	R			no
Other wheat derived products	CG	02 01 B	1999	6		20	6	0	0	0	0	0	0	0		10		10	Y	R			no
Other wheat derived products	CG	02 01 B	2000	3		10	2	0	1	0	0	0	0	0	20	10	20	5	Y	R			no
Other wheat derived products	CG	02 01 B	2001	8		50	8	0	0	0	0	0	0	0		25		25	Y	R			no
Other wheat derived products	CG	02 01 B	2002	10		50	8	2	0	0	0	0	0	0	10	19	8	25	Y	R			no
Maize derived products	CF3	02 01 C	2001	6		10	5	0	0	0	0	0	1	0	140	28	140	5	Y	R			no
Maize derived products	CF3	02 01 C	2002	8		10	5	1	2	0	0	0	0	0	13	7	11	5	Y	R			no
Rice	GC7	03 01 G	94 - 98	4		20	4	0	0	0	0	0	0	0		10		10	Y	R			no
Rice	GC7	03 01 G	2000	1		10	1	0	0	0	0	0	0	0		5		5	Y	R			no
Rice	GC7	03 01 G	2001	38		10	38	0	0	0	0	0	0	0		5		5	Y	R			no
Rice	GC7	03 01 G	2002	31		10	31	0	0	0	0	0	0	0		5		5	Y	R			no

Table 1A. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
FRANCE cont.																							
G (French code)																							
Wheat	CF2	02 01 B	2000	25	10-40	-	0	15	9	0	1	0	0	0	52	15		10		R	GC or HPLC	L	Y
Wheat	CF2	02 01 B	2001	49	10-50	-	0	45	4	0	0	0	0	0	25	8		5		R	GC or HPLC	L	Y
Maize	GC2	03 01 B	2000	164	10-40	20	33	62	25	11	14	8	20	24	998	96		27		R	GC or HPLC	L	Y
Maize	GC2	03 01 B	2001	116	40-50	5-30	1	1	35	11	12	8	27	22	1817	145		75		R	GC or HPLC	L	Y
GERMANY																							
Wheat (flour, Wheat grit, kernels)	CF		ref 1 2001/2002	133	6	6	91	18	24	0	0	0	0	0	20	4,5	10,6	1	yes	Random	ELISA/HPLC	p	yes
Wheat	GC1		ref 2 2001	25	10	4	20	4	1						11,4	2,3	k.a	k.a	yes	Random	HPLC-FD	p	yes
Pasta (Noodles)			ref 1	206	6	6	200	3	2	1	0	0	0	0	41	2,4	17,3	2,3	yes	Random	ELISA/HPLC	P	
Baby food			ref 1 2001/2002	171	6	6	167	2	2	0	0	0	1	0	14	2,6	10,8	3	yes	Random	HPLC	P	yes
ref 1: USLEBER et al., unpublished data from Joint Research Project on Fusarium Toxins (Deoxynivalenol, Zearalenon) in Foods and Toxin Intake by the Consumer in Germany (Ministry of Consumer Protection, Nutrition and Agriculture)																							
ref 2: MAJERUS, P., personal communication																							
Rye	GC5	03 01E	HI/2000	3	10	5	1	1	1	0	0	0	0	0	23,7	9,57	13,1	<LOQ	YES	Random	HPLC	good	YES
Wheat	GC1	02 01B	HI/2000	5	10	5	4	0	0	0	1	0	0	0	72,2	16,44	72,2	<LOD	YES	Random	HPLC	good	YES
White flour	CF2	02 01B	HI/2000	4	10	5	3	0	1	0	0	0	0	0	12,8	5,08	12,8	<LOD	YES	Random	HPLC	good	YES
Rice	CF	02 01A	HI/2000	3	10	5	3	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Other derived products of plant origin	CF4	02 01D	HI/2000	1	10	5	1	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Pasta	CG3	02 01B	HI/2001	7	10	5	7	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Wheat	GC1	03 01A	HI/2001	1	10	5	1	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
White flour	CF2	02 01B	HI/2001	3	10	5	3	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Rice	CF	02 01A	HI/2001	1	10	5	1	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Wheat	GC1	03 01A	HI/2002	6	10	5	5	1	0	0	0	0	0	0	<LOQ	<LOQ	<LOQ	<LOD	YES	Random	HPLC	good	YES
Rice	CF	02 01A	HI/2002	6	10	5	6	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
White flour	CF2	02 01B	HI/2002	1	10	5	1	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
	CP	03 01	HI/2002	2	10	5	2	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Pasta	CG3	02 01B	HI/2002	6	10	5	6	0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD	YES	Random	HPLC	good	YES
Wheat	GC1	0301A	2000	15	<5,0	:2,0	13		1	1					40,7	1	?	?	yes	Random	HPLC	P	
Rye	GC5	0301E	2000	4	<5,0	:2,0	4								<LOD	1			yes	Random	HPLC	P	
Barley	GC6	0301F	2001	11	<5,0	:2,0	11								<LOD	1			yes	Random	HPLC	P	
Rice	CF	0201A	2000	3	<5,0	<2,0	3								<LOD	1			yes	Random	HPLC	P	
Wheat	GC1	0301A	2001	25	10	4	20	4	1						11,4	2,3	11,4	11,4	yes	random	HPLC-FD	p	yes
Rye	GC 5	0301E	2001	13	10	4	13								<LOD	2			yes	random	HPLC-FD	p	yes
Barley	GC6	0301F	2001	13	10	4	13								<LOD	2			yes	random	HPLC-FD	p	yes
other grasses	GC9	301	2001	5	10	4	5								<LOD	2			yes	random	HPLC-FD	p	yes
Rice	CF	0201A	2001	8	10	4	8								<LOD	2			yes	random	HPLC-FD	p	yes
wheat bran	CF1	0201B	2001	1	10	4		1							1,7	1,7	?	?	yes	random	HPLC-FD	p	yes
Maize grits	CF3C	0201C	2001	1	10	4	1								<LOD	2			yes	random	HPLC-FD	p	yes
Flour	CF3D	0201C	2001	5	10	4	2	1	2						16,9	1,2	15,3	15,3	yes	random	HPLC-FD	p	yes
Polenta	CH1	0201C	2001	1	10	4		1							1,7	1,7	?	?	yes	random	HPLC-FD	p	yes
Barley	GC6	0301F	2001	5	10	2	5								<LOD	1			YES	Random	HPLC		
infant food			2001	43	10	4	43									2			yes	random	HPLC-FD	p	yes
THE NETHERLANDS																							
wheat	GC1		1(2000-2001)	4		10	2			1	1				55	24	42,5		y	r	IA HPLC-FD		
wheat durum	GC1		1(2000-2001)	5		10	5									5		<10	y	r	IA HPLC-FD		
Maize	GC2		1(2000-2001)	5		10	4		1						22	8,4	22	<10	y	r	IA HPLC-FD		
wheat	GC1		5(2000)	22		5	13	2	5	2					45,3	9	18,5	<5	y	r	IA HPLC-FD		

Table 1A. Summary of individual occurrence data by food group

Zearalenone Units: µg/kg or µg/L Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples LOD-9,9	in the range 10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
ITALY																							
Wheat	GC1	03 01A	1-2000	2	90	30	2								15	15	15	-	YES	Random	HPLC		NO
Barley	GC6	03 01F	1-1999	1	90	30	1								15	15	15	-	YES	Random	HPLC		NO
White wheat flour	CF2	02 01A	2-97/01	161		10	161								5	5	-	5	YES	Random	HPLC		YES
Maize Starch	CF3A	02 01C	2-97/01	24		10	22				1	1			72	14	57	5	YES	Random	HPLC		YES
Cereal grain	GC	03 01	2-97/01	85		10	82		1	1		1			80	6	43	5	YES	Random	HPLC		YES
Wheat bran	CF1	02 01B	2-97/01	32		10	29		1					2	510	29	260	5	YES	Random	HPLC		YES
Maize flour	CF3D	02 01C	2-97/00	53		10	37		6	4	3	3			99	17	45	5	YES	Random	HPLC		YES
Maize Gluten	CF3	02 01C	2-97-98	11		10			1	1	2	2		5	6075	1328	1328	93	YES	Random	HPLC		YES
Wheat Gluten	CF	02 01A	2-97/01	7		10	7								5	5	-	5	YES	Random	HPLC		YES
Bakery products			2-97/01	92		10	89		3						18	5	16	5	YES	Random	HPLC		YES
Maize semolina	CF3	02 01C	2-97/01	22		10	11		2	2	3			4	4051	417	829	13	YES	Random	HPLC		YES
Wheat semolina	CF	02 01A	2-99/01	35		10	34		1						28	6	28	5	YES	Random	HPLC		YES
Wheat	GC1	03 01A	2-97/01	51		10	51								5	5	-	5	YES	Random	HPLC		YES
Maize	GC2	03 01B	2-97/01	48		10	3		5	2	2	2	9	25	6492	627	668	235	YES	Random	HPLC		YES
Whole meal	CF	02 01A	2-97/01	37		10	33		1	3					35	8	30	5					
Maize	GC2	03 01B	3-2001	5		20	5								10	10	-	10	YES	Random	HPLC		YES
Maize flour	CF3D	02 01 C	3-2001	1		20	1								10	10	-	10	YES	Random	HPLC		YES
Maize	GC2	03 01B	4-1998	15		3	1	3	3	2	3	2	1		150	43	46	37	YES	Random	HPLC	L	NO
NORWAY																							
Wheat, no	GC 1	0301 A	1.-1990	138	15	5	132	4	2						11	2,8	8,3	2,5	yes	random	HPLC	good	yes
Barley, no *	GC 6 *	0301 F	1.-1990	20	15	5	19		1						11	2,9	11,0	2,5	yes	random	HPLC	good	yes
Rye, no	GC 5	0301 E	1.-1990	2	15	5	2								.-	2,5	0	2,5	yes	random	HPLC	good	yes
Oats, no *	GC 3 *	0301 C	1.-1990	40	15	5	35	4		1					43	3,8	12,6	2,5	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	1.-1990	27	15	5	25	2							5	2,7	5,0	2,5	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	1.-1990	18	15	5	16	2							5	2,8	5,0	2,5	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	2.-1994	2	15	5	2								.-	2,5	0	2,5	yes	random	HPLC	good	yes
Wheat, no *	GC 1 *	0301 A	3.-1995	32	9	3	29	2			1				68	3,7	25,3	1,5	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	3.-1995	21	9	3	20				1				64	4,5	64,0	1,5	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	3.-1995	13	9	3	12	1							3	1,7	3,0	1,5	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	3.-1995	4	9	3	4								.-	1,5	0	1,5	yes	random	HPLC	good	yes
Wheat, no *	GC 1 *	0301 A	4.-1669	28	60	20	28								.-	10,0	0	10,0	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	4.-1669	14	60	20	14								.-	10,0	0	10,0	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	4.-1669	14	60	20	14								.-	10,0	0	10,0	yes	random	HPLC	good	yes
Rye, imp	GC 5	0301 E	4.-1669	4	60	20	4								.-	10,0	0	10,0	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	5.-1997	25	3	1	19	5	1						21,2	1,6	5,2	0,5	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	5.-1997	14	3	1	8	4	1	1					34,5	5,1	11,3	0,5	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	5.-1997	10	3	1	7	2	1						13,2	2,0	5,5	0,5	yes	random	HPLC	good	yes
Wheat, no	GC 1	0301 A	6.-1998	35	6	2	26	8	1						13	1,5	3,4	1,0	yes	random	HPLC	good	yes
Oats, no	GC 3	0301 C	6.-1998	22	6	2	14	8							2	1,4	0,3	1,0	yes	random	HPLC	good	yes
Wheat, imp	GC 1	0301 A	6.-1998	24	6	2	16	8							4	1,6	2,9	1,0	yes	random	HPLC	good	yes
Baby porridge **																							
Maize ***	CH ***	0201 C	7.-2000	26	1,5	0,5	0	16		1		1	4	4	305	70,2	70,2	5,8	yes	random	HPLC	good	yes
Rice ***	GC7 ***	0301 G	7.-2000	16	1,5	0,5	8	8							5,5	1,2	2,2	0,3	yes	random	HPLC	good	yes
Oat ***	GC3 ***	0301 C	7.-2000	26	1,5	0,5	20	6							4,8	0,6	1,7	0,3	yes	random	HPLC	good	yes
Wheat ***	CG ***	0201 B	7.-2000	38	1,5	0,5	12	26							2,2	0,8	1,0	0,8	yes	random	HPLC	good	yes
Composite grain product***	CF	0201 A	7.-2000	19	1,5	0,5	7	12							1,9	0,7	1,0	0,7	yes	random	HPLC	good	yes
Maize fractions	**CF 3**																						
Maize meal	CF3 B	0201 C	8.-2001	20	5,82	1,94	1	7	7	4	1				54,5	19,5	20,5	13,1	yes	random	HPLC	good	yes
Maize starch	CF3 A	0201 C	8.-2001	14	5,82	1,94	5	8	1						10,9	3,9	5,5	3,6	yes	random	HPLC	good	yes
Maize grits	CF3 C	0201 C	8.-2001	4	5,82	1,94	1			2	1				59,0	37,6	49,8	45,1	yes	random	HPLC	good	yes
Maize-based products	**CH**																						
polenta	CH 1	0201 C	8.-2001	20	5,82	1,94	5	9	4	1	1				53,5	11,4	14,8	5,9	yes	random	HPLC	good	yes
bread	CH 3	0201 C	8.-2001	2	5,82	1,94	0	2							4,2	3,4	3,4	3,4	yes	random	HPLC	good	yes
Corn flakes	CH	0201 C	8.-2001	50	5,82	1,94	17	30	2	1					13,9	3,3	4,5	2,1	yes	random	HPLC	good	yes
sweet corn ****	CH5 ****	0201 C	8.-2001	50	15	5	50								.-	0,3	0	2,5	yes	random	HPLC	good	yes
sweet corn	CH5	0201 C	8.-2001	1	5,82	1,94	1								.-	1,0	0	1,0	yes	random	HPLC	good	yes

* = The products is divided into different grain products.** = The code that is used for rice and oat is for grasses, but the product is baby porridge.*** = The products is divided into organic (ecological) and conventional ("usual") samples.

**** = Sweet corn is divided into different sweet corn products, as hermetic maize, baby maize and corn cob; no= norwegian; imp = imported.

Table 1A. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
PORTUGAL																							
wheat		0301AGC1	2002	1	5	2,5	1									1,25			yes	Random	HPLC	L	yes
white wheat flour		0201BCF2	2002	1	5	2,5	1									1,25			yes	Random	HPLC	L	yes
wheat bran		0201BCF1	2002	2	5	2,5		2							15	13	13		yes	Random	HPLC	L	yes
cereals brakfast		0201DCF4	2002	11	5	2,5	4	7							11	5,1	7,3	6	yes	Random	HPLC	L	yes
UNITED KINGDOM																							
Rice			2/2000	100	6		100								<6	1,00	0,00	<6	Y	Random	HPLC	G	Y
Malted barley			1999	14	2		13	0	0	1	0	0	0	0	33,00	2,67	33,00	<2	Y	Random	HPLC	G	Y
Malted barley			2000	9	2		8	0	0	1	0	0	0	0	40,00	4,74	40,00	<2	Y	Random	HPLC	G	Y
Malted barley			2001	8	2		7	1	0	0	0	0	0	0	4	0,79	4,00	<2	Y	Random	HPLC	G	Y
Farm-gate milk			4/2000	50		1	50	0	0	0	0	0	0	0	<1	0,50	0,00	<1	Y	Random	HPLC	G	Y
Retail milk			4/2000	50		1	47	3	0	0	0	0	0	0	5,5	0,63	2,63	<1	Y	Random	HPLC	G	Y
Beer			2000	3	0,05		3	0	0	0	0	0	0	0	<0.05	0,01	0,00	<0.05	Y	Random	HPLC	G	Y
Breakfast cereals			3/2000	60	8		49	0	6	2	1	0	1	1	231,80	11,36	56,01	<8	Y	Random	GC/MS	G	Y
Biscuits			3/2000	60	8		58	0	2	0	0	0	0	0	11,80	1,66	11,25	<8	Y	Random	GC/MS	G	Y
Bread			3/2000	60	8		59	0	1	0	0	0	0	0	15,80	1,57	15,80	<8	Y	Random	GC/MS	G	Y
Cakes			3/2000	40	8		40	0	0	0	0	0	0	0	<8	1,33	0,00	<8	Y	Random	GC/MS	G	Y
Flour			3/2000	40	8		40	0	0	0	0	0	0	0	<8	1,33	0,00	<8	Y	Random	GC/MS	G	Y
Polenta			3/2000	8	8		3	2	3	0	0	0	0	0	23,40	9,59	14,54	8,70	Y	Random	GC/MS	G	Y
Snacks			3/2000	40	8		25	0	1	7	4	3	0	0	<8	21,48	55,05	<8	Y	Random	GC/MS	G	Y
Snacks			3/2001	44	8		30	1	11	1	1	0	0	0	55,80	7,15	19,62	<8	Y	Random	GC/MS	G	Y
Maizeflour			3/2000	8	8		4	1	3	0	0	0	0	0	17,30	6,87	12,40	4,00	Y	Random	GC/MS	G	Y
Baby cereals			3/2000	17	8		16	0	1	0	0	0	0	0	11,60	1,94	11,60	<8	Y	Random	GC/MS	G	Y
Maize, imported	GC2	03 01B	1/1998	92	10		11	1	13	17	13	4	23	10	391	90,42	94,44	57,5	Y	Random	HPLC	G	Y
Maize, imported	GC2	03 01B	1/1999	47	10		0	0	0	1	9	10	17	10	584	149,74	149,74	106	Y	Random	HPLC	G	Y
The cereal products from U.K can be divided into special cereals.																							
Breakfast cereals																							
Cornflakes			3/2000	15	8		8	0	4	1	1	0	1	0	171,7	22,30	46,27	<8	Y	Random	HPLC	G	Y
Oats			3/2000	16	8		16	0	0	0	0	0	0	0	<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Wheat			3/2000	14	8		14	0	0	0	0	0	0	0	<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Bran			3/2000	14	8		11	0	2	0	0	0	0	1	231,8	19,26	85,00	<8	Y	Random	HPLC	G	Y
Mixed			3/2000	1	8		0	0	0	1	0	0	0	0	37,2	37,20	37,20	37,20	Y	Random	HPLC	G	Y
Biscuits																							
Wheat			3/2000	54	8		52	0	2						11,8	1,70	11,25	<8	Y	Random	HPLC	G	Y
Rye			3/2000	2	8		2	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Oats			3/2000	4	8		4	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Bread																							
White			3/2000	40	8		39	0	1						15,8	1,69	15,80	<8	Y	Random	HPLC	G	Y
Wholemeal			3/2000	16	8		16	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Other			3/2000	3	8		3	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Rye			3/2000	1	8		1	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Flour																							
White			3/2000	29	8		29								<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Wholemeal			3/2000	11	8		11								<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Snacks																							
Maize			3/2000	30	8		16	0	1	6	4	3			85,8	26,78	55,48	<8	Y	Random	HPLC	G	Y
Wheat			3/2000	6	8		6	0	0	0	0	0			<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Mixed			3/2000	4	8		3	0	0	1	0	0			49	13,25	49,00	<8	Y	Random	HPLC	G	Y
Maize			3/2001	24	8		11	1	10	1	1	0			55,8	11,21	19,56	9,75	Y	Random	HPLC	G	Y
Wheat			3/2001	13	8		13	0	0	0	0	0			<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Rice			3/2001	1	8		1	0	0	0	0	0			<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Mixed			3/2001	5	8		5	0	1	0	0	0			20,4	5,15	20,40	<8	Y	Random	HPLC	G	Y
Baby food																							
Oats			3/2000	6	8		6	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Cornflakes			3/2000	1	8		1	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Mixed			3/2000	2	8		2	0	0						<8	1,33	0,00	<8	Y	Random	HPLC	G	Y
Wheat			3/2000	8	8		7	0	1						11,6		11,60	<8	Y	Random	HPLC	G	Y

Table 1B1. Summary of best estimates of occurrence data

Summary of best estimate which some participating countries reported

Zearalenone **Units: µg/kg or µg/L**

Country: Italy, Germany, Austria the Netherlands, Norway and Portugal

	Food or group or study	Code	N° samples	Maximum value	Mean (1)	Mean (2)	Median
ITALY							
Wheat	GC1	03 01A	2	15	15	15	-
Barley	GC6	03 01F	1	15	15	15	-
Maize	GC2	03 01B	15	150	43	46	37
White wheat flour	CF2	02 01A	161	5	5	-	5
Maize Starch	CF3A	02 01C	24	72	14	57	5
Cereal grain	GC	03 01	85	80	6	43	5
Wheat bran	CF1	02 01B	32	510	29	260	5
Maize flour	CF3D	02 01C	54	99	17	45	5
Maize Gluten	CF3	0201C	11	6075	1328	1328	93
Wheat Gluten	CF	02 01A	7	5	5	-	5
Bakery products			92	18	5	16	5
Maize semolina	CF3	0201C	22	4051	417	829	13
Wheat semolina	CF	02 01A	35	28	6	28	5
Wheat	GC1	03 01A	51	5	5	-	5
Maize	GC2	03 01B	53	6492	568	668	163
Whole meal	CF	02 01A	37	35	8	30	5
Overall best estimate, Italy							
White wheat flour	CF2	02 01A	161	5	5	-	5
Maize Starch	CF3A	02 01C	24	72	14	57	5
Cereal grain	GC	03 01	85	80	6,35	43,3	5
Wheat bran	CF1	02 01B	32	510	29	260	5
Maize flour	CF3D	02 01C	54	99	17	45	5
Maize Gluten	CF3	0201C	11	6075	1328	1328	93
Wheat Gluten	CF	02 01A	7	5	5	-	5
Bakery products			92	18	5	16	5
Maize semolina	CF3	0201C	22	4051	417	829	13
Wheat semolina	CF	02 01A	35	28	6	28	5
Wheat	GC1	03 01A	51	5	5	-	5
Maize	GC2	03 01B	53	6492	568	668	163
Whole meal	CF	02 01A	37	35	8	30	5

GERMANY							
Wheat (flour, Wheat grit, kernels)	CF		133	20	4,5	10,6	1
Wheat	GC1		25	11,4	2,3	k.a	k.a
Summary					3,4	10,6	1
Estimate for Bread:							
50% of Wheat levels			158		1,7	5,3	0,5
Pasta (Noodles)			206	41	2,4	17,3	2,3
Baby food			171	14	2,6	10,8	3

Portugal							
wheat	0301AGC1	2002	1		1,25		
white wheat flour	0201BCF2	2002	1		1,25		
wheat bran	0201BCF1	2002	2	15	13	13	
cereals brakfast	0201DCF4	2002	11	11	5,1	7,3	6

	Food or group or study	Code	N° samples	Maximum value	Mean (1)	Mean (2)	Median
The Netherlands							
Data in Table 1A1	wheat	GC1	4	55	23,75	42,5	
	wheat durum	GC1	5	0	5	0	
	wheat	GC1	22	45,3	9,0	18,5	
	Maize	GC2	5	22	8,4	22	

Overall best estimate, the Netherlands							
	wheat	GC1	31	55	10,3	22,8	
	Maize	GC2	5	22	8,4	22	

Norway							
Wheat, no	GC 1	0301 A	138	11	2,8	8,3	2,5
Wheat, no *	GC 1 *	0301 A	32	68	3,7	25,3	1,5
Wheat, no *	GC 1 *	0301 A	28	.-	10,0	0	10
Wheat, no	GC 1	0301 A	25	21,2	1,6	5,2	0,5
Wheat, no	GC 1	0301 A	35	13	1,5	3,4	1,0
Wheat, no			**258**	**68**	**3,3**	**10,3**	**2,5**
Wheat, imp	GC 1	0301 A	27	5	2,7	5,0	2,5
Wheat, imp	GC 1	0301 A	13	3	1,7	3,0	1,5
Wheat, imp	GC 1	0301 A	14	.-	10,0	0	10
Wheat, imp	GC 1	0301 A	10	13,2	2,0	5,5	0,5
Wheat, imp	GC 1	0301 A	24	4	1,6	2,9	1,0
Wheat, imp			**88**	**13,2**	**3,3**	**3,8**	**1,5**
no/imp WHEAT total	**GC 1**	**0301 A**	**346**	**68**	**3,3**	**7,3**	**2,5**
Rye, no	GC 5	0301 E	2	.-	2,5	0	2,5
Rye, no			**2**	**.-**	**2,5**	**0**	**2,5**
Rye, imp	GC 5	0301 E	18	5	2,8	5	2,5
Rye, imp	GC 5	0301 E	4	.-	1,5	0	1,5
Rye, imp	GC 5	0301 E	4	.-	10,0	0	10
Rye, imp			**26**	**5**	**3,7**	**5,0**	**2,5**
no/imp RYE total	**GC 5**	**0301 E**	**28**	**5**	**3,4**	**3,7**	**2,5**
Barley, no *	GC 6 *	0301 F	20	11	2,9	11,0	2,5
Barley, no total	**GC 6**	**0301 F**	**20**	**11**	**2,9**	**11,0**	**2,5**
Oats, no *	GC 3 *	0301 C	40	43	3,8	12,6	2,5
Oats, no	GC 3	0301 C	2	.-	2,5	0	2,5
Oats, no	GC 3	0301 C	21	64	4,5	64,0	1,5
Oats, no	GC 3	0301 C	14	.-	10,0	0	10
Oats, no	GC 3	0301 C	14	34,5	5,1	11,3	0,5
Oats, no	GC 3	0301 C	22	2	1,4	0,3	1
Oats, no total	**GC 3**	**0301 C**	**113**	**64**	**4,2**	**21,8**	**2,5**
Maize fractions	**CF 3**						
Maize meal	CF3 B	0201 C	20	54,46	19,5	20,5	13,1
Maize starch	CF3 A	0201 C	14	10,93	3,9	5,5	3,6
Maize grits	CF3 C	0201 C	4	59,04	37,6	49,8	45,1
Maize fractions total	**CF3**	**0201 C**	**38**	**59,04**	**15,7**	**19,0**	**8,3**
Maize-based products	**CH**						
polenta	CH 1	0201 C	20	53,51	11,6	14,8	5,9
Polenta total	**CH 1**	**0201 C**	**20**	**53,51**	**11,6**	**14,8**	**5,9**
Corn flakes	CH	0201 C	50	13,94	3,3	4,5	2,1
Corn flakes total	**CH**	**0201 C**	**50**	**13,94**	**3,3**	**4,5**	**2,1**
sweet corn **	CH5 **	02 01 C	50	.-	2,5	0	2,5
sweet corn	CH5	0201 C	1	.-	0,97	0	1,0
Sweet corn total	**CH5**	**0201 C**	**51**	**.-**	**2,47**	**0**	**2,5**
Baby porridge * **							
Maize, ecological	CH	0201 C	10	305	177,00	177,00	184,5
Maize, "usual"		0201 C	16	7,2	3,37	3,37	2,2
Maize baby porridge tot	**CH**	**0201 C**	**26**	**305**	**70,15**	**70,15**	**5,75**
Rice, ecological	GC 7	0301 G	7	1,5	0,61	1,10	0,25
Rice, "usual"		0301 G	9	5,5	1,73	2,92	1,1
Rice baby porridge total	**GC 7**	**0301 G**	**16**	**5,5**	**1,24**	**2,24**	**0,25**
Oat, ecological	GC 3	0301 C	11	4,8	0,80	3,30	0,25
Oat, "usual"		0301 C	15	1,4	0,42	0,88	0,25
Oat baby porridge total	**GC 3**	**0301 C**	**26**	**4,8**	**0,58**	**1,68**	**0,25**
Wheat, ecologocal	CG	0201 B	3	0,5	0,50	0,50	0,25
Wheat, "usual"		0201 B	35	2,2	0,81	1,04	0,9
Wheat baby porridge tot	**CG**	**0201 B**	**38**	**2,2**	**0,78**	**1,02**	**0,8**
Composite grain product (CF)							
Wholemeal, ecological		02 01A	3	1,9	1,05	1,45	1
Wholemeal, "usual"		02 01A	7	1,1	0,65	0,95	1,7
Milling grain product, ecological		02 01A	4	1,2	0,94	1,17	1,15
Milling grain product, "usual"		02 01A	5	0,9	0,52	0,70	0,25
Composite grain produc	**CF**	**02 01A**	**19**	**1,9**	**0,74**	**1,03**	**0,7**

ASTERISK * = The products is divided into different grain products. ** = Sweet corn is divided into different sweet corn products, as hermetic maize, baby maize and corn cob. *** = NOTE: The code that is used for rice and oat is for grasses, but the product is baby porridge.

Overall best estimate, Norway							
WHEAT	**GC 1**	**0301 A**	**346**	**68**	**3,3**	**7,3**	**2,5**
RYE	**GC 5**	**0301 E**	**28**	**5**	**3,4**	**3,7**	**2,5**
BARLEY	**GC 6**	**0301 F**	**20**	**11**	**2,9**	**11,0**	**2,5**
OATS	**GC 3**	**0301 C**	**113**	**64**	**4,2**	**21,8**	**2,5**
Maize fractions	**CF 3**	**0201 C**	**38**	**59**	**15,7**	**19,0**	**8,3**
Polenta	**CH 1**	**0201 C**	**20**	**54**	**11,6**	**14,8**	**5,9**
Corn flakes	**CH**	**0201 C**	**50**	**14**	**3,3**	**4,5**	**2,1**
Sweet corn	**CH 5**	**0201 C**	**51**	**.-**	**2,47**	**0**	**2,5**
Maize baby porridge	**CH**	**0201 C**	**26**	**305**	**70,15**	**70,15**	**5,75**
Rice baby porridge	**GC 7**	**0301 G**	**16**	**5,5**	**1,24**	**2,24**	**0,25**
Oat baby porridge	**GC 3**	**0301 C**	**26**	**4,8**	**0,58**	**1,68**	**0,25**
Wheat baby porridge	**CG**	**0201 B**	**38**	**2,2**	**0,78**	**1,02**	**0,8**
Composite grain produc	**CF**	**02 01A**	**19**	**1,9**	**0,74**	**1,03**	**0,7**

	Food or group or study	Code	N° samples	Maximum value	Mean (1)	Mean (2)	Median
AUSTRIA							
Maize and Oats	GC (Grasses)	03 01	390	340	20,9	85,4	<LOQ

	Food or group or study	Code	N° samples	Maximum value	Mean (1)	Mean (2)	Median
FRANCE							
Data in Table 1A1							
Maize	GC2	03 01 B	55	1500	156,45	231,76	25,00
Maize	GC2	03 01 B	164	998	96,00		27,00
Maize	GC2	03 01 B	116	1817	145,00		75,00
Maize	GC2	03 01 B	29	560	43,10	151,88	1,67
Wheat	GC1	03 01 A	5	20	5,33	20,00	1,67
Wheat bran	CF1	02 01 B	2	6	3,16	6,00	3,17
Wheat bran	CF1	02 01 B	5		10,00		10,00
Wheat bran	CF1	02 01 B	10		20,00		20,00
Wheat bran	CF1	02 01 B	2	174	121,50	121,50	121,50
Wheat bran	CF1	02 01 B	5	115	43,60	101,50	5,00
Wheat bran	CF1	02 01 B	7		5,00		5,00
Wheat bran	CF1	02 01 B	5	23,4	7,50	17,45	0,83
White wheat flour	CF2	02 01 B	2		0,83		0,83
White wheat flour	CF2	02 01 B	6	21,3	8,40	12,20	7,35
White wheat flour	CF2	02 01 B	9		1,67		1,67
White wheat flour	CF2	02 01 B	16	3	1,75	3,00	1,75
White wheat flour	CF2	02 01 B	8		0,33		0,33
White wheat flour	CF2	02 01 B	37		10,00		10,00
White wheat flour	CF2	02 01 B	18		10,00		10,00
White wheat flour	CF2	02 01 B	28	100	13,46	43,00	5,00
White wheat flour	CF2	02 01 B	19	27	25,11	27,00	25,00
White wheat flour	CF2	02 01 B	24	8,2	17,88	7,00	25,00
White wheat flour	CF2	02 01 B	25	52	15,00		10,00
White wheat flour	CF2	02 01 B	49	25	8,00		5,00
White wheat flour	CF2	02 01 B	34	28,9	3,97	14,27	1,50
Maize fractions	CF3	02 01 C	6	140	27,50	140,00	5,00
Maize fractions	CF3	02 01 C	8	13	6,50	10,67	5,00
Maize fractions	CF3	02 01 C	1	5	5,00	5,00	5,00
Maize fractions	CF3	02 01 C	2	2,5	1,40	2,50	1,42
Maize fractions	CF3	02 01 C	1	36	36,00	36,00	36,00
Maize fractions	CF3	02 01 C	1	154	154,00	154,00	154,00
Maize Stardh	CF3A	02 01 C	1		0,83		0,83
Maize Meal	CF3B	02 01 C	5	31	11,30	14,28	9,25
Maize Meal	CF3B	02 01 C	2	83	68,00	68,00	68,00
Maize Meal	CF3B	02 01 C	4	156	40,90	81,00	3,42
Maize Meal	CF3B	02 01 C	1	20	20,00	20,00	20,00
Wheat based products	CG	02 01 B	8		10,00		10,00
Wheat based products	CG	02 01 B	6		10,00		10,00
Wheat based products	CG	02 01 B	3	20	10,00	20,00	5,00
Wheat based products	CG	02 01 B	8		25,00		25,00
Wheat based products	CG	02 01 B	10	10	19,42	8,35	25,00
Wheat based products	CG	02 01 B	2		0,83		0,83
Wheat based products	CG	02 01 B	6		0,83		0,83
Wheat based products	CG	02 01 B	6		0,33		0,33
Wheat based products	CG	02 01 B	7	15,3	4,60	14,00	0,83
Wheat based products	CG	02 01 B	1		0,83		0,83
Pizza	CG4	02 01 B	1		1,50		1,50
Maize based products	CH	02 01 C	2		0,83		0,83
Maize based products	CH	02 01 C	2	12,7	6,50	12,70	6,77
Maize based products	CH	02 01 C	1		0,83		0,83
Maize based products	CH	02 01 C	8	37	11,20	21,63	21,50
Maize based products	CH	02 01 C	1	4,4	4,40	4,40	4,40
Polenta	CH1	02 01 C	5	18,7	6,50	10,77	2,30
Polenta	CH1	02 01 C	2	5,6	2,90	5,60	2,90
Polenta	CH1	02 01 C	3	6,6	3,31	6,60	1,67
Popcorn	CH4	02 01 C	4	15	5,67	10,50	3,42
Popcorn	CH4	02 01 C	3	5	2,61	3,50	2,00
SweetCorn	CH5	02 01 c	9		0,83		0,83
SweetCorn	CH5	02 01 C	1		0,83		0,83
SweetCorn	CH5	02 01 C	4		0,83		0,83
SweetCorn	CH5	02 01 C	3		1,50		1,50
Rice	GC7	03 01 G	4		10,00		10,00
Rice	GC7	03 01 G	1		5,00		5,00
Rice	GC7	03 01 G	38		5,00		5,00
Rice	GC7	03 01 G	31		5,00		5,00

Data in Table 1A2						
Soft wheat	BT	74	135	26,00		50,00
Soft wheat	BT	100	152	13,00		5,00
Soft wheat	BT	5		1,67		1,67
Wheat, durum	BD	16		0,50		0,50
Wheat, durum	BD	16		0,50		0,50
Breakfast cereals	A	8		0,83		0,83
Breakfast cereals	A	15	48,8	5,60	17,15	0,83
Breakfast cereals	A	10		10,00		10,00
Breakfast cereals	A	1		10,00		10,00
Breakfast cereals	A	3		5,00		5,00
Breakfast cereals	A	7		5,00		5,00
Derived cereals products	A*	3		0,83		0,83
Rye wheat	D5	1		0,83		0,83
Rye wheat	D5	5		1,67	1,67	1,67
Rye wheat	D5	2		1,67		1,67
Rye wheat	D5	1		0,83		0,83
Buckwheat	D9	5	6,5	2,40	4,75	0,83
Buckwheat	D9	10	5,1	1,39	5,10	1,67
Oat derived products	E3	4		0,83		0,83
Oat derived products	E3	2		0,83		0,83
Oat derived products	E3	1		1,67		
Barley derived products	E6	2		0,83		0,83
Barley derived products	E6	3		0,83		0,83
Rice derived products	E7	2		0,83		0,83
Rice derived products	E7	4		0,83		0,83
Rice derived products	E7	3		0,83		0,83
Rice derived products	E7	4		0,83		0,83

	Food or group or study	Code	N° of samples	Maximum value	Mean (1)	Mean (2)	Median
UNITED KINGDOM							
Rice			100	<6	1,00	0,00	<6
Malted barley			31	40			<2
MILK			100	5,5			<1
Beer			3	<0.05	0,01	0,00	<0.05
Breakfast cereals			60	231,80	11,36	56,01	<8
Biscuits			60	11,80	1,66	11,25	<8
Bread			60	15,80	1,57	15,80	<8
Cakes			40	<8	1,33	0,00	<8
Flour			40	<8	1,33	0,00	<8
Polenta			8	23,40	9,59	14,54	8,70
Snacks			84	55,80			<8
Maizeflour			8	17,30	6,87	12,40	4,00
Baby cereals			17	11,60	1,94	11,60	<8

	Food or group or study	Code	N° of samples	Maximum value	Mean (1)	Mean (2)	Median
FINLAND							
Wheat			138	12,1			0,083
Barley			145	53,4			0,083
Oats			66	1310			
Rye			36	.-			0,083

Table 1B2. Summary of best estimates of occurrence data

Zearalenone **Units: µg/kg or µg/L**

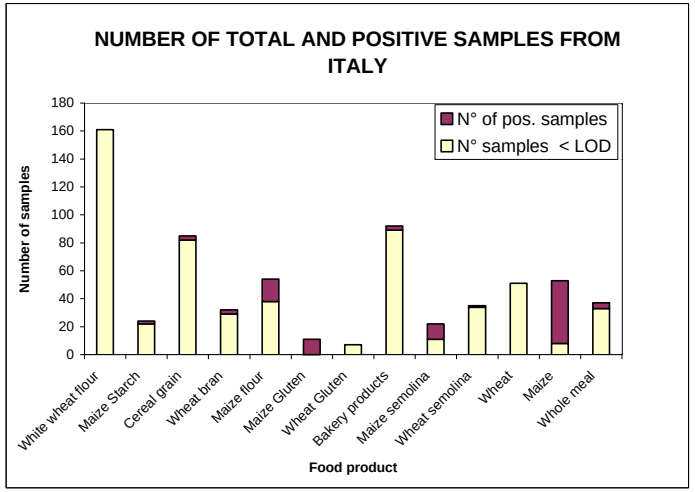
Country: Italy, Germany, the Netherlands, Norway, Portugal, U.K., Finland and Austria

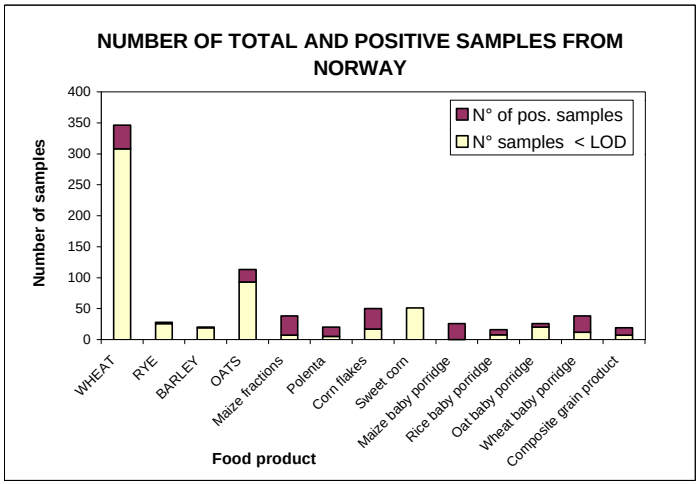
	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
ITALY									
White wheat flour	CF2	02 01A	161	0	161	5	5	-	5
Maize Starch	CF3A	02 01C	24	2	22	72	14	57	5
Cereal grain	GC	03 01	85	3	82	80	6,35	43,3	5
Wheat bran	CF1	02 01B	32	3	29	510	29	260	5
Maize flour	CF3D	02 01C	54	16	38	99	17	45	5
Maize Gluten	CF3	0201C	11	11	0	6075	1328	1328	93
Wheat Gluten	CF	02 01A	7	0	7	5	5	-	5
Bakery products			92	3	89	18	5	16	5
Maize semolina	CF3	0201C	22	11	11	4051	417	829	13
Wheat semolina	CF	02 01A	35	1	34	28	6	28	5
Wheat	GC1	03 01A	51	0	51	5	5	-	5
Maize	GC2	03 01B	53	45	8	6492	568	668	163
Whole meal	CF	02 01A	37	4	33	35	8	30	5

	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
GERMANY									
Wheat products			158	47	111	20	1,7	5,3	0,5
Pasta (Noodles)			206	6	200	41	2,4	17,3	2,3
Baby food			171	4	167	14	2,6	10,8	3

	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
THE NETHERLANDS									
wheat		GC1	31	11	20	55	10,3	22,8	
Maize		GC2	5	1	4	22	8,4	22	

	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
NORWAY									
WHEAT	GC 1	0301 A	346	38	308	68	3,3	7,3	2,5
RYE	GC 5	0301 E	28	2	26	5	3,4	3,7	2,5
BARLEY	GC 6	0301 F	20	1	19	11	2,9	11,0	2,5
OATS	GC 3	0301 C	113	20	93	64	4,2	21,8	2,5
Maize fractions	CF 3	0201 C	38	31	7	59	15,7	19,0	8,3
Polenta	CH 1	0201 C	20	15	5	54	11,6	14,8	5,9
Corn flakes	CH	0201 C	50	33	17	14	3,3	4,5	2,1
Sweet corn	CH 5	0201 C	51	0	51	.-	2,47	0	2,5
Maize baby porridg	CH	0201 C	26	26	0	305	70,15	70,15	5,75
Rice baby porridge	GC 7	0301 G	16	8	8	5,5	1,24	2,24	0,25
Oat baby porridge	GC 3	0301 C	26	6	20	4,8	0,58	1,68	0,25
Wheat baby porridg	CG	0201 B	38	26	12	2,2	0,78	1,02	0,8
Composite grain pr	CF	02 01A	19	12	7	1,9	0,74	1,03	0,7



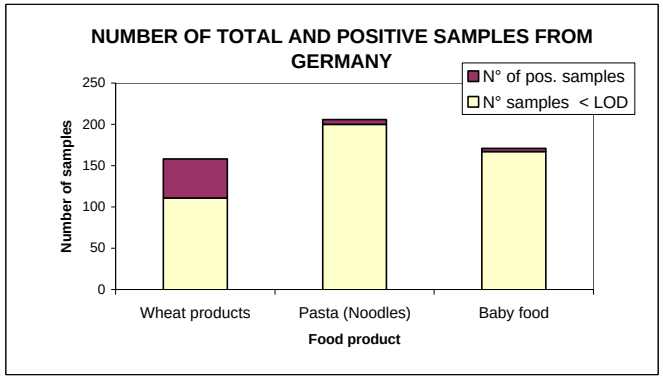


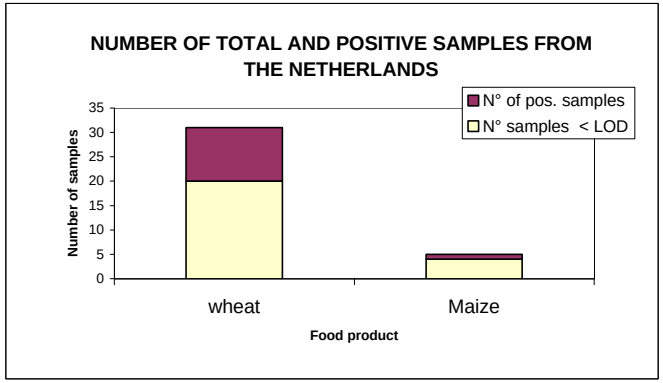
	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
PORTUGAL									
wheat		0301AGC1	1	0	1		1,25		
white wheat flour		0201BCF2	1	0	1		1,25		
wheat bran		0201BCF1	2	2	0	15	13	13	
cereals brakfast		0201DCF4	11	7	4	11	5,1	7,3	6

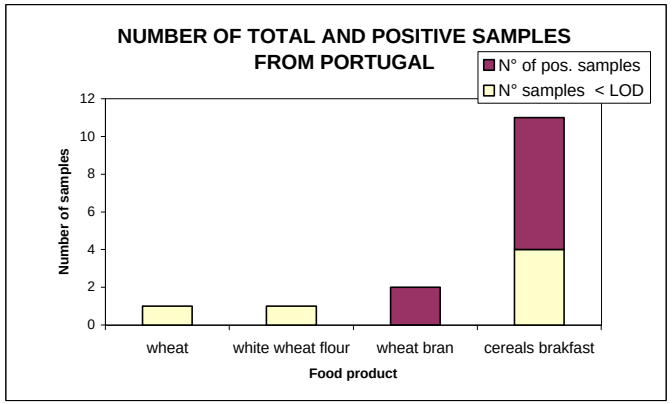
	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
UNITED KINGDOM									
Rice			100	0	100	<6	1,00	0,00	<6
Malted barley			31	3	28	40			<2
MILK			100	3	97	5,5			<1
Beer			3	0	3	<0.05	0,01	0,00	<0.05
Breakfast cereals			60	11	49	231,80	11,36	56,01	<8
Biscuits			60	2	58	11,80	1,66	11,25	<8
Bread			60	1	59	15,80	1,57	15,80	<8
Cakes			40	0	40	<8	1,33	0,00	<8
Flour			40	0	40	<8	1,33	0,00	<8
Polenta			8	5	3	23,40	9,59	14,54	8,70
Snacks			84	29	55	55,80			<8
Maizeflour			8	4	4	17,30	6,87	12,40	4,00
Baby cereals			17	1	16	11,60	1,94	11,60	<8

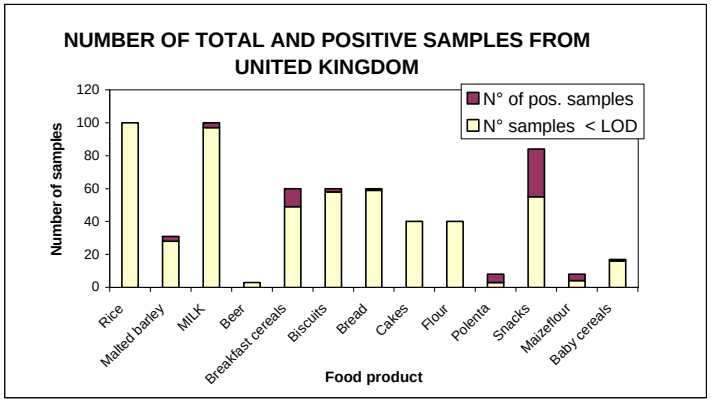
	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
FINLAND									
Wheat			138	5	133	12,1			0,083
Barley			145	7	138	53,4			0,083
Oats			66	46	20	1310			
Rye			36	0	36	.-			0,083

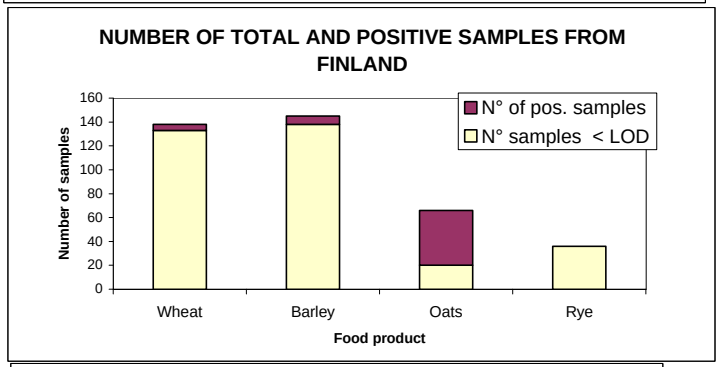
	Food or group or study	Code	N° of samples	N° of pos. samples	N° samples < LOD	Maximum value	Mean (1)	Mean (2)	Median
AUSTRIA									
Maize and Oats (Gra	GC	03 01	390	86	304	340	20,9	85,4	<LOQ








NUMBER OF TOTAL AND POSITIVE SAMPLES FROM UNITED KINGDOM
N° of pos. samples
N° samples < LOD
Number of samples
0
20
40
60
80
100
120
Rice
Malted barley
MILK
Beer
Breakfast cereals
Biscuits
Bread
Cakes
Flour
Polenta
Snacks
Maizeflour
Baby cereals
Food product


NUMBER OF TOTAL AND POSITIVE SAMPLES FROM FINLAND
N° of pos. samples
N° samples < LOD
Number of samples
0
20
40
60
80
100
120
140
160
Wheat
Barley
Oats
Rye
Food product

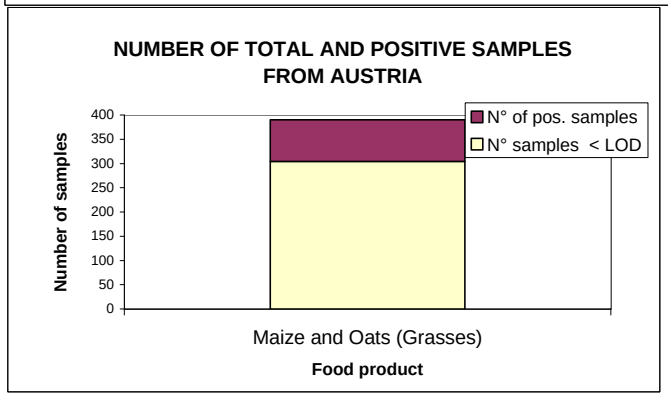

NUMBER OF TOTAL AND POSITIVE SAMPLES FROM AUSTRIA
N° of pos. samples
N° samples < LOD
Number of samples
0
50
100
150
200
250
300
350
400
Maize and Oats (Grasses)
Food product

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
ITALY																			
Wheat	GC1	03 01A	1-2000	2	90	30	2								< LOD	15	15	-	NO
White wheat flour	CF2	02 01A	2-97/01	161		10	161								< LOD	5	-	5	YES
Wheat bran /hvete kli	CF1	02 01B	2-97/01	32		10	29		1					2	510	29	260	5	YES
Wheat Gluten	CF	02 01A	2-97/01	7		10	7								< LOD	5	-	5	YES
Wheat semolina	CF	02 01A	2-99/01	35		10	34		1						28	6	28	5	YES
Wheat	GC1	03 01A	2-97/01	51		10	51								< LOD	5	-	5	YES
Whole meal	CF	02 01A	2-97/01	37		10	33		1	3					35	8	30	5	
Barley	GC6	03 01F	1-1999	1	90	30	1								< LOD	15	15	-	NO
Maize Starch	CF3A	02 01C	2-97/01	24		10	22				1	1			72	14	57	5	YES
Maize flour	CF3D	02 01C	2-97/00	53		10	37		6	4	3	3			99	17	45	5	YES
Maize Gluten	CF3	02 01C	2-97-98	11		10			1	1	2	2		5	6075	1328	1328	93	YES
Maize semolina	CF3	02 01C	2-97/01	22		10	11		2	2	3			4	4051	417	829	13	YES
Maize	GC2	03 01B	2-97/01	48		10	3		5	2	2	2	9	25	6492	627	668	235	YES
Maize	GC2	03 01B	3-2001	5		20	5								< LOD	10	-	10	YES
Maize flour	CF3D	02 01 C	3-2001	1		20	1								< LOD	10	-	10	YES
Maize	GC2	03 01B	4-1998	15		3	1	3	3	2	3	2	1		150	43	46	37	NO
Cereal grain	GC	03 01	2-97/01	85		10	82		1	1		1			80	6	43	5	YES
Bakery products			2-97/01	92		10	89		3						18	5	16	5	YES

Total samples Italy	**682**	**569**	**Number of positive samples:**	**113**	**Percentage:**	**16,57**

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
GERMANY																			
Wheat (flour, Wheat grit, kernels)	CF		ref 1 2001/2002	133	6	6	91	18	24						20	4,5	10,6	1	yes
Wheat *	GC1		ref 2 2001	25	10	4	20	4	1						11,4	2,3	k.a	k.a	yes
Wheat	GC1	02 01B	HI/2000	5	10	5	4				1				72,2	16,44	72,2	<LOD	YES
White flour	CF2	02 01B	HI/2000	4	10	5	3		1						12,8	5,08	12,8	<LOD	YES
Wheat	GC1	03 01A	HI/2001	1	10	5	1								<LOD	<LOD	<LOD	<LOD	YES
White flour	CF2	02 01B	HI/2001	3	10	5	3								<LOD	<LOD	<LOD	<LOD	YES
Wheat	GC1	03 01A	HI/2002	6	10	5	5	1							<LOQ	<LOQ	<LOQ	<LOD	YES
White flour	CF2	02 01B	HI/2002	1	10	5	1								<LOD	<LOD	<LOD	<LOD	YES
Wheat	GC1	0301A	2000	15	<5,0	,0	13		1	1					40,7	1			
Wheat *	GC1	0301A	2001	25	10	4	20	4	1						11,4	2,3	11,4	11,4	yes
wheat bran	CF1	0201B	2001	1	10	4		1							1,7	1,7			yes
Flour	CF3D	0201C	2001	5	10	4	2	1	2						16,9	1,2	15,3	15,3	yes
Pasta (Noodles)			2001/2002	206	6	6	200	3	2	1					41	2,4	17,3	2,3	
Pasta	CG3	02 01B	HI/2001	7	10	5	7								<LOD	<LOD	<LOD	<LOD	YES
Pasta	CG3	02 01B	HI/2002	6	10	5	6								<LOD	<LOD	<LOD	<LOD	YES
Polenta	CH1	0201C	2001	1	10	4		1							1,7	1,7			yes
Rice	CF	02 01A	HI/2000	3	10	5	3								<LOD	<LOD	<LOD	<LOD	YES
Rice	CF	02 01A	HI/2001	1	10	5	1								<LOD	<LOD	<LOD	<LOD	YES
Rice	CF	02 01A	HI/2002	6	10	5	6								<LOD	<LOD	<LOD	<LOD	YES
Rice	CF	0201A	2000	3	<5,0	<2,0	3								<LOD	1			
Rice	CF	0201A	2001	8	10	4	8								<LOD	2			yes
Rye	GC5	03 01E	HI/2000	3	10	5	1	1	1						23,7	9,57	13,1	<LOQ	YES
Rye	GC5	0301E	2000	4	<5,0	,0	4								<LOD	1			
Rye	GC 5	0301E	2001	13	10	4	13								<LOD	2			yes
Barley	GC6	0301F	2001	11	<5,0	,0	11								<LOD	1			
Barley	GC6	0301F	2001	13	10	4	13								<LOD	2			yes
Barley	GC6	0301F	2001	5	10	2	5								<LOD	1			
infant food			2001	43	10	4	43								<LOD	2			yes
Baby food			2001/2002	171	6	6	167	2	2				1		14	2,6	10,8	3	yes
Maize grits	CF3C	0201C	2001	1	10	4	1								<LOD	2			yes
other grasses	GC9	301	2001	5	10	4	5								<LOD	2			yes
	CP	03 01	HI/2002	2	10	5	2								<LOD	<LOD	<LOD	<LOD	YES
Other derived products of plant origin	CF4	02 01D	HI/2000	1	10	5	1								<LOD	<LOD	<LOD	<LOD	YES

ref 1: USLEBER et al., unpublished data from Joint Research Project on Fusarium Toxins (Deoxynivalenol, Zearalenon) in Foods and Toxin Intake by the Consumer in Germany (Ministry of Consumer Protection, Nutrition and Agriculture)
ref 2: MAJERUS, P., personal communication

Total samples Germany	**712**	**643**	**Number of positive samples:**	**69**	**Percentage:**	**9,69**

* = Just one of these samples are included in the calculation

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
NORWAY																			
Wheat, no	GC 1	0301 A	1.-1990	138	15	5	132	4	2						11	2,8	8,3	2,5	yes
Wheat, imp	GC 1	0301 A	1.-1990	27	15	5	25	2							5	2,7	5,0	2,5	yes
Wheat, no *	GC 1 *	0301 A	3.-1995	32	9	3	29	2			1				68	3,7	25,3	1,5	yes
Wheat, imp	GC 1	0301 A	3.-1995	13	9	3	12	1							3	1,7	3,0	1,5	yes
Wheat, no *	GC 1 *	0301 A	4.-1669	28	60	20	28								<LOD	10,0	0	10,0	yes
Wheat, imp	GC 1	0301 A	4.-1669	14	60	20	14								<LOD	10,0	0	10,0	yes
Wheat, no	GC 1	0301 A	5.-1997	25	3	1	19	5	1						21,2	1,6	5,2	0,5	yes
Wheat, imp	GC 1	0301 A	5.-1997	10	3	1	7	2	1						13,2	2,0	5,5	0,5	yes
Wheat, no	GC 1	0301 A	6.-1998	35	6	2	26	8	1						13	1,5	3,4	1,0	yes
Wheat, imp	GC 1	0301 A	6.-1998	24	6	2	16	8							4	1,6	2,9	1,0	yes
Barley, no *	GC 6 *	0301 F	1.-1990	20	15	5	19		1						11	2,9	11,0	2,5	yes
Rye, no	GC 5	0301 E	1.-1990	2	15	5	2								<LOD	2,5	0	2,5	yes
Rye, imp	GC 5	0301 E	1.-1990	18	15	5	16	2							5	2,8	5,0	2,5	yes
Rye, imp	GC 5	0301 E	3.-1995	4	9	3	4								<LOD	1,5	0	1,5	yes
Rye, imp	GC 5	0301 E	4.-1669	4	60	20	4								<LOD	10,0	0	10,0	yes
Oats, no *	GC 3 *	0301 C	1.-1990	40	15	5	35	4		1					43	3,8	12,6	2,5	yes
Oats, no	GC 3	0301 C	2.-1994	2	15	5	2								<LOD	2,5	0	2,5	yes
Oats, no	GC 3	0301 C	3.-1995	21	9	3	20				1				64	4,5	64,0	1,5	yes
Oats, no	GC 3	0301 C	4.-1669	14	60	20	14								<LOD	10,0	0	10,0	yes
Oats, no	GC 3	0301 C	5.-1997	14	3	1	8	4	1	1					34,5	5,1	11,3	0,5	yes
Oats, no	GC 3	0301 C	6.-1998	22	6	2	14	8							2	1,4	0,3	1,0	yes
Baby porridge **																			
Maize ***	CH ***	0201 C	7.-2000	26	1,5	0,5	0	16		1		1	4	4	305	70,2	70,2	5,8	yes
Rice ***	GC7 ***	0301 G	7.-2000	16	1,5	0,5	8	8							5,5	1,2	2,2	0,3	yes
Oat ***	GC3 ***	0301 C	7.-2000	26	1,5	0,5	20	6							4,8	0,6	1,7	0,3	yes
Wheat ***	CG ***	0201 B	7.-2000	38	1,5	0,5	12	26							2,2	0,8	1,0	0,8	yes
Composite grain product***	CF	0201 A	7.-2000	19	1,5	0,5	7	12							1,9	0,7	1,0	0,7	yes
Maize fractions	**CF 3**																		
Maize meal	CF3 B	0201 C	8.-2001	20	5,82	1,94	1	7	7	4	1				54,5	19,5	20,5	13,1	yes
Maize starch	CF3 A	0201 C	8.-2001	14	5,82	1,94	5	8	1						10,9	3,9	5,5	3,6	yes
Maize grits	CF3 C	0201 C	8.-2001	4	5,82	1,94	1			2	1				59,0	37,6	49,8	45,1	yes
Maize-based products	**CH**																		
polenta	CH 1	0201 C	8.-2001	20	5,82	1,94	5	9	4	1	1				53,5	11,4	14,8	5,9	yes
bread	CH 3	0201 C	8.-2001	2	5,82	1,94	0	2							4,2	3,4	3,4	3,4	yes
Corn flakes	CH	0201 C	8.-2001	50	5,82	1,94	17	30	2	1					13,9	3,3	4,5	2,1	yes
sweet corn ****	CH5 ****	0201 C	8.-2001	50	15	5	50								<LOD	0,3	0	2,5	yes
sweet corn	CH5	0201 C	8.-2001	1	5,82	1,94	1								<LOD	1,0	0	1,0	yes

* = The products is divided into different grain products.** = The code that is used for rice and oat is for grasses, but the product is baby porridge.*** = The products is divided into organic (ecological) and conventional ("usual") samples.
**** = Sweet corn is divided into different sweet corn products, as hermetic maize, baby maize and corn cob; no= norwegian; imp = imported.

Total samples Norway	**793**	**573**	**Number of positive samples:**	**220**	**Percentage:**	**27,74**

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
PORTUGAL																			
wheat		0301AGC1	2002	1	5	2,5	1								<LOD	1,25			yes
white wheat flour		0201BCF2	2002	1	5	2,5	1								<LOD	1,25			yes
wheat bran		0201BCF1	2002	2	5	2,5		2							15	13	13		yes
cereals brakfast		0201DCF4	2002	11	5	2,5	4	7							11	5,1	7,3	6	yes
Total samples Portugal				**15**			**6**			**Number of positive samples:**				**9**		**Percentage:**		**60,00**	
UNITED KINGDOM																			
Maize, imported	GC2	03 01B	1/1998	92	10		11	1	13	17	13	4	23	10	391	90,42	94,44	57,5	Y
Maize, imported	GC2	03 01B	1/1999	47	10					1	9	10	17	10	584	149,7	149,7	106	Y
Rice			2/2000	100	6		100								<LOQ	1,00	0,00	<6	Y
Malted barley			1999	14	2		13			1					33,00	2,67	33,00	<2	Y
Malted barley			2000	9	2		8			1					40,00	4,74	40,00	<2	Y
Malted barley			2001	8	2		7	1							4	0,79	4,00	<2	Y
Farm-gate milk			4/2000	50		1	50								<LOD	0,50	0,00	<1	Y
Retail milk			4/2000	50		1	47	3							5,5	0,63	2,63	<1	Y
Beer			2000	3	0,05		3								<LOQ	0,01	0,00	<0.05	Y
Breakfast cereals			3/2000	60	8		49		6	2	1		1	1	231,80	11,36	56,01	<8	Y
Biscuits			3/2000	60	8		58		2						11,80	1,66	11,25	<8	Y
Bread			3/2000	60	8		59		1						15,80	1,57	15,80	<8	Y
Cakes			3/2000	40	8		40								<LOQ	1,33	0,00	<8	Y
Flour			3/2000	40	8		40								<LOQ	1,33	0,00	<8	Y
Polenta			3/2000	8	8		3	2	3						23,40	9,59	14,54	8,70	Y
Snacks			3/2000	40	8		25		1	7	4	3			<LOQ	21,48	55,05	<8	Y
Snacks			3/2001	44	8		30	1	11	1	1				55,80	7,15	19,62	<8	Y
Maizeflour			3/2000	8	8		4	1	3						17,30	6,87	12,40	4,00	Y
Baby cereals			3/2000	17	8		16		1						11,60	1,94	11,60	<8	Y
Total samples United Kingdom				**750**			**563**			**Number of positive samples:**				**187**		**Percentage:**		**24,93**	
NETHERLAND																			
wheat	GC1		1(2000-2001)	4		10	2			1	1				55	24	42,5		
wheat durum	GC1		1(2000-2001)	5		10	5								<LOD	5		<10	
wheat	GC1		5(2000)	22		5	13	2	5	2					45,3	9	18,5	<5	
Maize	GC2		1(2000-2001)	5		10	4		1						22	8,4	22	<10	
Total samples the Netherlands				**36**			**24**			**Number of positive samples:**				**12**		**Percentage:**		**33,33**	

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
FINLAND	*** Data from the english summary of mycotoxins in Finnish cereals from 1998 to 2001**																		
Wheat (organic)			1998	27		2	25	2							5,3	1,30	5,1	1	Yes
Wheat			1999	37	0,5		37								<LOQ	0,083	.-	0,083	Yes
Wheat			2000	35	0,5		33	1	1						12,1	0,6	9,8	0,083	Yes
Wheat			2001	39	0,5		38			1					0,5	0,094	0,5	0,083	Yes
Barley			1998	7		2	6	1							4,4	1,49	4,4	1	Yes
Barley			1999	30	0,5		30								<LOQ	0,083	.-	0,083	Yes
Barley,malt			1999	18	0,5		18								<LOQ	0,083	.-	0,083	Yes
Barley,malt			2000	25	0,5		24	1							6,39	0,3	6,4	0,083	Yes
Barley, feed			2000	20	0,5		20								<LOQ	0,083	.-	0,083	Yes
Barley			2001	20	0,5		15		2	2	1				53,4	7,8	30,9	0,083	Yes
Barley,malt			2001	25	0,5		25								<LOQ	0,083	.-	0,083	Yes
Oats (organic)			1998	7		2	6	1							5,5	1,64	5,5	1	Yes
Oats			1999	10	0,5		0						3	7	299	221,5	221,5	231,5	Yes
Oats			2000	25	0,5		20		2	1	2				64	8,5	42,3	0,083	Yes
Oats			2001	30	0,5		0		1		1		3	25	1310	640,4	640,4	687,5	Yes
Rye			1998	6		2	6									1		1	Yes
Rye			1999	2	0,5		2								<LOQ	0,083	.-	0,083	Yes
Rye			2000	15	0,5		15								<LOQ	0,083	.-	0,083	Yes
Rye			2001	12	0,5		12								<LOQ	0,083	.-	0,083	Yes
Rye, organic			2001	1	0,5		1								<LOQ	0,083	.-	.-	Yes

Total samples Finland	**391**	**333**	**Number of positive samples:**	**58**	**Percentage:**	**14,83**

AUSTRIA																			
Maize	GC2	03 01 B	1996	92	10		34		16	6	6	6	20	4	275	63	99	20	y
Maize	GC2	03 01 B	1997	58	10		53		4				1		140	5,2	43	<LOQ	y
Maize	GC2	03 01 B	1998	48	10		28	2	6	4	3	3	1	1	340	28,3	65,5	<LOQ	y
Oats	GC 3	03 01 C	1999	96	20		96								<LOQ	3,3		<LOQ	y
Oats	GC 3	03 01 C	2000	96	20		93		3						30	4,1	26,7	<LOQ	y

Total samples Austria	**390**	**304**	**Number of positive samples:**	**86**	**Percentage:**	**22,05**

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	inated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
FRANCE																			
Maize	GC2	03 01 B	2000	55	10			18	10	6	3	3	5	10	1500	156,45	231,8	25,00	no
Maize	GC2	03 01 B	2001	29	10			21	1	2	1	0	2	2	560	43,10	151,9	1,667	no
Wheat	GC1	03 01 A	2001	5	10			4	1						20	5,33	20	1,667	no
Groups of derived products containing cereals																			
Wheat bran	CF1	02 01 B	2000	2	2			2							6	3,16	6	3,165	no
Wheat bran	CF1	02 01 B	2002	5	5			3	2						23,4	7,5	17,45	0,83	no
White wheat flour	CF2	02 01 B	2002	2	5			2								0,83		0,83	no
White wheat flour	CF2	02 01 B	2002	6	5			4	2						21,3	8,4	12,2	7,35	no
Maize fractions	CF3	02 01C	2000	1	5			1							5	5	5	5	no
Maize fractions	CF3	02 01 C	2000	2	5			2							2,5	1,4	2,5	1,415	no
Maize fractions	CF3	02 01 C	2001	1						1					36	36	36	36	no
Maize fractions	CF3	02 01 C	2001	1									1		154	154	154	154	no
Maize Stardh	CF3A	02 01 C	2001	1	5			1								0,83		0,83	no
Maize Meal	CF3B	02 01 C	2000	5	5			4		1					31	11,3	14,28	9,25	no
Maize Meal	CF3B	02 01 C	2001	2							1	1			83	68	68	68	no
Maize Meal	CF3B	02 01 C	2001	4	5			3					1		156	40,9	81	3,415	no
Maize Meal	CF3B	02 01 C	2002	1					1						20	20	20	20	no
Wheat based products	CG	02 01 B	2001	2	5			2								0,83		0,83	no
Wheat based products	CG	02 01 B	2001	6	5		2	4								0,83		0,83	no
Wheat based products	CG	02 01 B	2002	7	5			5	2						15,3	4,6	14	0,83	no
Wheat based products	CG	02 01 B	2002	1	5			1								0,83		0,83	no
Pizza	CG4	02 01 B	2000	1		3	1								<LOD	1,5		1,5	no
Maize based products	CH	02 01 C	2001	2	5			2								0,83		0,83	no
Maize based products	CH	02 01 C	2000	2	5			1	1						12,7	6,5	12,7	6,765	no
Maize based products	CH	02 01 C	2001	1	5			1								0,83		0,83	no
Maize based products	CH	02 01 C	2001	8	5		1	4	2	1					37	11,2	21,63	21,5	no
Maize based products	CH	02 01 C	2002	1				1							4,4	4,4	4,4	4,4	no
Polenta	CH1	02 01 C	2000	5	5			3	2						18,7	6,5	10,77	2,3	no
Polenta	CH1	02 01 C	2001	2	5			2							5,6	2,9	5,6	2,9	no
Polenta	CH1	02 01 C	2002	3	10		2	1							6,6	3,31	6,6	1,67	no
Popcorn	CH4	02 01 C	2000	4	5			3	1						15	5,665	10,5	3,415	no
Popcorn	CH4	02 01 C	2001	3	5			3							5	2,61	3,5	2	no
SweetCorn	CH5	02 01 C	2002	9	5		1	8								0,83		0,83	no
SweetCorn	CH5	02 01 C	2000	1	5			1								0,83		0,83	no
SweetCorn	CH5	02 01 C	2002	4	5		1	3								0,83		0,83	no

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
FRANCE																			
Wheat based products	CG	02 01 B	2000	6	2			6								0,33		0,33	no
Wheat based products	CG	02 01 B	2000	3		2	3								<LOD	1,5		1,5	no
White wheat flour	CF2	02 01 B	2001	9	10		2	7								1,67		1,67	no
White wheat flour	CF2	02 01 B	2000	16	10		12	4							3	1,75	3	1,75	no
White wheat flour	CF2	02 01 B	2000	8	2			8								0,33		0,33	no
White wheat flour	CF2	02 01 B	2001	34	5		21	8	5						28,9	3,965	14,27	1,5	no
Maize	GC2	03 01 B	2000	25	8		0	2	8	5		4	3	3	569	97	97		yes
Maize	GC2	03 01 B	2001	25	8		1	2	3	3	4	5	4	3	569	97	101		yes
Wheat	CF2	02 01 B	94 - 98	37		20	37								<LOD	10		10	no
Wheat	CF2	02 01 B	1999	18		20	18								<LOD	10		10	no
Wheat	CF2	02 01 B	2000	28		10	24		2		1		1		100	13	43	5	no
Wheat	CF2	02 01 B	2001	19		50	18		1						27	25	27	25	no
Wheat	CF2	02 01 B	2002	24		50	22	2							8	18	7	25	no
Wheat bran	CF1	02 01 B	94 - 98	5		20	5								<LOD	10		10	no
Wheat bran	CF1	02 01 B	1999	10		50	10								<LOD	20		20	no
Wheat bran	CF1	02 01 B	2000	2		20					1		1		174	122	122	122	no
Wheat bran	CF1	02 01 B	2001	5		10	3					1	1		115	44	102	5	no
Wheat bran	CF1	02 01 B	2002	7		10	7								<LOD	5		5	no
Other wheat derived product	CG	02 01 B	94 - 98	8		20	8								<LOD	10		10	no
Other wheat derived product	CG	02 01 B	1999	6		20	6								<LOD	10		10	no
Other wheat derived product	CG	02 01 B	2000	3		10	2		1						20	10	20	5	no
Other wheat derived product	CG	02 01 B	2001	8		50	8								<LOD	25		25	no
Other wheat derived product	CG	02 01 B	2002	10		50	8	2							10	19	8	25	no
Maize derived products	CF3	02 01 C	2001	6		10	5						1		140	28	140	5	no
Maize derived products	CF3	02 01 C	2002	8		10	5	1	2						13	7	11	5	no
Rice	GC7	03 01 G	94 - 98	4		20	4								<LOD	10		10	no
Rice	GC7	03 01 G	2000	1		10	1								<LOD	5		5	no
Rice	GC7	03 01 G	2001	38		10	38								<LOD	5		5	no
Rice	GC7	03 01 G	2002	31		10	31								<LOD	5		5	no
Wheat	CF2	02 01 B	2000	25	10-40	-		15	9		1				52	15		10	Y
Wheat	CF2	02 01 B	2001	49	10-50	-		45	4						25	8		5	Y
Maize	GC2	03 01 B	2000	164	10-40	20	33	62	25	11	14	8	20	24	998	96		27	Y
Maize	GC2	03 01 B	2001	116	40-50	5-30	1	1	35	11	12	8	27	22	1817	145		75	Y

Total samples France	**Table 1A1**	942	341	**Number of positive samples:**	**601**	**Percentage:** **63,80**

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Food or group	Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median	Representative for Member state
FRANCE																			
Soft wheat	BT		2001	5	10			5								1,67		1,67	no
Soft wheat	BT		2000	74	10-80	20	1	27	25	13	5	4			135	26		50	Y
Soft wheat	BT		2001	100	15-10(	-	0	70	17	12			1		152	13		5	Y
Wheat, durum	BD		1999	16	2	1	16								<LOD	0,5		0,5	y
Wheat, durum	BD		2000	16	2	1	16								<LOD	0,5		0,5	y
Breakfast cereals	A		2000	8	5			8								0,83		0,83	Y
Breakfast cereals	A		2001	15	5			14		1					48,8	5,6	17,15	0,83	Y
Breakfast cereals	A		94 - 98	10		20	10								<LOD	10		10	
Breakfast cereals	A		1999	1		20	1								<LOD	10		10	
Breakfast cereals	A		2001	3		10	3								<LOD	5		5	
Breakfast cereals	A		2002	7		10	7								<LOD	5		5	
Derived cereals products	A*		2000	3	5			3								0,83		0,83	Y
Rye wheat	D5		2001	1	5			1								0,83		0,83	Y
Rye wheat	D5		2001	5	10		2	3								1,67	1,67	1,67	Y
Rye wheat	D5		2002	1	5			1								0,83		0,83	Y
Rye wheat	D5		2000	2	10			2								1,67		1,67	Y
Buckwheat	D9		2001	5	5		2	3							6,5	2,398	4,75	0,83	Y
Buckwheat	D9		2000	10	10		4	6							5,1	1,388	5,1	1,67	Y
Oat derived products	E3		2001	4	5		1	3								0,83		0,83	Y
Oat derived products	E3		2001	1	10		1								<LOQ	1,67			Y
Oat derived products	E3		2000	2	5	3	1	1								0,83		0,83	Y
Barley derived products	E6		2001	3	5			3								0,83		0,83	Y
Barley derived products	E6		2000	2	5	3	1	1								0,83		0,83	Y
Rice derived products	E7		2001	2	5			2								0,83		0,83	Y
Rice derived products	E7		2001	4	5			4								0,83		0,83	Y
Rice derived products	E7		2002	4	5	3	1	3								0,83		0,83	Y
Rice derived products	E7		2000	3	5			3								0,83		0,83	Y

Total samples France	**Table 1A2**	307	67	**Number of positive samples:**	**240**	**Percentage:**	**78,18**
	Total Table 1A1 and 1A2 =	1249	408	**Number of positive samples:**	**841**	**Percentage:**	**67,33**

Table 1C. Summary of individual occurrence data by food group (Food Categorisation System)
Zearalenone Units: µg/kg or µg/L
Country: Italy, Germany, the Netherlands, Norway, Portugal U.K., Finland, Austria and France

Tolal samples all countries= 5018

The **Food Categorisation System** is described in annex 2 (= *Annex III of the final report*). Not all countries follow this categorisation system, because not all products are described in this system. France has added new categories to the given categorisation system for other derived products of plant origin, this categorisation system is shown in the table to the right. **NOTE:** In the second and fourth column where it stands wheat, this is wrong the exact word is flour/meal.

OAT	Derived products	E3	Oat wheat, oat flakes
RYE	wheat	D5	Wheat
BARLEY	Derived products	E6	Malt, semolina
RICE	wheat	D7	
	Derived products	E7	Rice
	Derived products	F7	Semolina, pancakes
BUCKWEAT	wheat	D9	
Mixing of different cereals	Cereals for breakfast	A	Multi-cereal for breakfast, millet flakes, rye flakes, rice cereals
	Derived products	A*	Multi-cereal wheat and cakes
Durum wheat		BD	When the precision is given, BD is written instead of GC1 03 01 A
Soft wheat		BT	When the precision is given, BT is written instead of GC1 03 01 A
Malting barley		OB	Barley used only for malting

Table 1D. Summary of individual occurrence data by food group

Zearalenone Units: µg/kg or µg/L

Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
WHEAT																				
GC= Cereal grains, wheat																				
Wheat	GC1	03 01A	Italy	1-2000	2	90	30	2									15	15	15	-
Wheat	GC1	03 01A	Italy	2-97/01	51		10	51									<LOD	5	-	5
Wheat	GC1	03 01A	Germany	HI/2001	1	10	5	1									<LOD	<LOD	<LOD	<LOD
Wheat	GC1	03 01A	Germany	HI/2002	6	10	5	5	1	1							<LOQ	<LOQ	<LOQ	<LOD
Wheat	GC1	0301A	Germany	2000	15	<5,0	2,0	13	2		1	1					40,7	1		
Wheat	GC1	0301A	Germany	2001	25	10	4	20	5	4	1						11,4	2,3	11,4	11,4
wheat	GC1	0301A	Portugal	2002	1	5	2,5	1									<LOD	1,25	.-	
wheat	GC1		the Netherlands	.(00/01)	4		10	2	2			1	1				55	24	42,5	
wheat	GC1		the Netherlands	5(2000)	22		5	13	9	2	5	2					45,3	9	18,5	<5
Wheat (organic)			Finland	1998	27		2	25	2	2							5,3	1,30	5,1	1
Wheat			Finland	1999	37	0,5		37									<LOQ	0,083	.-	0,083
Wheat			Finland	2000	35	0,5		33	2	1	1						12,1	0,6	9,8	0,083
Wheat			Finland	2001	39	0,5		38	1			1					0,5	0,094	0,5	0,083
Wheat	GC1	03 01 A	France	2001	5	10			5	4	1						20	5,33	20	1,667
Wheat, no	GC 1	0301 A	Norway	1.-1990	138	15	5	132	6	4	2						11	2,8	8,3	2,5
Wheat, imp	GC 1	0301 A	Norway	1.-1990	27	15	5	25	2	2							5	2,7	5,0	2,5
Wheat, no	GC 1	0301 A	Norway	3.-1995	32	9	3	29	3	2			1				68	3,7	25,3	1,5
Wheat, imp	GC 1	0301 A	Norway	3.-1995	13	9	3	12	1	1							3	1,7	3,0	1,5
Wheat, no	GC 1	0301 A	Norway	4.-1669	28	60	20	28									<LOD	10,0	0	10,0
Wheat, imp	GC 1	0301 A	Norway	4.-1669	14	60	20	14									<LOD	10,0	0	10,0
Wheat, no	GC 1	0301 A	Norway	5.-1997	25	3	1	19	6	5	1						21,2	1,6	5,2	0,5
Wheat, imp	GC 1	0301 A	Norway	5.-1997	10	3	1	7	3	2	1						13,2	2,0	5,5	0,5
Wheat, no	GC 1	0301 A	Norway	6.-1998	35	6	2	26	9	8	1						13	1,5	3,4	1,0
Wheat, imp	GC 1	0301 A	Norway	6.-1998	24	6	2	16	8	8							4	1,6	2,9	1,0
wheat durum	GC 1	0301 A	the Netherlands	.(00/01)	5		10	5									<LOD	5	.-	<10
Wheat, durum	GC 1	0301 A	France	1999	16	2	1	16									<LOD	0,5	.-	0,5
Wheat, durum	GC 1	0301 A	France	2000	16	2	1	16									<LOD	0,5	.-	0,5
Buckwheat	D9		France	2001	5	5		2	3	3							6,5	2,398	4,75	0,83
Buckwheat	D9		France	2000	10	10		4	6	6							5,1	1,388	5,1	1,67
Soft wheat	GC 1	0301 A	France	2001	5	10			5	5								1,67		1,67
Soft wheat	GC 1	0301 A	France	2000	74	10-80	20	1	73	27	25	13	5	4			135	26		50
Soft wheat	GC 1	0301 A	France	2001	100	15-100	-		100	70	17	12			1		152	13		5

no= norwegian; imp = imported to Norway

Wheat cereal grains, total	GC1 0301 A	**7 countries**	**847**		**593**	**254**	**30,0 % positive**		**Max. value 152 g/kg**

% < LOD: **70,0**

Table 1D. Summary of individual occurrence data by food group

Zearalenone Units: µg/kg or µg/L

Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

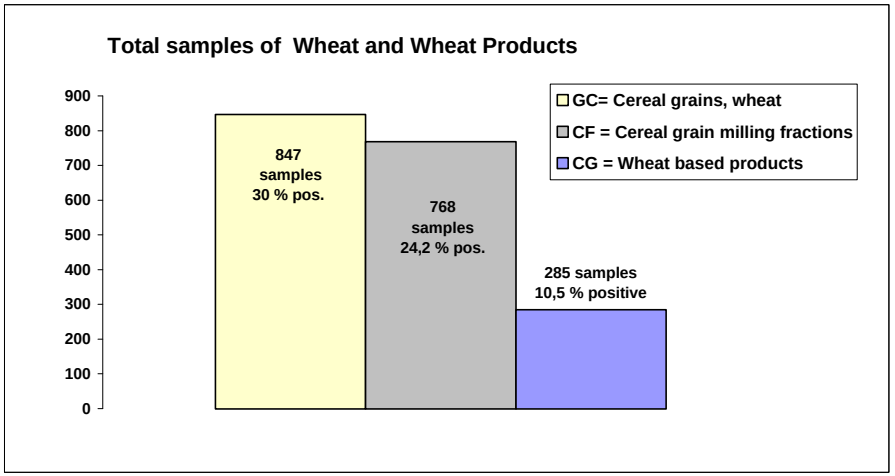
Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median
DERIVED WHEAT PRODUCTS																				
CF = Cereal grain milling fractions																				
Wheat (flour, Wheat grit, kernels)	CF		Germany	1.-01/02	133	6	6	91	42	18	24						20	4,5	10,6	1
Wheat Gluten	CF	02 01A	Italy	2-97/01	7		10	7									<LOD	5	-	5
Wheat semolina	CF	02 01A	Italy	2-99/01	35		10	34	1		1						28	6	28	5
Whole meal	CF	02 01A	Italy	2-97/01	37		10	33	4		1	3					35	8	30	5
Wholemeal	CF	02 01A	United Kingdom	3/2000	11	8		11									< LOQ	1,33	0,00	<8
Wheat bran	CF1	02 01 B	Italy	2-97/01	32		10	29	3		1					2	510	29	260	5
wheat bran	CF1	02 01 B	Germany	2001	1	10	4		1	1							1,7	1,7		
wheat bran	CF1	02 01 B	Portugal	2002	2	5	2,5		2	2							15	13	13	
Wheat bran	CF1	02 01 B	France	2000	2	2			2	2							6	3,16	6	3,165
Wheat bran	CF1	02 01 B	France	2002	5	5			5	3	2						23,4	7,5	17,45	0,83
Wheat bran	CF1	02 01 B	France	94 - 98	5		20	5									<LOD	10		10
Wheat bran	CF1	02 01 B	France	1999	10		50	10									<LOD	20		20
Wheat bran	CF1	02 01 B	France	2000	2		20		2				1		1		174	122	122	122
Wheat bran	CF1	02 01 B	France	2001	5		10	3	2					1	1		115	44	102	5
Wheat bran	CF1	02 01 B	France	2002	7		10	7									<LOD	5		5
White wheat flour	CF2	02 01 B	France	94 - 98	37		20	37									<LOD	10		10
White wheat flour	CF2	02 01 B	France	1999	18		20	18									<LOD	10		10
White wheat flour	CF2	02 01 B	France	2000	28		10	24	4		2		1		1		100	13	43	5
White wheat flour	CF2	02 01 B	France	2001	19		50	18	1		1						27	25	27	25
White wheat flour	CF2	02 01 B	France	2002	24		50	22	2	2							8	18	7	25
White wheat flour	CF2	02 01 B	France	2000	25	10-40	-		25	15	9		1				52	15		10
White wheat flour	CF2	02 01 B	France	2001	49	10-50	-		49	45	4						25	8		5
White wheat flour	CF2	02 01A	Italy	2-97/01	161		10	161									<LOD	5	-	5
White wheat flour	CF2	02 01 B	Germany	HI/2000	4	10	5	3	1		1						12,8	5,08	12,8	<LOD
White wheat flour	CF2	02 01 B	Germany	HI/2001	3	10	5	3									<LOD	<LOD	<LOD	<LOD
White wheat flour	CF2	02 01 B	Germany	HI/2002	1	10	5	1									<LOD	<LOD	<LOD	<LOD
White wheat flour	CF2	02 01 B	United Kingdom	3/2000	29	8		29									< LOQ	1,33	0,00	<8
White wheat flour	CF2	02 01 B	France	2002	2	5			2	2								0,83		0,83
White wheat flour	CF2	02 01 B	France	2002	6	5			6	4	2						21,3	8,4	12,2	7,35
white wheat flour	CF2	02 01 B	Portugal	2002	1	5	2,5	1									<LOD	1,25	.-	
White wheat flour	CF2	02 01 B	France	2001	9	10		2	7	7								1,67		1,67
White wheat flour	CF2	02 01 B	France	2000	16	10		12	4	4							3	1,75	3	1,75
White wheat flour	CF2	02 01 B	France	2000	8	2			8	8								0,33		0,33
White wheat flour	CF2	02 01 B	France	2001	34	5		21	13	8	5						28,9	3,965	14,27	1,5

Wheat milling fractions, total	CF 0201	**5 countries**	**768**		**582**	**186**	**24,2 % positive**		**Max. value 510 g/kg**

% < LOD: **75,8**

Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	Quantified samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max value	Mean(1)	Mean(2)	Median
DERIVED WHEAT PRODUCTS																				
CG = Wheat based products																				
Wheat		02 01 B	Germany	HI/2000	5	10	5	4	1				1				72,2	16,44	72,2	<LOD
Wheat based products	CG	02 01 B	France	2001	2	5			2	2								0,83		0,83
Wheat based products	CG	02 01 B	France	2001	6	5		2	4	4								0,83		0,83
Wheat based products	CG	02 01 B	France	2002	7	5			7	5	2						15,3	4,6	14	0,83
Wheat based products	CG	02 01 B	France	2002	1	5			1	1								0,83		0,83
Wheat based products	CG	02 01 B	France	2000	6	2			6	6								0,33		0,33
Wheat based products	CG	02 01 B	France	2000	3		2	3									<LOD	1,5		1,5
Wheat based products	CG	02 01 B	France	94 - 98	8		20	8									<LOD	10		10
Wheat based products	CG	02 01 B	France	1999	6		20	6									<LOD	10		10
Wheat based products	CG	02 01 B	France	2000	3		10	2	1		1						20	10	20	5
Wheat based products	CG	02 01 B	France	2001	8		50	8									<LOD	25		25
Wheat based products	CG	02 01 B	France	2002	10		50	8	2	2							10	19	8	25
Pasta (Noodles)	CG 3	02 01 B	Germany	01/02	206	6	6	200	6	3	2	1					41	2,4	17,3	2,3
Pasta	CG3	02 01 B	Germany	HI/2001	7	10	5	7									<LOD	<LOD	<LOD	<LOD
Pasta	CG3	02 01 B	Germany	HI/2002	6	10	5	6									<LOD	<LOD	<LOD	<LOD
Pizza	CG4	02 01 B	France	2000	1		3	1									<LOD	1,5		1,5
Wheat derived products, total		CG 0301 A	**2 countries**		**285**			**255**	**30**	**10,5 % positive**							**Max. value 72,2 g/kg**			



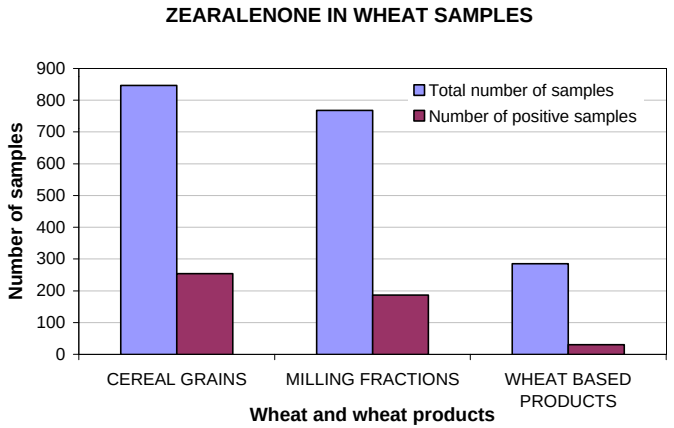
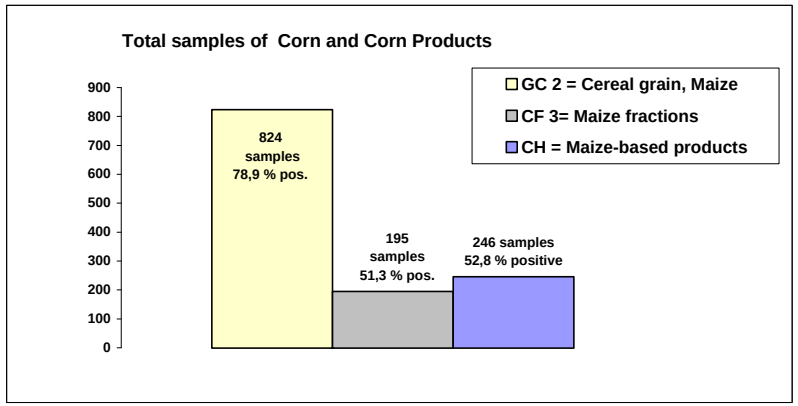


Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
Maize																				
GC 2 = Cereal grain, Maize																				
Maize	GC2	03 01 B	Italy	2-97/01	48		10	3	45		5	2	2	2	9	25	6492	627	668	235
Maize	GC2	03 01 B	Italy	3-2001	5		20	5									<LOD	10	-	10
Maize	GC2	03 01 B	Italy	4-1998	15		3	1	14	3	3	2	3	2	1		150	43	46	37
Maize	GC2		the Netherlands	(00-01)	5		10	4	1		1						22	8,4	22	<10
Maize	GC2	03 01 B	Austria	1996	92	10		34	58		16	6	6	6	20	4	275	63	99	20
Maize	GC2	03 01 B	Austria	1997	58	10		53	5		4				1		140	5,2	43	<LOQ
Maize	GC2	03 01 B	Austria	1998	48	10		28	20	2	6	4	3	3	1	1	340	28,3	65,5	<LOQ
Maize	GC2	03 01 B	France	2000	55	10			55	18	10	6	3	3	5	10	1500	156,45	231,8	25,00
Maize	GC2	03 01 B	France	2001	29	10			29	21	1	2	1		2	2	560	43,10	151,9	1,667
Maize	GC2	03 01 B	France	2000	25	8			25	2	8	5		4	3	3	569	97	97	
Maize	GC2	03 01 B	France	2001	25	8		1	24	2	3	3	4	5	4	3	569	97	101	
Maize	GC2	03 01 B	France	2000	164	10-40	20	33	131	62	25	11	14	8	20	24	998	96		27
Maize	GC2	03 01 B	France	2001	116	40-50	5-30	1	115	1	35	11	12	8	27	22	1817	145		75
Maize, imported	GC2	03 01 B	United Kingdom	1/1998	92	10		11	81	1	13	17	13	4	23	10	391	90,42	94,44	57,5
Maize, imported	GC2	03 01 B	United Kingdom	1/1999	47	10			47			1	9	10	17	10	584	149,7	149,7	106
Maize cereal grain, total	GC 2	0301 B	**5 countries**		**824**			**174**	**650**	**78,9 % positive**							**Max. value 6492 g/kg**			



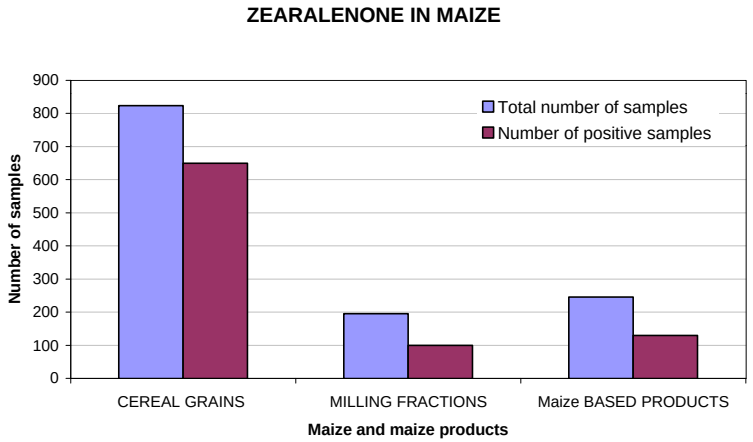


Table 1D. Summary of individual occurrence data by food group

Zearalenone Units: µg/kg or µg/L

Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
DERIVED Maize PRODUCTS																				
CF 3= Maize fractions																				
Maize fractions	CF3	02 01 C	France	2000	1	5			1	1							5	5	5	5
Maize fractions	CF3	02 01 C	France	2000	2	5			2	2							2,5	1,4	2,5	1,415
Maize fractions	CF3	02 01 C	France	2001	1	*	*		1			1					36	36	36	36
Maize fractions	CF3	02 01 C	France	2001	1	*	*		1						1		154	154	154	154
Maize fractions	CF3	02 01 C	France	2001	6		10	5	1						1		140	28	140	5
Maize fractions	CF3	02 01 C	France	2002	8		10	5	3	1	2						13	7	11	5
Maize Gluten	CF3	02 01 C	Italy	2-97-98	11		10		11		1	1	2	2		5	6075	1328	1328	93
Maize semolina	CF3	02 01 C	Italy	2-97/01	22		10	11	11		2	2	3			4	4051	417	829	13
Maize Starch	CF3 A	02 01 C	Italy	2-97/01	24		10	22	2				1	1			72	14	57	5
Maize Starch	CF3 A	02 01 C	Norway	8.-2001	14	5,82	1,94	5	9	8	1						10,9	3,9	5,5	3,6
Maize Starch	CF3 A	02 01 C	France	2001	1	5			1	1								0,83		0,83
Maize Meal	CF3 B	02 01 C	Norway	8.-2001	20	5,82	1,94	1	19	7	7	4	1				54,5	19,5	20,5	13,1
Maize Meal	CF3 B	02 01 C	France	2000	5	5			5	4		1					31	11,3	14,28	9,25
Maize Meal	CF3 B	02 01 C	France	2001	2	*	*		2				1	1			83	68	68	68
Maize Meal	CF3 B	02 01 C	France	2001	4	5			4	3					1		156	40,9	81	3,415
Maize Meal	CF3 B	02 01 C	France	2002	1	*	*		1		1						20	20	20	20
Maize Grits	CF3 C	02 01 C	Germany	2001	1	10	4	1	0								<LOD	2		
Maize Grits	CF3 C	02 01 C	Norway	8.-2001	4	5,82	1,94	1	3			2		1			59,0	37,6	49,8	45,1
Maize Flour	CF3 D	02 01 C	Italy	2-97/00	53		10	37	16		6	4	3	3			99	17	45	5
Maize Flour	CF3 D	02 01 C	United Kingdom	3/2000	8	8		4	4	1	3						17,30	6,87	12,40	4,00
Maize Flour	CF3 D	02 01 C	Italy	3-2001	1		20	1									<LOD	10	-	10
Maize Flour	CF3 D	02 01 C	Germany	2001	5	10	4	2	3	1	2						16,9	1,2	15,3	15,3

Maize fractions, total	CF 3	02 01 C	**5 countries**	**195**		**95**	**100**	**51,3 % positive**		**Max. value 6075 g/kg**

% < LOD: **48,7**

* = France; Some samples were gathered together with different LOQ and LOD, in order to have more samples in each row

Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
CH = Maize-based products																				
Maize based products	CH	02 01 C	France	2001	2	5			2	2								0,83		0,83
Maize based products	CH	02 01 C	France	2000	2	5			2	1	1						12,7	6,5	12,7	6,765
Maize based products	CH	02 01 C	France	2001	1	5			1	1								0,83		0,83
Maize based products	CH	02 01 C	France	2001	8	5		1	7	4	2	1					37	11,2	21,63	21,5
Maize based products	CH	02 01 C	France	2002	1	*	*		1	1							4,4	4,4	4,4	4,4
Maize based products	CH	0201 C	Norway	8.-2001	50	5,82	1,94	17	33	30	2	1					13,9	3,3	4,5	2,1
Maize based products	CH	0201 C	United Kingdom	3/2000	15	8		8	7	0	4	1		1		1	171,7	22,3	46,27	<8
Polenta	CH 1	02 01 C	Norway	8.-2001	20	5,82	1,94	5	15	9	4	1		1			53,5	11,4	14,8	5,9
Polenta	CH 1	02 01 C	Germany	2001	1	10	4		1	1							1,7	1,7		
Polenta	CH 1	02 01 C	United Kingdom	3/2000	8	8		3	5	2	3						23,40	9,59	14,54	8,70
Polenta	CH 1	02 01 C	France	2000	5	5			5	3	2						18,7	6,5	10,77	2,3
Polenta	CH 1	02 01 C	France	2001	2	5			2	2							5,6	2,9	5,6	2,9
Polenta	CH 1	02 01 C	France	2002	3	10		2	1	1							6,6	3,31	6,6	1,67
Maize Bread	CH 3	02 01 C	Norway	8.-2001	2	5,82	1,94		2	2							4,2	3,4	3,4	3,4
Popcorn	CH 4	02 01 C	France	2000	4	5			4	3	1						15	5,665	10,5	3,415
Popcorn	CH 4	02 01 C	France	2001	3	5			3	3							5	2,61	3,5	2
SweetCorn	CH 5	02 01 C	Norway	8.-2001	50	15	5	50									<LOD	0,3	0	2,5
SweetCorn	CH 5	02 01 C	Norway	8.-2001	1	5,82	1,94	1									<LOD	1,0	0	1,0
SweetCorn	CH 5	02 01 C	France	2002	9	5		1	8	8								0,83		0,83
SweetCorn	CH 5	02 01 C	France	2000	1	5			1	1								0,83		0,83
SweetCorn	CH 5	02 01 C	France	2002	4	5		1	3	3								0,83		0,83
Snacks																				
Maize			United Kingdom	3/2000	30	8		16	14		1	6	4	3			85,8	26,78	55,48	<8
Maize			United Kingdom	3/2001	24	8		11	13	1	10	1	1				55,8	11,21	19,56	9,75

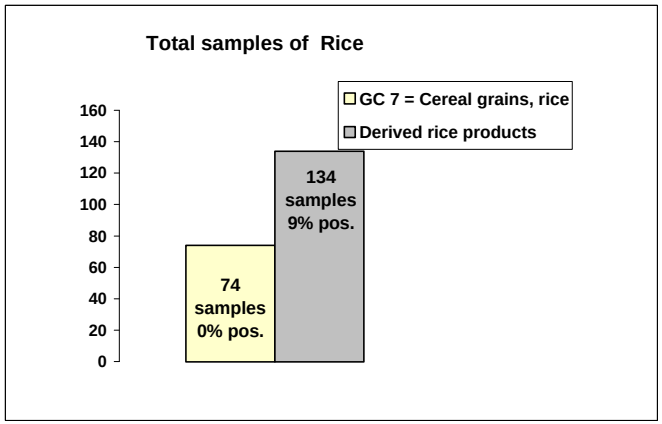
Maize-based products, total	CH 0201C	**4 countries**	**246**	**116**	**130**	**52,8 % positive**		**Max. value 171,7 g/kg**	

% < LOD: **47,2**

* = France; Some samples were gathered together with different LOQ and LOD, in order to have more samples in each row

Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
RICE																				
GC 7 = Cereal grains, rice																				
Rice	GC7	03 01 G	France	94 - 98	4		20	4									<LOD	10	.-	10
Rice	GC7	03 01 G	France	2000	1		10	1									<LOD	5	.-	5
Rice	GC7	03 01 G	France	2001	38		10	38									<LOD	5	.-	5
Rice	GC7	03 01 G	France	2002	31		10	31									<LOD	5	.-	5
Rice cereal grains, total		GC7 0301G	**1 country**		**74**			**74**	**0**	**0,0 % positive**							**Max. value < LOD**			
								% < LOD: **100,0**												
DERIVED RICE PRODUCTS																				
CF = Cereal grain milling fractions																				
Rice	CF	02 01A	United Kingdom	2/2000	100	6		100									< LOQ	1,00	.-	<6
Rice	CF	02 01A	Germany	HI/2000	3	10	5	3									<LOD	<LOD	.-	<LOD
Rice	CF	02 01A	Germany	HI/2001	1	10	5	1									<LOD	<LOD	.-	<LOD
Rice	CF	02 01A	Germany	HI/2002	6	10	5	6									<LOD	<LOD	.-	<LOD
Rice	CF	0201A	Germany	2000	3	<5,0	<2,0	3									<LOD	1	.-	
Rice	CF	0201A	Germany	2001	8	10	4	8									<LOD	2	.-	
Rice derived products	E7		France	2001	2	5			2	2								0,83		0,83
Rice derived products	E7		France	2001	4	5			4	4								0,83		0,83
Rice derived products	E7		France	2002	4	5	3	1	3	3								0,83		0,83
Rice derived products	E7		France	2000	3	5			3	3								0,83		0,83
Rice derived products, total		CF 0201 A	**3 countries**		**134**			**122**	**12**	**9,0 % positive**							**Max. value < LOD**			



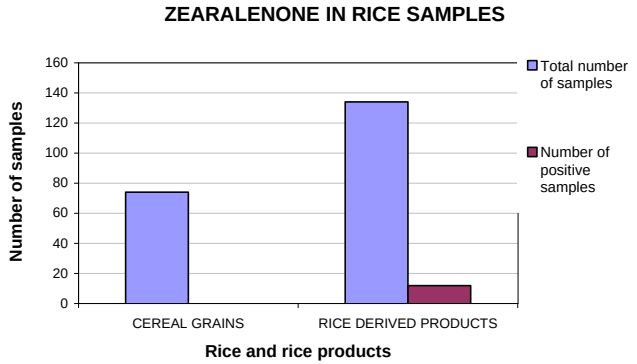


Table 1D. Summary of individual occurrence data by food group

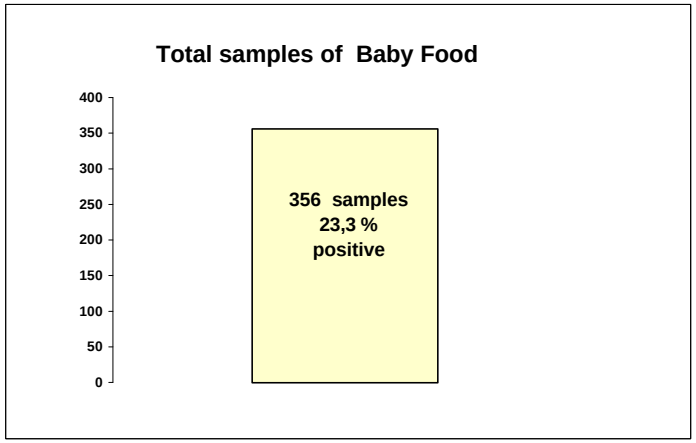
Zearalenone Units: µg/kg or µg/L

Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
BABY FOOD																				
infant food			Germany	2001	43	10	4	43									<LOD	2	.-	
Baby food			Germany	01/02	171	6	6	167	4	2	2				1		14	2,6	10,8	3
Baby porridge																				
Maize	CH	0201 C	Norway	7.-2000	26	1,5	0,5	0	26	16		1		1	4	4	305	70,2	70,2	5,8
Rice	GC7	0301 G	Norway	7.-2000	16	1,5	0,5	8	8	8							5,5	1,2	2,2	0,3
Oat	GC3	0301 C	Norway	7.-2000	26	1,5	0,5	20	6	6							4,8	0,6	1,7	0,3
Wheat	CG	0201 B	Norway	7.-2000	38	1,5	0,5	12	26	26							2,2	0,8	1,0	0,8
Composite grain product	CF	0201 A	Norway	7.-2000	19	1,5	0,5	7	12	12							1,9	0,7	1,0	0,7
Baby cereals																				
Oats	GC3	0301 C	United Kingdom	3/2000	6	8		6									< LOQ	1,33	.-	<8
Cornflakes	CH	0201 C	United Kingdom	3/2000	1	8		1									< LOQ	1,33	.-	<8
Mixed			United Kingdom	3/2000	2	8		2									< LOQ	1,33	.-	<8
Wheat	CG	0201 B	United Kingdom	3/2000	8	8		7	1		1						11,6	11,60	11,60	<8

Baby food, total	**3 countries**	**356**	**273**	**83**	**23,3 % positive**	**Max. value 305 g/kg**

% < LOD: **76,7**



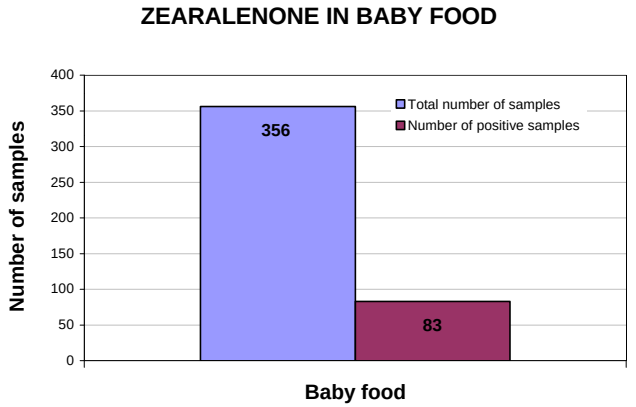


Table 1D. Summary of individual occurrence data by food group

Zearalenone Units: µg/kg or µg/L

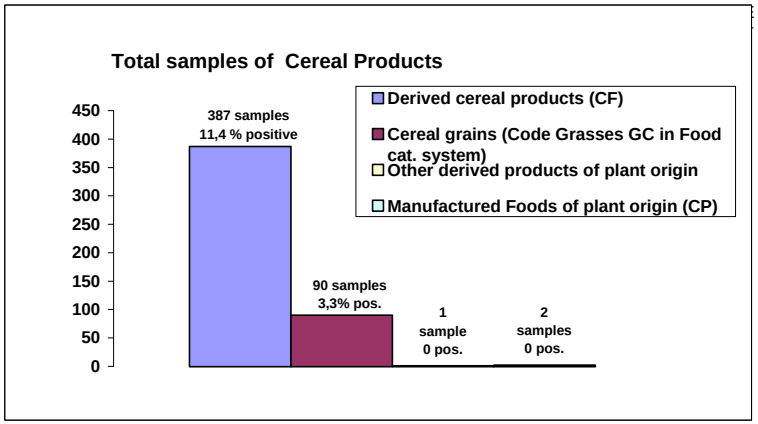
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
CEREALS PRODUCTS																				
Derived cereal products (CF)																				
Derived cereal products	A*		France	2000	3	5			3	3								0,83		0,83
Breakfast cereals																				
Oats			United Kingdom	3/2000	16	8		16									< LOQ	1,33	0,00	<8
Wheat			United Kingdom	3/2000	14	8		14									< LOQ	1,33	0,00	<8
Bran			United Kingdom	3/2000	14	8		11	3		2					1	231,8	19,26	85,00	<8
Mixed			United Kingdom	3/2000	1	8		0	1			1					37,2	37,20	37,20	37,20
Breakfast cereals	A		France	2000	8	5			8	8								0,83		0,83
Breakfast cereals	A		France	2001	15	5			15	14		1					48,8	5,6	17,15	0,83
Breakfast cereals	A		France	94 - 98	10		20	10									<LOD	10	.-	10
Breakfast cereals	A		France	1999	1		20	1									<LOD	10	.-	10
Breakfast cereals	A		France	2001	3		10	3									<LOD	5	.-	5
Breakfast cereals	A		France	2002	7		10	7									<LOD	5	.-	5
Breakfast cereals		0201DCF4	Portugal	2002	11	5	2,5	4	7	7							11	5,1	7,3	6
Bakery products			Italy	2-97/01	92		10	89	3		3						18	5	16	5
Biscuits																				
Wheat			United Kingdom	3/2000	54	8		52	2		2						11,8	1,70	11,25	<8
Rye			United Kingdom	3/2000	2	8		2									< LOQ	1,33	.-	<8
Oats			United Kingdom	3/2000	4	8		4									< LOQ	1,33	.-	<8
Bread																				
White			United Kingdom	3/2000	40	8		39	1		1						15,8	1,69	15,80	<8
Wholemeal			United Kingdom	3/2000	16	8		16									< LOQ	1,33	.-	<8
Other			United Kingdom	3/2000	3	8		3									< LOQ	1,33	.-	<8
Snacks																				
Wheat			United Kingdom	3/2000	6	8		6									< LOQ	1,33	.-	<8
Wheat			United Kingdom	3/2001	13	8		13									< LOQ	1,33	.-	<8
Rice			United Kingdom	3/2001	1	8		1									< LOQ	1,33	.-	<8
Mixed			United Kingdom	3/2000	4	8		3	1			1					49	13,25	49,00	<8
Mixed			United Kingdom	3/2001	6	8		5			1						20,4	5,15	20,40	<8
Cakes			United Kingdom	3/2000	40	8		40									< LOQ	1,33	.-	<8
Beer			United Kingdom	2000	3	0,05		3									< LOQ	0,01	.-	<0.05

Derived Cereal products, total	CF	**4 countries**	**387**	**342**	**44**	**11,4 % positive**	**Max. value 231,8 g/kg**
						% < LOD: **88,4**	

Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
Cereal grains (Code Grasses GC in Food cat. system)																				
Cereal grain	GC	03 01	Italy	2-97/01	85		10	82	3		1	1		1			80	6	43	5
Other grasses	GC9	03 01 I	Germany	2001	5	10	4	5									<LOD	2		
Cereal grains, total			GC	**2 countries**	**90**			**87**	**3**	**3,3 % positive**							**Max. value 80 g/kg**			
										% < LOD: **96,7**										
Other derived products of plant origin																				
Other derived products of plant origin	CF4	02 01D	Germany	HI/2000	1	10	5	1		0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD
Other Derived Cereal products, total			**CF 4; 1 country**		**1**			**1**	**0**	**0,0 % positive**							**Max. value < LOD**			
										% < LOD: **100,0**										
Manufactured Foods of plant origin (CP)																				
Manufactured multi-ingredient CP		03 01	Germany	HI/2002	2	10	5	2		0	0	0	0	0	0	0	<LOD	<LOD	<LOD	<LOD
Foods of plant origin, total			CP	**1 country**	**2**			**2**	**0**	**0,0 % positive**							**Max. value < LOD**			
										% < LOD: **100,0**										



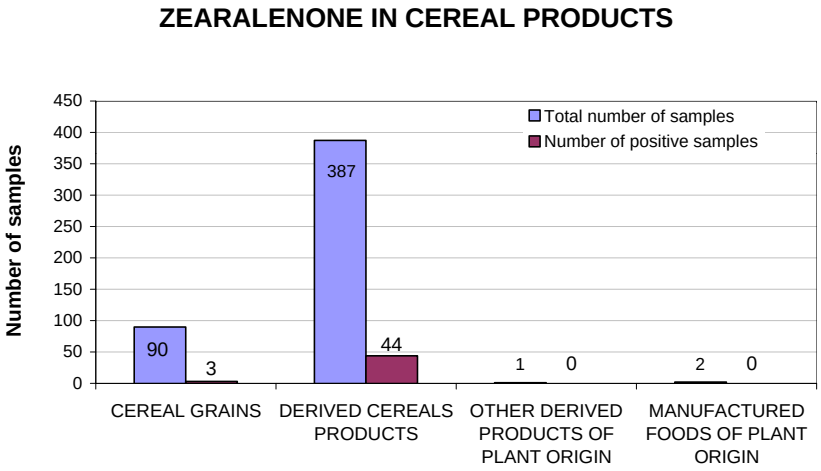
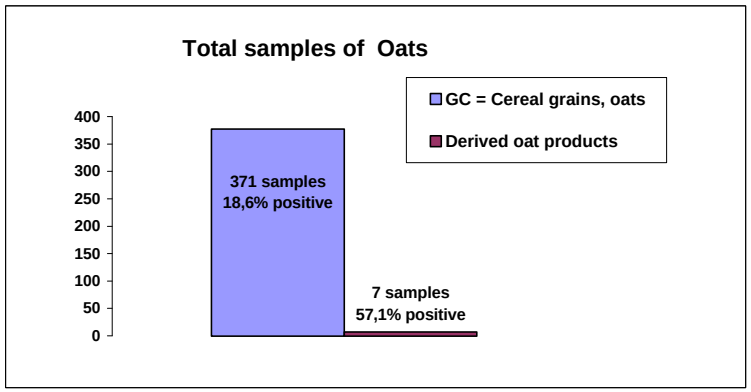


Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
OATS																				
GC = Cereal grains, oats																				
Oats	GC 3	0301 C	Norway	1.-1990	40	15	5	35	5	4		1					43	3,8	12,6	2,5
Oats	GC 3	0301 C	Norway	2.-1994	2	15	5	2									<LOD	2,5	0	2,5
Oats	GC 3	0301 C	Norway	3.-1995	21	9	3	20	1				1				64	4,5	64,0	1,5
Oats	GC 3	0301 C	Norway	4.-1669	14	60	20	14									<LOD	10,0	0	10,0
Oats	GC 3	0301 C	Norway	5.-1997	14	3	1	8	6	4	1	1					34,5	5,1	11,3	0,5
Oats	GC 3	0301 C	Norway	6.-1998	22	6	2	14	8	8							2	1,4	0,3	1,0
Oats	GC 3	03 01 C	Austria	1999	96	20		96										3,3	0	<LOQ
Oats	GC 3	03 01 C	Austria	2000	96	20		93	3		3						30	4,1	26,7	<LOQ
Oats (organic)			Finland	1998	7		2	6	1	1							5,5	1,64	5,5	1
Oats			Finland	1999	10	0,5		0	10						3	7	299	221,5	221,5	231,5
Oats			Finland	2000	25	0,5		20	5		2	1	2				64	8,5	42,3	0,083
Oats			Finland	2001	30	0,5		0	30		1		1		3	25	1310	640,4	640,4	687,5
Oat cereal grains, total		GC	**3 countries**		**377**			**308**	**69**	**18,3 % positive**							**Max. value 1310 g/kg**			
										% < LOD: **81,7**										
Derived oat products																				
Oat derived products	E3		France	2001	4	5		1	3	3								0,83		0,83
Oat derived products	E3		France	2001	1	10		1									<LOD	1,67	.-	
Oat derived products	E3		France	2000	2	5	3	1	1	1								0,83		0,83
Derived oat products, total			**1 country**		**7**			**3**	**4**	**57,1 % positive**							**Max. value 1,67 g/kg**			
										% < LOD: **42,9**										



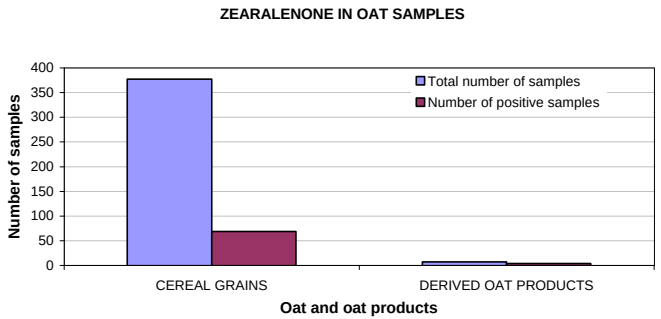
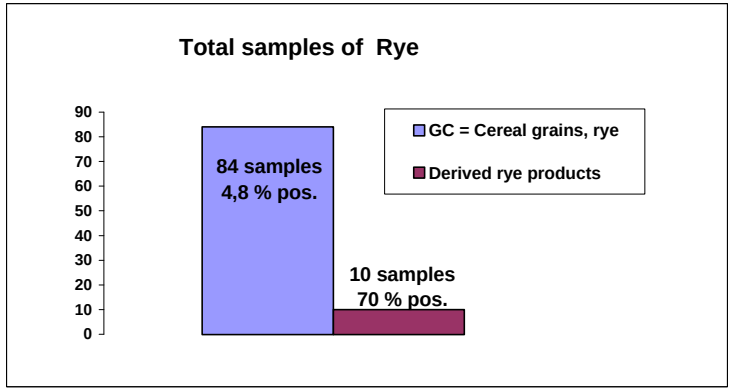


Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
RYE																				
GC = Cereal grains, rye																				
Rye	GC5	03 01E	Germany	HI/2000	3	10	5	1	2	1	1						23,7	9,57	13,1	<LOQ
Rye	GC5	0301E	Germany	2000	4	<5,0	<2,0	4									<LOD	1		
Rye	GC 5	0301E	Germany	2001	13	10	4	13									<LOD	2		
Rye (organic)			Finland	1998	6		2	6										1		1
Rye			Finland	1999	2	0,5		2									<LOD	0,083	.-	0,083
Rye			Finland	2000	15	0,5		15									<LOD	0,083	.-	0,083
Rye			Finland	2001	12	0,5		12									<LOD	0,083	.-	0,083
Rye, organic			Finland	2001	1	0,5		1									<LOD	0,083	.-	.-
Rye, no	GC 5	0301 E	Norway	1.-1990	2	15	5	2									<LOD	2,5	.-	2,5
Rye, imp	GC 5	0301 E	Norway	1.-1990	18	15	5	16	2	2							5	2,8	5,0	2,5
Rye, imp	GC 5	0301 E	Norway	3.-1995	4	9	3	4									<LOD	1,5	.-	1,5
Rye, imp	GC 5	0301 E	Norway	4.-1669	4	60	20	4									<LOD	10,0	.-	10,0
Rye cereal grains, total		GC 5	**3 countries**		**84**			**80**	**4**	**4,8 % positive**							**Max. value 23,7**		**g/kg**	
no= norwegian; imp = imported to Norway										% < LOD: **95,2**										
Derived rye products																				
Rye, bread			United Kingdom	3/2000	1	8		1									< LOQ	1,33	.-	<8
Rye meal	D5		France	2001	1	5			1	1								0,83		0,83
Rye meal	D5		France	2001	5	10		2	3	3								1,67	1,67	1,67
Rye meal	D5		France	2002	1	5			1	1								0,83		0,83
Rye meal	D5		France	2000	2	10			2	2								1,67		1,67
Derived rye products, total			**2 countries**		**10**			**3**	**7**	**70,0 % positive**							**Max. value 1,67**		**g/kg**	
										% < LOD: **30,0**										



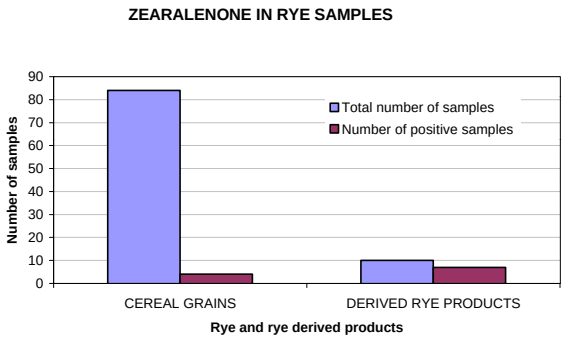
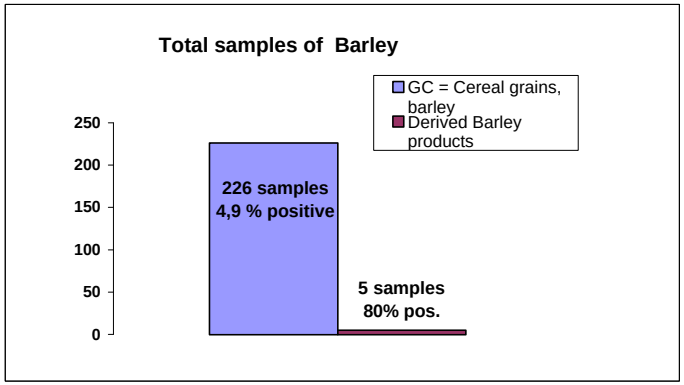


Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° samples positive	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
BARLEY																				
GC = Cereal grains, barley																				
Barley	GC6	03 01F	Italy	1-1999	1	90	30	1									<LOD	15	15	-
Barley	GC6	0301F	Germany	2001	11	<5,0	<2,0	11									<LOD	1		
Barley	GC6	0301F	Germany	2001	13	10	4	13									<LOD	2		
Barley	GC6	0301F	Germany	2001	5	10	2	5									<LOD	1		
Barley (organic)			Finland	1998	7		2	6	1	1							4,4	1,49	4,4	1
Barley			Finland	1999	30	0,5		30									<LOD	0,083	.-	0,083
Barley			Finland	2001	20	0,5		15	5		2	2	1				53,4	7,8	30,9	0,083
Barley	GC 6	0301 F	Norway	1.-1990	20	15	5	19	1		1						11	2,9	11,0	2,5
Barley, feed			Finland	2000	20	0,5		20									<LOD	0,083	.-	0,083
Barley,malt			Finland	1999	18	0,5		18									<LOD	0,083	.-	0,083
Barley,malt			Finland	2000	25	0,5		24	1	1							6,39	0,3	6,4	0,083
Barley,malt			Finland	2001	25	0,5		25									<LOD	0,083	.-	0,083
Malted barley			United Kingdom	1999	14	2		13	1			1					33,00	2,67	33,00	<2
Malted barley			United Kingdom	2000	9	2		8	1			1					40,00	4,74	40,00	<2
Malted barley			United Kingdom	2001	8	2		7	1	1							4	0,79	4,00	<2
Barley cereal grains, total		GC 6	**6 countries**		**226**			**215**	**11**	**4,9 % positive**							**Max. value 53,4 g/kg**			
Derived Barley products										% < LOD: **95,1**										
Barley derived products	E6		France	2001	3	5			3	3								0,83		0,83
Barley derived products	E6		France	2000	2	5	3	1	1	1								0,83		0,83
Derived Barley products, total			**1 countries**		**5**			**1**	**4**	**80,0 % positive**							**Max. value 53,4 g/kg**			
Barley derived products = Malted or Semolina										% < LOD: **20,0**										



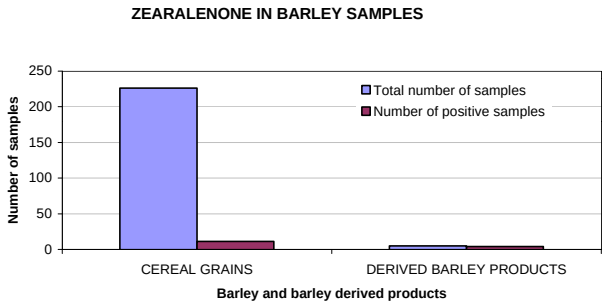
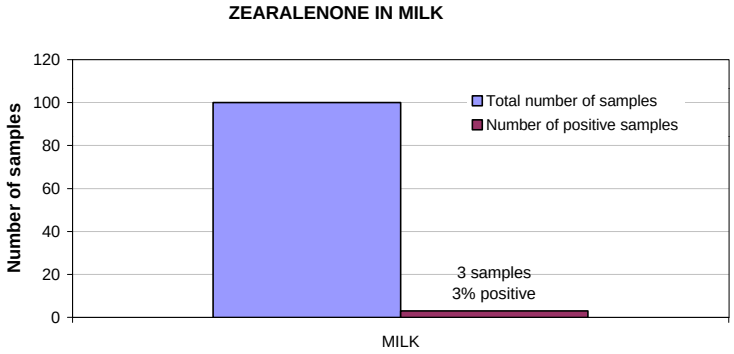
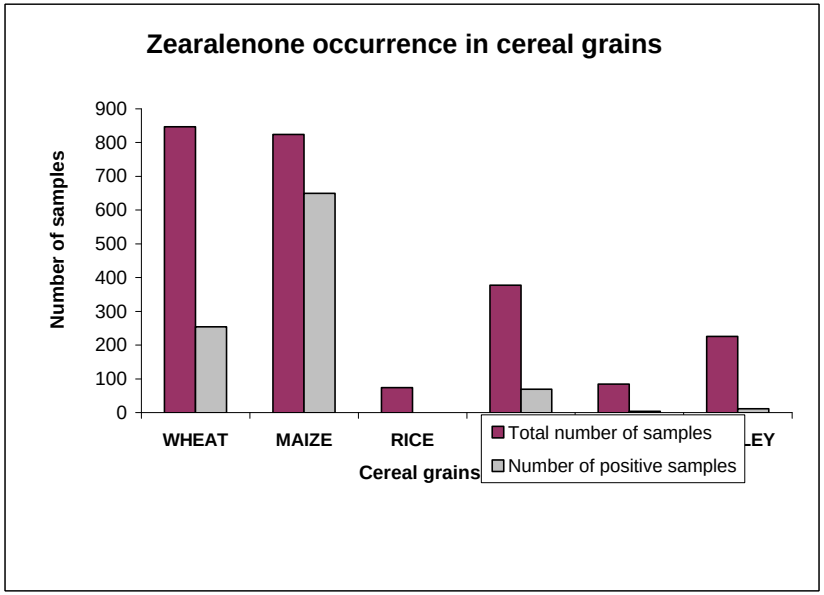


Table 1D. Summary of individual occurrence data by food group
Zearalenone Units: µg/kg or µg/L
Country: Austria, Finland , France, Germany, Italy, the Netherlands, Norway, Portugal and U.K.

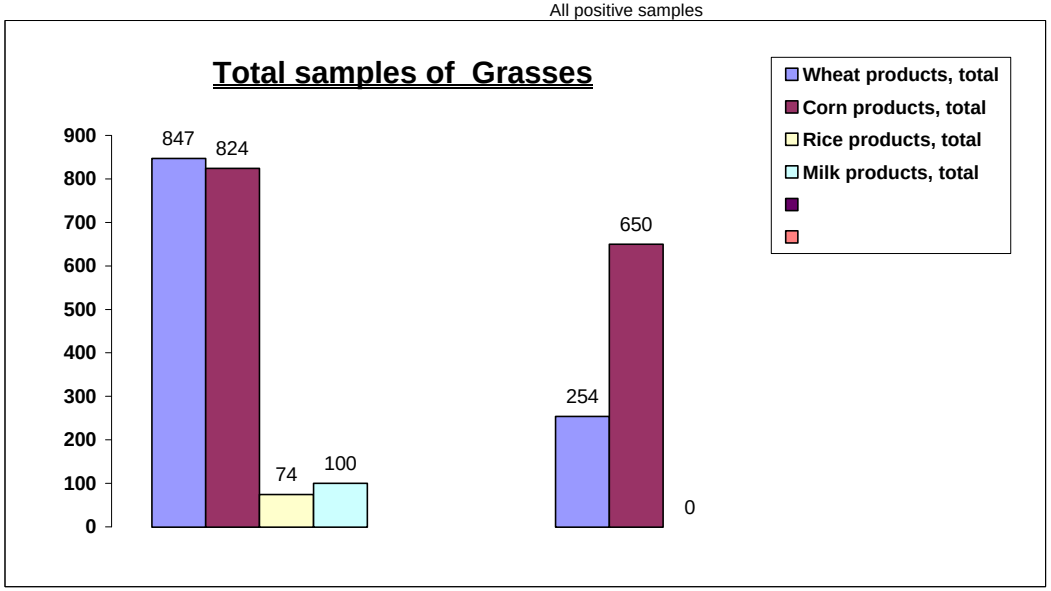
Food or group	Food or group	Code	Country	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Max valu	Mean(1)	Mean(2)	Median
MILK																			
Farm-gate milk			United Kingdom	4/2000	50		1	50								<LOD	0,50		<1
Retail milk			United Kingdom	4/2000	50		1	47	3	3						5,5	0,63	2,63	<1
Milk products, total					**100**			**97**	**3**	**3,0 % positive**						**5,5**			
										% < LOD: **97,0**									



Tolal samples all products= 5018 samples 1594 pos. samples 31,8 % positive



All samples
All positive samples



SCOOP task 3.2.10, zearalenone; Cereal grains

	Total number of sam	Number of samples < LOD	Number of positive samples	
WHEAT	847	593	254	ug/kg
MAIZE	824	174	650	ug/kg
RICE	74	74	0	ug/kg
OAT	377	308	69	ug/kg
RYE	84	80	4	ug/kg
BARLEY	226	215	11	ug/kg

Table 7A. List of raw individual zearalenone occurrence data from France, Italy, Portugal and Norway

Zeralenone

Country: NORWAY, ITALY, PORTUGAL and FRANCE **Units: µg/kg (or µg/L)**

Food or group	Code	Ref and year	LOQ	LOD	LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state	Country of origin	Processing details	Type of cultivation *
NORWAY																			
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	9							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5		11						yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	9							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5		11						yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C
Wheat	0301 A	**1.-1990**	15	5	<5							yes	random	HPLC	good	yes	South-west Norway		C

Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Wheat	0301 A	**1.-1990**	15	5		5	yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5		5	yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C

Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	East Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5	yes	random	HPLC	good	yes	Middle Norway	C

Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Middle Norway	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Argentina	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Argentina	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Sweden	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	USA	C
Wheat	0301 A	**1.-1990**	15	5		5		yes	random	HPLC	good	yes	USA	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5		5		yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5		3		yes	random	HPLC	good	yes	unknown	C
Wheat	0301 A	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	unknown	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley groats	0301 F	**1.-1990**	15	5			11	yes	random	HPLC	good	yes	East Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley groats	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C
Barley	0301 F	**1.-1990**	15	5	<5			yes	random	HPLC	good	yes	East Norway	C

Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Groats	0301 C	**1.-1990**	15	5		43	yes	random	HPLC	good	yes	East Norway	C
Groats	0301 C	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	East Norway	C
Groats	0301 C	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	East Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Groats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	South-west Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	East Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	Middle Norway	C
Oats	0301 C	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	South-west Norway	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C

Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	unknown	C
Rye	0301 E	**1.-1990**	15	5	5		yes	random	HPLC	good	yes	unknown	C
Oats	0301 C	**2.-1994**	15	5	< 5		yes	random	HPLC	good	yes	Norway	C
Oats	0301 C	**2.-1994**	15	5	< 5		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3		68	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	5		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C

oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3		64	yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	unknown	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Canada	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Germany	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	France	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Germany	C
wheat	0301 A	**3.-1995**	9	3	3		yes	random	HPLC	good	yes	Germany	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	USA	C
rye	0301 E	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Germany	C
rye	0301 E	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Germany	C
rye	0301 E	**3.-1995**	9	3	< 3		yes	random	HPLC	good	yes	Germany	C
rye	0301 E	**3.-1995**	9	3	2		yes	random	HPLC	good	yes	Germany	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Autumn wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301 A	**4.-1996**	60	20	<20		yes	random	HPLC	good	yes	Norway	C

Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
Spring wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
oats	0301	C	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Norway	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Canada	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Germany	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Germany	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Germany	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	England	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Sweden	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Sweden	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	USA	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	USA	C
wheat	0301	A	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	USA	C
rye	0301	E	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
rye	0301	E	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Denmark	C
rye	0301	E	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Germany	C
rye	0301	E	**4.-1996**	60	20	<20	yes	random	HPLC	good	yes	Germany	C

wheat	0301 A	**5.-1997**	3	1		21,2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	1,7			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	1,4			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	2,6			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	1,6			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	2,7			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	3,8			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	1,6			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1		23,9		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1			34,5	yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	2,1			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	1,8			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Canada	C
wheat	0301 A	**5.-1997**	3	1	2			yes	random	HPLC	good	yes	Canada	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Sweden	C
wheat	0301 A	**5.-1997**	3	1	1,3			yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**5.-1997**	3	1		13,2		yes	random	HPLC	good	yes	USA	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A	**5.-1997**	3	1	<1			yes	random	HPLC	good	yes	Denmark	C

wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2			13	yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
wheat	0301 A	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2		2		yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C
oats	0301 C	**6.-1998**	6	2	<2			yes	random	HPLC	good	yes	Norway	C

oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2		2					yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
oats	0301 C **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Norway	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Canada	C
wheat	0301 A **6.-1998**	6	2		4					yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A **6.-1998**	6	2		2					yes	random	HPLC	good	yes	Estonia	C
wheat	0301 A **6.-1998**	6	2		2					yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A **6.-1998**	6	2		3					yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A **6.-1998**	6	2		4					yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Estonia	C
wheat	0301 A **6.-1998**	6	2		2					yes	random	HPLC	good	yes	Estonia	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Kazakhstan	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2		2					yes	random	HPLC	good	yes	USA	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	USA	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	France	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Denmark	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	France	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2		4					yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Germany	C
wheat	0301 A **6.-1998**	6	2	<2						yes	random	HPLC	good	yes	Denmark	C
Maize	0201 C **7.-2000**	1,5	0,5						208	yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5						214	yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5					153		yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5						305	yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5				81			yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5					187		yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5					132		yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5						275	yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5					182		yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5			33				yes	random	HPLC	good	yes	unknown	O
Maize	0201 C **7.-2000**	1,5	0,5		6					yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	2,2						yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	5,3						yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	3,2						yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	7,2						yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	4,6						yes	random	HPLC	good	yes	unknown	C
Maize	0201 C **7.-2000**	1,5	0,5	1,8						yes	random	HPLC	good	yes	unknown	C

Maize	0201 C	**7.-2000**	1,5	0,5	2,1	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	6,2	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	2,2	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	1,9	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	1,4	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	2,1	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	5,5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	0,6	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	1,5	yes	random	HPLC	good	yes	unknown	O
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	1,4	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	1,1	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	5,5	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	C
Rice	0301 G	**7.-2000**	1,5	0,5	5,4	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	4,8	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	1,8	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	1,1	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	1,4	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Oat	0301 C	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C

Wheat	0201	B	**7.-2000**	1,5	0,5	0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	O
Wheat	0201	B	**7.-2000**	1,5	0,5	1,7	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1,1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1,3	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,9	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1,4	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1,6	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,8	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	2,2	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,9	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,9	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,9	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	0,8	yes	random	HPLC	good	yes	unknown	C
Wheat	0201	B	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF		**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	1,9	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	1,1	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	1,2	yes	random	HPLC	good	yes	unknown	O
Composite grain product	CF		**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	O

Composite grain product	CF	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	1	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	1,1	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	0,9	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	<0,5	yes	random	HPLC	good	yes	unknown	C
Composite grain product	CF	**7.-2000**	1,5	0,5	0,7	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	Zimbabwe	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	Zimbawe	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	Thailand	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	unknown	C
Baby maize	0201 C	**8.-2001**	15	5	<5	yes	random	HPLC	good	yes	Thailand	C

Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	Nederland	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	Spania	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	La Horadada	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	Israel	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	Israel	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	unknown	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	Israel	C
Corncob	0201 C	**8.-2001**	15	5	<5		yes	random	HPLC	good	yes	USA	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	Demark	O
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,94		yes	random	HPLC	good	yes	unknown	O
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,16		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,24		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	5,36		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	4,2		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,06		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,06		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,2		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9		13,9	yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	6,88		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,59		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,96		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	Germany	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,97		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,95		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	4,03		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,48		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,31		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,86		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,64		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	3,89		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9		11,8	yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	3,2		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94		yes	random	HPLC	good	yes	unknown	C

Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,09				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,16				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,36				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,6				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	6,96				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	3,3				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9			36,28		yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,12				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,31				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	2,13				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Corn flakes	0201 C	**8.-2001**	5,8	1,9	1,95				yes	random	HPLC	good	yes	Germany	C
Maize meal	0201 C	**8.-2001**	5,8	1,9		10,8			yes	random	HPLC	good	yes	unknown	O
Maize meal	0201 C	**8.-2001**	5,8	1,9	9,3				yes	random	HPLC	good	yes	unknown	O
Maize meal	0201 C	**8.-2001**	5,8	1,9		19			yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9		23,5			yes	random	HPLC	good	yes	unknown	O
Maize meal	0201 C	**8.-2001**	5,8	1,9		19,8			yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	7,09				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	7,43				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9		10,6			yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	4,5				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	9,42				yes	random	HPLC	good	yes	unknown	O
Maize meal	0201 C	**8.-2001**	5,8	1,9		15,4			yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	5,78				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9	41				yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9				54,46	yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9			47,46		yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9			40,51		yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9			35,85		yes	random	HPLC	good	yes	unknown	C
Maize meal	0201 C	**8.-2001**	5,8	1,9		21,6			yes	random	HPLC	good	yes	unknown	O
Maize meal	0201 C	**8.-2001**	5,8	1,9	6,23				yes	random	HPLC	good	yes	unknown	O
Maize starch	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	3,69				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	2,13				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	6,42				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9		10,9			yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	9,06				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	5,93				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	3,58				yes	random	HPLC	good	yes	unknown	C
Maize starch	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	Germany	O
Maize starch	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	Germany	O
Maize starch	0201 C	**8.-2001**	5,8	1,9	4,36				yes	random	HPLC	good	yes	Germany	O
Maize starch	0201 C	**8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	Germany	O
Maize starch	0201 C	**8.-2001**	5,8	1,9	3,57				yes	random	HPLC	good	yes	Germany	O

Maize grits	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	O
Maize grits	0201 C **8.-2001**	5,8	1,9				59,04	yes	random	HPLC	good	yes	unknown	C
Maize grits	0201 C **8.-2001**	5,8	1,9			48,74		yes	random	HPLC	good	yes	unknown	C
Maize grits	0201 C **8.-2001**	5,8	1,9			41,51		yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	7,91				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	3,42				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	9,21				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9		10,2			yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	2,05				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9		29,7			yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	5,07				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9				53,51	yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9			45,26		yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9		20,9			yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9		13,2			yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	6,77				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	3,24				yes	random	HPLC	good	yes	unknown	C
Polenta express	0201 C **8.-2001**	5,8	1,9	8,39				yes	random	HPLC	good	yes	unknown	C
Polenta	0201 C **8.-2001**	5,8	1,9	3,71				yes	random	HPLC	good	yes	unknown	O
Corn cob	0201 C **8.-2001**	5,8	1,9	<1,94				yes	random	HPLC	good	yes	unknown	O
Bread	0201 C **8.-2001**	5,8	1,9	4,23				yes	random	HPLC	good	yes	unknown	C
Bread	0201 C **8.-2001**	5,8	1,9	2,5				yes	random	HPLC	good	yes	unknown	C

Food or group	Code	Ref and year	LOQ	LOD	Level of contamination: LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state	Country of origin	Processing details	Type of cultivation
PORTUGAL																			
wheat	0301AG(	2002	5	2,5	0							yes	Random	HPLC	L	yes			
white wheat flour	0201BCI	2002	5	2,5	0							yes	Random	HPLC	L	yes			
wheat bran	0201BCI	2002	5	2,5	2							yes	Random	HPLC	L	yes			
cereals breakfast	0201DCI	2002	5	2,5	7							yes	Random	HPLC	L	yes			

Food or group	Code	Ref and year	LOQ	LOD	. sample tc	n.sample <LOD	Level of contamination: LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	epresentative Member state	Country of origin	Type of cultivation
ITALY																				
Wheat	GC1	03 01A	1-20(	90	30	1	1							YES	Random	HPLC		NO		
Wheat			1-19(	90	30	1	1							YES	Random	HPLC		NO		
Barley	GC6	03 01F	1-19(	90	30	1	1							YES	Random	HPLC		NO		
White wheat flour	CF2	02 01A	2-1997		10	27	27							YES	Random	HPLC		YES		
White wheat flour			2-1998		10	22	22							YES	Random	HPLC		YES		
White wheat flour			2-1999		10	26	26							YES	Random	HPLC		YES		
White wheat flour			2-2000		10	43	43							YES	Random	HPLC		YES		
White wheat flour			2-2001		10	43	43							YES	Random	HPLC		YES		
Maize Starch	CF3A	02 01C	2-1997		10	4	3							YES	Random	HPLC		YES		
Maize Starch			2-1997		10						72			YES	Random	HPLC		YES		
Maize Starch			2-1998		10	5	4							YES	Random	HPLC		YES		
Maize Starch			2-1998		10				42					YES	Random	HPLC		YES		
Maize Starch			2-1999		10	3	3							YES	Random	HPLC		YES		
Maize Starch			2-2000		10	3	3							YES	Random	HPLC		YES		
Maize Starch			2-2001		10	9	9							YES	Random	HPLC		YES		
Cereal Grain	GC	03 01	2-1997		10	13	13							YES	Random	HPLC		YES		
Cereal Grain			2-1998		10	4	3							YES	Random	HPLC		YES		
Cereal Grain			2-1998		10				31					YES	Random	HPLC		YES		
Cereal Grain			2-1998		10	19	19							YES	Random	HPLC		YES		
Cereal Grain			2-2000		10	22	21							YES	Random	HPLC		YES		
Cereal Grain			2-2000		10							80		YES	Random	HPLC		YES		
Cereal Grain			2-2001		10	27	26	19						YES	Random	HPLC		YES		
Wheat Bran	CF1	02 01B	2-1997		10	2							510	YES	Random	HPLC		YES		
Wheat Bran			2-1997		10								250	YES	Random	HPLC		YES		
Wheat Bran			2-1998		10	2	1							YES	Random	HPLC		YES		
Wheat Bran			2-1998		10				31					YES	Random	HPLC		YES		
Wheat Bran			2-1999		10	2	2							YES	Random	HPLC		YES		
Wheat Bran			2-2000		10	1	1							YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10	16	4							YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10			12						YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10				42					YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10					72				YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10							85		YES	Random	HPLC		YES		
Maize flour	CF3D	02 01C	2-1997		10			25						YES	Random	HPLC		YES		

Maize flour	CF3D	02 01C	2-1997	10				44				YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10					53			YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10						80		YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10			46					YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10				32				YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10					59			YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1997	10						99		YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1998	10	11	11						YES	Random	HPLC	YES	
Maize flour			2-2000	10	13	10						YES	Random	HPLC	YES	
Maize flour			2-2000	10			10					YES	Random	HPLC	YES	
Maize flour			2-2000	10			11					YES	Random	HPLC	YES	
Maize flour			2-2000	10			18					YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1999	10	13	12						YES	Random	HPLC	YES	
Maize flour	CF3D	02 01C	2-1999	10			28					YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10	8			36				YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10					65			YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10						86		YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10							1400	YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10							2650	YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10							6075	YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10							3054	YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1997	10							1054	YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1998	10	3		28					YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1998	10					68			YES	Random	HPLC	YES	
Maize wheat	CF3	02 01C	2-1998	10						93		YES	Random	HPLC	YES	
Gluten wheat	CF	02 01A	2-1999	10	1	1						YES	Random	HPLC	YES	
Gluten wheat			2-2000	10	1	1						YES	Random	HPLC	YES	
Gluten wheat			2-2001	10	5	5						YES	Random	HPLC	YES	
Bakery products			2-1997	10	20	20						YES	Random	HPLC	YES	
Bakery products			2-1999	10	2	2						YES	Random	HPLC	YES	
Bakery products			2-2000	10	7	6	18					YES	Random	HPLC	YES	
Bakery products			2-2001	10	63	61	13					YES	Random	HPLC	YES	
Bakery products							18					YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1997	10	15	10			74			YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1997	10							411	YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1997	10							972	YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1997	10							3341	YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1997	10							4051	YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1998	10	3	1						YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1998	10			21					YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-1998	10					56			YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-2000	10	4		29					YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-2000	10				49				YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-2000	10					67			YES	Random	HPLC	YES	
Maize semolina	CF3	02 01C	2-2000	10				50				YES	Random	HPLC	YES	
Wheat semolina	CF	02 01A	2-1999	10	7	7						YES	Random	HPLC	YES	
Wheat semolina			2-2000	10	16	16						YES	Random	HPLC	YES	
Wheat semolina			2-2001	10	12	11	28					YES	Random	HPLC	YES	

Wheat	GC1	03 01A	2-1997	10	11	11							YES	Random	HPLC	YES
Wheat			2-1998	10	12	12							YES	Random	HPLC	YES
Wheat			2-2001	10	28	28							YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10	41	3	11						YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10				47					YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10					70				YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10						98			YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							163		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								298	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10			17						YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10				34					YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10						78			YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							132		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								6942	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							104		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							154		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							128		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							177		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10							102		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								4074	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								2514	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								2344	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								1803	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								1643	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								1120	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								1013	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								858	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								806	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								554	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								501	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								457	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								378	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								374	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								355	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								340	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								325	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								295	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								295	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								285	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								280	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1997	10								252	YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1999	10	5		15						YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1999	10							160		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1999	10			21						YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1999	10							140		YES	Random	HPLC	YES
Maize	GC2	03 01B	2-1999	10								217	YES	Random	HPLC	YES
Maize			2-2000	10	1	1	28						YES	Random	HPLC	YES
Maize			2-2001	10	1	1			55				YES	Random	HPLC	YES

Whole meal	CF	02 01A	2-1997	10	10	9								YES	Random	HPLC		YES		
Whole meal	CF	02 01A	2-1997	10					35					YES	Random	HPLC		YES		
Whole meal			2-1998	10	2	2								YES	Random	HPLC		YES		
Whole meal			2-1999	10	7	5			35					YES	Random	HPLC		YES		
Whole meal									35					YES	Random	HPLC		YES		
Whole meal			2-2001	10	18	17		13						YES	Random	HPLC		YES		
Maize	GC2	03 01B	3-2001	20	5	5								YES	Random	HPLC		YES		
Maize flour	CF3D	02 01 C	3-2001	20	1	1								YES	Random	HPLC		YES		
Maize	GC2	03 01B	4-1998	3	15	1								YES	Random	HPLC	L	NO	North Italy	C
Maize	GC2	03 01B	4-1998	3			9,5							YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3				18						YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3						60				YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3					45					YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3							78			YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3				23						YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3					37					YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3			3,6							YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3						55				YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3							78			YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3						66				YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3								150		YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3			9							YES	Random	HPLC	L	NO	North Italy	
Maize	GC2	03 01B	4-1998	3				11						YES	Random	HPLC	L	NO	North Italy	

Table 7A. List of raw individual zearalenone occurrence data according to Food Categorisation system

Zearalenone

data code	Food or group	Code	Ref and year	number samples	LOQ	LOD	number of samples< LC	Level of contamination LOD-9,9	10-29,9	30-49,9	50-74,9	75-99,9	100-199,9	>200	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	representative Member state	type of cultivation	Country of origin
FRANCE																					
C																					
C1	GC2	03 01 B	2000	55	10			18	10	6	3	3	5	10	Y	R	HPLC	G	no	C	France
C2	GC2	03 01 B	2001	29	10			21	1	2	1	0	2	2	Y	R	HPLC	G	no	C	France
C3	GC1	03 01 A	2001	5	10			4	1						Y	R	HPLC	G	no	C	France
D																					
D1	CF1	02 01 B	2000	2	2			2							Y	R	HPLC	G	no	C	
D2	CF1	02 01 B	2002	5	5			3	2						Y	R	HPLC	G	no	C	
D3	CF2	02 01 B	2002	2	5			2							Y	R	HPLC	G	no	B	
D4	CF2	02 01 B	2002	6	5			4	2						Y	R	HPLC	G	no	C	
D5	CF3	02 01C	2000	1	5			1							Y	R	HPLC	G	no	C	
D6	CF3	02 01 C	2000	2	5			2							Y	R	HPLC	G	no	C	
D7	CF3	02 01 C	2001	1						1					Y	R	HPLC	G	no	B	
D8	CF3	02 01 C	2001	1									1		Y	R	HPLC	G	no	C	
D9	CF3A	02 01 C	2001	1	5			1							Y	R	HPLC	G	no	C	
D10	CF3B	02 01 C	2000	5	5			4		1					Y	R	HPLC	G	no	C	
D11	CF3B	02 01 C	2001	2							1	1			Y	R	HPLC	G	no	B	
D12	CF3B	02 01 C	2001	4	5			3					1		Y	R	HPLC	G	no	C	
D13	CF3B	02 01 C	2002	1					1						Y	R	HPLC	G	no	C	
D14	CG	02 01 B	2001	2	5			2							Y	R	HPLC	G	no	B	
D15	CG	02 01 B	2001	6	5		2	4							Y	R	HPLC	G	no	C	
D16	CG	02 01 B	2002	7	5			5	2						Y	R	HPLC	G	no	C	
D17	CG	02 01 B	2002	1	5			1							Y	R	HPLC	G	no	B	
D18	CG4	02 01 B	2000	1		3	1								Y	R	HPLC	G	no	C	
D19	CH	02 01 C	2001	2	5			2							Y	R	HPLC	G	no	C	
D20	CH	02 01 C	2000	2	5			1	1						Y	R	HPLC	G	no	C	
D21	CH	02 01 C	2001	1	5			1							Y	R	HPLC	G	no	B	
D22	CH	02 01 C	2001	8	5		1	4	2	1					Y	R	HPLC	G	no	C	
D23	CH	02 01 C	2002	1				1							Y	R	HPLC	G	no	C	
D24	CH1	02 01 C	2000	5	5			3	2						Y	R	HPLC	G	no	C	
D25	CH1	02 01 C	2001	2	5			2							Y	R	HPLC	G	no	C	
D26	CH1	02 01 C	2002	3	10		2	1							Y	R	HPLC	G	no	C	
D27	CH4	02 01 C	2000	4	5			3	1						Y	R	HPLC	G	no	C	
D28	CH4	02 01 C	2001	3	5			3							Y	R	HPLC	G	no	C	
D29	CH5	02 01 C	2002	9	5		1	8							Y	R	HPLC	G	no	C	
D30	CH5	02 01 C	2000	1	5			1							Y	R	HPLC	G	no	C	
D31	CH5	02 01 C	2002	4	5		1	3							Y	R	HPLC	G	no	C	
D32	CG	02 01 B	2000	6	2			6							Y	R	HPLC	G	no	C	
D33	CG	02 01 B	2000	3		2	3								Y	R	HPLC	G	no	C	
D34	CF2	02 01 B	2001	9	10		2	7							Y	R	HPLC	G	no	B	
D35	CF2	02 01 B	2000	16	10		12	4							Y	R	HPLC	G	no	C	
D36	CF2	02 01 B	2000	8	2			8							Y	R	HPLC	G	no	C	
D37	CF2	02 01 B	2001	34	5		21	8	5						Y	R	HPLC	G	no	C	
G																					
G1	CF2	02 01 B	2000	25	10-40	-	0	15	9	0	1	0	0	0		R	GC or HPLC	L	Y	C	France
G2	CF2	02 01 B	2001	49	10-50	-	0	45	4	0	0	0	0	0		R	GC or HPLC	L	Y	C	France
G3	GC2	03 01 B	2000	164	10-40	20	33	62	25	11	14	8	20	24		R	GC or HPLC	L	Y	C	France
G4	GC2	03 01 B	2001	116	40-50	5-30	1	1	35	11	12	8	27	22		R	GC or HPLC	L	Y	C	France
G5	GC2	03 01 B	2000	25	8		0	2	8	5	0	4	3	3	Y	T	ELISA	good	yes	C	France
G6	GC2	03 01 B	2001	25	8		1	2	3	3	4	5	4	3	Y	T	ELISA	good	yes	C	France

A

A1	CF2	02 01 B	94 - 98	37	20	37	0	0	0	0	0	0	0	Y	R		no	C
A2	CF2	02 01 B	1999	18	20	18	0	0	0	0	0	0	0	Y	R		no	C
A3	CF2	02 01 B	2000	28	10	24	0	2	0	1	0	1	0	Y	R		no	C
A4	CF2	02 01 B	2001	19	50	18	0	1	0	0	0	0	0	Y	R		no	C
A5	CF2	02 01 B	2002	24	50	22	2	0	0	0	0	0	0	Y	R		no	C
A6	CF1	02 01 B	94 - 98	5	20	5	0	0	0	0	0	0	0	Y	R		no	C
A7	CF1	02 01 B	1999	10	50	10	0	0	0	0	0	0	0	Y	R		no	C
A8	CF1	02 01 B	2000	2	20	0	0	0	0	1	0	1	0	Y	R		no	C
A9	CF1	02 01 B	2001	5	10	3	0	0	0	0	1	1	0	Y	R		no	C
A10	CF1	02 01 B	2002	7	10	7	0	0	0	0	0	0	0	Y	R		no	C
A11	CG	02 01 B	94 - 98	8	20	8	0	0	0	0	0	0	0	Y	R		no	C
A12	CG	02 01 B	1999	6	20	6	0	0	0	0	0	0	0	Y	R		no	C
A13	CG	02 01 B	2000	3	10	2	0	1	0	0	0	0	0	Y	R		no	C
A14	CG	02 01 B	2001	8	50	8	0	0	0	0	0	0	0	Y	R		no	C
A15	CG	02 01 B	2002	10	50	8	2	0	0	0	0	0	0	Y	R		no	C
A16	CF3	02 01 C	2001	6	10	5	0	0	0	0	0	1	0	Y	R		no	C
A17	CF3	02 01 C	2002	8	10	5	1	2	0	0	0	0	0	Y	R		no	C
A18	GC7	03 01 G	94 - 98	4	20	4	0	0	0	0	0	0	0	Y	R		no	C
A19	GC7	03 01 G	2000	1	10	1	0	0	0	0	0	0	0	Y	R		no	C
A20	GC7	03 01 G	2001	38	10	38	0	0	0	0	0	0	0	Y	R		no	C
A21	GC7	03 01 G	2002	31	10	31	0	0	0	0	0	0	0	Y	R		no	C

Annex 4

Consumption data, Table 2

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Finland, Norway, Portugal, Austria, France and U.K. **Units: g/day/consumer**

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
ITALY												
Table 2A1: Estimate of food consumption for an average person belonging to the Population using Food Categorisation System												
POPULATION												
White wheat flour	CF2	02 01B	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	5,2	28,6	Yes
Maize starch	CF3A	02 01C	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1982	Continuos (three time)	National	0,0	0,0	yes
Bran	CF1	02 01B	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	0,1	0,0	Yes
Maize Flour	CF3D	02 01 C	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	1,5	9,0	Yes
Bakery products			5-94/96	Household-individual data	Diary self-compiled	All food consumed	1982	Continuos (three time)	National	0,1	0,0	yes
Wheat Semolina	CF	02 01A	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	0,2	0,0	yes
Whole meal	CF	02 01A	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	0,1	0,0	Yes
Table 2A2: Estimate of food consumption for an average person belonging to the Consumers only using Food Categorisation System												
CONSUMERS ONLY												
White wheat flour	CF2	02 01B	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	15,4	46,7	Yes
Maize starch	CF3A	02 01C	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1982	Continuos (three time)	National	1,1	1,1	yes
Bran	CF1	02 01B	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	12,3	24,6	Yes
Maize Flour	CF3D	02 01 C	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	25,9	60,8	Yes
Bakery products			5-94/96	Household-individual data	Diary self-compiled	All food consumed	1982	Continuos (three time)	National	140,0	140,0	yes
Wheat Semolina	CF	02 01A	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	11,8	34,9	yes
Whole meal	CF	02 01A	5-94/96	Household-individual data	Diary self-compiled	All food consumed	1978	Continuos (three time)	National	26,8	54,4	Yes

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
The Netherlands												
Average person belonging to the whole population												
Maize	GC2	1998	DS	diary (2 days)	total Maize from Maize, Maize flour, Cornflakes, pop-corn, complex dishes etc.	6250	every 5 yr	national	3,0			
wheat	GC1	1998	DS	diary (2 days)	total wheat from bread, cakes, breakfast cereals, complex dishes etc.	6250	every 5 yr	national	130,6			
Group of all children; 1-4 yr												
Maize	GC2	1998	DS	diary (2 days)	total Maize from Maize, Maize flour, Cornflakes, pop-corn, complex dishes etc.	347	every 5 yr	national	2,2			
wheat	GC1	1998	DS	diary (2 days)	total wheat from bread, cakes, breakfast cereals, complex dishes etc.	347	every 5 yr	national	60,7			
Group of all children; 1-6 yr												
Maize	GC2	1998	DS	diary (2 days)	total Maize from Maize, Maize flour, Cornflakes, pop-corn, complex dishes etc.	530	every 5 yr	national	2,5			
wheat	GC1	1998	DS	diary (2 days)	total wheat from bread, cakes, breakfast cereals, complex dishes etc.	530	every 5 yr	national	81,1			
Portugal												
wheat	0301AGC1	2002	HPLC		all foods	1	2002	National	3,01			yes
white wheat flour	0201BCF2	2002	HPLC		all foods	1	2002	National	185,6			yes
wheat bran	0201BCF1	2002	HPLC		all foods	2	2002	National	0,25			yes
cereals brakfast	0201DCF4	2002	HPLC		all foods	11	2002	National	3			yes

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Austria												
GC	03 01		DS	diary	all foods	2580	24h	national	102,1	50	360	yes
Data in Tables 2A												

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Finland												
Adults (aged 24-64 years)*												
Rye (flour +bread)		2002	DS	Recall	All foods	2007	24 h	national	49,1			y
White wheat flour CF2	02 01 B	2002	DS	Recall	All foods	2007	24 h	national	68,7			y
Wheat bread		2002	DS	Recall	All foods	2007	24 h	national	46,0			y
Flour (other than rye and wheat)		2002	DS	Recall	All foods	2007	24 h	national	8,9			y

* FINDIET 2002 Study. Eds. Männistö S, Ovaskainen M-L, Valsta L. Publications of the National Public Health Institute B3/2003 (in press).
Method used:
The 2002 Dietary Survey of Finnish Adults, aged 25-64 years, n = 2007. The dietary data consisted of 24-hours recall.
The body weight used was 77,1 kg (mean of body weights of 84.3 kg of male and 69.9 kg of female).

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Food or group		Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Norway													
Norway, male, all participants.													
Wheat flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	122	114	211	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	65	62	118	Yes
Rye	GC 5	0301 E	1997	DS	FFQ*	All foods & bev.	1298		National	3	1	16	Yes
Barley	GC 6	0301 F	1997	DS	FFQ*	All foods & bev.	1298		National	3	0	16	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ*	All foods & bev.	1298		National	5	1	22	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ*	All foods & bev.	1298		National	1	0	5	Yes
Rice	GC 7	0301 G	1997	DS	FFQ*	All foods & bev.	1298		National	10	5	32	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ*	Certain foods	2874		National	0,5	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ*	Certain foods	2874		National	0,7	0,1	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	15	0	90	Yes
Imported beer	DM3	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	3	0	7	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	111	49	540	Yes
Norway, male, consumers.													
Wheat flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	122	114	211	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1289		National	65	62	119	Yes
Rye	GC 5	0301 E	1997	DS	FFQ*	All foods & bev.	1291		National	3	1	16	Yes
Barley	GC 6	0301 F	1997	DS	FFQ*	All foods & bev.	527		National	6	3	23	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ*	All foods & bev.	777		National	8	5	25	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ*	All foods & bev.	417		National	2	1	7	Yes
Rice	GC 7	0301 G	1997	DS	FFQ*	All foods & bev.	1154		National	11	7	38	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ*	Certain foods	1669		National	0,9	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ*	Certain foods	1952		National	1,1	0,1	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ*	All foods & bev.	335		National	60	25	186	Yes
Imported beer	DM3	0205A	1997	DS	FFQ*	All foods & bev.	128		National	33	7	173	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ*	All foods & bev.	871		National	165	105	540	Yes

Norway, female, all participants.												
Wheat flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1374	National	88	83	148	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1374	National	45	44	77	Yes
Rye	GC 5	0301 E	1997	DS	FFQ*	All foods & bev.	1374	National	2	1	12	Yes
Barley	GC 6	0301 F	1997	DS	FFQ*	All foods & bev.	1374	National	2	0	12	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ*	All foods & bev.	1374	National	4	1	16	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ*	All foods & bev.	1374	National	1	0	4	Yes
Rice	GC 7	0301 G	1997	DS	FFQ*	All foods & bev.	1374	National	7	5	25	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ*	Certain foods	3091	National	0,8	0,1	3,6	Yes
Bran, wheat	CF3F	0201C	1999	DS	FFQ*	Certain foods	3091	National	1,1	0,3	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ*	All foods & bev.	1374	National	6	0	39	Yes
Imported beer	DM3	0205A	1997	DS	FFQ*	All foods & bev.	1374	National	1	0	0	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ*	All foods & bev.	1374	National	38	0	180	Yes
Norway, female, consumers.												
Wheat flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1374	National	88	83	148	Yes
Wholemeal flour	CF 2	0201 B	1997	DS	FFQ*	All foods & bev.	1362	National	45	44	77	Yes
Rye	GC 5	0301 E	1997	DS	FFQ*	All foods & bev.	1363	National	2	1	12	Yes
Barley	GC 6	0301 F	1997	DS	FFQ*	All foods & bev.	553	National	5	3	16	Yes
Oat flakes	GC 3	0301 C	1997	DS	FFQ*	All foods & bev.	870	National	6	3	20	Yes
Corn flakes	CH	0201 C	1997	DS	FFQ*	All foods & bev.	413	National	2	1	6	Yes
Rice	GC 7	0301 G	1997	DS	FFQ*	All foods & bev.	1275	National	8	5	26	Yes
Bran, oat	CF3F	0201C	1999	DS	FFQ*	Certain foods	2222	National	1,2	0,3	3,6	Yes
Norway, female, consumers.												
Bran, wheat	CF3F	0201C	1999	DS	FFQ*	Certain foods	2535	National	1,4	0,3	3,6	Yes
Low alcoholic beer	DM2	0205A	1997	DS	FFQ*	All foods & bev.	262	National	34	25	126	Yes
Imported beer	DM3	0205A	1997	DS	FFQ*	All foods & bev.	61	National	31	5	160	Yes
Domestic beer	DM4	0205A	1997	DS	FFQ*	All foods & bev.	652	National	80	49	252	Yes
Norway,6-months old babies, consumers.												
Porridge**			1998-99	DS	FFQ*		2383	National	90	120	210	Yes

* Food frequency questionnaire

**Data refer to baby porridge based on formula, which is added to water/milk. The porrige consists of 60% formula.

According to dietary survey 6-months old babies eat in average 172 g porridge/day, median 200g/day and the 95th percentil consumption is 400g/day.

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
United Kingdom												
Estimate of food consumption (g/individual/d) for an average male adult (aged 16-64 years)												
Rice		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	597	Spot	National	35,60	22,60	113,90	Yes
Malted Barley		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	4	Spot	National	0,02	0,01	0,02	Yes
Milk		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1085	Spot	National	268,30	239,80	593,80	Yes
Beer		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	697	Spot	National	735,50	533,00	2138,90	Yes
Breakfast cereals		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	615	Spot	National	41,20	31,40	109,40	Yes
Biscuits		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	800	Spot	National	20,10	14,60	56,70	Yes
Bread		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1082	Spot	National	135,30	125,80	262,70	Yes
Cakes		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	807	Spot	National	44,00	32,50	114,00	Yes
Flour (1)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1034	Spot	National	21,30	16,60	56,60	Yes
Polenta (2)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	2	Spot	National	22,50	22,50	34,70	Yes
Snacks		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	532	Spot	National	13,30	9,30	36,90	Yes
Cornflour		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	172	Spot	National	1,20	0,90	2,90	Yes
Baby food (3)												
Corn (4)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	146	Spot	National	12,40	9,50	41,00	Yes
U.K: Estimate of food consumption (g/individual/d) for an average female adult (aged 16-64 years)												
Rice		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	557	Spot	National	23,80	17,10	64,60	Yes
Malted Barley		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	4	Spot	National	0,03	0,02	0,05	Yes
Milk		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1104	Spot	National	229,30	204,90	504,90	Yes
Beer		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	247	Spot	National	193,10	101,20	738,00	Yes
Breakfast cereals		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	649	Spot	National	29,90	23,00	76,10	Yes
Biscuits		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	885	Spot	National	17,40	12,60	46,90	Yes
Bread		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1102	Spot	National	85,00	80,90	159,00	Yes
Cakes		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	874	Spot	National	34,90	28,30	88,30	Yes
Flour (1)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1062	Spot	National	16,70	12,80	43,40	Yes
Polenta (2)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	1	Spot	National	7,30	7,30	7,30	Yes
Snacks		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	579	Spot	National	10,00	7,80	25,90	Yes
Cornflour		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	153	Spot	National	1,20	0,90	2,80	Yes
Baby food (3)												
Corn (4)		(1) Gregory *et al,* . 1990	DS	7-d weighed diet diary	AFB	186	Spot	National	8,40	5,40	23,40	Yes

U.K: Estimate of food consumption (g/individual/day) for an average toddler (aged 1.5-4.5 years)											
Rice	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	942	Spot	National	14,40	6,90	52,60	Yes
Malted Barley	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	2	Spot	National	0,01	0,01	0,01	Yes
Milk	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1671	Spot	National	295,50	255,80	680,80	Yes
Beer	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	5	Spot	National	7,80	4,20	16,80	Yes
Breakfast cereals	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1536	Spot	National	21,40	18,10	49,20	Yes
Biscuits	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1479	Spot	National	16,90	14,00	41,10	Yes
Bread	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1657	Spot	National	42,00	37,80	89,20	Yes
Cakes	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	939	Spot	National	18,30	13,40	50,80	Yes
Flour (1)	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1559	Spot	National	13,00	9,50	36,30	Yes
Polenta (2)	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	3	Spot	National	6,50	2,00	13,80	Yes
Snacks	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	1303	Spot	National	12,10	10,00	29,60	Yes
Cornflour	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	61	Spot	National	1,20	0,60	3,80	Yes
Baby food	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	38	Spot	National	55,70	35,20	168,20	Yes
Corn (3)	(2) Gregory *et al,* . 1995	DS	4-d weighed diet diary	AFB	206	Spot	National	7,50	4,60	23,10	Yes
U.K: Estimate of food consumption (g/individual/day) for an average infant (aged 6-12 months)											
Rice	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	369	Spot	National	7,20	5,10	21,10	yes
Malted Barley	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	0	Spot	National	0,00	0,00	0,00	yes
Milk	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	483	Spot	National	320,40	307,20	770,70	yes
Beer	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	0	Spot	National	0,00	0,00	0,00	yes
Breakfast cereals	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	380	Spot	National	16,20	14,50	36,10	yes
Biscuits	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	325	Spot	National	7,20	5,70	19,60	yes
Bread	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	388	Spot	National	16,90	13,30	46,90	yes
Cakes	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	146	Spot	National	7,00	4,30	20,20	yes
Flour (1)	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	449	Spot	National	11,20	9,00	32,50	yes
Polenta (2)	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	140	Spot	National	7,30	5,70	18,00	yes
Snacks	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	95	Spot	National	3,80	2,00	11,00	yes
Cornflour	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	293	Spot	National	4,90	3,70	12,40	yes
Baby food	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	317	Spot	National	14,60	9,40	48,40	yes
Corn (3)	(3) Mills & Tyler, 1992	DS	7-d semi-quantitive diet	AFB	35	Spot	National	3,30	2,40	7,90	yes
U.K: Estimate of food consumption (g/individual/day) for an average male free living elderly person (aged 65 years and over)											
Rice	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	145	Spot	National	28,50	26,20	69,00	Yes
Malted Barley	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	1	Spot	National	0,03	0,03	0,03	Yes
Milk	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	627	Spot	National	260,30	238,70	545,80	Yes
Beer	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	204	Spot	National	532,90	287,00	1669,70	Yes
Breakfast cereals	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	450	Spot	National	67,90	38,80	242,40	Yes
Biscuits	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	444	Spot	National	24,30	18,60	59,10	Yes
Bread	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	627	Spot	National	112,10	107,30	203,40	Yes
Cakes	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	459	Spot	National	50,50	41,10	116,60	Yes
Flour (1)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	532	Spot	National	20,40	15,70	61,90	Yes
Polenta (2)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	1	Spot	National	5,30	5,30	5,30	Yes
Snacks	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	78	Spot	National	11,90	7,50	26,60	Yes
Cornflour	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	31	Spot	National	2,00	1,50	4,30	Yes
Baby food (3)											
Corn (4)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	31	Spot	National	11,60	4,80	24,50	Yes

U.K: Estimate of food consumption (g/individual/day) for an average female free living elderly person (aged 65 years and over)											
Rice	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	123	Spot	National	24,40	13,30	84,60	Yes
Malted Barley	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	0	Spot	National	0,00	0,00	0,00	Yes
Milk	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	641	Spot	National	238,10	213,60	497,50	Yes
Beer	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	44	Spot	National	220,30	139,50	646,30	Yes
Breakfast cereals	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	424	Spot	National	46,50	29,50	146,70	Yes
Biscuits	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	461	Spot	National	20,20	16,40	49,60	Yes
Bread	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	633	Spot	National	80,90	77,00	148,40	Yes
Cakes	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	434	Spot	National	39,10	32,00	90,30	Yes
Flour (1)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	523	Spot	National	17,40	12,70	49,60	Yes
Polenta (2)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	0	Spot	National	0,00	0,00	0,00	Yes
Snacks	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	84	Spot	National	8,80	7,00	26,10	Yes
Cornflour	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	30	Spot	National	1,70	1,20	3,20	Yes
Baby food (3)											
Corn (4)	(4) Finch *et al* ., 1998	DS	4-d weighed diet diary	AFB	31	Spot	National	14,90	9,70	37,10	Yes
U.K: Estimate of food consumption (g/individual/day) for an average young person (aged 4-6 years)											
Rice	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	271	Spot	National	17,50	9,40	57,40	Yes
Malted Barley	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	0,02	0,02	0,02	Yes
Milk	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	354	Spot	National	240,10	222,10	536,70	Yes
Beer	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	21,40	21,40	21,40	Yes
Breakfast cereals	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	346	Spot	National	29,60	26,70	67,70	Yes
Biscuits	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	328	Spot	National	20,00	16,70	46,40	Yes
Bread	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	354	Spot	National	62,90	59,40	121,60	Yes
Cakes	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	291	Spot	National	26,50	22,20	59,80	Yes
Flour (1)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	348	Spot	National	16,50	13,90	39,80	Yes
Polenta (2)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	4,70	4,70	4,70	Yes
Snacks	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	333	Spot	National	16,30	15,10	34,60	Yes
Cornflour	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	30	Spot	National	1,20	0,60	4,30	Yes
Baby food	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	5	Spot	National	18,50	7,40	60,50	Yes
Corn (3)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	95	Spot	National	7,60	5,80	18,80	Yes
U.K: Estimate of food consumption (g/individual/day) for an average young person (aged 7-10 years)											
Rice	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	360	Spot	National	26,10	15,40	89,70	Yes
Malted Barley	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	0,10	0,10	0,10	Yes
Milk	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	482	Spot	National	208,00	179,30	483,40	Yes
Beer	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	2	Spot	National	9,30	7,40	12,60	Yes
Breakfast cereals	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	442	Spot	National	33,60	29,70	74,40	Yes
Biscuits	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	442	Spot	National	23,10	19,70	56,60	Yes
Bread	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	481	Spot	National	78,10	72,00	140,70	Yes
Cakes	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	401	Spot	National	30,50	27,90	77,10	Yes
Flour (1)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	470	Spot	National	20,20	16,00	48,90	Yes
Polenta (2)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	3	Spot	National	4,10	2,30	7,10	Yes
Snacks	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	447	Spot	National	18,40	16,70	40,80	Yes
Cornflour	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	48	Spot	National	0,80	0,70	1,80	Yes
Baby food	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	0	Spot	National	0,00	0,00	0,00	Yes
Corn (3)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	122	Spot	National	9,70	7,10	30,20	Yes

U.K: Estimate of food consumption (g/individual/day) for an average young person (aged 11-14 years)											
Rice	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	356	Spot	National	39,10	21,90	132,20	Yes
Malted Barley	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	0,10	0,10	0,10	Yes
Milk	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	475	Spot	National	199,30	169,10	493,70	Yes
Beer	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	12	Spot	National	61,30	38,90	129,30	Yes
Breakfast cereals	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	398	Spot	National	36,60	32,30	81,40	Yes
Biscuits	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	400	Spot	National	20,80	15,00	53,10	Yes
Bread	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	471	Spot	National	86,20	80,40	162,40	Yes
Cakes	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	372	Spot	National	32,40	24,30	90,90	Yes
Flour (1)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	460	Spot	National	24,60	19,80	64,00	Yes
Polenta (2)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	4	Spot	National	8,20	1,00	19,60	Yes
Snacks	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	427	Spot	National	19,80	16,70	43,50	Yes
Cornflour	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	55	Spot	National	1,00	0,70	2,20	Yes
Baby food	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	1	Spot	National	14,30	14,30	14,30	Yes
Corn (3)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	135	Spot	National	8,90	6,30	23,20	Yes
U.K: Estimate of food consumption (g/individual/day) for an average young person (aged 15-18 years)											
Rice	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	275	Spot	National	44,40	29,20	138,60	Yes
Malted Barley	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	2	Spot	National	0,16	0,14	0,22	Yes
Milk	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	386	Spot	National	194,50	163,40	489,40	Yes
Beer	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	108	Spot	National	391,30	227,10	1108,60	Yes
Breakfast cereals	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	269	Spot	National	39,30	31,60	95,10	Yes
Biscuits	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	276	Spot	National	20,00	12,60	62,50	Yes
Bread	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	43	Spot	National	102,00	96,80	185,10	Yes
Cakes	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	260	Spot	National	29,60	21,20	82,50	Yes
Flour (1)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	380	Spot	National	27,70	21,60	76,40	Yes
Polenta (2)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	2	Spot	National	13,50	13,50	23,60	Yes
Snacks	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	313	Spot	National	17,60	14,70	43,70	Yes
Cornflour	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	43	Spot	National	1,00	0,70	2,90	Yes
Baby food	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	3	Spot	National	13,10	7,80	19,80	Yes
Corn (3)	(5) Gregory *et al,* . 2000	DS	7-d weighed diet diary	AFB	111	Spot	National	10,40	4,80	35,00	Yes

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

* AFB = all foods and beverages consumed

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

						Units: g / day / person							
food	Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
FRANCE													
Table 2A1 Estimate of food consumption for an average person belonging to the group adults using Food Categorisation System as in Survey													
bread (without rye bread)	CG2	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**117,4**	**98,8**	**278,6**	Yes
pasta	CG3	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**36,1**	**28,6**	**100,0**	Yes
semolina	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**1,7**	**0,0**	**14,3**	Yes
corn	CH	02 01 C	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**2,4**	**0,0**	**17,9**	Yes
biscuits	CG1	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**67,0**	**51,4**	**191,4**	Yes
pizzas and tarts	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**73,3**	**0,0**	**400,0**	Yes
sandwiches	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**13,8**	**0,0**	**74,3**	Yes
compound dishes with	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**9,0**	**0,0**	**50,0**	Yes
other compound dishes	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**20,9**	**0,0**	**100,0**	Yes
beer	DM1	02 05 A	INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**28,5**	**0,0**	**142,9**	Yes
Table 2A3: Estimate of food consumption for an average person belonging to the group male using Food Categorisation System as in Survey													
bread (without rye bread)	CG2	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**147,9**	**135,6**	**340,5**	Yes
pasta	CG3	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**42,1**	**28,6**	**118,2**	Yes
semolina	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**1,6**	**0,0**	**14,3**	Yes
corn	CH	02 01 C	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**2,0**	**0,0**	**14,7**	Yes
biscuits	CG1	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**70,3**	**51,4**	**205,3**	Yes
pizzas and tarts	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**46,5**	**0,0**	**300,0**	Yes
sandwiches	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**18,9**	**0,0**	**97,1**	Yes
compound dishes with	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**10,6**	**0,0**	**60,4**	Yes
other compound dishes	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**23,6**	**0,0**	**109,2**	Yes
beer	DM1	02 05 A	INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**50,5**	**0,0**	**250,0**	Yes
* category corn contains: flakes, maizena, cooked corn, popcorn													

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

						Units: g / day / person							
food	Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Table 2A5: Estimate of food consumption for an average person belonging to the group female using Food Categorisation System as in Survey													
bread (without rye bread)	CG2	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	91,7	77,1	218,0	Yes
pasta	CG3	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	31,0	28,6	85,7	Yes
semolina	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	1,7	0,0	14,3	Yes
corn	CH	02 01 C	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	2,8	0,0	18,2	Yes
biscuits	CG1	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	64,3	51,1	171,4	Yes
pizzas and tarts	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	95,8	2,9	498,9	Yes
sandwiches	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	9,5	0,0	48,6	Yes
compound dishes with	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	7,6	0,0	46,4	Yes
other compound dishes	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	18,5	0,0	92,7	Yes
beer	DM1	02 05 A	INCA 1999	DS	7 days dietary records	beverages consumed	802	during one year august 98-June 99	national	10,0	0,0	70,4	Yes
* category corn contains: flakes, maizena, cooked corn, popcorn													

food	Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Table 2A7:													
bread (without rye bread)	CG2	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	58,6	40,0	173,8	Yes
pasta	CG3	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	37,0	28,6	100,0	Yes
semolina	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	2,0	0,0	20,2	Yes
corn	CH	02 01 C	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	7,9	0,0	39,5	Yes
biscuits	CG1	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	85,9	72,7	210,8	Yes
pizzas and tarts	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	19,6	10,0	68,8	Yes
sandwiches	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	10,2	0,0	45,9	Yes
compound dishes with	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	13,9	0,0	57,7	Yes
other compound dishes	CG	02 01 B	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	18,5	0,0	75,1	Yes
beer	DM1	02 05 A	INCA 1999	DS	7 days dietary records	beverages consumed	1018	during one year august 98-June 99	national	0,0	0,0	0,0	Yes
* category corn contains: flakes, maizena, cooked corn, popcorn													

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

						Units: g / day / person							
food	Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State
Table 2B1 Estimate of food consumption for an average person belonging to the group adults using free Categorisation System													
Rye bread	E5		INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**0,3**	**0,0**	**0,0**	Yes
buckwheat pancakes	E9		INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**0,6**	**0,0**	**0,0**	Yes
breakfast cereals without corn	A		INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**3,9**	**0,0**	**28,6**	Yes
cooked rice	E7		INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**19,1**	**14,3**	**65,0**	Yes
other products containing	A*		INCA 1999	DS	7 days dietary records	beverages consumed	**1474**	during one year august 98-June 99	national	**0,8**	**0,0**	**0,0**	Yes
Table 2B3: Estimate of food consumption for an average person belonging to the group adults only-consumers using Free Categorisation System													
Rye bread	E5		INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**0,3**	**0,0**	**0,0**	Yes
buckwheat pancakes	E9		INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**0,6**	**0,0**	**0,0**	Yes
breakfast cereals without corn	A		INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**3,7**	**0,0**	**28,6**	Yes
cooked rice	E7		INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**20,6**	**14,3**	**73,7**	Yes
other products containing	A*		INCA 1999	DS	7 days dietary records	beverages consumed	**672**	during one year august 98-June 99	national	**0,6**	**0,0**	**0,0**	Yes
Table 2B5: Estimate of food consumption for an average person belonging to the group adults only-consumers using Free Categorisation System													
Rye bread	E5		INCA 1999	DS	7 days dietary records	beverages consumed	**802**	during one year august 98-June 99	national	**0,3**	**0,0**	**0,0**	Yes
buckwheat pancakes	E9		INCA 1999	DS	7 days dietary records	beverages consumed	**802**	during one year august 98-June 99	national	**0,6**	**0,0**	**0,0**	Yes
breakfast cereals without corn	A		INCA 1999	DS	7 days dietary records	beverages consumed	**802**	during one year august 98-June 99	national	**4,0**	**0,0**	**28,6**	Yes
cooked rice	E7		INCA 1999	DS	7 days dietary records	beverages consumed	**802**	during one year august 98-June 99	national	**17,9**	**14,3**	**57,1**	Yes
other products containing	A*		INCA 1999	DS	7 days dietary records	beverages consumed	**802**	during one year august 98-June 99	national	**0,9**	**0,0**	**0,0**	Yes
Table 2B7: Estimate of food consumption for an average person belonging to the group adults only-consumers using Free Categorisation System													
Rye bread	E5		INCA 1999	DS	7 days dietary records	beverages consumed	**1018**	during one year august 98-June 99	national	**0,2**	**0,0**	**0,0**	Yes
buckwheat pancakes	E9		INCA 1999	DS	7 days dietary records	beverages consumed	**1018**	during one year august 98-June 99	national	**0,5**	**0,0**	**0,0**	Yes
breakfast cereals without corn	A		INCA 1999	DS	7 days dietary records	beverages consumed	**1018**	during one year august 98-June 99	national	**12,3**	**0,0**	**51,4**	Yes
cooked rice	E7		INCA 1999	DS	7 days dietary records	beverages consumed	**1018**	during one year august 98-June 99	national	**19,3**	**14,3**	**57,1**	Yes
other products containing	A*		INCA 1999	DS	7 days dietary records	beverages consumed	**1018**	during one year august 98-June 99	national	**1,3**	**0,0**	**0,0**	Yes

Table 2: Summary of consumption data from each Member State

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Table 2XC1. Summary of best estimates of consumption data as reported in tables 2A and 2B for an average person belonging to the group adults							Table 2C3 Summary of best estimates of consumption data as reported in tables 2Aand 2B for an average person belonging to the group male						
Country: France		**Units: g / day / person**					**Country: France**		**Units: g / day / person**				
	food	Food or group	Code	Mean	Median	95th percentile		food	Food or group	Code	Mean	Median	95th percentile
2A	bread (without rye	CG2	02 01 B	117,4	98,8	278,6	**2A**	bread (without rye bread)	CG2	02 01 B	147,9	135,6	340,5
	pasta	CG3	02 01 B	36,1	28,6	100,0		pasta	CG3	02 01 B	42,1	28,6	118,2
	semolina	CG	02 01 B	1,7	0,0	14,3		semolina	CG	02 01 B	1,6	0,0	14,3
	corn	CH	02 01 C	2,4	0,0	17,9		corn	CH	02 01 C	2,0	0,0	14,7
	biscuits	CG1	02 01 B	67,0	51,4	191,4		biscuits	CG1	02 01 B	70,3	51,4	205,3
	pizzas and tarts	CG	02 01 B	73,3	0,0	400,0		pizzas and tarts	CG	02 01 B	46,5	0,0	300,0
	sandwiches	CG	02 01 B	13,8	0,0	74,3		sandwiches	CG	02 01 B	18,9	0,0	97,1
	compound dishes	CG	02 01 B	9,0	0,0	50,0		compound dishes with pasta	CG	02 01 B	10,6	0,0	60,4
	other compound dishes	CG	02 01 B	20,9	0,0	100,0		other compound dishes	CG	02 01 B	23,6	0,0	109,2
	beer	DM1	02 05 A	28,5	0,0	142,9		beer	DM1	02 05 A	50,5	0,0	250,0
Data in Table 2B	Rye bread	E5		0,3	0,0	0,0	**Data in Table 2B**	Rye bread	E5		0,3	0,0	0,0
	buckwheat pancakes	E9		0,6	0,0	0,0		buckwheat pancakes	E9		0,6	0,0	0,0
	breakfast cereals without corn cereals	A		3,9	0,0	28,6		breakfast cereals without corn cereals	A		3,7	0,0	28,6
	cooked rice	E7		19,1	14,3	65,0		cooked rice	E7		20,6	14,3	73,7
	other products containing cereals: oat flakes, puff-	A*		0,8	0,0	0,0		other products containing cereals: oat flakes, puff-paste, wheat germ	A*		0,6	0,0	0,0

Table 2: Summary of consumption data from each Member State
Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Table 2C5 Summary of best estimates of consumption data as reported in tables 2A and 2B for an average person belonging to the group female						
Country: France		Units: g / day / person				
	food	Food or group	Code	Mean	Median	95th percentile
Data in Table 2A	bread (without rye bread)	CG2	02 01 B	91,7	77,1	218,0
	pasta	CG3	02 01 B	31,0	28,6	85,7
	semolina	CG	02 01 B	1,7	0,0	14,3
	corn	CH	02 01 C	2,8	0,0	18,2
	biscuits	CG1	02 01 B	64,3	51,1	171,4
	pizzas and tarts	CG	02 01 B	95,8	2,9	498,9
	sandwiches	CG	02 01 B	9,5	0,0	48,6
	compound dishes with pasta	CG	02 01 B	7,6	0,0	46,4
	other compound dishes	CG	02 01 B	18,5	0,0	92,7
	beer	DM1	02 05 A	10,0	0,0	70,4
Data in Table 2B	Rye bread	E5		0,3	0,0	0,0
	buckwheat pancakes	E9		0,6	0,0	0,0
	breakfast cereals without corn cereals	A		4,0	0,0	28,6
	cooked rice	E7		17,9	14,3	57,1
	other products containing cereals: oat flakes, puff-paste, wheat germ	A*		0,9	0,0	0,0

Table 2C7. Summary of best estimates of consumption data as reported in tables 2A and 2B for an average person belonging to the group children						
Country: France		Units: g / day / person				
	food	Food or group	Code	Mean	Median	95th percentile
Data in Table 2A	bread (without rye bread)	CG2	02 01 B	58,6	40,0	173,8
	pasta	CG3	02 01 B	37,0	28,6	100,0
	semolina	CG	02 01 B	2,0	0,0	20,2
	corn	CH	02 01 C	7,9	0,0	39,5
	biscuits	CG1	02 01 B	85,9	72,7	210,8
	pizzas and tarts	CG	02 01 B	19,6	10,0	68,8
	sandwiches	CG	02 01 B	10,2	0,0	45,9
	compound dishes with pasta	CG	02 01 B	13,9	0,0	57,7
	other compound dishes	CG	02 01 B	18,5	0,0	75,1
	beer	DM1	02 05 A	0,0	0,0	0,0
Data in Table 2B	Rye bread	E5		0,2	0,0	0,0
	buckwheat pancakes	E9		0,5	0,0	0,0
	breakfast cereals without corn cereals	A		12,3	0,0	51,4
	cooked rice	E7		19,3	14,3	57,1
	other products containing cereals: oat flakes, puff-paste, wheat germ	A*		1,3	0,0	0,0

Annex 5

Dietary intake data, Table 3

Table 3: Estimate of daily intake of zearalenone for group of population

Zearalenone

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Food or Group		Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
ITALY													
POPULATION	Body Weight for average person (kg): 70												
White wheat flour	CF2	02 01B	5,2	28,6	5	-	<LOD	26,1	-	142,9	0,4	-	2,0
Maize Starch	CF3A	02 01C	0,0	0,0	14	57	<LOD-72	0,0	0,1	0,0	0,0	0,0	0,0
Wheat bran	CF1	02 01B	0,1	0,0	29	260	<LOD-510	4,1	37,1	0,0	0,1	0,5	0,0
Maize flour	CF3D	02 01 C	1,5	9,0	17	45	<LOD-99	24,6	65,1	152,8	0,4	0,9	2,2
Bakery products			0,1	0,0	5	16	<LOD-18	0,4	1,2	0,0	0,0	0,0	0,0
Wheat Semolina	CF	02 01A	0,2	0,0	6	28	<LOD-28	1,0	4,7	0,0	0,0	0,1	0,0
Whole meal	CF	02 01A	0,1	0,0	8	30	<LOD-35	0,8	3,2	0,0	0,0	0,0	0,0
Best estimate of total mean intake											0,8		
CONSUMERS ONLY	Body Weight for average person (kg): 70												
White wheat flour	CF2	02 01B	15,4	46,7	5	-	<LOD	76,9	-	233,5	1,1	-	3,3
Maize Starch	CF3A	02 01C	1,1	1,1	14	57	<LOD-72	14,7	61,0	14,7	0,2	0,9	0,2
Wheat bran	CF1	02 01B	12,3	24,6	29	260	<LOD-510	354,6	3186,6	712,2	5,1	45,5	10,2
Maize flour	CF3D	02 01 C	25,9	60,8	17	45	<LOD-99	438,0	1159,7	1026,8	6,3	16,6	14,7
Bakery products			140,0	140,0	5	16	<LOD-18	756,0	2282,0	756,0	10,8	32,6	10,8
Wheat Semolina	CF	02 01A	11,8	34,9	6	28	<LOD-28	70,8	330,5	209,6	1,0	4,7	3,0
Whole meal	CF	02 01A	26,8	54,4	8	30	<LOD-35	203,6	790,2	413,6	2,9	11,3	5,9
Best estimate of total mean intake											27,4		

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
The Netherlands												
Body Weight for average person (kg): 13,8			**1-4 yr**									
Maize	GC2	2,2		8,4			18,5			1,3		
wheat	GC1	60,7		10,3			622,2			45,1		
Best estimate of total mean intake							640,7			46,4		
Body Weight for average person (kg): 17,1			**1-6 yr**									
Maize	GC2	2,5		8,4			21,0			1,2		
wheat	GC1	81,1		10,3			831,1			48,6		
Best estimate of total mean intake							852,1			49,8		
Body Weight for average person (kg): 65,8			**Whole population**									
Maize	GC2	3,0		8,4			25,1			0,4		
wheat	GC1	130,6		10,3			1338,9			20,3		
Best estimate of total mean intake							1364,0			20,7		

Portugal

Body Weight for average person (kg): 65kg

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
wheat	0301AGC1	3,01		M1-1,25			M1-3,8			0,06		
white wheat flour	0201BCF2	185,6		M1-1,25			M1-232			3,6		
wheat bran	0201BCF1	0,25		M1-13 M2-13			M1-3,25M2-3,25			0,05		
cereals breakfast	0201DCF4	3		M1-7,3			21,9			0,34		

Austria

Body Weight for average person (kg): 75

Food or Group		Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
GC	03 01		102,1	360	20,9	85,4		2133,9	8719	7524	28,45	116,26	100,32

Finland

Body Weight for average person (kg): 77,1 - adults (aged 24-64 years) (estimation of daily intake of mycotoxins for all population)

Food or Group		Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Wheat	GC1	03 01 A	114,7		0,52	5,13		59,644	588,4		0,774	7,6318	
Rye	GC5	03 01 E	49,1		0,26664			13,092			0,17		
Oat	GC3	03 01 C	4,45		218	227,4		970,1	1012		12,58	13,125	
Barley*	GC6	03 01 F	4,45		3,12	17,7			78,77			1,0216	

*except malting barley and forage barley
** assuming that a consumption of flour (8,9 g/d) is composed of barley (50 %) and oats (50 %)

Table 3: Estimate of daily intake of zearalenone for group of population

Zearalenone

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			
		Mean	High level (2 x mean)	Mean 1**	Mean 2**	Range	Mean1	Mean2	Mean 1x High level	Mean2xHigh level
Germany										
Adults; Body Weight for average person (kg): 70										
Bread*	CG2	170	340	1,7	5,3	n.d.-10.6	4	13	8	26
Pasta	CG3	20	40	2,4	17,3	n.d.-41	1	5	1	10
Baby food	CP									
Sum of daily intake (all relevant foods)							5	18	10	36
% TDI							2	9	5	18
*estimated from wheat results										
** please note that the % of positives is very low and that the median value is below detection limit										
Young child; Body Weight for average young child(kg): 20										
Bread*	CG2	170	340	1,7	5,3	n.d.-10.6	14	45	29	90
Pasta	CG3	20	40	2,4	17,3	n.d.-41	2	17	5	35
Baby food										
Sum of daily intake (all relevant foods)							17	62	34	125
% of TDI							8	31	17	62
*estimated from wheat results										
** please note that the % of positives is very low and that the median value is below detection limit										
Baby; Body Weight for average 4 month baby (kg): 10										
Bread										
Pasta										
Baby food	CP	50	100	2,6	10,8	n.d.-14	13	54	26	108
Sum of daily intake (all relevant foods)							13	54	26	108
% TDI							6,5	27	13	54
**Please note that only four out of 171 samples were positive at 7-14 µg/kg										
Mean and median were below detection limit of method										

Table 3: Estimate of daily intake of zearalenone for group of population

Zearalenone

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

Food or Group		Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
NORWAY, male, all participants													
Body Weight for average person (kg): 81													
WHEAT /siftet white flour	GC 1	0301 A	122	211	3,3	7,3	< LOD - 68	403	889	696	5	11	9
WHEAT /wholewheat	GC 1	0301 A	65	118	3,3	7,3	< LOD - 68	215	474	389	3	6	5
RYE	GC 5	0301 E	3	16	3,4	3,7	< LOD - 5	10	11	54	0	0	1
BARLEY	GC 6	0301 F	3	16	2,9	11,0	< LOD - 11	9	33	47	0	0	1
OATS	GC 3	0301 C	5	22	4,2	21,8	< LOD - 64	21	109	92	0	1	1
Maize fractions	CF3 C	0201 C			15,7	19,0	< LOD - 59						
Polenta	CH 1	0201 C			11,6	14,8	< LOD - 53,5						
Corn flakes	CH	0201 C	1	5	3,3	4,5	< LOD - 13,9	3	4	16	0	0	0
Sweet corn	CH5	0201 C			2,47	0	< LOD						
Total intake								660	1520	1295	8	19	16

Food or Group		Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
NORWAY, male, consumers													
Body Weight for average person (kg): 81													
WHEAT /siftet white flour	GC 1	0301 A	122	211	3,3	7,3	< LOD - 68	403	889	696	5	11	9
WHEAT /wholewheat	GC 1	0301 A	65	119	3,3	7,3	< LOD - 68	215	474	393	3	6	5
RYE	GC 5	0301 E	3	16	3,4	3,7	< LOD - 5	10	11	54	0	0	1
BARLEY	GC 6	0301 F	6	23	2,9	11,0	< LOD - 11	18	66	67	0	1	1
OATS	GC 3	0301 C	8	25	4,2	21,8	< LOD - 64	34	174	105	0	2	1
Maize fractions	CF3 C	0201 C			15,7	19,0	< LOD - 59	0	0	0			
Polenta	CH 1	0201 C			11,6	14,8	< LOD - 53,5	0	0	0			
Corn flakes	CH	0201 C	2	7	3,3	4,5	< LOD - 13,9	7	9	23	0	0	0
Sweet corn	CH5	0201 C			2,47	0	< LOD						
Total intake								685	1623	1338	8	20	17

NORWAY, female, all participants												
Body Weight for average person (kg): 66												
WHEAT /siftet white flour	GC 1	0301 A	88	148	3,3	7,3 < LOD - 68	290	641	488	4	10	7
WHEAT /wholewheat	GC 1	0301 A	45	77	3,3	7,3 < LOD - 68	149	328	254	2	5	4
RYE	GC 5	0301 E	2	12	3,4	3,7 < LOD - 5	7	7	41	0	0	1
BARLEY	GC 6	0301 F	2	12	2,9	11,0 < LOD - 11	6	22	35	0	0	1
OATS	GC 3	0301 C	4	16	4,2	21,8 < LOD - 64	17	87	67	0	1	1
Maize fractions	CF3 C	0201 C			15,7	19,0 < LOD - 59						
Polenta	CH 1	0201 C			11,6	14,8 < LOD - 53,5						
Corn flakes	CH	0201 C	1	4	3,3	4,5 < LOD - 13,9	3	4	13	0	0	0
Sweet corn	CH5	0201 C			2,47	0 < LOD						
Total intake							472	1090	898	7	17	14

NORWAY, female, consumers												
Body Weight for average person (kg): 66												
WHEAT /siftet white flour	GC 1	0301 A	88	148	3,3	7,3 < LOD - 68	290	641	488	4	10	7
WHEAT /wholewheat	GC 1	0301 A	45	77	3,3	7,3 < LOD - 68	149	328	254	2	5	4
RYE	GC 5	0301 E	2	12	3,4	3,7 < LOD - 5	7	7	41	0	0	1
BARLEY	GC 6	0301 F	5	16	2,9	11,0 < LOD - 11	15	55	47	0	1	1
OATS	GC 3	0301 C	6	20	4,2	21,8 < LOD - 64	25	131	84	0	2	1
Maize fractions	CF3 C	0201 C			15,7	19,0 < LOD - 59						
Polenta	CH 1	0201 C			11,6	14,8 < LOD - 53,5						
Corn flakes	CH	0201 C	2	6	3,3	4,5 < LOD - 13,9	7	9	20	0	0	0
Sweet corn	CH5	0201 C			2,47	0 < LOD						
Total intake							492	1171	934	7	18	14

Norway,6-months old babies, all participants.												
Body Weight for average person (kg): 8												
If all porridge consumed consisted of maize:												
Maize baby porridge*	CH	0201 C	90	210	70,15	70,15 1,0 - 305	6314	6314	14732	789	789	1841
If all porridge consumed consisted of rice:												
Rice baby porridge*	GC 7	0301 G	90	210	1,24	2,24 < LOD - 5,5	112	202	260	14	25	33
If all porridge consumed consisted of oat:												
Oat baby porridge*	GC 3	0301 C	90	210	0,58	1,68 < LOD - 4,8	52	151	122	7	19	15
If all porridge consumed consisted of wheat:												
Wheat baby porridge*	CG	0201 B	90	210	0,78	1,02 < LOD - 2,2	70	92	164	9	11	20
If all porridge consumed consisted of :												
Composite grain product	CF	02 01A	90	210	0,74	1,03 < LOD - 1,9	66,6	92,25	155,4	8,325	11,531	19,425

*Data refer to baby porridge based on formula, which is added to water/milk. The porrige consists of 60% formula.

According to dietary survey 6-months old babies eat in average 172 g porridge/day, 95th percentil consumption is 400g/day.

Table 3: Estimate of daily intake of zearalenone for group of population

Zearalenone

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

United Kingdom

Table 3A(1) Estimate of daily intake of zearalenone for an average male adult (aged 16-64 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 70,1

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		35,60	113,90	1,00	0,00	<6.00	<6.00	35,60	0,00	113,90	0,50	0,00	1,67
Malted Barley		0,02	0,02	2,73	25,67	<2.00	40,00	0,00	0,40	0,10	0,00	0,01	0,00
Milk		268,30	593,80	0,57	1,32	<1.00	5,50	151,60	354,20	335,50	2,05	4,80	4,70
Beer		735,50	2138,90	0,01	0,00	<0.05	<0.05	7,40	0,00	21,40	0,10	0,00	0,29
Breakfast cereals		41,20	109,40	11,36	56,01	<8.00	231,80	467,90	2307,10	1242,30	6,38	31,45	16,80
Biscuits		20,10	56,70	1,66	11,25	<8.00	11,80	33,40	226,40	94,10	0,45	3,06	1,31
Bread		135,30	262,70	1,57	15,80	<8.00	15,80	212,40	2137,50	412,50	2,86	28,75	5,67
Cakes		44,00	114,00	1,33	0,00	<8.00	<8.00	58,50	0,00	151,60	0,79	0,00	2,16
Flour (1)		21,30	56,60	1,33	0,00	<8.00	<8.00	28,40	0,00	75,30	0,38	0,00	1,07
Polenta (2)		22,50	34,70	9,59	14,54	<8.00	23,40	215,50	326,70	333,10	3,46	5,25	5,53
Snacks		13,30	36,90	14,32	37,34	<8.00	55,80	189,90	495,20	528,20	2,60	6,78	7,30
Cornflour		1,20	2,90	6,87	12,40	<8.00	17,30	8,30	15,00	20,20	0,11	0,21	0,29
Baby food (3)				1,94	11,60	<8.00	11,60						
Corn (4)		12,40	41,00	120,08	122,09	<10.00	584,00	1493,20	1518,20	4925,30	19,68	20,01	64,00

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **14,06**

Table 3A(2) Estimate of daily intake of zearalenone for an average female adult (aged 16-64 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 70,1

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		23,80	64,60	1,00	0,00	<6.00	<6.00	23,80	0,00	64,60	0,39	0,00	1,13
Malted Barley		0,03	0,05	2,73	25,67	<2.00	40,00	0,10	0,70	0,10	0,00	0,01	0,00
Milk		229,30	504,90	0,57	1,32	<1.00	5,50	129,60	302,70	285,20	2,10	4,91	4,75
Beer		193,10	738,00	0,01	0,00	<0.05	<0.05	1,90	0,00	7,40	0,03	0,00	0,12
Breakfast cereals		29,90	76,10	11,36	56,01	<8.00	231,80	339,70	1674,70	864,50	5,60	27,62	14,03
Biscuits		17,40	46,90	1,66	11,25	<8.00	11,80	28,80	195,50	77,90	0,47	3,17	1,31
Bread		85,00	159,00	1,57	15,80	<8.00	15,80	133,50	1343,30	249,60	2,15	21,61	4,13
Cakes		34,90	88,30	1,33	0,00	<8.00	<8.00	46,40	0,00	117,50	0,75	0,00	1,90
Flour (1)		16,70	43,40	1,33	0,00	<8.00	<8.00	22,20	0,00	57,70	0,36	0,00	0,99
Polenta (2)		7,30	7,30	9,59	14,54	<8.00	23,40	69,90	105,90	69,90	0,91	1,38	0,91
Snacks		10,00	25,90	14,32	37,34	<8.00	55,80	143,30	373,70	370,40	2,32	6,06	6,40
Cornflour		1,20	2,80	6,87	12,40	<8.00	17,30	8,30	15,00	19,60	0,14	0,25	0,37
Baby food (3)				1,94	11,60	<8.00	11,60						
Corn (4)		8,40	23,40	120,08	122,09	<10.00	584,00	1013,00	1029,90	2808,60	16,33	16,60	46,68

(1) does not include cakes, bread, biscuits containing flour

(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute

(3) baby foods were not included in this survey

(4) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **12,98**

Table 3A(3) Estimate of daily intake of zearalenone for an average toddler (aged 1.5-4.5 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 14,5

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		14,40	52,60	1,00	0,00	<6.00	<6.00	14,40	0,00	52,60	1,03	0,00	3,81
Malted Barley		0,01	0,01	2,73	25,67	<2.00	40,00	0,00	0,20	0,00	0,00	0,01	0,00
Milk		295,50	680,80	0,57	1,32	<1.00	5,50	167,00	390,10	384,60	12,00	28,03	29,32
Beer		7,80	16,80	0,01	0,00	<0.05	<0.05	0,10	0,00	0,20	0,01	0,00	0,01
Breakfast cereals		21,40	49,20	11,36	56,01	<8.00	231,80	243,00	1198,00	205,30	17,22	84,90	41,00
Biscuits		16,90	41,10	1,66	11,25	<8.00	11,80	28,10	190,40	68,20	1,97	13,38	4,70
Bread		42,00	89,20	1,57	15,80	<8.00	15,80	66,00	663,80	140,00	4,58	46,06	9,52
Cakes		18,30	50,80	1,33	0,00	<8.00	<8.00	24,30	0,00	67,50	1,67	0,00	4,44
Flour (1)		13,00	36,30	1,33	0,00	<8.00	<8.00	17,20	0,00	48,30	1,22	0,00	3,44
Polenta (2)		6,50	13,80	9,59	14,54	<8.00	23,40	62,70	95,10	132,60	5,18	7,85	11,05
Snacks		12,10	29,60	14,32	37,34	<8.00	55,80	173,00	451,00	424,50	12,19	31,78	30,99
Cornflour		1,20	3,80	6,87	12,40	<8.00	17,30	8,00	14,40	26,30	0,60	1,08	2,09
Baby food		55,70	168,20	1,94	11,60	<8.00	11,60	108,10	646,30	326,40	9,07	54,21	24,27
Corn (3)		7,50	23,10	120,08	122,09	<10.00	584,00	898,20	898,30	2771,70	60,63	60,63	204,03

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **53,85**

Table 3A(4) Estimate of daily intake of zearalenone for an average infant (aged 6-12 months using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 8,7

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		7,20	21,10	1,00	0,00	<6.00	<6.00	7,20	0,00	21,10	0,81	0,00	2,38
Malted Barley		0,00	0,00	2,73	25,67	<2.00	40,00	0,00	0,00	0,00	0,00	0,00	0,00
Milk		320,40	770,70	0,57	1,32	<1.00	5,50	181,00	422,90	435,50	18,90	44,15	46,50
Beer		0,00	0,00	0,01	0,00	<0.05	<0.05	0,00	0,00	0,00	0,00	0,00	0,00
Breakfast cereals		16,20	36,10	11,36	56,01	<8.00	231,80	184,30	908,50	410,60	19,31	95,22	42,48
Biscuits		7,20	19,60	1,66	11,25	<8.00	11,80	12,00	81,10	32,60	1,23	8,35	3,33
Bread		16,90	46,90	1,57	15,80	<8.00	15,80	26,60	267,60	73,70	2,75	27,67	7,55
Cakes		7,00	20,20	1,33	0,00	<8.00	<8.00	9,40	0,00	26,90	0,95	0,00	2,70
Flour (1)		11,20	32,50	1,33	0,00	<8.00	<8.00	14,80	0,00	43,30	1,56	0,00	4,42
Polenta (2)		7,30	18,00	9,59	14,54	<8.00	23,40	70,00	106,20	172,60	7,90	11,97	19,77
Snacks		3,80	11,00	14,32	37,34	<8.00	55,80	54,30	141,60	157,50	5,34	13,91	15,50
Cornflour		4,90	12,40	6,87	12,40	<8.00	17,30	33,80	61,10	85,10	3,70	6,68	9,81
Baby food		14,60	48,40	1,94	11,60	<8.00	11,60	28,30	169,20	93,90	3,14	18,79	10,54
Corn (3)		3,30	7,90	120,08	122,09	<10.00	584,00	395,90	395,90	952,10	42,42	42,42	108,19

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **49,79**

Table 3A(5) Estimate of daily intake of zearalenone for an average free living male elderly person (aged 65 years and over) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 70,8

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		28,50	69,00	1,00	0,00	<6.00	<6.00	28,50	0,00	69,00	0,37	0,00	0,92
Malted Barley		0,03	0,03	2,73	25,67	<2.00	40,00	0,10	0,80	0,10	0,00	0,01	0,00
Milk		260,30	545,80	0,57	1,32	<1.00	5,50	147,10	343,60	308,40	1,96	4,59	4,14
Beer		532,90	1669,70	0,01	0,00	<0.05	<0.05	5,30	0,00	17,00	0,07	0,00	0,22
Breakfast cereals		67,90	242,40	11,36	56,01	<8.00	231,80	771,50	3803,60	2754,00	10,39	51,21	34,73
Biscuits		24,30	59,10	1,66	11,25	<8.00	11,80	40,30	273,00	98,10	0,55	0,00	1,30
Bread		112,10	203,40	1,57	15,80	<8.00	15,80	176,00	1771,40	319,40	2,35	23,62	4,33
Cakes		50,50	116,60	1,33	0,00	<8.00	<8.00	67,20	0,00	155,10	0,90	0,00	2,12
Flour (1)		20,40	61,90	1,33	0,00	<8.00	<8.00	27,20	0,00	82,40	0,36	0,00	1,06
Polenta (2)		5,30	5,30	9,59	14,54	<8.00	23,40	50,80	77,10	50,80	0,91	1,38	0,91
Snacks		11,90	26,60	14,32	37,34	<8.00	55,80	171,10	446,00	381,50	2,30	6,00	5,59
Cornflour		2,00	4,30	6,87	12,40	<8.00	17,30	14,10	25,40	29,20	0,20	0,35	0,42
Baby food (3)				1,94	11,60	<8.00	11,60				0,00	0,00	0,00
Corn (4)		11,60	24,50	120,08	122,09	<10.00	584,00	1398,40	1398,50	2944,90	17,81	17,81	47,76

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **14,25**

Table 3A(6) Estimate of daily intake of zearalenone for an average free living female elderly person (aged 65 years and over) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 70,8

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		24,40	84,60	1,00	0,00	<6.00	<6.00	24,40	0,00	84,60	0,38	0,00	1,57
Malted Barley		0,00	0,00	2,73	25,67	<2.00	40,00	0,00	0,00	0,00	0,00	0,00	0,00
Milk		238,10	497,50	0,57	1,32	<1.00	5,50	134,50	314,30	281,10	2,14	5,00	4,51
Beer		220,30	646,30	0,01	0,00	<0.05	<0.05	2,20	0,00	6,50	0,04	0,00	0,11
Breakfast cereals		46,50	146,70	11,36	56,01	<8.00	231,80	528,40	2605,40	1667,00	8,41	41,44	27,86
Biscuits		20,20	49,60	1,66	11,25	<8.00	11,80	33,60	227,50	82,30	0,54	3,67	1,37
Bread		80,90	148,40	1,57	15,80	<8.00	15,80	127,00	1278,30	233,00	2,01	20,21	3,81
Cakes		39,10	90,30	1,33	0,00	<8.00	<8.00	52,00	0,00	120,20	0,82	0,00	1,91
Flour (1)		17,40	49,60	1,33	0,00	<8.00	<8.00	23,20	0,00	66,00	0,36	0,00	0,98
Polenta (2)		0,00	0,00	9,59	14,54	<8.00	23,40	0,00	0,00	0,00	0,00	0,00	0,00
Snacks		8,80	26,10	14,32	37,34	<8.00	55,80	126,00	328,50	374,20	2,01	5,24	5,53
Cornflour		1,70	3,20	6,87	12,40	<8.00	17,30	11,70	21,10	22,10	0,17	0,30	0,35
Baby food (3)				1,94	11,60	<8.00	11,60						
Corn (4)		14,90	37,10	120,08	122,09	<10.00	584,00	1784,60	1784,70	4456,50	27,48	27,48	68,68

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) baby foods were not included in this survey
(4) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **12,42**

Table 3A(7) Estimate of daily intake of zearalenone for an average young person (aged 4-6 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 20,5

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		17,50	57,40	1,00	0,00	<6.00	<6.00	17,50	0,00	57,40	0,83	0,00	2,72
Malted Barley		0,02	0,02	2,73	25,67	<2.00	40,00	0,10	0,50	0,10	0,00	0,02	0,00
Milk		240,10	536,70	0,57	1,32	<1.00	5,50	135,70	316,90	303,20	6,62	15,47	14,30
Beer		21,40	21,40	0,01	0,00	<0.05	<0.05	0,20	0,00	0,20	0,01	0,00	0,01
Breakfast cereals		29,60	67,70	11,36	56,01	<8.00	231,80	336,70	1660,20	769,60	16,24	80,08	33,72
Biscuits		20,00	46,40	1,66	11,25	<8.00	11,80	33,20	225,10	77,00	1,62	10,97	3,88
Bread		62,90	121,60	1,57	15,80	<8.00	15,80	98,70	993,40	190,90	4,77	47,96	9,46
Cakes		26,50	59,80	1,33	0,00	<8.00	<8.00	35,20	0,00	79,50	1,66	0,00	3,83
Flour (1)		16,50	39,80	1,33	0,00	<8.00	<8.00	21,90	0,00	52,90	1,05	0,00	2,39
Polenta (2)		4,70	4,70	9,59	14,54	<8.00	23,40	44,80	67,90	44,80	2,36	3,58	2,36
Snacks		16,30	34,60	14,32	37,34	<8.00	55,80	233,00	607,50	495,50	11,39	29,70	23,85
Cornflour		1,20	4,30	6,87	12,40	<8.00	17,30	7,90	143,00	29,40	0,34	0,62	1,21
Baby food		18,50	60,50	1,94	11,60	<8.00	11,60	35,90	214,90	117,40	1,99	11,91	7,08
Corn (3)		7,60	18,80	120,08	122,09	<10.00	584,00	908,30	908,40	2260,00	45,15	45,15	114,59

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **54,81**

Table 3A(8) Estimate of daily intake of zearalenone for an average young person (aged 7-10 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 30,9

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		26,10	89,70	1,00	0,00	<6.00	<6.00	26,10	0,00	89,70	0,87	0,00	3,14
Malted Barley		0,10	0,10	2,73	25,67	<2.00	40,00	0,30	2,40	0,30	0,01	0,09	0,01
Milk		208,00	483,40	0,57	1,32	<1.00	5,50	117,50	274,60	273,10	3,92	9,15	9,01
Beer		9,30	12,60	0,01	0,00	<0.05	<0.05	0,10	0,00	0,10	0,00	0,00	0,00
Breakfast cereals		33,60	74,40	11,36	56,01	<8.00	231,80	382,00	1883,60	845,40	12,71	62,67	28,00
Biscuits		23,10	56,60	1,66	11,25	<8.00	11,80	38,40	260,30	93,90	1,29	8,75	3,08
Bread		78,10	140,70	1,57	15,80	<8.00	15,80	122,70	1234,60	220,80	4,01	40,37	7,49
Cakes		30,50	77,10	1,33	0,00	<8.00	<8.00	40,60	0,00	102,60	1,35	0,00	3,47
Flour (1)		20,20	48,90	1,33	0,00	<8.00	<8.00	26,90	0,00	65,10	0,90	0,00	2,24
Polenta (2)		4,10	7,10	9,59	14,54	<8.00	23,40	39,40	59,70	68,00	1,09	1,65	1,57
Snacks		18,40	40,80	14,32	37,34	<8.00	55,80	263,50	687,10	584,40	8,80	22,95	20,05
Cornflour		0,80	1,80	6,87	12,40	<8.00	17,30	5,70	10,20	12,10	0,20	0,35	0,52
Baby food		0,00	0,00	1,94	11,60	<8.00	11,60	0,00	0,00	0,00	0,00	0,00	0,00
Corn (3)		9,70	30,20	120,08	122,09	<10.00	584,00	1159,50	1159,60	3630,50	38,79	38,79	124,44

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **41,37**

Table 3A(9) Estimate of daily intake of zearalenone for an average young person (aged 11-14 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 48,0

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		39,10	132,20	1,00	0,00	<6.00	<6.00	39,10	0,00	132,20	0,84	0,00	2,72
Malted Barley		0,10	0,10	2,73	25,67	<2.00	40,00	0,30	2,60	0,30	0,00	0,04	0,00
Milk		199,30	493,70	0,57	1,32	<1.00	5,50	112,60	263,10	278,90	2,46	5,75	6,28
Beer		61,30	129,30	0,01	0,00	<0.05	<0.05	0,60	0,00	1,30	0,00	0,00	0,02
Breakfast cereals		36,60	81,40	11,36	56,01	<8.00	231,80	415,30	2047,60	924,40	9,09	44,82	21,55
Biscuits		20,80	53,10	1,66	11,25	<8.00	11,80	34,60	234,30	88,20	0,77	5,25	1,99
Bread		86,20	162,40	1,57	15,80	<8.00	15,80	135,30	1361,50	254,90	2,93	29,51	5,47
Cakes		32,40	90,90	1,33	0,00	<8.00	<8.00	43,10	0,00	120,90	0,93	0,00	2,35
Flour (1)		24,60	64,00	1,33	0,00	<8.00	<8.00	32,70	0,00	85,10	0,70	0,00	1,72
Polenta (2)		8,20	19,60	9,59	14,54	<8.00	23,40	78,90	119,70	188,30	1,40	2,12	3,31
Snacks		19,80	43,50	14,32	37,34	<8.00	55,80	283,40	739,10	623,40	6,35	16,56	15,72
Cornflour		1,00	2,20	6,87	12,40	<8.00	17,30	6,80	12,20	14,80	0,15	0,27	0,35
Baby food		14,30	14,30	1,94	11,60	<8.00	11,60	27,70	165,70	27,70	0,68	4,04	0,68
Corn (3)		8,90	23,20	120,08	122,09	<10.00	584,00	1072,00	1072,10	2786,00	24,40	24,41	72,44

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **28,35**

Table 3A(10) Estimate of daily intake of zearalenone for an average young person (aged 15-18 years) using the Free Categorisation System - Consumers only

Body Weight for average person (kg): 63,8

Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)				Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range		Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Rice		44,40	138,60	1,00	0,00	<6.00	<6.00	44,40	0,00	138,60	0,73	0,00	2,01
Malted Barley		0,16	0,22	2,73	25,67	<2.00	40,00	0,40	4,00	0,60	0,01	0,06	0,01
Milk		194,50	489,40	0,57	1,32	<1.00	5,50	109,90	256,70	276,50	1,76	4,10	4,30
Beer		391,30	1108,60	0,01	0,00	<0.05	<0.05	3,90	0,00	11,10	0,06	0,00	0,19
Breakfast cereals		39,30	95,10	11,36	56,01	<8.00	231,80	446,50	2201,50	1080,80	7,18	35,42	17,30
Biscuits		20,00	62,50	1,66	11,25	<8.00	11,80	33,10	224,60	103,70	0,54	3,68	1,64
Bread		102,00	185,10	1,57	15,80	<8.00	15,80	160,10	1611,50	290,60	2,56	25,78	4,80
Cakes		29,60	82,50	1,33	0,00	<8.00	<8.00	39,30	0,00	109,70	0,64	0,00	1,72
Flour (1)		27,70	76,40	1,33	0,00	<8.00	<8.00	36,90	0,00	101,60	0,59	0,00	1,55
Polenta (2)		13,50	23,60	9,59	14,54	<8.00	23,40	129,60	196,40	226,60	2,47	3,75	4,35
Snacks		17,60	43,70	14,32	37,34	<8.00	55,80	251,90	656,80	625,30	4,09	10,67	11,33
Cornflour		1,00	2,90	6,87	12,40	<8.00	17,30	6,80	12,40	19,70	0,11	0,20	0,30
Baby food		13,10	19,80	1,94	11,60	<8.00	11,60	25,40	152,00	38,40	0,41	2,42	0,59
Corn (3)		10,40	35,00	120,08	122,09	<10.00	584,00	1244,90	1245,00	4198,00	19,86	19,87	67,89

(1) does not include cakes, bread, biscuits containing flour
(2) no consumption data are available for polenta, therefore cornmeal has been used as a substitute
(3) does not include breakfast cereals, snacks or or other corn containing food groups

Best estimate of total mean intake **20,35**

Table 3: Estimate of daily intake of zearalenone for group of population

Zearalenone

Countries: Italy, The Netherlands, Norway, Portugal, Austria, France and U.K.

France

Body Weight for average person (kg): 66,4 kg

FOOD	Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th p	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High lev	Mean 1	Mean 2	Mean1xHigh level
bread (without rye bread)	CG2	02 01 B	117,35	278,57	11,34	15,69		1331,12	1841,58	3159,87	20,05	27,73	47,59
pasta	CG3	02 01 B	36,09	100,00	0,20			7,22		20,00	0,11		0,30
semolina	CG	02 01 B	1,67	14,29	2,23	30,19		3,72	50,41	31,80	0,06	0,76	0,48
corn	CH	02 01 C	2,44	17,857	23,56	56,92		57,49	138,89	420,73	0,87	2,09	6,34
biscuits	CG1	02 01 B	67,03	191,43	3,13	7,92		209,54	531,10	598,41	3,16	8,00	9,01
pizzas and tarts	CG	02 01 B	73,32	400,00	0,10	5,28		7,33	387,29	40,00	0,11	5,83	0,60
sandwiches	CG	02 01 B	13,80	74,29	3,13	7,92		43,14	109,34	232,22	0,65	1,65	3,50
compound dishes with pasta	CG	02 01 B	9,01	50,00	0,10			0,90		5,00	0,01		0,08
other compound dishes	CG	02 01 B	20,85	100,00	3,13	7,92		65,18	165,20	312,60	0,98	2,49	4,71
beer	DM1	02 05 A	28,50	142,86									
Rye bread	E5		0,31	0,00	1,19	1,34		0,37	0,41	0,00	0,01	0,01	0,00
buckwheat pancakes	E9		0,60	0,00	0,69	1,99		0,41	1,20	0,00	0,01	0,02	0,00
breakfast cereals without corn cereals	A		3,88	28,57	5,70	17,50		22,10	67,90	162,75	0,33	1,02	2,45
cooked rice	E7		19,12	65,00	1,22			23,33		79,30	0,35		1,19
other products containing cereals: oat flakes, puff-paste, wheat germ	A*		0,77	0,00	0,87			0,67		0,00	0,01		0,00
SOMME								1772,51149	3293,31		26,69	49,60	

Table 3A3. Estimate of daily intake of zearalenone for group of population males

Zearalenone

Country:France

Body Weight for average person (kg): 73,9 kg

FOOD	Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th p	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High lev	Mean 1	Mean 2	Mean1xHigh level
bread (without rye bread)	CG2	02 01 B	147,92	340,50	11,34	15,69		1677,85	2321,26	3862,35	22,70	31,41	**52,26**
pasta	CG3	02 01 B	42,11	118,23	0,20			8,42		23,65	0,11		0,32
semolina	CG	02 01 B	1,62	14,29	2,23	30,19		3,60	48,79	31,80	0,05	0,66	0,43
corn	CH	02 01 C	2,043834821	14,687505	23,56	56,92		48,15	116,34	346,05	0,65	1,57	4,68
biscuits	CG1	02 01 B	70,26	205,32	3,13	7,92		219,64	556,69	641,84	2,97	7,53	8,69
pizzas and tarts	CG	02 01 B	46,53	300,00	0,10	5,28		4,65	245,80	30,00	0,06	3,33	0,41
sandwiches	CG	02 01 B	18,90	97,14	3,13	7,92		59,08	149,75	303,67	0,80	2,03	4,11
compound dishes with pasta	CG	02 01 B	10,65	60,36	0,10			1,06		6,04	0,01		0,08
other compound dishes	CG	02 01 B	23,61	109,21	3,13	7,92		73,82	187,09	341,41	1,00	2,53	4,62
beer	DM1	02 05 A	50,54	250,00									
Rye bread	E5		0,33	0,00	1,19	1,34		0,39	0,44	0,00	0,01	0,01	0,00
buckwheat pancakes	E9		0,61	0,00	0,69	1,99		0,42	1,21	0,00	0,01	0,02	0,00
breakfast cereals without corn cereals	A		3,72	28,57	5,70	17,50		21,21	65,16	162,75	0,29	0,88	2,20
cooked rice	E7		20,62	73,66	1,22			25,15		89,87	0,34		1,22
other products containing cereals: oat flakes, puff-paste, wheat germ	A*		0,59	0,00	0,87			0,51		0,00	0,01		0,00
SOMME								2143,95	3692,53		29,01	49,97	

Table 3A5. Estimate of daily intake of zearalenone for group of population females

Zearalenone

Country:France

Body Weight for average person (kg): 60,1 kg

FOOD	Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th p	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High lev	Mean 1	Mean 2	Mean1xHigh level
bread (without rye bread)	CG2	02 01 B	91,74	217,98	11,34	15,69		1040,65	1439,72	2472,61	17,32	23,96	**41,14**
pasta	CG3	02 01 B	31,04	85,71	0,20			6,21		17,14	0,10	0,00	0,29
semolina	CG	02 01 B	1,72	14,29	2,23	30,19		3,82	51,78	31,80	0,06	0,86	0,53
corn	CH	02 01 C	2,772132045	18,19644	23,56	56,92		65,31	157,79	428,72	1,09	2,63	7,13
biscuits	CG1	02 01 B	64,33	171,43	3,13	7,92		201,09	509,68	535,89	3,35	8,48	8,92
pizzas and tarts	CG	02 01 B	95,76	498,86	0,10	5,28		9,58	505,80	49,89	0,16	8,42	0,83
sandwiches	CG	02 01 B	9,52	48,57	3,13	7,92		29,76	75,42	151,83	0,50	1,25	2,53
compound dishes with pasta	CG	02 01 B	7,64	46,39	0,10			0,76		4,64	0,01		0,08
other compound dishes	CG	02 01 B	18,54	92,72	3,13	7,92		57,94	146,87	289,84	0,96	2,44	4,82
beer	DM1	02 05 A	10,04	70,42									
Rye bread	E5		0,30	0,00	1,19	1,34		0,35	0,40	0,00	0,01	0,01	0,00
buckwheat pancakes	E9		0,59	0,00	0,69	1,99		0,41	1,18	0,00	0,01	0,02	0,00
breakfast cereals without corn cereals	A		4,01	28,57	5,70	17,50		22,87	70,24	162,75	0,38	1,17	2,71
cooked rice	E7		17,86	57,14	1,22			21,80		69,72	0,36		1,16
other products containing cereals: oat flakes, puff-paste, wheat germ	A*		0,92	0,00	0,87			0,80		0,00	0,01		0,00
SOMME								1461,34	2958,88		24,32	49,23	

Table 3A7. Estimate of daily intake of zearalenone for group of population children

Zearalenone

Country:France

Body Weight for average person (kg): 31,6 kg

FOOD	Food or Group	Code	Food Consumption g/person/day		Mean of zeralenone level in food (ug/kg)			Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
			Mean	High level (95th p	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High lev	Mean 1	Mean 2	Mean1xHigh level
bread (without rye bread)	CG2	02 01 B	58,65	173,81	11,34	15,69		665,22	920,32	1971,52	**21,05**	29,12	62,39
pasta	CG3	02 01 B	37,02	100,00	0,20			7,40		20,00	0,23		0,63
semolina	CG	02 01 B	2,03	20,21	2,23	30,19		4,51	61,23	44,99	0,14	1,94	1,42
corn	CH	02 01 C	7,94	39,49	23,56	56,92		187,08	451,98	930,44	5,92	14,30	29,44
biscuits	CG1	02 01 B	85,92	210,82	3,13	7,92		268,59	680,76	659,03	8,50	21,54	20,86
pizzas and tarts	CG	02 01 B	19,59	68,79	0,10	5,28		1,96	103,47	6,88	0,06	3,27	0,22
sandwiches	CG	02 01 B	10,24	45,89	3,13	7,92		32,02	81,17	143,44	1,01	2,57	4,54
compound dishes with pasta	CG	02 01 B	13,95	57,68	0,10			1,39		5,77	0,04		0,18
other compound dishes	CG	02 01 B	18,48	75,08	3,13	7,92		57,77	146,43	234,69	1,83	4,63	7,43
beer	DM1	02 05 A	0,00	0,00									
Rye bread	E5		0,22	0,00	1,19	1,34		0,26	0,30	0,00	0,01	0,01	0,00
buckwheat pancakes	E9		0,47	0,00	0,69	1,99		0,32	0,94	0,00	0,01	0,03	0,00
breakfast cereals without corn cereals	A		12,31	51,43	5,70	17,50		70,10	215,35	292,96	2,22	6,81	9,27
cooked rice	E7		19,28	57,14	1,22			23,52		69,72	0,74		2,21
other products containing cereals: oat flakes, puff-paste, wheat germ	A*		1,28	0,00	0,87			1,12		0,00	0,04		0,00
SOMME								1321,28	2661,94		41,81	84,24	

Annex 6

Maximum tolerable limits for zearalenone in food products, Table 6

Table 6. Maximum tolerable limits for zearalenone in food products

Zeralenone **Units: µg/kg (or µg/L)**

Country: ITALY, NORWAY, GERMANY, AUSTRIA AND FRANCE

Food/ Beverage	Maximum limit	Legal basis*	Comments	Reference
ITALY				
Baby food	20		Guideline level	Circular n. 10 of 9.06.1999 published in Italian Official Gazette n. 135 of 11 June 1999
Cereals and derived products	100		Guideline level	Circular n. 10 of 9.06.1999 published in Italian Official Gazette n. 135 of 11 June 1999
NORWAY				
We don`t have a regulatory limit for Zearalenone yet. But when high levels of Zearalenone occur in spesific foods, these foods might be excluded from the market dependent on the risk for exceeding the TDI value.				
GERMANY				
Zearalenone should be regulated, with the intention to maintain low levels as presently found in foods.				
FRANCE				
Food/Beverage	Maximum limit	Legal basis	Comments	Reference
cereals	50	guideline level	see form 5	
vegetable oils	200	guideline level	see form 5	

Annex 7

All forms to subtask II zearalenone

The information the participating countries have provided:

Austria has not provided this information.

Country: FRANCE

"Collection of occurrence data of fusarium toxins in food and assessment of dietary intake by the population of EU member state"

Country: FRANCE

1. General comments:

Data are coming from 7 ***different sources*** *: 2 public sources and 5 private sources. They all provided data on different toxins and food products.*

Total number of samples is given in the following table:

Mycotoxins measured		**Number of samples**
Trichothecenes Type A	Neosolaniol	846
	HT2 toxin	1042
	T2 toxin	1075
	T2 triol	718
	T1 triol	194
	Diacetoxyscirpenol	1025
	Monoacetoxyscirpenol	853
	verrucarol	121
Trichothecenes Type B	DON	3261
	Nivalenol	971
	3 acetyldeoxynivalenol	1043
	15 - O - acetyl - 4 -deoxynivalenol	878
	fusarenone	1011
Zearalenone		1249
fumonisins	B1	786
	B2-B3	353
Total		**15426**

Table 1: total number of samples for every toxin measured

Data are given for each mycotoxin in ***15 different files****:*

- *fumonisins B1 and fumonisin B2-B3*
- *zearalenone*
- *trichothecenes A: T2 toxin, HT2 toxin, DAS, MAS, verrucarol, neosolaniol, T1 triol, T2 triol*
- *trichothecenes B: DON, 3-ac-DON, 15-ac-DON, fusarenone, nivalenol*

Informations on analysis, sampling procedure, and quality assurance are given for each data source in 7 separate form1.

Food categorization system:

Additional food categories were introduced to describe data more accurately, as follows:

As data about derived products of plant origin such as oat, rye or barley were available, new categories were added to the given categorization system. They are described in the following table.

Country: FRANCE

Table 2: Additional food categorization system

OAT	Derived products	E3	Oat wheat, oat flakes
RYE	wheat	D5	Wheat
BARLEY	Derived products	E6	Malt, semolina
RICE	wheat	D7	
	Derived products	E7	Rice
	Derived products	F7	Semolina, pancakes
BUCKWEAT	wheat	D9	
Mixing of different cereals	Cereals for breakfast	A	Multi-cereal for breakfast, millet flakes, rye flakes, rice cereals
	Derived products	A*	Multi-cereal wheat and cakes
Durum wheat		BD	When the precision is given, BD is written instead of GC1 03 01 A
Soft wheat		BT	When the precision is given, BT is written instead of GC1 03 01 A
Malting barley		OB	Barley used only for malting

Comments on files:

Tables 2A, 2B and 2C are given in separate files.

Tables 4 and 5 were deleted as they did not contain any information.

In tables 8A and 8B, raw data are given, when available.

Table 7 contains the same information as Table 1A, but with information on type of cultivation and country of origin.

Comments on data coding:

Data code refers to data source and quality of information given in form1.

Data codes are given in the following table for each data source. Please, keep the information confidential in the final released report.

Country: FRANCE

Table 3: data code for type of data in every source

Data source	Data code	Type of cereals	
C	PA_B_01	wheat 2001	
	PA_BT_01	Soft wheat 2001	
	PA_O_01	Barley 2001	
	PA_BB_01	Bio-technological wheat 2001	
	PA_M_01	Corn 2001	
	PA_M_00	Corn 2000	
E	E1	Spring malting barley 1999	
	E2	Winter malting barley 1999	
	E3	Spring malting barley 2000	
	E4	Winter malting barley 2000	
	E5	Spring malting barley 2001	
	E6	Winter malting barley 2001	
	E7	Spring malting barley 2002	
	E8	Winter malting barley 2002	
F	F1	Durum wheat 1999	
	F2	Durum wheat 2000	
	F3	Durum wheat 2001	
	F4	Durum wheat 2002	
	F5	Soft wheat 2000	
	F6	Soft wheat 2001	
	F7	Soft wheat 2002	
B	B1	Products of first transformation of wheat into semolina 2000 et 2001	
	B2	Products of first transformation of wheat into semolina 2002	
D	D1	Groups of derived products containing cereals in which DON was analysed (n=1 à 59)	
	D2	Groups of derived products containing cereals in which zearalenone was analysed (n=1 à 56)	
	D3	Groups of derived products containing cereals in which Fumonisin B1 was analysed (n= 1 à 63)	
	D4	Groups of derived products containing cereals in which Fumonisine B2 ou B3 were analysed (n= 1 à 17)	
A	A1	Wheat	m = 94 : years 1994-98 m=99 : 1999 m=00 : 2000 m=01 : 2001 m=02 : 2002
	A2	Wheat bran	
	A3	Wheat germ	
	A4	Wheat grains	
	A5	Other wheat derived products	
	A6	Corn dericed products	
	A7	Rice	
	A8	Other cereals	
G	G1	Soft wheat 2000	
	G2	Soft wheat 2001	
	G3	Wheat 2000	
	G4	Wheat 2001	
	G5	Corn 2000	
	G6	Corn 2001	

2. FORM 1. Occurrence data

FORM 1. Occurrence data A

- **Summary:**

Data are coming from different cereals industrials: producers of biscuits, ready to eat cereals such as cereals for breakfast.

Mycotoxins measured		*Number of samples*			
		Wheat products	Corn products	Rice products	Other cereals products
Trichothecenes Type A	HT2 toxin	13			
	T2 toxin	42			
Trichothecenes Type B	deoxynivalenol	698	27	46	
	nivalenol	12			
Zearalenone		190	14	21	74
Fumonisins	B1	94	17		

Table n°3: number of samples for each type of mycotoxin measured

These data are identified by the data code beginning with A.

Analysis were carried out by several industrials.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

For some analysis, the laboratory is accredited for mycotoxins measurements in food products, for others, laboratory has assurance quality rules (see in tables).

Analytical method:

Waiting information.

Recovery:

Waiting information.

Why the data are / are not evaluated to be representative for the member state:
Samples were taken randomly.
Some industrials provided a lot of analysis, and some others provided very few analysis. So sampling procedure does not represent National Consumption.

Country: FRANCE

FORM 1. Occurrence data B

- **Summary:**

Samples are coming from first transformation of durum wheat into semolina products. Analysis of deoxynivalenol were carried out by industrials (pasta producers).

		Number of samples	
Mycotoxins measured		Semolina 2000-2001	Semolina 2002
Trichothecenes Type B	DON	145	69

Table n°5: number of samples for each type of mycotoxin measured

These data are identified by the data code beginning with B.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

Not informed.

Analytical method:

Samples were analysed with ELISA kits.

Recovery:

Results were not corrected for recovery.

Why the data are / are not evaluated to be representative for the member state:

Sampling is representative of pasta French production, but as a lot of pasta products are imported, these data could not be considered as representative of French consumption.

- **Other comments:**

Considering that the ELISA method used is a semi-quantitative method, analytical results were given as level ranges.
Mean and Max values were not available, so data could not be used to estimate the population exposition.

Country: FRANCE

FORM1. Occurrence data C

- **Summary:**

Data are coming from 2000-2001 national monitoring program set up by the Ministry of Agriculture.

Samples were taken randomly, in regions and farms selected for their crop variety, in order to be representative of the whole French crop.

		Number of samples							
Mycotoxins measured		2000			2001				
		corn	durum wheat	Soft wheat	corn	wheat	Soft wheat	Biological wheat	barley
Trichothecenes Type A	T2 toxin	-	-	-	29	30	31	22	9
	HT2-toxin	-	-	-					
	diacetoyscirpenol	-	-	-					
	verrucarol	-	-	-					
Trichothecenes Type B	DON	-	-	-					
	3 ac-DON	-	-	-					
	15a-DON	-	-	-					
	nivalenol	-	-	-					
	fusarenone	-	-	-					
Zearalenone		55	-	-		5	5	-	-
Fumonisins	B1		-	-	14	-	-	-	-
	B2 & B3		-	-		-	-	-	-

Table n°6: number of samples for each type of mycotoxin measured-

These data are identified by the data code beginning with C.

All the samples were analysed in one public laboratory.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

The laboratory belongs to the public laboratory network involved in national monitoring program for mycotoxins.

The laboratory has quality assurance rules (ISO 17025). It is not accredited for the analysis of fusarium toxins, but it is accredited by COFRAC for aflatoxins.

The laboratory participates to proficiency testing organised by FAPAS (UK), and BIPEA (F) for trichothecenes.
The laboratory used the certified reference material for DON in wheat, distributed by IRMM (B).

Analytical method:

Analytical methods used for fumonisins, trichothecenes and zearalenone are in-house validated, according to guide AFNOR V03-110. Validation files are available.

For trichothecenes, the method used was Gaseous Chromatography:
- extraction with acetonitrile and water
- purification with alumine and charcoal
- Trichothecenes A are derived using HFBI, and trichothecenes B are derived using TMSI
- Injection CPG with electron detector

Country: FRANCE

For fumonisins, the method employed was HPLC (ref NF-EN13585: HPLC method with solid phase extraction clean-up).
For zearalenone, method employed was also HPLC with fluorescence detection. Extraction and clean-up were done by immunoaffinity.

Recovery:

Trichothecenes results were corrected following validation studies and the use of reference material for DON. DON was estimated at 80 % of its value using gaseous chromatography, and raw data were corrected with this factor.

Why the data are / are not evaluated to be representative for the member state:

The number of samples analysed was below the number of samples asked in the monitoring program, so there were not enough available data for the program to be representative of the national contamination level.

Country: FRANCE

FORM1. Occurrence data D

- **Summary:**

All data are coming from the monitoring program 2000-2001 and 2001-2002 set up by the Ministry of concurrence, consumption and control. Data are only coming from cereals derived products.
Samples were taken randomly.

Mycotoxins measured		Number of samples
Zearalenone		246
Fumonisins	B1	247
	B2 and B3	39
Trichothecenes	deoxynivalenol	520

Table n°7: number of samples for each type of mycotoxins measured

All samples were analysed in two public laboratories.

These data are identified by the data code beginning with D.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

Both laboratories have quality assurance rules (ISO 17025). They are not accredited for the analysis of fusarium toxins, but they are accredited by COFRAC for other mycotoxins (aflatoxins and ochratoxins).

Both laboratories participate to proficiency testing organised by FAPAS (UK), and BIPEA (F).

Both laboratories use certified reference material for DON in wheat, distributed by IRMM (B).

Limits of quantification (LOQ) and limits of detection, determination (LOD):

Limits of quantification vary for the same method, depending on:
- Concentrate of extracts
- Clean up step (for DON: use of SPE or immunoaffinity column)
- Technical phenomenon (changing lamps for zearalenone measurements)

For laboratory n°1, LOQ used are:
- for DON, LOQ = 200 µg/kg
- for zearalenone, LOQ = 5 µg/kg
- for fumonisin B1, LOQ = 50 µg/kg, but for some samples, LOQ = 20 µg/kg

For laboratory n°2, LOQ used are:
- for DON, LOQ = 100 µg/kg, but for some samples, LOQ = 50 µg/kg or 200 µg/kg
- for zearalenone, LOQ = 10 µg/kg, but for some samples, LOQ = 10 µg/kg
- for fumonisins B1, LOQ = 20 µg/kg, but for some samples, LOQ = 15 µg/kg
- for fumonisins B2/B3, LOQ = 30 µg/kg.

Analytical method:

Both laboratories use protocols very similar to those being currently standardised by CEN.

Country: FRANCE

Both laboratories used HPLC method for mycotoxins measurements:

- for DON analysis: immunoaffinity, HPLC, and UV detection
- for fumonisins analysis: immunoaffinity, HPLC and fluorescence detection (based on Visconty method[1]) for one laboratory, and adsorption chromatography in solid phase, HPLC and fluorescence detection for the other laboratory.
- for zearalenone analysis: immunoaffinity, HPLC and fluorescence detection

Recovery:

In both laboratories, results were not corrected for recovery.

Why the data are / are not evaluated to be representative for the member state:

Analysis are not representative of French consumption of cereals derived products.

[1] Visconti A., Solfrizzo M., De Girolamo A. : Determination of fumonisins B1 and B2 in corn and cornflakes by liquid chromatography with immunoaffinity column cleanup. J of AOAC International, 84 (6), 1828-1838, 2001

Country: FRANCE

FORM 1. Occurrence data E

- **Summary:**

Data are about malting barley from the French crop from 1999 to 2002.

For years 1999 and 2000, samples were analysed only for deoxynivalenol.
For years 2001 and 2002, samples were analysed for trichothecenes type A and B, but only DON was found.

		Number of samples	
Mycotoxins measured		Malting barley 1999 & 2000	Malting barley 2001 & 2002
Trichothecenes Type A	Diacetoxyscipenol	-	194
	Monoacetoxyscirpenol		
	Neosolaniol		
	HT2 toxin		
	T2 toxin		
	T1 triol		
Trichothecenes Type B	deoxynivalenol	220	
	3acetyldeoxynivalenol	-	
	fusarenone		
	nivalenol		

Table n°8: number of samples for each type of mycotoxin measured

These data are identified by the data code beginning with E.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

The laboratory is accredited by COFRAC for multi-trichothecenes measurements in cereals (in-house method ref CM 10 / rev.1 based on GC-MS).

Analytical method:

For years 1999 and 2000, samples were analysed by a HPLC method.

For years 2001 and 2002, samples were analysed by a GC-MS method for which the laboratory was accredited by COFRAC.

Recovery:

Results are not corrected for recovery.

Country: FRANCE

Why the data are / are not evaluated to be representative for the member state:
Samples are coming from different barley production sites in France, and are representative of the crop during a season (spring and winter), and are also considered by IFBM to be representative of the national Malting Barley French crop.

- **Other comments:**

Mycotoxins crossing from barley to malt and beer

Ref: Dr Patrick BOIVIN, 2002, Starter culture for malting : Geotrichum. Chair de Clerk

The conditions of malting process are favourable to the rapid growth of microflora naturally present in barley as well as in the malt house. DON present in malting barley is eliminated during steeping (90 % of DON is eliminated during steeping), but synthetized *de novo* by Fusarium during the malting process (germination and kilning).
IFBM Institute considers also that 90 % of mycotoxins go through from malt to beer.
To prevent from this phenomenon, this IFBM has developed a natural effective bio treatment for enhanced control of malting process, IFBM Malting Yeast ®, which was granted the authorisation by the Food technology Commission in 1997 for commercialisation to malting companies. IFBM Malting Yeast ® is a specially selected strain of *Geotrichum candidium*, a micro-organism native to most malting plants and also widely used in the food industry. This process reduces the growth of toxicogenic and gushing inducers moulds including field and storage fungi. It has been shown that the use of this process can significantly reduce the number of malt samples with DON rates over admissible level and can totally inhibit the synthesis by *Fusarium* of deoxynivalenol and other mycotoxins.

Concentration of mycotoxins in beer

IFBM Malting Yeast ® is used by some malt producers if the sanitary quality of their barley grains is not good enough. **So, to estimate the daily intake of trichothecenes, we consider, as a maximalist hypothesis, that no process was used to prevent from mycotoxins growth in beer fabrication.**

0,15 kg of malt is needed to make 1l of beer. **So we consider that 0,15 kg of barley is needed to make 1 kg of beer, and that 90 % of mycotoxins go through from grain to beverage.**

Country: FRANCE

FORM 1. Occurrence data F

- **Summary:**

Data are coming from a national survey done by a private French research and development institute on cereals and their derived products. They made analysis on durum and soft wheat, and on corn.

		Number of samples								
Mycotoxins measured		1999	2000			2001			2002	
		Durum wheat	Corn	Durum wheat	Soft wheat	Corn	Durum wheat	Soft wheat	Durum wheat	Soft wheat
Trichothecenes Type A	Neosolaniol	16	-	16	82	25	13	72	52	71
	HT2 toxin		-							
	T2 toxin		-							
	T2 triol		-							
	Diacetoxyscirpenol		-							
	Monoacetoxyscirpenol		-							
Trichothecenes Type B	DON		25							
	Nivalenol		-							
	3 acetyldeoxynivalenol		-							
	15 - O - acetyl - 4 - deoxynivalenol		-							
	fusarenone		-							
Zearalenone			(25E)		-		-	-	-	-
fumonisins	B1	-	25	-	-		-	-	-	-
	B2-B3	-	-	-	-		-	-	-	-

Table n°9: number of samples for each type of mycotoxin measured

These data are identified by the data code beginning with F.

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

The laboratory is accredited by COFRAC for multi-trichothecenes analysis in cereals (in – house method ref CM 10 / rev. 1 based on GC-MS) and for zearalenone analysis in cereals (HPLC with immunoaffinity).
It participates to proficiency test schemes: BIPEA ring (France) and other international ring tests.

Analytical method:

The method used was GC-MS for trichothecenes analysis.
The method used was HPLC for zearalenone analysis. They are both in-house validated.

Country: FRANCE

Recovery:

Results are not corrected by recovery range.

Why the data are / are not evaluated to be representative for the member state:

The monitoring program was done to represent the French crop and all its varieties of durum and soft wheat. As a consequence, the sampling was targeted to farmers cultivating different varieties of wheat to be representative of the French crop.

- **Other comments:**

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as pasta, semolina, flour and bread:

Ref: ABECASSIS, J., and FEUILLET, P., 2002, Basis of knowledge on deoxynivalenol (DON) distribution in durum wheat, semolina and pasta products

This institute, in collaboration with national research laboratories, made a review of the distribution of DON in durum wheat, semolina and pasta products. Given the present knowledge, a temporary coefficient of DON retention level (tCDRL) is calculated to appreciate the retention level of DON during different steps of durum wheat harvesting and end products processing. Combine harvesters and grain cleaning before milling remove a significant amount of DON (tCDRL= 65 %). During milling, DON fractionates so that the concentration in semolina is significantly lower that in the cleaned kernel (tCDRL= 65 %). No change is observed during pasta processing and drying (tCDRL= 100%). DON levels are reduced in cooked pasta because DON is soluble in cooking water (tCDRL= 55%). From grains in the fields to cooked pasta in the plate, a tCDRL value of about 25 % is calculated from the above intermediary values.

These coefficients were not used in the calculation of the intake.

A national research project funded by the Ministry of Agriculture, on the distribution of DON in grains, the effects of food processing and pasta cooking and the exposition of the population to DON in durum wheat, is being done by both private and public research institutes for two years.

Country: FRANCE

FORM 1. Occurrence data G

- **Summary:**

Data are coming from monitoring programs set up by different cereals producers, and collected by IRTAC.

		Number of samples					
Mycotoxins measured		2000			2001		
		Soft wheat	wheat	corn	Soft wheat	wheat	corn
Trichothecenes Type A	T2 toxin	208	-	17	106	-	40
	HT2-toxin	204	-	10	108	-	45
	DAS	204	-	17	102	-	40
	MAS	198	-	12	77	-	25
	neosolaniol	193	-	10	77	-	25
	T2 triol	197	-	10	86	-	38
Trichothecenes Type B	DON	276	37	59	252 (+8F)	101	107 (+9F)
	3 ac-DON	204	-	10	112	-	55
	15a-DON	203	-	10	112	-	54
	Nivalenol	208	-	16	27	-	46
	Fusarenone	197	-	10	102	-	40
Zearalenone		74	25	164	100	49	116
Fumonisins	B1	45	12	78	46	40	92
	B2 & B3	31	5	33	32	32	76

Table n°10: number of samples for each type of mycotoxin measured, "F" means foreign samples.

These data are identified by the data code beginning with G

- **Comments on:**

Evidence of Analytical Quality Assurance (AQA):

Data are coming from different cereals producers, and are coming from different laboratories. Some of these are accredited, some others are not accredited.

Analytical method:

Depending on laboratories, analytical methods used for fumonisins, trichothecenes and zearalenone are in-house validated, according to guide AFNOR V03-110.

For trichothecenes A, the method used was chromatography.
For trichothecenes B and for zearalenone, the method used was GC or HPLC.
For fumonisins, the method employed was GC-MS, GC.

Recovery:

Why the data are / are not evaluated to be representative for the member state:

Cereals producers sent voluntarily data, so sampling procedure was targeted to producers who sent data. However, samples are coming from different regions, and sampling can be considered as representative at the national scale.

Country: FRANCE

- **Other comments:**

All samples are coming from conventional agriculture.

Some samples are coming from a foreign country (corn and soft wheat for DON analysis, and corn for Fumonisin B1 analysis). The results were not considered in the calculation of population exposition to fusarium toxins.

Trichothecenes A results were given in ranges different from other data of the task.

Some samples were gathered together with different LOQ and LOD, in order to have more samples in each row.

Comments on occurrence data

When values are given for Mean1 and Median and nothing is given for Mean2, all samples values are lower than LOQ.

In some groups of samples, Mean2 is lower than Mean1: for few samples of the same group, the LOQ was lower, due to the analysis method.

Rows in grey in tables 1A, 7 and 8, contain analysis done with ELISA kits.

In Table 1B, occurrence data of the same food product were gathered in order to calculate the best estimate of the contamination of this food product (WM1 and WM2).
Data concerning ELISA tests and foreign countries were not included.
WM1 and WM2 were calculated as mean1 and mean2 weighted with number of samples.

When all samples were lower than LOQ or LOD, mean2 and WM2 could not be calculated.

Country: FRANCE

3. FORM 2. Food consumption data

Reference: VOLATIER, J.L., 2000, Enquête INCA individuelle et nationale sur les consommations alimentaires. Editions TEC&DOC.

Summary:

The food consumption data are based on the INCA survey (Individual and national French food intake survey). This national survey was conducted all over the country from August 1998 to June 1999, so it integrates the seasonal effects. The total sample (3003 persons) is composed of 1985 adults 15 years and over and 1018 children and young teenagers (3 – 14 years old). The food consumption reading was done with a diary record on 7 consecutive days. The identification of the type of food and the portion size consumed were estimated with a validated photographic book.
In this survey, body weight of almost all the participants were collected. So the calculation of the intake of fusarium toxins by kg of body weight is done with the real weight of each person and not with a fixed weight.

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

The representativeness of the sample is assured by a geographic stratification (based on region of residence, size of urban area) and by the quota sample method (with the factors age, sex, profession, size of household). The socio-demographic characteristics of the sub-samples (adults and children) of the survey were compared with the national data from the population census (organised by the INSEE: National Institute of Statistic and Economic Studies) and the difference was very small. So **the INCA survey is representative of the consumption of food in France**. Moreover such a survey on individual consumption is the only one in France. A previous similar survey (with only 1500 persons) was made in 1984.The other food intake surveys cover only on a part on the population (young or elderly people) or a local area.

Other comments:

Consumption data are available for 15 derived products (bread, pasta, rice, cakes…) for 4 subgroups of the population: all adults, adult males, adult females, all children.

These data are given on tables 2A, 2B and 2C, with one table for each population subgroups.

Country: FRANCE

4. FORM 3: Estimate of daily intake of fusarium toxins for an average person and for at risk subgroup of population

General comments:

Daily intake was calculated for the following toxins:
- fumonisins B1
- fumonisins B2/B3
- zearalenone
- trichothecenes A : T2 toxin and HT2 toxin
- trichotehecenes B : DON and nivalenol

For other trichothecenes (DAS, verrucarol, MAS, neosolaniol, T1 triol, T2 triol, 3 ac - DON, fusarenone, 15 - ac - DON), daily intake of fusarium toxins was not calculated because:
- almost all analysis were lower than LOD
- contamination data were available for only few food groups.

Food products contamination:

Food products for which contamination data were available were not the same as food products for which consumption data were given.

So contamination of consumption products was calculated as a function of contamination data:

Hypothesis were made:
- There is 80 % of wheat in bread
- Consumption of wheat is the same as consumption of grain
- There is 40 % of wheat in biscuits, compound dishes, compound dishes with pasta, pizzas and tarts and sandwiches
- There is 95 % of wheat in pasta
- Pasta, rice and semolina consumption data were given for cooked products. As contamination data were available for fresh products, a conversion factor was used: 40 % for rice, semolina and pasta
- Pizza pastry preparation product represents about 25 % of category “pizza and pastries”
- Pasta represent about 50 % of a compound dish with pasta
- 0,15 kg of barley is necessary to produce 1 kg of beer (1l of beer = 1kg of beer)

For beer, hypothesis made in form 1 (see §2.5 Form1) was used: 90 % of mycotoxins in malting barley go through beverage.

Country: FRANCE

Calculation of the contamination C of consumed products as a function of the contamination of different cereals and their derived products:

Contamination of bread:
C(bread) = { C(GC1 03 01 A) * 0,8 + C(CF2 02 01 B) * 0,8 + C(BT) * 0,8} / 3

Contamination of pasta:
C(pasta) = {C(CG3 02 01 B) * 0,4 + C(BD) * 0,95 * 0,4} / 2

When none of these data are available, C(CF2 02 01 B) is used.

Contamination of semolina:
C(semolina) = {C(CG 02 01 B) * 0,4 + C(BD) * 0,4}/2

Contamination of corn:
C(corn) = {C(GC2 03 01 B) + C(CF3 02 01 C) + C(CF3A 02 01 C) + C(CF3B 02 01 C) + C(CH1 02 01 C) + C(CH 02 01 C) + C(CH5 02 01 C) + C(CH4 02 01 C)} / 8

Contamination of biscuits, sandwiches and compound dishes:
C(biscuits) = {C(GC1 03 01 A) * 0,4 + C(CF2 02 01 B) * 0,4} / 2

Contamination of pizzas and tarts:
*C(pizzas and tarts) = {(GC1 03 01 A) * 0,4 + C(CF2 02 01 B) * 0,4 + C(CG4 02 01 B) * 0,25 } / 3*

Contamination of pasta compound dishes:
C(pasta compound dishes) = C(pasta) / 2

When none of these data are available, C(CF2 02 01 B) is used.

Contamination of beer:
C(beer) = C(OB) * 0,15 * 0,9

Contamination of rye bread:
C(rye bread) = C(D5) * 0,8

Contamination of buckwheat pancakes:
C(buckwheat pancakes) = C(D9) * 0,4

Contamination of cereals for breakfast:
C(cereals) = C(A)

Contamination of rice:
C(rice) = {C(E7) * 0.4 + C(GC7 03 01 G) * 0,4} / 2

Contamination of other cereal products:
C(other products) = {C(A*) + C(E6) + C(E3) + C(F7) + C(D7)+ C(GC 6 03 01 F)}/ 6

Other comments:

As consumption of wheat bran (CF1 02 01 B) is very little in French consumption habits, contamination data were not included in contamination of consumed food products.

Calculation of cereals contamination does not take into account cereals grains, but only derived products.

Country: FRANCE

Comments on form 3:

Data on Mean2 were often missing, when analysis were all lower than LOD and LOQ.
However, WM2 can be higher than WM1 (for example, WM2=15 with M2=15 and WM1=12 with M1= 15 and M1 = 12).

Data were often missing for different types of products to estimate the daily intake: Total daily intake of all cereals consumed products is available only with Mean1 of DON.

Zearalenone

For the calculation of the mean1 of the intake of zearalenone, no data on contamination of beer were available.

Fumonisins

Data on pasta or durum wheat were not available; so contamination of wheat was used to estimate contamination of pasta.

Country: FRANCE

5. FORM 5. Current recommendations

Ref : Conseil Supérieur d'Hygiène Publique de France, Section de l'Alimentation et de la Nutrition, 1999, les mycotoxines dans l'alimentation : évaluation et gestion du risque. Ministère de l'Emploi et de la Solidarité, Direction Générale de la santé, Editions Tec & Doc.

Current recommendations for zearalenone in foods and beverages:

In 1999, the CSHPF(French Council of Public Hygiene), made a risk assessment for mycotoxins, which led to the following recommendations about zearalenone in cereals and vegetable oil.

In cereals, a limit of **50 µg/kg** was proposed. This value was based on:

- the Virtually Safe Dose calculated for the carcinogenic effect on mice (VSD= 50 ng/kgbw/day, NOAEL= 4 mg/kgbw/day),
- the Tolerable Daily Intake calculated for the effect on reproduction on monkeys (NOAEL= 50 µg/kgbw/day, TDI=100 ng/kgbw/day).

In vegetable oils, a limit of **200µg/kg** was proposed. The CSHPF also recommended to collect more data to calculate the risk more accurately.

Current recommendations for fumonisins in foods and beverages:

In 1999, the CSHPF made a risk assessment of mycotoxins, which led to some recommendations about fumonisin B1 in cereals.

The study of the carcinogenic effect of FB1 on rats (on liver) led to a NOAL = 4 mg/kgbw/day, and to a toxical limit for humans of 800 ng/kgbw/day. The effects on lungs of pigs (oedema) led to a LOAEL = 5 mg/kgbw/day, and to a Tolerable Daily Intake TDI = 5 µg/kgbw/day.
According to this work, CSHPF proposed a limit of **3000 µg/kg** for FB1 in cereals. It also proposed a target value of **1000µg/kg**, taking into account carcinogenic effects, and encouraged monitoring programs to study the possibility of this value as a limit.

CSHPF did not propose any recommendations for other fumonisins.

Current recommendations for trichothecenes in foods and beverages:

There are no maximum limits for trichothecenes in France

Country: Germany

FORM 1. Occurrence data

Reference No.: ___

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Analysis by official laboratorium

Akkreditated laboratorium, participant in proficiency test

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

for samples eg.:
LOD = 4 µg/kg (signal to noise = 3 : 1)
LOQ = 10 µg/kg (signal to noise = 10 : 1)

Country: Germany
Reference no. _____
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Cleaning up by use of immunaffinity columns, derivatization with OPA, HPLC/fluorescence detection

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Samples of the official food control

Ratio used for imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Country: Germany

SCOOP Project 3.2.10 (Fusarium toxins)

Estimate of the dietary intake of Zearalenone in relevant foods in Germany
E. Usleber, University of Giessen, December 2002

Comments on the estimate of consumption of foods likely to be contaminated with zearalenone (Please note that most comments made for deoxynivalenol also apply here)

1. Occurrence of zearalenone in foods

The incidence and levels of zearalenone in foods in Germany were very low in 2001 and 2002. Evaluation of 716 food samples analysed in the period showed that only 88 samples (12.2%) contained detectable levels of zearalenone at >6 µg/kg.
Using two ELISA and one HPLC methods, detection limits varied from 0.1 to 6.0 µg/kg. The "worst" detection limit of 6 µg/kg was used for all calculation. Several samples contained ZEA at the ppt level as determined by HPLC, but this was considered as non-relevant. However, results for many negative samples were given as "3 µg/kg", which is half of the detection limit of 6 µg/kg. The mean levels given here may therefore slightly overestimate the true contamination.

In the report, only three major products are considered (535 samples) further, which were found to be contaminated with ZEA as follows:

	n	n positive	range of positives (µg/kg)
Wheat (flour, kernels etc.)	158	47	3-20
Pasta	206	6	3-41
Baby foods	171	4	7-14
Total	535	57	

2. Dietary intake

The best estimate of dietary intake for zearalenone shows that at present, 10% of the TDI or less is consumed. In a very unlikely worst-case scenario, 50% of the TDI may be reached.

Conclusion:

Currently, the following maximum levels for zearalenone in foods are discussed in Germany:
Bread: 50 µg/kg
Other cereal foods: 50 µg/kg
Infant foods: 20 µg/kg

The data basis is still somehow limited for foods from the German market. A present project carried out by 6 German institutes will provide detailed information in 2004.

Country: Germany

However, the available data (approx. 500 samples) suggest that present contamination levels are close to ZERO.

No negative impact on food industry would be expected by these maximum levels.

Nevertheless zearalenone should be regulated, with the intention to maintain low levels as presently found in foods. Unfortunately, no data were available for beer. In 2003, sufficient data on zearalenone (+ deoxynivalenol) in beer will be collected for Germany.

Country: ITALY

FORM 1. Occurrence data on Zearalenone

Reference No.: 1

Unpublished data

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

These data are referred to analyses for the official control between 1998-2000

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Analyses performed by local official laboratory that participates in FAPAS scheme.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

LOD 30 ug/kg
LOQ 90 ug/kg

Country: ITALY
Reference no. 1
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

The recovery factor is 110%
All results are corrected for recovery

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Authors judged the data not representative of National situation

Country: ITALY

FORM 1. Occurrence data on Zearalenone

Reference No.: 2

Unpublished data

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

These data are referred to analysis for the official control between 1997-2001

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Analyses are performed by laboratory participating in international proficiency testing for the determination of fumonisins (FAPAS).

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

LOD : 10 μg/kg

Country: ITALY
Reference no.2
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

The range recovery is 75-80%.
All the data are corrected for recovery.
Rsd <10%

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Authors judged the data representative of National situation

Country: ITALY

FORM 1. Occurrence data on Zearalenone

Reference No.: 3

Unpublished data

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

These data are referred to analyses for the official control.

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Analyses performed by local official laboratory

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

LOD : 20 ug/kg

Country: ITALY
Reference no.3
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

The range recovery is 50-60%.

Why the data are / are not evaluated to be representative for the member state:
(details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

The corn flour is not intended for baby food.

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Authors judged the data representative of National situation.

Country: ITALY

Form 1. Occurrence data on Zearalenone

Reference 4

Visconti, A., and Pascale, M., 1998, Determination of zearalenone in corn by means of immunoaffin
and high-performance liquid chromatography with fluorescence detection. Journal of Chromatograp

Summary:
(main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

No specific information has been given by the laboratory

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

LOD 3 ug/kg

Analytical method: (validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Country: ITALY

Reference no. 4

FORM 1 /page2

Why, the data are / are not evaluated to be representative for the member state: (sampling procedures, target or random, geographical origin, weather conditions (e.g. average, wet or dry climate during harvest), difference in agricultural techniques (drying. storing. etc), quality of analysis)

The Corn is produced in north Italy

Other comments:

The authors judged the data not representative of the National situation.

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Country: ITALY

FORM 2. Food consumption data

Reference No.: 5

Turrini A. et al. 2001, Original Comunication. Food consumption patterns in Italy : the INN-CA Study 1994-1996. European Journal of clinical Nutrition 55, 571-588.

Summary:

(Main Tables, figures and summary from the reference can be copied and attached to this Form)

+

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

Our data are representative for the country :
Sampled subjects: 1147 households randomly selected to be considered representative of the four main geographical areas (North-west, North-East, Centre, South). Analysed subjects: 1978 individuals out of 2734 initially collected in 15 Collaborative Centres strategically scattered through the national territory

Other comments:

Country: ITALY

FORM 3: Estimate of daily intake of zearalenone for an average person and for at risk subgroup of population

Comments on estimated daily intake of Zearalenone
(Adequacy of the data available, need for additional information etc.)

In tables 3A1 and 3A2 are reported two best estimated of total mean daily intake:

- Bold character: the Coordinator considers also the intake derived by occurrence data judged not representative by authors.
- Normal character: the Coordinator considers the intake derived only by occurrence data judged representative by authors.

Comments on estimated daily intake of _____
(Adequacy of the data available, need for additional information etc.)

Other comments:

Country: ITALY

FORM 4. Other sources of zearalenone exposure

Reference No.: ____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Other comments:

Country: ITALY

FORM 5. Present regulations for Zearalenone

Present maximum limits of zearalenone for foods and beverages:

Food/beverages	Maximum limit	Remarks	Reference
Baby Food	*20 μg/kg*	*Guideline level*	*Circular n. 10 of 9.06.1999 published in Italian Official Gazette n. 135 of 11 June 1999*
Cereals and derived products	*100 μg/kg*	*Guideline level*	*Circular n. 10 of 9.06.1999 published in Italian Official Gazette n. 135 of 11 June 1999*

Country: The Netherlands

FORM 1. Occurrence data

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1 Reference No.: _1___
anonymous

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

see Table 7

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

accredited laboratory

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

Country: The Netherlands
Reference no. 1
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Short description of the method for zearalenone:

Clean-up with immunoaffinity column followed by HPLC and fluorescence detection

Why the data are / are not evaluated to be representative for the member state:
(details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used for imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Country:_the Netherlands_

FORM 1. Occurrence data

Reference No.: __5__
National Institute of Public Health and The Environment
Unpublished results

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

see table 7

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

Country: The Netherlands
Reference no. 5
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)
Immunoaffinity cleanup followed by HPLC with fluorescence detection

Repeatability 8%

Why the data are / are not evaluated to be representative for the member state:
(details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used for imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

2 Country:_the Netherlands

FORM 2. Food consumption data

Reference No.: _1__(consumption)

Kistemaker C., Bouman M., Hulshof, K.F.A.M. (1998). De consumptie van afzonderlijke producten door de Nederlandse bevolkingsgroepen- Voedselconsumptiepeiling 1997-1998. TNO-rapport V98.812, Zeist (In Dutch).
VCP (1998).
Zo eet Nederland. Resultaten van de voedselconsumptiepeiling 1997-1998. Uitgave van Voedingscentrum, het ministerie van WVC en LNV, Rijswijk (In Dutch).

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Results of a food consumption survey. Each participant kept a diary for him (her) and for the members of the family during 2 consecutive days.

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

Other comments:

Because of the 2 day “sampling” it is not possible to calculate the 95%percentile for consumption.

Country:_the Netherlands_

FORM 2. Food consumption data

Reference No.: _2__(consumption)

Van Dooren M.M.H., Boeijen I., Van Klaveren J.D., Van Donkersgoed G. (1995). Conversion of consumer food to primairy agricultural products. State Institute for Quality Control of Agricultural Products (RIKILT). Report No 95.17, Wageningen (in Dutch)

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

Other comments:

Used for conversion in the data for zearalenone and fumonisin B1

Country: Norway
FORM 1/page 1

FORM 1. Occurrence data on zeralenone

Reference No.: 1- 6

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

Mycotoxins in Norwegian grain, 1990-1998

(Zeralenone was analysed in 1990 and 1994-1998)

Main tables are attached

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Norwegian National Veterinary Institute, Ullevålsveien 68, Pb 8156 Dep., 0033 Oslo, NORWAY.
The laboratory is accredited.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

1990: LOD = 5 μg/kg (3x noise) LOQ/LOD = 10/3
1994: LOD = 5 μg/kg (3x noise) LOQ/LOD = 10/3
1995: LOD = 3 μg/kg (3x noise) LOQ/LOD = 10/3
1996: LOD = 20 μg/kg (3x noise) LOQ/LOD = 10/3
1997: LOD = 1 μg/kg (3x noise) LOQ/LOD = 10/3
1998: LOD = 2 μg/kg (3x noise) LOQ/LOD = 10/3

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

1990-1996 and for the analysis of wheat in 1997: The analytical method is described in: Langsteh W., Ellingsen Y., Nymoen U. and Økland E.M. (1989) High-performance liquid chromatograohic determination of zearalenone and ochratoxin A in cereals and feed. J. Chromatogr., 478: 269-274.

1997-1998: The analytical method is modified from the article: Visconti H. and Pascale M. (1998) Determination of zearalenone in corn by means of immunoaffinity clean-up and high-performance liquid chromatography with fluorescence detection. J. Chromatogr. A, 815: 133-140.

Country: Norway
Reference no. 1-6
FORM 1/page 2

1990: recovery 90% - RSD = 8
1994: recovery 93% - RSD = 6
1995: recovery 83% - RSD = 9
1996: recovery 87% - RSD = 13
1997: recovery 86% - RSD = 31
- recovery for the wheat sample was only 50%
1998: recovery 95% - RSD = 9

The data were not corrected for recovery, exept the wheat sample in 1997.

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Quality of analysis:

- *1997-98: A new fluorescence detector is the reason for the very low LOD this year.*
- *The analysis of wheat in 1997 was done by using the old method. The laboratory had problems whith the purity to the samples on the silica gel. This is the reason for the low recovery rate, only 50%.*

As shown in the table different values for limits of detection (LOD) were obtained in the period between 1990-1998. In 1996 LOD was set to 20 μg/kg, which is a high value compared to the other values of LOD obtained. To study the consequencies of this high value of LOD on the final intake estimate of zearalenone, we made some calculations, where we first included and then excluded samples with analytical values below this LOD. Our intake calculation concerns the group of males, all participants (the same as in table 3A1). The total intake of zearalenone would be 660 ng/person/day if the samples below LOD < 20 were included in the calculation, whereas the intake would be 561 ng/person/day if all these high LOD- samples were exeluded.

As you may see there are small differences in the calculated total intake in these two examples, so we do not think that this will affect the best estimate. Thus, in all the intake calculations of zearalenone the high LOD value from 1996 (<20) are included.

The table shows the intake calculation of zearalenone with and without the samples with the high LOD value from 1996.

	Intake of zeralenone ng/person/day			Intake of zeralenone ng/kg body weight/day		
	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Total intake with LOD<20 included	660	1520	1295	8	19	16
Total intake with the excluded LOD<20	561	1324	1270	7	16	16
Differences in percent	15%	13%	2%	15%	13%	2%

Country: Norway
Reference no. 1-6
FORM 1/page 3

Ratio used imported foods/domestically grown foods:
The table shows the imported and the domestically grown foods and animal feed of four grain products, from 1997-2001. For wheat 54% was from Norway, while 46% was imported. Durum wheat was included in the imported wheat. For rye almost 27% was from Norway and 73% was imported. Rye-wheat was included in wheat products. For barley and oats, almost all used grain are from Norway.

The last column of the table shows how much grain that were used as food in Norway from 1997-2001. As you can see only a part of the total grain available in the country is used for human foods, especially concerning grain such as barley and oats. The exact percentage of Norwegian and imported grain used as food were not known. Thus, the ratio used were based on the percentage of domestically grown and imported grain used as food and animal feed.

Grain	Norwegian # 1000 ton in 5 year	Imported # 1000 ton in 5 year	Total grain in Norway from 97-01 # 1000 ton	% Norwegian	% Imported	# 1000 ton grain used in food from 1997-2001
WHEAT	1399	1192	2591	54,0	46,0	1711
RYE	46	125	171	26, 7	73,3	162
BARLEY	3091	179	3270	94,5	5,5	13
OATS	1832	85	1917	95,5	4,5	72

Calculation of how much primary agricultural products, such as grain, there are in processed foods, such as bread:
Whereas raw agricultural products, such as grain of wheat, oat, rye and barley, were analysed, the consumption data refer to food as eaten, such as bread and cakes. Thus, the consumption of processed food was converted to the consumption of raw agricultural products, such as different kinds of flour. In this conversion process assumptions were made concerning the percentage of different kinds of flour in these products. Based on standard recipes following assumptions were made:

White bread: Contains 70 % of wheat flour.
Wholemeal bread and crisp bread: Contain 70% of flour, of which 50% consists of wheat flour , 45% of wholemeal wheat flour and 5% rye flour.
Cakes: Contain 55% of wheat flour.
Müsli: Contains of equal amounts (i.e. 25%) of flakes of barley, wheat, rye and oats.

Subsequently, the amount of flour consumed was set to be equal the amount of grain consumed.

Other comments:
Some of the products are divided into different grain products in the raw data. Barley are divided into barley and barley groats. Oats are divided into groats and oats. We also collected samples from both autumn wheat and spring wheat. However, in the calculation of results no consideration was made to the type of grain samples or whether the wheat was harvested in the spring or autumn. You can also see this in the raw data in table 7A, and in the references in this form.

Country: Norway
Reference no. 1-6
FORM 1/page 4

Reference 1

Mycotoxins in Norwegian grain, 1990

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 5 µg/kg	Highest concentration µg/kg
Wheat, norwegian	138	6	11
Barley groats, norwegian	10	1	11
Barley, norwegian	10	0	-
Rye, norwegian	2	0	-
Groats, norwegian	20	3	43
Oats, norwegian	20	2	5
Wheat, import	27	2	5
Rye, import	18	2	5

Content of zeralenone in the analysed samples of grain.

No = Norwegian, imp= imported

Year	Type of grain	No / imp	Country/ Area	Zeralenone µg/kg	
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway		9
1990	Wheat	no	South-west norway		11
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5

1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway		9
1990	Wheat	no	South-west norway		11
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	South-west norway	<	5
1990	Wheat	no	Østfold og Akershus.		5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5

1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.		5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Østfold og Akershus.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5

1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Mjøsområdet.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Indre Østlandet/Øvre Glommavassdraget.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Wheat	no	Trøndelag.	<	5
1990	Barley groats	no	Østfold og Akershus.	<	5

1990	Barley groats	no	Østfold og Akershus.	<	5
1990	Barley groats	no	Østfold og Akershus.		11
1990	Barley groats	no	Østfold og Akershus.	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley groats	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Norway	<	5
1990	Barley	no	Østfold og Akershus.	<	5
1990	Barley	no	Østfold og Akershus.	<	5
1990	Barley	no	Østfold og Akershus.	<	5
1990	Barley	no	Østfold og Akershus.	<	5
1990	Rye	no	South-west Norway	<	5
1990	Rye	no	South-west Norway	<	5
1990	Groats	no	Østfold og Akershus.	<	5
1990	Groats	no	Østfold og Akershus.	<	5
1990	Groats	no	Østfold og Akershus.		43
1990	Groats	no	Østfold og Akershus.		5
1990	Groats	no	Østfold og Akershus.		5
1990	Groats	no	South-west Norway	<	5
1990	Groats	no	South-west Norway	<	5
1990	Groats	no	South-west Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Norway	<	5
1990	Groats	no	Trøndelag.	<	5
1990	Groats	no	Trøndelag.	<	5
1990	Groats	no	Trøndelag.	<	5
1990	Groats	no	Trøndelag.	<	5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway	<	5

1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway		5
1990	Oats	no	South-west Norway	<	5
1990	Oats	no	South-west Norway		5
1990	Oats	no	Østfold og Akershus.	<	5
1990	Oats	no	Østfold og Akershus.	<	5
1990	Oats	no	Østfold og Akershus.	<	5
1990	Oats	no	Østfold og Akershus.	<	5
1990	Oats	no	Østfold og Akershus.	<	5
1990	Oats	no	Trøndelag.	<	5
1990	Oats	no	Trøndelag.	<	5
1990	Oats	no	Trøndelag.	<	5
1990	Oats	no	Trøndelag.	<	5
1990	Oats	no	South-west Norway	<	5
1990	Wheat	imp	Argentina	<	5
1990	Wheat	imp	Argentina	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	Sweden	<	5
1990	Wheat	imp	USA	<	5
1990	Wheat	imp	USA		5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp		<	5
1990	Wheat	imp			5

1990	Wheat	imp			3
1990	Wheat	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp		<	5
1990	Rye	imp			5
1990	Rye	imp			5

Country: Norway
Reference no. 2 and 3
FORM 1/ page 11

Reference 2

Mycotoxins in Norwegian grain, 1994

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 5 µg/kg	Highest concentration µg/kg
Oats, norwegian	2	0	-

Content of zeralenone in the analysed samples of grain.

Year	Type of grain	Norwegian/ Import	Country/ Area	Zeralenone µg/kg
1994	Oats	norwegian	Norway	< 5
1994	Oats	norwegian	Norway	< 5

Reference 3

Mycotoxins in Norwegian grain, 1995

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 3 µg/kg	Highest concentration µg/kg
Wheat, norwegian	32	3	68
Oats, norwegian	21	1	64
Wheat, import	13	1	3
Rye, import	4	0	-

Country: Norway

Content of zeralenone in the analysed samples of grain.

No = Norwegian, imp= imported

Year	Type of grain	No / imp	Country/ Area	Zeralenone µg/kg	
95	Autumn wheat	no	Melsomvik	<	3
95	Autumn wheat	no	Melsomvik	<	3
95	Autumn wheat	no	Ø.Romerike	<	3
95	Autumn wheat	no	Regal Moss	<	3
95	Autumn wheat	no	Sarpsborgg	<	3
95	Autumn wheat	no	Halden	<	3
95	Autumn wheat	no	Ø.Romerike	<	3
95	Autumn wheat	no	Mysen	<	3
95	Autumn wheat	no	Storhamar	<	3
95	Autumn wheat	no	Eidsvoll	<	3
95	Autumn wheat	no	Årnes	<	3
95	Autumn wheat	no	Årnes	<	3
95	Spring wheat	no	Kvelde		3
95	Spring wheat	no	Melsomvik	<	3
95	Spring wheat	no	Ringerike	<	3
95	Spring wheat	no	Kvelde	<	3
95	Spring wheat	no	Kvelde	<	3
95	Spring wheat	no	Ringerike	<	3
95	Spring wheat	no	Mysen	<	3
95	Spring wheat	no	Halden	<	3
95	Spring wheat	no	Moss	<	3
95	Spring wheat	no	Storhamar	<	3
95	Spring wheat	no	Eidsvoll	<	3
95	Spring wheat	no	Odal	<	3
95	Spring wheat	no	Flisa		68
95	Spring wheat	no	Flisa	<	3
95	Spring wheat	no	Bø, Telemark	<	3
95	Spring wheat	no	Bø, Telemark	<	3
95	Spring wheat	no	Bø, Telemark		5
95	Spring wheat	no	Bø, Telemark	<	3
95	Spring wheat	no	Bø, Telemark	<	3
95	Spring wheat	no	Drammen	<	3
95	oats	no	Buskerud	<	3
95	oats	no	Sand mølle, Grimstad	<	3
95	oats	no	Sand mølle, Grimstad	<	3
95	oats	no	Sandnes	<	3
95	oats	no	Sand mølle	<	3
95	oats	no	Sand mølle	<	3
95	oats	no	Regal mølle	<	3

95	oats	no	Regal mølle	<	3
95	oats	no	Regal mølle		64
95	oats	no	Regal mølle	<	3
95	oats	no	Regal mølle	<	3
95	oats	no	Norge	<	3
95	oats	no	Akershus	<	3
95	oats	no	ØRK	<	3
95	oats	no	Østfold	<	3
95	oats	no	Hedemark	<	3
95	oats	no	Hedemark	<	3
95	oats	no	Verdal	<	3
95	oats	no	Norge	<	3
95	oats	no	Sandnes	<	3
95	oats	no	Moss	<	3
95	wheat	imp		<	3
95	wheat	imp	Canada	<	3
95	wheat	imp	Germany	<	3
95	wheat	imp	Denmark	<	3
95	wheat	imp	Denmark	<	3
95	wheat	imp	Denmark	<	3
95	wheat	imp	France	<	3
95	wheat	imp	Germany	<	3
95	wheat	imp	Germany		3
95	wheat	imp	USA	<	3
95	wheat	imp	USA	<	3
95	wheat	imp	USA	<	3
95	wheat	imp	USA	<	3
95	rye	imp	Germany	<	3
95	rye	imp	Germany	<	3
95	rye	imp	Germany	<	3
95	rye	imp	Germany		2

Country: Norway
Reference no. 4
FORM 1

Reference 4

Mycotoxins in Norwegian grain, 1996

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 20 µg/kg	Highest concentration µg/kg
Wheat, norwegian	28	0	-
Oats, norwegian	14	0	-
Wheat, import	14	0	-
Rye, import	4	0	-

Content of zeralenone in the analysed samples of grain.

No = Norwegian, imp= imported

Year	Type of grain	No / imp	Country/ Area	Zeralenone µg/kg	
96	Autumn wheat	no	Rygge	<	20
96	Autumn wheat	no	Råde	<	20
96	Autumn wheat	no	Onsøy	<	20
96	Autumn wheat	no	Råde	<	20
96	Autumn wheat	no	Søndre Østfold	<	20
96	Autumn wheat	no	Vestby	<	20
96	Autumn wheat	no	Storhamar	<	20
96	Autumn wheat	no	Årnes	<	20
96	Spring wheat	no	Skjelfoss	<	20
96	Spring wheat	no	Skjelfoss	<	20
96	Spring wheat	no	Melsomvik	<	20
96	Spring wheat	no	Ringerike	<	20
96	Spring wheat	no	Bakke Bruk	<	20
96	Spring wheat	no	Bakke Bruk	<	20
96	Spring wheat	no	Trøgstad	<	20
96	Spring wheat	no	Vestby	<	20
96	Spring wheat	no	SØK Halden	<	20
96	Spring wheat	no	SØK Halden	<	20
96	Spring wheat	no	Mysen	<	20
96	Spring wheat	no	Trøgstad	<	20
96	Spring wheat	no	Søndre Østfold	<	20

96	Spring wheat	no	Hadeland	<	20
96	Spring wheat	no	Råde	<	20
96	Spring wheat	no	Fredrikstad	<	20
96	Spring wheat	no	Storhamar	<	20
96	Spring wheat	no	Årnes	<	20
96	Spring wheat	no	Årnes	<	20
96	Spring wheat	no	Sperrebotn, Våler	<	20
96	oats	no	Svindal	<	20
96	oats	no	Stokke	<	20
96	oats	no	Spydeberg	<	20
96	oats	no	Sørum	<	20
96	oats	no	Sørum	<	20
96	oats	no	Spydeberg	<	20
96	oats	no	Hobøl	<	20
96	oats	no	Halden	<	20
96	oats	no	Rakkestad	<	20
96	oats	no	Løten	<	20
96	oats	no	Ilseng	<	20
96	oats	no	Odal	<	20
96	oats	no	Odal	<	20
96	oats	no	Våler	<	20
96	wheat	imp	Canada	<	20
96	wheat	imp	Germany	<	20
96	wheat	imp	Germany	<	20
96	wheat	imp	Germany	<	20
96	wheat	imp	Denmark	<	20
96	wheat	imp	Denmark	<	20
96	wheat	imp	Denmark	<	20
96	wheat	imp	Denmark	<	20
96	wheat	imp	England	<	20
96	wheat	imp	Sweden	<	20
96	wheat	imp	Sweden	<	20
96	wheat	imp	USA	<	20
96	wheat	imp	USA	<	20
96	wheat	imp	USA	<	20
96	rye	imp	Denmark	<	20
96	rye	imp	Denmark	<	20
96	rye	imp	Germany	<	20
96	rye	imp	Germany	<	20

Country: Norway
Reference no. 5
FORM 1

Reference 5

Mycotoxins in Norwegian grain, 1997

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 1 µg/kg	Highest concentration µg/kg
Wheat, norwegian	25	6	21,2
Oats, norwegian	14	6	34,5
Wheat, import	10	3	13,2

Content of zeralenone in the analysed samples of grain.

No = Norwegian, imp= imported

Year	Type of grain	No / imp	Country/ Area	Zeralenone µg/kg	
97	wheat	no	Kvelde		21,2
97	wheat	no	Kvelde	<	1
97	wheat	no	Melsomvik	<	1
97	wheat	no	Rygge	<	1
97	wheat	no	Halden		1,7
97	wheat	no	Halden	<	1
97	wheat	no	Hadeland		1,4
97	wheat	no	Hadeland		2,6
97	wheat	no	Østre Romerike	<	1
97	wheat	no	Trøgstad	<	1
97	wheat	no	Rakkestad	<	1
97	wheat	no	Spydeberg	<	1
97	wheat	no	Rygge	<	1
97	wheat	no	Rygge	<	1
97	wheat	no	Hølen	<	1
97	wheat	no	Ski	<	1
97	wheat	no	Kråkstad	<	1
97	wheat	no	Svinndal	<	1
97	wheat	no	Eidsvoll	<	1
97	wheat	no	Gjøvik	<	1
97	wheat	no	Årnes		1,6

97	wheat	no	Odal	<	1
97	wheat	no	Odal		2,7
97	wheat	no	Flisa	<	1
97	wheat	no	Verdal	<	1
97	oats	no	Holter	<	1
97	oats	no	Barkåker		3,8
97	oats	no	Hønefoss		1,6
97	oats	no	Holmestrand	<	1
97	oats	no	Sandnes	<	1
97	oats	no	Lillestrøm		23,9
97	oats	no	Spydeberg	<	1
97	oats	no	Minnesund	<	1
97	oats	no	Våler	<	1
97	oats	no	Elverum	<	1
97	oats	no	Bruvoll		34,5
97	oats	no	Vikersund		2,1
97	oats	no	Røyken		1,8
97	oats	no	Solør	<	1
97	wheat	imp	Canada	<	1
97	wheat	imp	Canada		2
97	wheat	imp	Sweden	<	1
97	wheat	imp	USA		1,3
97	wheat	imp	USA	<	1
97	wheat	imp	USA		13,2
97	wheat	imp	Denmark	<	1
97	wheat	imp	Denmark	<	1
97	wheat	imp	Denmark	<	1
97	wheat	imp	Denmark	<	1

Country: Norway
Reference no. 6
FORM 1

Reference 6

Mycotoxins in Norwegian grain, 1998

Number of positive samples and highest concentration of zeralenone in samples of grain.

	No. of samples	No. of positive samples ZEN ≥ 2 µg/kg	Highest concentration µg/kg
Wheat, norwegian	35	9	13
Oats, norwegian	22	8	-
Wheat, import	24	8	4

Content of zeralenone in the analysed samples of grain.

No = Norwegian, imp= imported

Year	Type of grain	No / imp	Country/ Area	Zeralenone µg/kg	
98	wheat	no	Melsomvik	<	2
98	wheat	no	Melsomvik		2
98	wheat	no	Kvelde mølle	<	2
98	wheat	no	Kvelde mølle	<	2
98	wheat	no	Vestfold syd/ Telemark	<	2
98	wheat	no	Vestfold syd/ Telemark	<	2
98	wheat	no	Nome og Bø	<	2
98	wheat	no	Drammen		2
98	wheat	no	Drammen		2
98	wheat	no	Bø	<	2
98	wheat	no	N.vestfold	<	2
98	wheat	no	N.vestfold	<	2
98	wheat	no	Romedal		2
98	wheat	no	Hadeland	<	2
98	wheat	no	Hadeland	<	2
98	wheat	no	Søndre Østf		2
98	wheat	no	Søndre Østf	<	2
98	wheat	no	Østre Romerike		13
98	wheat	no	Østre Romerike	<	2
98	wheat	no	Romerike	<	2

98	wheat	no	Sørum/Romerike	<	2
98	wheat	no	Indre Østfold	<	2
98	wheat	no	Indre Østfold	<	2
98	wheat	no	Rakkestad	<	2
98	wheat	no	Rakkestad	<	2
98	wheat	no	Storhamar	<	2
98	wheat	no	Storhamar	<	2
98	wheat	no	Årnes		2
98	wheat	no	Årnes		2
98	wheat	no	Nogesfôr Flisa		2
98	wheat	no	Nogesfôr Flisa	<	2
98	wheat	no	Odal	<	2
98	wheat	no	Odal	<	2
98	wheat	no	Verdal	<	2
98	wheat	no	Verdal	<	2
98	oats	no	Gaupen		2
98	oats	no	Skottem	<	2
98	oats	no	Norge		2
98	oats	no	Eiksmarka	<	2
98	oats	no	Holmestrand	<	2
98	oats	no	N.vestfold		2
98	oats	no	Søndre Vestfold + Telemark	<	2
98	oats	no	Drammen		2
98	oats	no	Nes		2
98	oats	no	Ilseng	<	2
98	oats	no	Ilseng		2
98	oats	no	Vormsund		2
98	oats	no	Grue	<	2
98	oats	no	Grue	<	2
98	oats	no	Grue	<	2
98	oats	no	Grue	<	2
98	oats	no	Grue	<	2
98	oats	no	Grue	<	2
98	oats	no	Magnor		2
98	oats	no	Grue	<	2
98	oats	no	Magnor	<	2
98	oats	no	Våler	<	2
98	wheat	imp	Canada	<	2
98	wheat	imp	Denmark		4
98	wheat	imp	Estonia		2
98	wheat	imp	Denmark		2
98	wheat	imp	Denmark		3

98	wheat	imp	Denmark		4
98	wheat	imp	Estonia	<	2
98	wheat	imp	Estonia		2
98	wheat	imp	Kazakhstan	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	USA		2
98	wheat	imp	USA	<	2
98	wheat	imp	France	<	2
98	wheat	imp	Denmark	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	France	<	2
98	wheat	imp	Germany	<	2
98	wheat	imp	Germany		4
98	wheat	imp	Germany	<	2
98	wheat	imp	Denmark	<	2

Country: Norway
Reference no. 7
FORM 1

FORM 1. Occurrence data on zeralenone

Reference No.: 7

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

Zeralenone and Ochratoxin A exposure – especially for babies, 1999- 2000.

The samples was collected from different baby porridge.

Main tables are attached

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Norwegian National Veterinary Institute, Ullevålsveien 68, Pb 8156 Dep., 0033 Oslo, NORWAY.
The laboratory is accredited.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

1999 - 2000: LOD = 0,5 µg/kg (3x noise) LOQ/LOD = 10/3

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

1999-2000: Rhône-Diagnostics have developed the analytical method used in this reference. The method is described in: Schuhmacher et al. (1998). Immunoaffinity columns versus conventional clean-up: a method-comparison study for the determination of zearalenone in corn. Journal Analytical Chemistry, 360: 241-245.

1999-2000: recovery 100% - RSD = 6

Country: Norway
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Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used imported foods/domestically grown foods:

All baby porridge products were imported. The samples were bought from different stores in the district of Oslo, over a period of 10 month. The producers were Nestlé (81 samples), Helios (24 samples), Grano Vita (7 samples), Semper (6 samples) and Nordkronen(1 sample).

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

It was difficult to find a food group according to the food categorisation system, in annex 2 to place baby porridge made of rice and oat. We used the food groups 03 01G GC7 (Rice) and 03 01C GC3 (Oat), respectively.

Wholemeal and milling grain product is included in composite grain product.

In the raw data the baby porridge is divided into ecological and "usual" samples;

- *ecological = organic grown samples*
- *"usual" = conventional grown samples*

All raw data are given in this form and in table 7A.

Country: Norway
Reference no. 7
FORM 1/page 23

Reference 7

Zeralenone in baby porridge 1999- 2000

Zeralenone and Ochratoxin A exposure – especially for babies, 1999- 2000. // The samples was collected from different baby porridge

Number of positive samples and highest concentration of zeralenone in samples of **baby porridge**

	No. of samples	No. of positive samples ZEN ≥ 0,5 µg/kg	Highest concentration µg/kg
Maize	**26**	**26**	**305**
- organic	10	10	305
- conventional	16	16	7,2
Rice	**16**	**8**	**5,5**
- organic	7	3	1,5
- conventional	9	5	5,5
Oat	**26**	**6**	**4,8**
- organic	11	2	4,8
- conventional	15	4	1,4
Wheat	**38**	**26**	**2,2**
- organic	3	1	0,5
- conventional	35	25	2,2
Composite grain product			
	19	**12**	**1,9**
* Wholemeal			
- organic	3	2	1,9
- conventional	7	4	1,1
* Milling grain product			
- organic	4	3	1,2
- conventional	5	3	0,9

Content of zeralenone in the analysed samples of **baby porridge**

Year	Type of food	Producer	Comments	Zeralenone µg/kg	
1999	Maize	Helios	ecological		208
1999	Maize	Helios	ecological		214
1999	Maize	Helios	ecological		153
1999	Maize	Helios	ecological		305
1999	Maize	Helios	ecological		81
1999	Maize	Helios	ecological		187
1999	Maize	Helios	ecological		132

1999	Maize	Helios	ecological		275
1999	Maize	Helios	ecological		182
2000	Maize	Helios	ecological		33
1999	Maize	Nestlé	”usual”		6
1999	Maize	Nestlé	”usual”		2,2
1999	Maize	Nestlé	”usual”		5,3
1999	Maize	Nestlé	”usual”		3,2
1999	Maize	Nestlé	”usual”		7,2
1999	Maize	Nestlé	”usual”		4,6
1999	Maize	Nestlé	”usual”		1,8
1999	Maize	Nestlé	”usual”		2,1
1999	Maize	Nestlé	”usual”		6,2
1999	Maize	Nestlé	”usual”		2,2
1999	Maize	Nestlé	”usual”		1,2
1999	Maize	Nestlé	”usual”		1,9
1999	Maize	Nestlé	”usual”		1,4
2000	Maize	Nestlé	”usual”		2,1
2000	Maize	Nestlé	”usual”		5,5
2000	Maize	Nestlé	”usual”		1
2000	Rice	Grano Vita	ecological	<	0,5
2000	Rice	Helios	ecological		0,6
2000	Rice	Helios	ecological	<	0,5
2000	Rice	Helios	ecological		1,2
2000	Rice	Helios	ecological	<	0,5
2000	Rice	Helios	ecological	<	0,5
2000	Rice	Helios	ecological		1,5
2000	Rice	Nestlé	”usual”	<	0,5
2000	Rice	Nestlé	”usual”		1,4
2000	Rice	Nestlé	”usual”	<	0,5
2000	Rice	Nestlé	”usual”	<	0,5
2000	Rice	Nestlé	”usual”	<	0,5
2000	Rice	Nestlé	”usual”		1,1
2000	Rice	Nestlé	”usual”		5,5
2000	Rice	Nestlé	”usual”		1,2
2000	Rice	Nestlé	”usual”		5,4
1999	Oat	Helios	ecological	<	0,5
1999	Oat	Helios	ecological	<	0,5
1999	Oat	Helios	ecological		4,8
1999	Oat	Helios	ecological	<	0,5
1999	Oat	Helios	ecological		1,8
1999	Oat	Helios	ecological	<	0,5
1999	Oat	Helios	ecological	<	0,5
2000	Oat	Helios	ecological	<	0,5
2000	Oat	Helios	ecological	<	0,5
2000	Oat	Helios	ecological	<	0,5
2000	Oat	Helios	ecological	<	0,5

2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”		0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”	<	0,5
2000	Oat	Nestlé	“usual”		1,1
2000	Oat	Nestlé	“usual”		1,4
2000	Oat	Nestlé	“usual”		0,5
1999	Oat	Semper	“usual”	<	0,5
1999	Oat	Semper	“usual”	<	0,5
1999	Oat	Semper	“usual”	<	0,5
2000	Wheat	Helios	ecological		0,5
2000	Wheat	Helios	ecological	<	0,5
2000	Wheat	Nordkrone n	ecological	<	0,5
1999	Wheat	Nestlé	”usual”		1
1999	Wheat	Nestlé	”usual”		1,7
1999	Wheat	Nestlé	”usual”		0,7
1999	Wheat	Nestlé	”usual”		1,1
1999	Wheat	Nestlé	”usual”	<	0,5
1999	Wheat	Nestlé	”usual”		1,3
1999	Wheat	Nestlé	”usual”		1
1999	Wheat	Nestlé	”usual”		0,9
1999	Wheat	Nestlé	”usual”		1,4
1999	Wheat	Nestlé	”usual”		0,7
1999	Wheat	Nestlé	”usual”		1,6
1999	Wheat	Nestlé	”usual”		0,8
1999	Wheat	Nestlé	”usual”		1
2000	Wheat	Nestlé	”usual”		2,2
2000	Wheat	Nestlé	”usual”		1,2
2000	Wheat	Nestlé	”usual”		0,7
2000	Wheat	Nestlé	”usual”		0,9
2000	Wheat	Nestlé	”usual”		1
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”		1
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”		1
2000	Wheat	Nestlé	”usual”		1
2000	Wheat	Nestlé	”usual”		0,9
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”		0,7
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”		0,5

2000	Wheat	Nestlé	”usual”		0,9
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Wheat	Nestlé	”usual”		0,8
2000	Wheat	Nestlé	”usual”	<	0,5
2000	Composite grain product	Grano Vita	Wholemeal, ecological	<	0,5
2000	Composite grain product	Grano Vita	Wholemeal, ecological		1,9
2000	Composite grain product	Grano Vita	Wholemeal, ecological		1
2000	Composite grain product	Grano Vita	ecological		1,2
2000	Composite grain product	Grano Vita	ecological		1,1
2000	Composite grain product	Grano Vita	ecological		1,2
2000	Composite grain product	Helios	ecological	<	0,5
2000	Composite grain product	Nestlé	Wholemeal, “usual”		0,7
2000	Composite grain product	Nestlé	Wholemeal, “usual”		1
2000	Composite grain product	Nestlé	Wholemeal, “usual”		1
2000	Composite grain product	Nestlé	Wholemeal, “usual”		1,1
1999	Composite grain product	Semper	Wholemeal, “usual”	<	0,5
1999	Composite grain product	Semper	Wholemeal, “usual”	<	0,5
1999	Composite grain product	Semper	Wholemeal, “usual”	<	0,5
2000	Composite grain product	Nestlé	“usual”	<	0,5
2000	Composite grain product	Nestlé	“usual”		0,5
2000	Composite grain product	Nestlé	“usual”		0,9
2000	Composite grain product	Nestlé	“usual”	<	0,5
2000	Composite grain product	Nestlé	“usual”		0,7

FORM 1. Occurrence data on zeralenone

Reference No.: 8

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

Zeralenone in different products of maize, 2001

Main tables are attached

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Norwegian National Veterinary Institute, Ullevålsveien 68, Pb 8156 Dep., 0033 Oslo, NORWAY.
The laboratory is accredited.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

LOD for different products of maize, analysed in 2001:

- *Sweet maize; LOD was 5 µg/kg (3x noise) LOQ/LOD = 10/3*
- *Corn flakes and different maize fractions; LOD was 1,94 µg/kg ≈ 2 µg/kg (3x noise) LOQ/LOD = 10/3*

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Rhône-Diagnostics have developed the analytical method used in this reference. The method is described in: Schuhmacher et al. (1998). Immunoaffinity columns versus conventional clean-up: a method-comparison study for the determination of zearalenone in corn. Fresenius Journal Analytical Chemistry, 360: 241-245.

This method has been tested in a international EU-SMT project (SMT4-CT98-2228).

Country: Norway
Reference no.8
FORM 1

Recovery and reproducibility for different products of maize, analysed in 2001:

- *Sweet maize; Recovery 97%, RSD = 4*
- *Corn flakes; Recovery 98%, RSD = 12*
- *Different maize fractions; Recovery 99%, RSD = 12*

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used imported foods/domestically grown foods:

All products were imported.

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Hermetic maize, baby maize and maize cob is the same as sweet corn

Country: Norway
Reference no. 8
FORM 1/page 29

Reference 8

Zeralenone in different products of maize, 2001

Number of positive samples and highest concentration of zeralenone in samples of maize

	No. of samples	No. of positive samples ZEN ≥ 5 µg/kg	Highest concentration µg/kg
Hermetic maize	26	0	-
Baby maize	10	0	-
Maize cob	14	0	-
		ZEN ≥ 1,94 µg/kg	
Corn flakes	50	33	13,94
Maize fractions			
- Maize meal	20	19	54,46
- Maize starch	14	9	10,93
- Maize grits	4	3	59,04
- Polenta	20	15	53,51
- Bread	2	2	4,23
- Maize cob	1	0	-

Content of zeralenone in the analysed samples of maize

Year of analysis	Type of food	Producer / Import	Comments	Zeralenone µg/kg
02.05.2002	Maize	Eldorado	Hermetic	<5
25.04.2002	Maize	Diva	Hermetic	<5
02.05.2002	Maize	Machandel	Hermetic	<5
02.05.2002	Maize	Luxus	Hermetic	<5
02.05.2002	Maize	Eldorado	Hermetic	<5
02.05.2002	Maize	Luxus	Hermetic	<5
02.05.2002	Maize	Green Giant	Hermetic	<5
02.05.2002	Maize	Green Giant	Hermetic	<5
02.05.2002	Maize	S&W	Hermetic	<5
02.05.2002	Maize	Diva	Hermetic	<5
17.04.2002	Maize	Green Giant	Hermetic	<5
02.05.2002	Maize	Eldorado	Hermetic	<5
02.05.2002	Maize	Eldorado	Hermetic	<5
02.05.2002	Maize	Landlord	Hermetic	<5
02.05.2002	Maize	Landlord	Hermetic	<5
17.04.2002	Maize	Luxus	Hermetic	<5
17.04.2002	Maize	Luxus	Hermetic	<5
17.04.2002	Maize	Don Frubbo	Hermetic	<5
17.04.2002	Maize	Machandel	Hermetic	<5
17.04.2002	Maize	Rainbow	Hermetic	<5
17.04.2002	Maize	Rainbow	Hermetic	<5
17.04.2002	Maize	Rainbow	Hermetic	<5
25.04.2002	Maize	Luxus	Hermetic	<5
25.04.2002	Maize	Green Giant	Hermetic	<5

25.04.2002	Maize	Green Giant	Hermetic	<5
25.04.2002	Maize	Eldorado	Hermetic	<5
25.04.2002	Baby maize	Luxus	Hermetic	<5
02.05.2002	Baby maize	Diva	Hermetic	<5
25.04.2002	Baby maize	Zimbabwe	Fresh	<5
17.04.2002	Baby maize	Tiger Tiger	Hermetic	<5
25.04.2002	Baby maize	Diva	Hermetic	<5
17.04.2002	Baby maize	Zimbawe	Fresh	<5
25.04.2002	Baby maize	Landlord	Hermetic	<5
17.04.2002	Baby maize	Thailand	Hermetic	<5
17.04.2002	Baby maize	Luxus	Hermetic	<5
17.04.2002	Baby maize	Thailand	Fresh	<5
02.05.2002	Maize cob	Luxus	Hermetic	<5
25.04.2002	Maize cob	S&W	Hermetic	<5
02.05.2002	Maize cob	Diva	Hermetic	<5
25.04.2002	Maize cob	Nederland	Fresh	<5
25.04.2002	Maize cob	Spania	Fresh	<5
25.04.2002	Maize cob	La Horadada	Fresh	<5
17.04.2002	Maize cob	Israel	Fresh	<5
17.04.2002	Maize cob	S&W	Hermetic	<5
02.05.2002	Maize cob	Diva	Hermetic	<5
25.04.2002	Maize cob	Israel	Fresh	<5
17.04.2002	Maize cob	Eldorado	Hermetic	<5
17.04.2002	Maize cob	Landlord	Hermetic	<5
25.04.2002	Maize cob	Israel	Fresh	<5
25.04.2002	Maize cob	USA	Fresh	<5
05.04.2002	Corn flakes	Organic /kornkammeret	Denmark	<1,94
01.02.2002	Corn flakes	Spielberger (ecological)		1,94
24.01.2002	Corn flakes	Kellogg's	Germany	2,16
01.02.2002	Corn flakes	Kellogg's	Germany	2,24
01.02.2002	Corn flakes	Euroshopper		5,36
01.02.2002	Corn flakes	Eldorado		<1,94
01.02.2002	Corn flakes	Landlord		<1,94
01.02.2002	Corn flakes	Glutano	Germany	4,2
01.02.2002	Corn flakes	Kellogg's	Germany	2,06
01.02.2002	Corn flakes	Kellogg's	Germany	<1,94
05.04.2002	Corn flakes	Kellogg's	Germany	<1,94
01.02.2002	Corn flakes	Euroshopper		2,06
01.02.2002	Corn flakes	Euroshopper		2,2
05.04.2002	Corn flakes	Kellogg's	Germany	13,94
01.02.2002	Corn flakes	Euroshopper		6,88
05.04.2002	Corn flakes	Kellogg's		<1,94
05.04.2002	Corn flakes	Kellogg's		2,59
24.01.2002	Corn flakes	Eldorado		<1,94
14.02.2002	Corn flakes	Eldorado		1,96
14.02.2002	Corn flakes	Kellogg's	Germany	<1,94
24.01.2002	Corn flakes	Euroshopper	Germany	<1,94

05.04.2002	Corn flakes	Eldorado		1,97
14.02.2002	Corn flakes	Kellogg's		1,95
14.02.2002	Corn flakes	Eldorado		4,03
05.02.2002	Corn flakes	Kellogg's		2,475
05.02.2002	Corn flakes	Kellogg's		2,305
05.02.2002	Corn flakes	Eldorado		2,864
05.02.2002	Corn flakes	Kellogg's		<1,94
05.04.2002	Corn flakes	Kellogg's		2,64
05.02.2002	Corn flakes	Kellogg's		<1,94
05.04.2002	Corn flakes	Euroshopper		3,89
05.02.2002	Corn flakes	Euroshopper		11,816
12.04.2002	Corn flakes	Euroshopper		3,2
14.02.2002	Corn flakes	Euroshopper		<1,94
01.02.2002	Corn flakes	Kellogg's		<1,94
24.01.2002	Corn flakes	Kellogg's		<1,94
14.02.2002	Corn flakes	Nestlé		2,09
14.02.2002	Corn flakes	Kellogg's		<1,94
14.02.2002	Corn flakes	Kellogg's		2,16
01.02.2002	Corn flakes	Kellogg's frosties		2,36
12.04.2002	Corn flakes	Nestlé		1,6
12.04.2002	Corn flakes	Kellogg's frosties		<1,94
12.04.2002	Corn flakes	Eldorado		6,96
12.04.2002	Corn flakes	Kellogg's		3,3
01.02.2002	Corn flakes	Kellogg's		36,28
12.04.2002	Corn flakes	Husets økologiske		2,12
14.02.2002	Corn flakes	Husets økologiske		2,31
24.01.2002	Corn flakes	Eldorado		2,13
24.01.2002	Corn flakes	Kellogs Frosties		<1,94
24.01.2002	Corn flakes	Corn Flakes XP	Germany	1,95
30.10.2001	Maize meal	Gaia	ecological	10,79
30.10.2001	Maize meal	Nutana	ecological	9,3
30.10.2001	Maize meal	Nutana		18,98
30.10.2001	Maize meal	Helios	ecological	23,48
14.11.2001	Maize meal	Unifood		19,83
22.11.2001	Maize meal	TRS		7,09
22.11.2001	Maize meal	TRS		<1,94
14.11.2001	Maize meal	TRS		7,43
22.11.2001	Maize meal	TRS		10,55
14.11.2001	Maize meal	TRS		4,50
08.11.2001	Maize meal	Nutana	ecological	9,42
30.10.2001	Maize meal	TRS		15,38
08.11.2001	Maize meal	MAP		5,78
12.04.2002	Maize meal	Nutana		41,00
12.04.2002	Maize meal	Nutana		54,46
12.04.2002	Maize meal	Nutana		47,46
12.04.2002	Maize meal	Nutana		40,51
07.05.2002	Maize meal	Natuna		35,85

07.05.2002	Maize meal	Natuna	ecological	21,60
07.05.2002	Maize meal	Helios	gluten-free	6,23
21.11.2001	Maize starch	Maizena		<1,94
24.01.2002	Maize starch	Maizena		<1,94
14.11.2001	Maize starch	Maizena		3,69
12.04.2002	Maize starch	Maizena		2,13
12.04.2002	Maize starch	Maizena		6,42
12.04.2002	Maize starch	Maizena		10,93
07.05.2002	Maize starch	Maizena		9,06
07.05.2002	Maize starch	Maizena		5,93
07.05.2002	Maize starch	Maizena		3,58
07.05.2002	Maize starch	"Bauck"/Germany	ecological/gluten-free	<1,94
07.05.2002	Maize starch	"Bauck"/Germany	ecological/gluten-free	<1,94
07.05.2002	Maize starch	"Bauck"/Germany	ecological/gluten-free	4,36
07.05.2002	Maize starch	"Bauck"/Germany	ecological/gluten-free	<1,94
07.05.2002	Maize starch	"Bauck"/Germany	ecological/gluten-free	3,57
21.11.2001	Maize grits	Gaia	ecological	<1,94
30.10.2001	Maize grits	Nutana		59,04
12.04.2002	Maize grits	Nutana		48,74
07.05.2002	Maize grits	Natuna		41,51
21.11.2001	Polenta	Risenta		7,91
14.11.2001	Polenta	Valsugana		3,42
21.11.2001	Polenta	Favero		<1,94
30.10.2001	Polenta	Favero		<1,94
24.01.2002	Polenta	Unifood		9,21
22.11.2001	Polenta	TRS		10,17
22.11.2001	Polenta	TRS		<1,94
24.01.2002	Polenta	Natcho		<1,94
22.11.2001	Polenta	TRS		2,05
22.11.2001	Polenta	TRS		29,7
14.11.2001	Polenta	Favero		5,07
21.11.2001	Polenta	TRS		53,51
21.11.2001	Polenta	KTC		45,26
21.11.2001	Polenta	Nutana		20,93
08.11.2001	Polenta	Unifood		13,16
14.11.2001	Polenta	Favero		<1,94
21.11.2001	Polenta	MAP		6,77
12.04.2002	Polenta	Express		3,24
07.05.2002	Polenta express	Tipiak		8,39
07.05.2002	Polenta	Spielberger/demeter	ecological	3,71
07.05.2002	Corn cob	Helios	ecological/gluten-free	<1,94
07.05.2002	Bread	Olda	gluten-free	4,23
07.05.2002	Bread	Olda	gluten-free	2,50

Country: Norway
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FORM 2. Food consumption data
Reference No.: 9-11

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

9: NORKOST 1997
NORKOST 1997: Johansson, L, Solvoll K: NORKOST 1997. Landsomfattende kostholds-undersøkelse blant menn og kvinner i alder 16-79 år. Rapport nr.2/1999. Statens råd for ernæring og fysisk aktivitet. Oslo 1999.

NORKOST 1997: In the national representative dietary survey NORKOST 1997, 2 672 persons in the age of 16 to 79 years participated. The method used in NORKOST was a quantitative food frequency questionnaire, which was distributed and collected in four different periods spread through the year. The result from the survey describes the usual diet among the participants.

Sex/Age group	*n*	*Body weight, Mean (kg/person)*
Males 16-79 years old (NORKOST)	*1291*	*81*
Females 16-79 years old (NORKOST)	*1381*	*66*

10: Fish and game study-part A
Fish & game study: Meltzer, H, Bergsten C, Stigum, H: Fisk og viltundersøkelsen. Konsum av matvarer som kan ha betydning for inntaket av kvikksølv, kadmium og PCB/dioksin i norsk kosthold. SNT-rapport 6, 2002 (Summary In English).
In 1999-2000 two dietary surveys were conducted, focusing on the consumption patterns of foods which may contain environmental contaminants, primarily cadmium, mercury, polyclorinated biphenols (PCB) and dioxines. Part A of the survey encompassed a nation-wide postal qualitative food frequency questionnaire to ten thousand randomly chosen persons between 18 and 79 years old. Part B encompassed a postal quantitative food frequency questionnaire to six thousand randomly chosen persons from 14 coastal and 13 inland municipalities. Standard portion sizes for each of the food items included in the survey were used to convert food frequencies into amounts consumed per day.

11: SPEDKOST 1998
Lande B. The Norwegian infant nutrition survey 1998 among 6 months old infants, Report (in Norwegian). Oslo: Norwegian Directorate for Health and
Social Welfare (in preparation).

Data for the consumption of porridge among 6 months old children are from the SPEDKOST-study. The survey was carried out in Norway in 1998. The samples were representative and consisted of 2 383 children. The methodology used was a precoded 4-d records and data refer to food as consumed with weight of food using photographs of foods items.

Comments on:
Why the data are / are not representative for the consumption of the food item in the member state:
Other comments:

FORM 3: Estimate of daily intake of zeralenone for an average person and for risk subgroup of population

Comments on estimated daily intake of <u>zearalenone</u>
(Adequacy of the data available, need for additional information etc.)

There is a tendency that surveys using food frequency questionnaires overestimate the food consumption in relation to the food records measures. The average energy intake among men aged 16 to 19 years who participated in NORKOST 1993/94 was above the reference values for boys aged 15 to 18 years. This may indicate that this age group has overestimated their consumption in some degree. However, the average energy intake among the men in the age group 30 to 79 years old were within the reference values. The female participants reported energy intakes below the reference values. This indicates that the women may have underestimated their consumption.

Certain assumptions were made in order to estimate the food consumption. The contribution from cakes and biscuits to the total intake of different kinds of flour, were calculated by using assumptions about the percentage of different kinds of flours in these products. The assumptions were based on standard recipes laid down in the food composition database. Whether these standard recipes reflect the recipes used in "real life" is uncertain. Furthermore, in the food composition database similar types of certain foods have been aggregated into one food code. For instance, different kinds of breakfast cereals are aggregated into one food code. In the database a «recipe» is connected to such a food code with information about the assumed percentage of certain types of breakfast cereals. This information was used when calculating the amount of grain-/flour consumption among the participants.

To our knowledge, it is uncertain how much of the fusarium toxin in question that may be found in the outer layer of the grain and in its kernel, respectively. Therefore, when assessing the dietary intake of zearalenone it was assumed that the content of the toxin was the same in the flour as it was found by analysis of the whole grain.

NORKOST 1997 does not give information about the consumption of bran. Therefore, complementary data on the consumption of bran are from the Fish- and game study. The method used in this study was a food frequency questionnaire, which is a similar method to the one used in NORKOST 1997. However, in the Fish- and game study the participants were not asked to report how much of the products that was consumed at each eating occasion. It was assumed that an average portion of bran weighs 5 grams.

Norwegian consumption data on products such as maize are lacking. Since maize may be an important contributor to the dietary intake of fusarium toxins, there may be groups of Norwegians who consume large quantities of maize that may have an intake of fusarium toxins that exceeds the estimated intake presented in this report.

Other comments:

Country: Norway
FORM 4/ page 35

FORM 4. Other sources of zeralenone exposure

Reference No.: ____

Summary:
(Main Tables, figures and summary from the reference can be copied and attached to this Form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Other comments:

Country: Norway
FORM 5/ page 36

FORM 5. Present regulations for zeralenone

We don`t have a regulatory limit for Zearalenone yet. But when high levels of Zearalenone occur in spesific foods, these foods might be excluded from the market dependent on the risk for exceeding the TDI value.

Present maximum limits of zeralenone for foods and beverages:

Zeralenone	Food/beverages	Maximum limit	Remarks	Reference

Country: PORTUGAL

FORM 1. Occurrence data on zeralenone

Reference No.: 1

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Original Report in annex.

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Analyseis are performed by the laboratoryof INETI (Instituuto Nacional de Engenharia e Tecnologia Industrial) – Food Department, which is accredited by the IPQ (Instituto Português da Qualidade) according to EN ISO/IEC 17025.

The laboratory has participated in international studies for method validation of several mycotoxins.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

The limits (LOD and LOQ) were defined in 3×noise and 9×noise

LOD/LOQ in μg/kg 2,5/5

Country: PORTUGAL
Reference no. 1
FORM 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)
The method used to determine zearalenone in cereals does the purification of samples using immunoaffinity columns with specific anticorps to zearalenone. The colunms used were from VICAM.

The recovery for cereals is 80%.

The data were not corrected for recovery.

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

The samples used in this study were supplied by industrial millings (cereals and byproducts) to know the content of Fusarium toxins in these products consumed in Portugal. The breakfast products were proceeding from several origins.

Ratio used for imported foods/domestically grown foods:

There is not date.

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

In the document “Balança Alimentar Portuguesa” we have the consumption of cereals.
For wheat we have 235.1 g/ day
Then we have 20% of **bran** and we consume in human food 0.53% of total (animal and human)

Bran $235.1 \times 20\% = 47.02 \times 0.53\%$ **= 0.25 g**
Integral meal $235.1 \times 1.3\%$ **= 3.01 g**
White wheat meal $235.1 - 3.01 = 232.0 \times 80\%$ **= 185.6 g**

Other comments:

Country:PORTUGAL

FORM 2. Food consumption data

Reference No.: 1

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Instituto Nacional de Estatística – Balança Alimentar Portugues (BAP), Estudo nº 79, 1990 - 1997

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

The data are representative for the consumption of the food item in Portugal.

Other comments:

The methodology of the survey used is:

For the estimate of the mean consumption for an average person, it was calculated as**.**

Produced + Imported = Resource = Employment

Employment = Exported + Consumption – Stock variation

Human consumption = Rate between annual resource and Population number

Country:PORTUGAL

FORM 3: Estimate of daily intake of zearalenone for an average person and for at risk subgroup of population

Comments on estimated daily intake of _____
(Adequacy of the data available, need for additional information etc.)

Other comments:

Country: PORTUGAL

FORM 4. Other sources of zearalenone exposure

Reference No.: 1

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Other comments:

Country:PORTUGAL

FORM 5. Present regulations for zearalenone

Present maximum limits of zearalenone for foods and beverages:

Food/beverages	Maximum limit	Remarks	Reference

Country: United Kingdom

FORM 1. Occurrence data for zearalenone

Reference No.: 1
Ministry of Agriculture, Fisheries and Food, 1999, Survey for aflatoxins, ochratoxin A, fumonisins and zearalenone in raw maize. *Food Surveillance Information Sheet* No. 192. Food Survey Information Sheets on the WWW: http://www.food.gov.uk/science/surveillance/

Scudamore, K.A. and Patel, S., 2000, Survey for aflatoxins, ochratoxin A, zearalenone and fumonisins in maize imported into the United Kingdom. *Food Additives and Contaminants*, 17 (5), 407-416.

Summary:
The survey determined the levels of zearalenone in 139 samples of raw maize imported into the UK. Samples were taken at UK ports or on entry to large maize mills. Zearalenone was detected in almost every sample with 42 per cent of samples containing more than 100 microgram/kg of zearalenone. Imported raw maize undergoes cleaning and further processing before use for direct consumption or as an ingredient in foodstuffs and, therefore, the amounts of mycotoxins in raw maize are unlikely to reflect the concentrations in the finished products for human consumption.

Table 1: Summary of results for zearalenone in raw maize

Sample origin	*No. of* **Samples**	**Number of samples in the range (µg/kg)**					**Max.**
		< 10	**10-20**	**20.1-100**	**100.1-500**	**> 500**	
France	97	8	5	51	32	1	584
Argentina	37	0		11	26	0	357
Other European	5	4	0	1	0	0	34
Total	**139**	**12**	**5**	**63**	**58**	**1**	**584**

Comments on:

Evidence of Analytical Quality Assurance (AQA):
The laboratory was accredited for the analyses. It also participates in FAPAS.

Limits of quantification (LOQ) and limits of detection, determination (LOD):
The limit of detection was 4 µg/kg and the limit of quantification was 8 µg/kg.

The limit of detection (LOD) was defined as the minimum detectable level of the analyte under the assay conditions during a particular assay. The limit of quantification (LOQ) was defined as the minimum level of analyte that could reliably be quantified. In this survey the LOD was defined as 3 times the electronic baseline noise and the LOQ as 6 times baseline noise.

Country: United Kingdom
Reference no. 1
FORM 1/page 2

Analytical method:
On-going control of the method was monitored using in-house naturally maize in house reference material contaminated at 9.7 µg/kg which was then spiked at 20 µg/kg. Typical mean recovery was 85% with a coefficient of variability of 3.2% for 6 replicates.
Recoveries obtained for the analytical method fell within the acceptable range throughout the study (70-110%) and all results are corrected for recovery.

Why the data are / are not evaluated to be representative for the member state:
The data are considered to be representative of the quality of the maize imported into the UK during nine months 1998/99. It is estimated that the samples taken as part of this survey were drawn from almost half of the consignments of maize imported during this period.

Sampling at the ports

Samples for analysis consisted of aggregates of incremental samples taken randomly throughout the consignments of raw maize. At Manchester, health and safety considerations ruled out sampling on board ship, particularly during unloading, because safe access to sample in a systematic manner was considered impractical. After unloading the maize was transferred to silos until required, at which time it was discharged by conveyer direct to a mill. Twenty incremental samples each of 0.5 kg were taken from the conveyer during a 2 hour period and bulked. At Merseyside and Hull and Goole it was feasible to sample individual holds and 100 incremental samples of 300 grams were obtained from holds during discharge. The 30 kg bulk sample was thoroughly mixed and a 10 kg sub-sample sent to the laboratory for analysis.

Sampling at maize mills

Samples were either taken from lorries, normally carrying approximately 25 tonne loads, or from a moving belt as the consignment was being discharged from the ship directly to silos at the mill. At one mill, 0.5 kg incremental samples were taken from
20 consecutive lorries using an automatic sampling probe. The incremental samples were bulked to give a 10 kg laboratory sample representing 500 tonnes. At a second mill 30 incremental 'tailgate' samples of 1.5 kg were taken from every third lorry arriving at the mill. An incremental sample of 0.5 kg was taken from each of the 30 samples and the incremental samples bulked to give a 15 kg laboratory sample. At the third mill 20 grab samples of 1.5 kg were taken from a moving belt on discharge from a holding silo over a 5 day period. An incremental sample of 0.5 kg was taken from each of the 20 samples and bulked to give a 10 kg laboratory sample.

Ratio used for imported foods/domestically grown foods:

100% imported

Country: United Kingdom
Reference no. 1
FORM 1/page 3

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:
Breakfast cereals 85.5%
Snacks ? to 75%

Other comments:

Country: United Kingdom

FORM 1. Occurrence data for zearalenone

Reference No.: 2
Food Standards Agency, 2002, Survey of retail rice for a range of mycotoxins. *Food Survey Information Sheet* No. 22/02.
Food Survey Information Sheets on the WWW: http://www.food.gov.uk/science/surveillance/

Summary:
The survey determined the levels of zearalenone in 100 samples of rice (long grain rice, easy cook rice, basmati rice, speciality rice, brown rice, short grain rice, flaked and ground rice) available at retail outlets in the UK. Zearalenone was not detected in any of the samples analysed.

Comments on:

Evidence of Analytical Quality Assurance (AQA):
The analyses of zearalenone in rice were carried out using a United Kingdom Accreditation Scheme (UKAS) accredited method. On-going control of mycotoxin analyses was monitored using in-house naturally contaminated reference materials and by participation in UK and EC proficiency schemes, collaborative and intercomparison trials (FAPAS, SM&T).

Limits of quantification (LOQ) and limits of detection, determination (LOD):
The limit of detection was 5 µg/kg and the limit of quantification was 10 µg/kg.

The limit of detection (LOD) was defined as the minimum detectable level of the analyte under the assay conditions during a particular assay. The limit of quantification (LOQ) was defined as the minimum level of analyte that could reliably be quantified. In this survey the LOD was defined as 3 times the electronic baseline noise and the LOQ as 6 times baseline noise.

Analytical method:
The method used was UKAS accredited and had been validated i.e. evidence had been, and continues to be, generated to demonstrate that the methods do what is intended and are claimed reliable and reproducible. The method validation has covered all aspects of the method including sample preparation, extraction and clean-up, chromatographic separation and detection. The validation has principally been conducted using naturally contaminated samples. The parameters considered during method validation were specificity/selectivity, precision, accuracy, linearity, range, sensitivity, stability, ruggedness and system suitability.

The extraction method used has been reported to give full recovery of toxin. All analyses were conducted with spiked samples, i.e. to each sample matrix on each day a known amount of toxin was added prior to extraction. These samples were used to assess recovery and recoveries between 70% and 110% were classed as valid. Spiked samples were also used for quantification and all results were corrected for recovery.

Country: United Kingdom
Reference no. 2
FORM 1/page 2

Why the data are / are not evaluated to be representative for the member state:
The data are considered to be representative of the quality of rice available at retail outlets in the UK in 2000. Random samples were purchased from retail outlets in 3 areas of England; the Crawley (south east), Bristol (south west) and County Durham (north east) between April and May 2000. The number of samples of each type of rice collected was calculated on a market share basis.

Ratio used for imported foods/domestically grown foods:
100% imported.

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:
Not applicable.

Other comments:

Country: United Kingdom

FORM 1. Occurrence data for zearalenone

Reference No.: 3
Food Standards Agency, 2002, Survey of retail cereal products for trichothecenes and zearalenone. *Food Survey Information Sheet* No. ?/**02**. (In press).
Food Survey Information Sheets on the WWW: http://www.food.gov.uk/science/surveillance/

Summary:
In the survey, 377 samples of retail cereal products (breakfast cereals, bread, cakes, biscuits, flour, polenta, savoury snacks, cornflour and baby cereal) were analysed for zearalenone. Zearalenone was quantified in 53 of the 377 samples at levels ranging from 8.0 to 231.8 micrograms/kg. The highest levels were found samples of breakfast cereals and cereal-based snacks. Zearalenone was not quantifiable in samples of cakes and flour. A summary of the results is given in the attached Table 1.

Comments on:

Evidence of Analytical Quality Assurance (AQA):
The analyses of zearalenone in cereal-based products were carried out using a United Kingdom Accreditation Scheme (UKAS) accredited method. On-going control of mycotoxin analyses was monitored using in-house naturally contaminated reference materials and by participation in UK and EC proficiency schemes, collaborative and intercomparison trials (FAPAS, SM&T).

Limits of quantification (LOQ) and limits of detection, determination (LOD):
The limit of quantification was 8 µg/kg for zearalenone.

The limit of quantification (LOQ) was defined as the minimum level of analyte that could reliably be quantified under the assay conditions during a particular assay. In this survey the LOQ was defined as 6 times the electronic baseline noise.

Analytical method:
The methods used were UKAS accredited and have been validated i.e. evidence has been, and continues to be, generated to demonstrate that the methods do what is intended and are claimed reliable and reproducible. The method validation has covered all aspects of the method including sample preparation, extraction and clean-up, chromatographic separation and detection. The validation has principally been conducted using naturally contaminated samples. The parameters considered during
method validation were specificity/selectivity, precision, accuracy, linearity, range, sensitivity, stability, ruggedness and system suitability.

The extraction method used has been reported to give full recovery of toxin. All analyses were conducted with spiked samples, i.e. to each sample matrix on each day a known amount of toxin was added prior to extraction. These samples were used to

assess recovery and recoveries between 70% and 110% were classed as valid. Spiked samples were also used for quantification and all results were corrected for recovery.

Why the data are / are not evaluated to be representative for the member state:
The data are considered to be representative of the quality of cereal-based products (breakfast cereals, bread, cakes, biscuits, flour, polenta, savoury snacks, cornflour and baby cereal) available at retail outlets in the UK in 2000 and of cereal-based snacks in 2001. Random samples were purchased from retail outlets in 3 areas of England; the Sussex (South), Bristol (South West) and County Durham (North East) between April and May 2000. The samples were selected to include a wide range of stores both supermarkets, smaller shops and market stalls. A wide range of brands were covered, informed by market share information, in order to ensure that the survey was representative of the supply of the products available to consumers in the UK. Additional samples of cereal-based snack products were purchased during October and November 2001 from retail outlets, selected at random, in the same areas as the main survey.

Ratio used for imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:
Not applicable.

Other comments:

Country: United Kingdom
Reference no. 3
Fom 1/page 3

Table 1: Summary of zearalenone occurrence in retail cereal products.

Commodity	No. of samples	Number of samples in range (µg/kg)						Range (µg/kg)
		< LOQ	8 - 25	25.1 - 50	50.1 – 75	75.1 - 100	> 100	
Breakfast cereals	60	49	6	2	1	0	2	10.0 - 231.8
Biscuits	60	58	2	0	0	0	0	10.7 - 11.8
Cakes	40	40	0	0	0	0	0	-
Flour	40	40	0	0	0	0	0	-
Bread	60	59	1	0	0	0	0	15.8
Polenta	8	3	5	0	0	0	0	8.7 - 23.4
Savoury snacks	84	55	13	8	5	3	0	19.5 - 99.0
Cornflour	8	4	4	0	0	0	0	8 - 17.3
Baby cereal	17	16	1	0	0	0	0	11.6
Total	**297**	**244**	**32**	**10**	**6**	**3**	**2**	

Country: United Kingdom

FORM 1. Occurrence data for zearalenone

Reference No.: 4
Food Standards Agency, 2002, Survey of milk for mycotoxins. *Food Survey Information Sheet* No. 17/01 (supplement). (In press).
Food Survey Information Sheets on the WWW: http://www.food.gov.uk/science/surveillance/

Summary:
This survey analysed 50 retail and 50 farm-gate milk samples, produced by both conventional and organic methods, for zearalenone, α- and β-zearalenol and their conjugates. Zearalenone was detected in 3 percent of conventional retail milk samples at levels ranging from 1.2 to 5.5 µg/l. Zearalenone conjugates were found in 3 percent of conventional retail milks and 2 percent of conventional farm-gate milks at levels ranging from 3.4 to 12.5 µ/l. Zearalenone conjugates were not detected in the same samples as ZEA. Alpha- and β-zearalenol and α- and β-zearalenol conjugates were not detected in any of the samples.

A summary of the results is given in Table1.

Table 1: Summary of levels of zearalenone and zearalenone conjugates in retail and farm-gate milk.

Commodity	***Sample no.***	***Zearalenone (µg/l)***	***Zearalenone conjugates (µg/l)***
Retail conventional	*T21049*	*5.5*	*n/d*
	T21052	*1.2*	*n/d*
	T21058	*n/d*	*5.9*
	T21066	*n/d*	*12.5*
	T21075	*1.2*	*n/d*
	T21092	*n/d*	*11.3*
Farm-gate conventional	*T21100*	*n/d*	*8.3*
	T21106	*n/d*	*3.4*

n/d = not detected

Comments on:

Evidence of Analytical Quality Assurance (AQA):
The analyses of zearalenone in milk were carried out using a United Kingdom Accreditation Scheme (UKAS) accredited method. The methods for zearalenone conjugates and α- and β-zearalenol and their conjugates follow published procedures and have been validated to demonstrate that the methods do what is intended and are reliable and reproducible. On-going control of mycotoxin analyses is monitored using in-house naturally contaminated reference materials and by participation in UK and EC proficiency schemes, collaborative and intercomparison trials (FAPAS, SM&T).

Country: United Kingdom
Reference no. 4
FORM 1/page 2

Limits of quantification (LOQ) and limits of detection, determination (LOD):
The limit of detection for zearalenone, zearalenone and α- and β-zearalenol and their conjugates was 1.0 µg/l.

The level of detection of a method is defined as the minimum detectable level of an analyte under the assay conditions during a particular assay. The limit of detection is dependant on the sensitivity of the analyte and the base-line noise at the time of analysis. In this survey the LOD was defined as 3 times the electronic baseline noise.

Analytical method:
HPLC methods were used for the determination of zearalenone and α- and β-zearalenol, β zearalenol. Immunoaffinity clean-up methods are specific for the chosen toxin. The identification of toxin is then based on chromatographic retention time and fluorescence properties of the individual toxin. The repeatability (short term differences between a single operator on the same day) and the reproducibility (longer term variability between different operators on different days, possibly using different instruments) are continually assessed on methods performed for mycotoxin determination. Accuracy of the methods used is assessed by participation in collaborative trials and the use of reference materials. The linearity of the methods were checked and shown to be linear over the range of this survey. The level of detection of a method is defined as the minimum detectable level of an analyte under the assay conditions during a particular assay. The stability of the analyte in each method is known, and detailed standard operating procedures are available for all the analyses that instruct the operator and give details of any instabilities which need to be considered. The performance of a spiked sample with every type and daily batch of samples acts as both a check on the ruggedness of the assay and checks that the whole system is functioning. The method validation has covered all aspects of the method including sample preparation (extraction and clean-up), chromatographic separation and detection.

The extraction methods used have been reported to give full recovery of toxin or have been developed in-house to give optimal recovery from naturally contaminated samples. All analyses are conducted with spiked samples, i.e. to each sample matrix on each day a known amount of toxin was added prior to extraction. These samples were used to assess recovery and recoveries between 70% and 110% were classed as valid. Spiked samples were also used for quantification, thus making all results recovery corrected.

Why the data are / are not evaluated to be representative for the member state:
The data are considered to be representative of the quality of farm-gate milk and milk available at retail outlets in the UK in 2000. Samples of farm-gate milk were collected form farms in four areas of England; the East, the South West, the North West Midlands and the North West. Random samples of milk were purchased from retail outlets in 4 areas of England; in Sussex (South), Bristol (South West), County Durham (North East) and High Wycombe (South East) in 2000. The samples were selected to include a wide range of stores both supermarkets and smaller shops. A wide range of brands were covered in order to ensure that the survey was representative of the supply of milk available to consumers in the UK.

Ratio used for imported foods/domestically grown foods:
Not applicable.

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:
Not applicable.

Other comments:

Country: United Kingdom

FORM 3.1: Estimate of daily intake of zearalenone

Comments on estimated daily intake of zearalenone

Intake figures for selected foods and beverages (i.e. items where zearalenone occurrence has been identified) were based on survey data from various years: 1986/87 adults (16-64 years); 1992/93 toddlers (1½ - 4½); 1986 infants (6-12 months); 1994/95 elderly (65 years and over) and 1997 young people (4-18 years). The zearalenone occurrence figures are based on analytical data obtained between 1999 and 2001.

Although eating habits have changed markedly since the data were collected for all population groups, the figures offer a useful guide on the relative proportions and total zearalenone intake and represent the best available data in the UK.

It should be noted that in the calculation of mean 1, occurrence data below the Limit of Quantification (LoQ) has, as instructed, been taken as LoQ/6. This assumes that these foods contain levels of mycotoxin and that they contain mycotoxin at the 95th percentile of the distribution. This has inevitably distorted the "true value" in this exposure assessment and the actual mean 1 values and associated exposure assessments are likely to be lower than presented in this task. Furthermore, the relatively low amount of positive occurrence data for this mycotoxin has also positively distorted mean 2 values, with the actual mean 2 values and associated exposure assessments likely to be lower than presented in this task. These points should be considered when assessing the UK data.

Furthermore, little consumption data were available for polenta within the UK population, therefore, therefore cornmeal was used as a substitute food and any high intakes indicated for this food cannot be directly attributable to polenta.

In order to calculate the 'best estimate of total mean intake' it was not appropriate to simply sum the mean 1 exposure values for each food group as this assumes that all consumers consume all food groups. In our calculation, the best estimate of total mean intake is defined as the average exposure to zearalenone for a given individual within the consumer group who consumes one or more food groups accounted for in the exposure assessment. Similarly, it would not be appropriate to sum the 'high level' exposure estimates to obtain a value for a consumer at the 95th percentile of all food groups. These data can be provided if required.

Estimate of daily intake of zearalenone

2 Population group	**Bodyweight** (kg)	**Mean 1** (ng/kg bw/day)
Adult male (16-64 yrs)	70.1	14.06
Adult female (16-64 yrs)	70.1	12.98
Infant (6-12 mnths)	8.7	49.79
Toddler (1.5-4.5 yrs)	14.5	53.85
Young people (4 - 6 yrs)	20.5	54.81
Young people (7 - 10 yrs)	30.9	41.37
Young people (11 - 14 yrs	48.0	28.35
Young people (15 - 18 yrs)	63.8	20.35
Elderly male (65 yrs and over)	70.8	14.25
Elderly female (65 yrs and over)	70.8	12.42

It is reassuring that the exposures calculated from the zearalenone levels in the UK diet for all population groups were well below the temporary tolerable daily intake (tTDI) of 200 ng/kg bw/d recommended in June 2000 by the EC's Scientific Committee on Food.

For all population groups, corn was the greatest contributor of zearalenone of all the food groups evaluated.

Country: Finland

FORM 1. Occurrence data

Reference No.: ____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this Form)

Comments on:
Data were obtained from three sources:

1998: National Veterinary and Food Research Institute (the EELA)
1999-2001: Agrifood Research Finland (the MTT)
2001: Finnish Customs Laboratory

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

National Veterinary and Food Research Institute (the EELA)

Agrifood Research Finland (the MTT)

The method has been accepted as an accredited method * in April 2003 by the Centre of Metrology and Accreditation of Finland.

* accredited compounds are DON, 3-AcDON, NIV, T-2 and HT-2 in finnish cereals: barley, oat, rye and wheat
** DAS and F-X were left outside of accreditation because of rare findings in finnish cereals (uncertainty of these two compounds are quite theorethical)

Finnish Customs Laboratory

Finnish Customs Laboratory is accredited by FINAS :

DON-method is not accredited
ZEA-method is not accredited

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

National Veterinary and Food Research Institute (the EELA)

For DON, F-X, 3-AcDON and DAS, the LOD is 5 µg/kg (matrix: products pf plant origin)
For Nivalenol, the LOD is 15 µg/kg (matrix: products pf plant origin)
For HT-2 and T-2, the LOD is 10 µg/kg (matrix: products pf plant origin)
For zearalenone, the LOD is 2 µg/kg (matrix: products pf plant origin)

Agrifood Research Finland (the MTT)

2001: For Fusarium-toxins, the LOQ is 25 µg/kg and the LOD is about LOQ/6.
For zearalenone, the LOQ is 0,5 µg/kg
2000: For Fusarium-toxins, the LOQ is 50 µg/kg
For zeararalenone, the LOQ is 0,5 µg/kg
1999: For Fusarium-toxins, the LOQ is 50 µg/kg
For zearalenone, the LOQ is 0,5 µg/kg

Country: Finland

Finnish Customs Laboratory

LOQ is determined using spiked samples at LOQ-level.

For DON, the LOQ is 40 µg/kg (matrix: products of plant origin)
For zearalenone, the LOQ is 5 µg/kg (matrix: products of plant origin)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

National Veterinary and Food Research Institute (the EELA)

For trichothecenes, a GC-method with mass selective detection, Eskola et al. Acta Agric. Scand., Sect. B, Soil and Plant Sci: 2000:50, 183-186.

For zearalenone, a HPLC-method with fluorescence detection, Eskola et al. Acta Agric. Scand., Sect. B, Soil and Plant Sci: 2000:50, 183-186.

Data corrected for recovery.

Agrifood Research Finland (the MTT)

2.4b. Determination of Fusarium-toxins (Trichothecenes) employing ROMER MycoSEP™ minicolumn purification by GC-MS.

References:

1. Saastamoinen, I. and Saloniemi, H., Quantification and confirmation of trichothecenes by GC-MS-selected ion monitoring, Poster in ISAH-97-meeting
2. Pettersson H. and Langseth W., Intercomparison of Trichothecene Analysis and Feasibility to produce Certified Calibrants and Reference Material: Method studies, European Commission, EUR20285/1 EN, 2002
3. Pettersson H. and Langseth W., Intercomparison of Trichothecene Analysis and Feasibility to produce Certified Calibrants and Reference Material: Homogeneity and stability studies, European Commission, EUR20285/1 EN, 2002

Compound	Enlarged uncertainty	Concentration range	Largest CV % of parallel samples
DON	51 %	25-8000 µg/kg	25 %
DAS	20 %	25-500 µg/kg	10 %
3-AcDON	40 %	25-800 µg/kg	20 %
F-X	18 %	25-250 µg/kg	10 %
NIV	54 %	25-400 µg/kg	20 %
T-2	33 %	25-600 µg/kg	20 %
HT-2	41 %	25-1300 µg/kg	20 %

The reproducibility of the method is checked by reference material BCR CRM 379:DON in wheat, which main recovery is 82 %. The repeatability of the method is checked by parallel samples (at least one of five samples) and the repeatability of GC-MS by running the control standard sample between the samples in sequence.

The normal recovery range of the compounds are:

80-110 % : DAS, 3-AcDON, T-2 and HT-2
70-100 % : DON and F-X
60-90 % : NIV

The results are not corrected for recovery.

2.6 method for determination zearalenone employing minicolumn purification by HPLC with fluorescence detection.

The results are not corrected for recovery.

The Finnish Customs Laboratory:

DON : HPLC with immunoaffinity column clean-up , Cahill et al J.Chromatography A 859, 23-28.
ZEA : HPLC with immunoaffinity column clean-up , Visconti et al J.Chromatography A 815 (1998)133-140.

DON : rSD 15 % , Recovery > 80 % level 300 microg/kg , data not corrected for recovery
ZEA : rSD 15 % , Recovery 90 % level 50 microg/kg , data not corrected for recovery

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

The data are evaluated to be representative for the whole country. Most of the samples were analysed in the laboratory of the MTT by the Plant Product Inspection Centre (the PPIC). Samples were collected from the area of eleven Rural Advisory Centres in order to take the extent of cultivation and regions with both heavy and low precipitation into consideration. Samples included both spring and autumn cereals and different varietes of grains. Cereal samples were cultivated by different cultivation techniques (conventional/organic). Samples were collected randomly.

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

bread:
water 15-30 %
yeast 2-5 %
rest : grain, flour, bran etc.
(salt, spices,syrup etc.)

Other comments:

Country: FINLAND

FORM 2. Food consumption data

Reference : Männistö S., Ovaskainen M-L, Valsta L. (Eds.) 2002, FINDIET 2002 Study. Publications of the National Public Health Insitute B3/2003 (in press).

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

The food consumption data used in intake estimations in Finland are derivered from the 2002 Dietary Survey of Finnish adults. The total sample amount (2007 persons) was composed of adults aged from 24 to 64 years. The methodology used was a 24-hours recall. The data apply both males and females, but in the final intake estimation mean consumption values have been used. The body weight used was 77,1 kg (mean of body weights of 84,3 kg of male and 69,9 kg of female).

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

The data for the consumption of the food item are representative in Finland. The dietary survey was geographically comprehensive and the total sample size (2700 persons) was composed for both male and female aged 24-26 years.

Other comments:

Country: Finland

FORM 3: Estimate of daily intake of trichothecenes for an average person and for at risk subgroup of population

Trichothecene: _____

Comments on estimated daily intake of _____
(Adequacy of the data available, need for additional information etc.)

There are deficiencies in the estimation of daily intake of trichothecenes and zearalenone in Finland. Firstly, there were only few suitable food groups in the Finnish food consumption data. Moreover, the occurrence data of trichothecenes and zearalenone were based on the results of raw cereals and thus, the effects of food processing were not taken into consideration.

Other comments:

Country:Finland

FORM 4. Other sources of trichothecenes exposure

Reference No.: ____

Trichothecene : _____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Other comments:

Country: Finland

FORM 5. Present regulations for trichothecenes

There are no regulations for trichothecenes and zearalenone in Finland.

Present maximum limits of trichothecenes for foods and beverages:

There are no maximum limits for trichothecenes and for zearalenone in Finland.

TASK 3.2.10 "COLLECTION OF OCCURRENCE DATA OF FUSARIUM TOXINS IN FOOD AND ASSESSMENT OF DIETARY INTAKE BY THE POPULATION OF EU MEMBER STATES"

Subtask III: Fumonisins

Co-ordinators: Carlo Brera and Marina Miraglia

Collaborator: Dr Silvana Grossi and Dr Francesca Debegnach

CONTENTS

1 GENERAL

Basically, participants were asked to provide information on the exposure of the population to Fumonisins in their country through the elaboration of the following categories of data:

1. Occurrence data in food and beverages, including those from different methodological approaches (i.e. total diet, duplicate test portion)
2. Consumption data
3. Best estimate of dietary intake
4. Occurrence data in biological fluids
5. Individual data for each group or subgroup of food products.

Additional information was also asked, among others and whenever possible, on the following issues:

- Sampling procedures employed
- Quality Assurance of Analytical data
- Regulations related to the toxin (maximum limits, sampling plans, others).

Data has been provided by the participating institutes on the following fumonisins:

- Fumonisin B_1 (FB_1)
- Fumonisin B_2 (FB_2)
- Fumonisin B_3 (FB_3)

2 FUMONISINS OCCURRENCE IN FOOD (all Tables 1)

Occurrence data has been provided by 9 countries for FB_1 (Austria, Belgium, Germany, France, Italy, the Netherlands, Norway, Sweden and United Kingdom), 6 countries for FB_2 (Austria, Italy, Norway, France, Sweden and United Kingdom) and 1 for FB_3 (United Kingdom).
Italy has been the only country to supply data also in biological fluids (urine).

Data provided by participants were collected, harmonised, and reported by the Co-ordinators according to the following criteria:

- To provide a description, harmonised at European level, of the status of FBs contamination in foodstuffs in each participating Member State
- To group available information on each raw material and/or food products

Calculation of the mean 1 and mean 2

Basically, for the calculation of the mean 1 and 2, the same approach used in the previous tasks on mycotoxins has been followed. This for assuring a certain degree of comparability with the previous outcoming results. A quite marked difference among the limits of detection provided by each Member State still persisted, by rendering quite difficult a correct interpretation of the distribution of the results around the mean values and the corresponding intake calculations. The value the Co-ordinators believed as representing the greatest closeness of the calculated value to real figure was the weighed arithmetic mean. It should be also noted that the uncertainties associated to non representative sampling methodologies associated to the surveys should represent a much more complex scenario for a correct determination of the real exposure of population to FBs.

Mean 1 accounts for all the individual provided values according to the following criteria:

1) If LOD and LOQ are available, participants were requested to calculate mean level using LOD/2 for results lower than the LOD. For results between LOD and LOQ, numerical values, if available, were used.

2) If only LOQ is available, or if numerical values between LOD and LOQ are not available, LOQ/6 for values below the LOQ was used.

Mean 2 accounts for all positive above LOD values and it accounts for the distribution and level of positive results.

Range of contamination and median value

The ranges of concentration were chosen in order to provide a wide spectrum of the low region of concentration.

The median value, corresponding to the 50^{th} percentile, provides an indication, along with mean 1, of the distribution of data population.

Occurrence data by each Member State

Table 1 and Table 1bis present the occurrence data for FB_1 and FB_2 respectively as provided by participating Member States (N = 9) including information on AQA, sampling, and level of representativity of the Member State.
The total number of analysed samples for each Member State is graphically represented in **Fig. A**. A total of 5112 (3863 for FB_1, 1010 for FB_2 and 239 for FB_3) samples were analysed for FBs, with 45,8 % of positive samples for FB_1, 42 % for FB_2 and 36 % for FB_3. The ratio between the total number and positive samples is graphically reported in **Fig. 1** for FB_1**, in Fig. 1A1** for FB_2 and **in Fig. 1A2** for FB_3**.** The percentage of FB_1 positive samples by each MS ranged from 68,3 % (France) to 4,4 % (Belgium). The percentage of FB_2 positive samples by each MS ranged from 88,9 % (Italy) to 2,9 % (Austria).
According to the request of information reported in Annex II described in the general part, most of the participants have sent their information on the occurrence of FBs in various food, generally by following the food categorisation system provided by the Co-ordinators.
The system allowed for setting data in groups and subgroups and participants were also requested to include other possible classes of food as additional subgroups (Free Categorisation System). In order to allow the Co-ordinators to better harmonise the occurrence data by each Member State, participants were asked to send, whenever possible, also the individual data for each group or subgroup.

Occurrence data for selected commodities

In order to account for the overall incidence of FBs contamination in different food matrices in European countries, all provided data on the occurrence are gathered in **Tables and Figures 1A-1Z4 for FB_1** and in **Tables and Figures 1B1, 1C1, 1L1 1X1and 1Y1 for FB_2 and Tables and Figures 1B2, and 1X2 for FB_3**. In these Tables and Figures, all available occurrence data was included, even though in some cases the corresponding consumption data were not available. As for FB_2 , only data corresponding to positive samples were discussed in this report.

Cereals

The summary of data for FB_1 in cereals by each single cereal commodity is reported in **Tables 1 ter (I) and (II)**. A graphic representation of the contributions by each single cereal commodity is reported in **Figures 1 ter (I) and (II).** Furthermore, the same results by country are shown in **Table 1A ter** (number of samples, number of positive samples, LOD/LOQ, means and range).

- Corn

The occurrence data for corn (raw material) are gathered in **Table 1A and showed in Fig. 1A for FB_1 and in Table 1B1 and showed in Fig. 1B1 for FB_2, and in Table 1B2 and showed in Fig. 1B2 for FB_3.** The total number of results was 801 for FB_1, with 66 % of positive samples, and they ranged from LOD (5 ug/kg) to 10200 ug/kg (Italy). All participating countries provided results on this food matrices except Sweden, Norway and Belgium. The weighed means 1 and 2 for Europe were 346,4 ug/kg and 730,5 ug/kg respectively.
For FB_2 only four countries (Austria, Norway, France and United Kingdom) provided data. The total number of results was 544, with 51 % of positive samples, and they ranged from LOD (20 ug/kg) to 1268 ug/kg (United Kingdom).

Corn derived products

- Cornflakes

The occurrence data for cornflakes are gathered in **Table 1B and showed in Fig. 1B for FB_1.** The total number of results was 274 for FB1, with 46 % of positive samples, and they ranged from LOD (2 ug/kg) to 1092 ug/kg (Italy). Five participating countries (Germany, Italy, Norway, Sweden and Belgium) provided data. The weighed means 1 and 2 for Europe were 31,5 ug/kg and 74,2 ug/kg respectively.

- Polenta

The occurrence data for polenta are gathered in **Table 1C and showed in Fig. 1C for FB_1 and in Table 1C1 and showed in Fig. 1C1 for FB_2.** The total number of results was 29 for FB1, with 100 % of positive samples, and they ranged from LOD (20 ug/kg) to 752 ug/kg (Norway). Three participating countries (France, Italy, Norway) provided data. No weighed means for Europe were calculated due to the paucity of data.
Only Norway and France provided data for FB_2. The total number of results was 20, with 70 % of positive samples, and they ranged from LOD (20 ug/kg) to 293 ug/kg.

- Corn based biscuits

The occurrence data for corn based biscuits are gathered in **Table 1D and showed in Fig. 1D for FB_1.**
Only one country (Sweden) provided data, but the number of samples (N = 4) was too low for getting sound conclusions.

- Corn starch

The occurrence data for corn starch are gathered in **Table 1E and showed in Fig. 1E for FB_1.**
Only three countries (Belgium, France and Norway) provided data, but the number of samples (N = 8) was too low for getting sound conclusions.

- Popcorn

The occurrence data for popcorn are gathered in **Table 1F and showed in Fig. 1F for FB_1.**
Only three countries (Belgium, France and Sweden) provided data, but the number of samples (N = 15) was too low for getting sound conclusions.

- Sweet corn

The occurrence data **for FB_1** in sweet corn are gathered in **Table 1G and showed in Fig. 1G**. The total number of results was 145, with 9 % of positive samples, and they ranged from LOD (5 ug/kg) to 81 ug/kg (France). Four participating countries (France, Belgium, Germany and Norway) provided data. No weighed means for Europe were calculated due to the paucity of data.
All positive samples came from France.

- Cereal products

The occurrence data **for FB_1** in cereal products are gathered in **Table 1H and showed in Fig. 1H**. The total number of results was 666, with 53,8 % of positive samples, and they ranged from LOD (5 ug/kg) to 1260 ug/kg (Germany). Four participating countries (Belgium, France, Italy, and Germany) provided data. The weighed means 1 for Europe was 69,8 ug/kg. Mean 2 was not calculated since French data was missing.

- Corn flour

The occurrence data for corn flour are gathered in **Table 1I and showed in Fig. 1I for FB_1. Six** participating countries (France, Germany, Italy, the Netherlands, Norway and Sweden) provided results. The total number of results was 110 for FB_1, with 79,1 % of positive samples, and they ranged from LOD (5 ug/kg) to 4766 ug/kg (Germany). The weighed means for Europe were 408,5 ug/kg (mean 1) and 570,9 (mean 2).

- Corn fractions

The occurrence data for corn fractions are gathered in **Table 1L and showed in Fig. 1L for FB_1 and in Table 1L1 and showed in Fig. 1L1 for FB_2.** The total number of results was 41 for FB_1, with 90% of positive samples, and they ranged from LOD (12 ug/kg) to 6009 ug/kg (Italy). Two participating countries (France and Italy) provided results. No weighed means for Europe were calculated due to the paucity of data.
Only Norway and France provided data for FB_2. The total number of results was 20, with 55 % of positive samples, and they ranged from LOD (20 ug/kg) to 1088 ug/kg. No weighed means for Europe were calculated due to the paucity of data.

- Corn grits

The occurrence data for corn grits are gathered in **Table 1M and showed in Fig. 1M for FB_1.** The total number of results was 172 for FB_1, with 57 % of positive samples, and they ranged from LOD (5 ug/kg) to 4800 ug/kg (Germany). Four participating countries (Germany, Norway, Sweden and Italy) provided results. No weighed means for Europe were calculated due to the paucity of data.

- Corn based products

The occurrence data for corn based products are gathered in **Table 1N and showed in Fig. 1N for FB_1.** The total number of results was 83 for FB_1, with 31,3 % of positive samples, and they ranged from LOD (0,2 ug/kg) to 800 ug/kg (Belgium). Six participating countries (Sweden, Italy, Germany, Belgium, France and Norway) provided results. The weighed means for Europe were 65,2 ug/kg (mean 1) and 183,5 (mean 2).

- Wheat

The occurrence data for wheat are gathered in **Table 1Q and showed in Fig. 1Q for FB_1.** Only two participating countries (France and Italy) provided results. The total number of results was 110 for FB_1, with 79,1 % of positive samples, and they ranged from LOD (10 ug/kg) to 736 ug/kg (France). No weighed means for Europe were calculated due to the paucity of data.
As for FB_2 only France provided data **(Table 1Q1 and showed in Figure 1Q1)**. FB_2 resulted in 88,4 % of total samples.

- White wheat flour

The occurrence data for white wheat flour are gathered in **Table 1S and showed in Fig. 1S for FB_1.** The total number of results was 256 for FB_1, with 16,4 % of positive samples, and they ranged from LOD (12 ug/kg) to 4343 ug/kg (France). Only two participating countries (France and Italy) provided results. No weighed means for Europe were calculated due to the paucity of data.
As for FB_2 only France provided data **(Table 1S1 and showed in Figure 1S1)**. FB_2 resulted in 75,5 % of total samples with a maximum level of 70 ug/g.

- Rice

The occurrence data for rice are gathered in **Table 1V and showed in Fig. 1V for FB_1 and in Table 1V1 and showed in Fig. 1V1 for FB_2, and in Table 1V2 and in Fig. 1V2 for FB_3.** The total number of results was 197 for FB_1, with 2 % of positive samples, and they ranged from LOD (10 ug/kg) to 77 ug/kg (Germany). Three participating countries (Germany, Norway and United Kingdom) provided results. No weighed means for Europe were calculated due to the paucity of data.
As for FB_2 and FB_3, only United Kingdom provided data with no positive samples (Tables and Figures 1X1 and 1X2 rerspectively).

- Cereal Grains

The occurrence data for cereal grains are gathered in **Table 1Y and showed in Fig. 1Y for FB_1**. The total number of results was 68 for FB_1, with 38 % of positive samples, and they ranged from LOD (30 ug/kg) to 7808 ug/kg (Italy). Only Italy provided results. No weighed means for Europe were calculated due to the paucity of data.

- Miscellaneous

The occurrence data for miscellaneous products are gathered in **Table 1Z4 and showed in Fig. 1Z4 for FB_1**. The total number of results was 676 for FB_1, with 36 % of positive samples, and they ranged from LOD (5 ug/kg) to 955 ug/kg (infant food). Only Germany provided results. No weighed means for Europe were calculated due to the paucity of data.
Within this group, infant food, dietetic nutrition without gluten and dietetic nutrition for infants showed rather high percentage of contamination at high levels. Soy products, asparagus, and spice sauce were found contaminated even though at low levels.

All the other food commodities reported in Tables 1 were not discussed due to the paucity of data or to the scarce relevance of provided data.

As a general remark it should be emphasized that meanly a ratio of one third occurred between FB_1 and FB_2 contamination levels, when the two toxins were co-present, and that HPLC methodology was mainly used for quantitative analyses against a scarce use of ELISA tests.

As far as legislation is concerned, there are not specific maximum limits in none of the Member States but general recommendations when high levels of FBs occur in food products.

Occurrence of Fumonisins in biological fluids

Only one country (Italy) provided data for biomarkers of fumonisins in biological fluids (urine).
The values of the ratio Sphinganine/Sphingosin are reported in Table 5 and ranged from 0.34 to 0.17; the authors did not consider this data as representative for the Member State.

3 CONSUMPTION DATA FOR SELECTED COMMODITIES

Consumption data as provided by participating countries are presented in **Table 2**. Mean, median and 95th percentile, and information on the adopted methodology for recording the consumption data are reported.
Most countries provided consumption data for all population.
More in detail each country provided the following data:
Austria: not indicated if for All population or Consumers only. As for the body weight 75 kg was used.

Belgium: The group of subjects was adolescents 13-18 years. In this study performed only in the region of Ghent in 1997, the body weight was 60 kg, the number of subjects was 341, and seven day food record was used as methodology. The study was not representative for the whole country.

Germany: Consumers only. As far as corn flour, corn grits, cornflakes and breakfast cereals are concerned the group of subjects was adults >14 years (N = 2005), children >14 (N = 574), and Girls 4-6 years (N = 81). The adopted methodology was randomly selected and representative for the population, based on 3 days food records using common household units (prospective method) and a food frequency questionnaire (4 weeks, retrospective method). As for the other food items the Nationale Verzehrstudie (German National Consumption Study) approach was followed.
For adults, 70,4 kg as body weight was used.
Reference: Wolff J. et al. 2000 "Belastung des Verbrauchers und der Lebensmittel mit Ochratoxin A (Dietary intake of Ochratoxin A by the population of Germany), Archiv für Lebensmittelhygiene 4-5, 84-117.

France: The food consumption data are based on the INCA survey (Individual and national French food intake survey). The total sample (3003 persons) is composed of 1985 adults 15 years and over and 1018 children and young teenagers (3 – 14 years old). In this survey, body weight of almost all the participants were collected. So the calculation of the intake of *Fusarium* toxins by kg of body weight is done with the real weight of each person and not with a fixed weight.
It was not clearly indicated if data correspond to all population or consumers only.

Italy: Sampled subjects were 1147 households randomly selected to be considered representative of the four main geographical areas (North-west, North-East, Centre, South). Analysed subjects were 1978 individuals out of 2734 initially collected in 15 Collaborative Centres strategically scattered through the national territory. Data were reported for all population and consumers only. As for the body weight 70 kg was used.

Norway: In the national representative dietary survey NORKOST 1997, 2 672 persons in the age of 16 to 79 years participated. The method used in NORKOST was a quantitative food frequency questionnaire, which was distributed and collected in four different periods spread through the year. The result from the survey describes the usual diet among the participants. More specifically, 1291 males 16-79 years old and 1381 females 16-79 years old were contacted. The corresponding body weights were 81 kg and 66 kg.

The Netherlands: Each participant kept a diary for him (her) and for the members of the family during 2 consecutive days.
Data referred to all population within adults and children. The corresponding body weights were 65,8 kg, 17,1 kg (1-6 years), and 13,8 (1-4 years).

Sweden and United Kingdom did not provide data for consumption.

4 DIETARY INTAKE DATA FOR SELECTED COMMODITIES

Seven countries provided intake data.
The summary of contribution to dietary intake A (mean level for food consumption and mean 1 level for fumonisins occurrence) expressed as ng/kg body weight /day, from a number of groups of commodities in participating Member States is presented in **Table 3 for FB_1 and in Table 3a for**

FB_2, both for all population and for specific groups of population depending on the available data. Only the dietary intake A was taken into consideration due to its closeness to real situation**.**
Each commodity considered in **Table 3** contributed to the fumonisins intake, but it should be noted that no participating country could estimate intakes from all the commodities known to be susceptible to fumonisins contamination. The total dietary intake, as obtained by the summing up of contributions from the data available for all commodities is given in **Table 4** for FB_1 and in **Table 4a** for FB_1+FB_2.
In consideration of the already mentioned limiting aspects (see occurrence and consumption sections) some factors contribute to overestimate or underestimate the calculated total dietary intake:

- Since it is rather unlikely that one single person is a consumer of all the considered food groups, the calculated total dietary intake should be considered overestimated when applied to consumers only.
- Whenever dietary intakes were calculated on the basis of occurrence data on raw materials, this led to an overestimation of the intakes, due to the lack of information on the fumonisins reduction attributable to technological procedures, or on the actual percentage of raw materials in the final product.
- For each country, the fewer the number of the tested food, the more underestimated should the result of the total dietary intake be considered.
- Since in most cases, occurrence data were not corrected for recovery factors, an additional underestimation of the intakes should be considered.

5 CONCLUSIONS

As shown in Table 4-4a and keeping into due consideration the limitations above mentioned, and the limited amount of data available, the following conclusions can be drawn:

- Cereals represent the major source of intake for FBs. Among cereals, corn and wheat act as the main contributors to the total intake.
- It should be underlined that, as shown in Table 4-4a, most countries did not provide information on all food products potentially affected by fumonisins contamination; therefore the total dietary intake A by country should be generally considered underestimated.
- The overall intake strongly increases when consumers only are considered.

For FB_1+FB_2 a TDI of 2 µg/kg bw, was set by the SCF.
By comparing the results in Table 4-4a with the above mentioned TDI the following conclusions can be drawn:

FB_1 mean1 intake: Most of the intakes for all population group are far below the TDI of 2 µg/kg bw. However for the group of consumers only in two countries (Italy and Norway) the intake accounts for one-fourth of the TDI. It should be outlines, however, that for Norway data related to infants accounting for 430 ng/kg bw/d must be considered as an overestimation since the food for this group of consumers is mainly based on baby porridge. Furthermore, the high value is a result of a combination of an high consumption rate with levels of contamination found below the limit of quantification. However, it is not possible to soundly compare the total dietary intake with TDI since all countries provide data only for a small number of contributing food matrices.

6 FUTURE NEEDS

Occurrence

As far as the factors influencing the reliability of data are concerned, some lack of information still persists. In fact, harmonised sampling plans and methods of analysis, number and type of analysed commodities, quality assurance of data, information on the role of technological processing on the fate of fumonisins should be improved.

Consumption

In consideration of the spectrum of methodologies used in each Member State to calculate consumption data, research projects should be launched by EU in order to define specific guidelines aimed at improving the harmonisation of methodology for the survey on consumption data to be adopted by each Member State.
In addition, to assess more accurately the exposure of European population, data for consumers only should be collected. Furthermore, in order to better address to the information regarding the intake from food categories, data for specific groups of population like children or subdivided by age groups should be activated.

Intake

Additional data based upon total diet or duplicate test portion should be developed in order to overcome uncertainties due to many factors including not representative sampling procedures, and inaccurate consumption data.

Annex 1

Basic information on Fumonisin B_1

The basic information on Fumonisins has been mainly related to the SCF opinion on Fusarium Toxins part III: Fumonisin B_1. (1)

Sources and properties

Fumonisins (FB_s) are produced by *Fusarium verticilloides* (older synonym is *F. moniliforme*) and *F. proliferatum*, fungi that commonly contaminate maize. It has been also claimed that *F. napiforme*, *F. dlamini* and *F. nygamai* are able to produce FB_s (2, 3). Fumonisin B_1 (FB_1), the most toxic compound, has been found as natural contaminant in maize and maize-based food from many parts of the world, e.g. the U.S., Canada, South Africa, Italy, Poland, and Spain (4, 2). FB_1 production depends on both environmental and storage conditions (climatic conditions, abnormally long storage, transportation, etc.).
Chemically, FB_1 is 1,2,3-propanetricarboxylic acid, 1,1'-[(12-amino-4,9,11-trihydroxy-2-methyltridecyl)-2-(1-methylpentyl)-1,2-ethanediyl] ester, C34H59NO15. MW: 721.838, CAS no.: 79748-81-5.

FB_1 is stable during most types of processing. Dry milling of maize results in the distribution of the toxin into the bran, germ and flour. FB_1 is stable in polenta (maize porridge). However, the concentration of FB_1 is reduced during the manufacture of cornstarch by wet milling, since FB_1 is water-soluble. A number of factors make it difficult to extract FB_1 from processed food (5, 6, 7, 8, 9). Nixtamalisation (calcium hydroxide processing) and ammoniation lead to hydrolysed FB_1 (AP_1or HFB_1) and aminopentol, respectively. These treatments reduce the fumonisin content while increasing the concentration of hydrolysed fumonisins without eliminating the toxic product (8, 9, 10, 11).

Toxicokinetics

FB_1 is poorly absorbed, but rapidly distributed and eliminated in many animal species including laying hen, swine, cow, rat, and mouse and non-human primates (12, 13, 14, 15, 16, 17, 8, 2). However, a small but persistent pool of FB_1 or its metabolites appears to be retained in liver and kidney. It has been shown that FB_1 is not transferred through the placenta or into the milk in several animal species (18, 19, 10, 20, 21, 22, 23). However, there are no toxicokinetic data available for non-human primates and humans.

Mode of action

The mode of action of fumonisins is primarily explained by interference with the *de novo* synthesis of complex glyco-sphingolipids. This results in disturbances of cellular processes such as cell growth, cell differentiation and cell morphology, endothelial cell permeability and apoptosis. Inhibition of biosynthesis of sphingolipids is seen at different levels of the process (24, 25, 26, 27, 17, 8, 28), and is reflected in changes of the ratio sphinganine/sphingosin (Sa/So). Marginal effects on the Sa/So ratio were seen from 0.2 mg/kg bw level onwards. The inhibition of biosynthesis of glyco-sphingolipids is already seen a few hours after oral exposure to FB_1.
Recently it has been shown that FB_1 administered to different animal species is able to produce increased apoptosis in various tissues (29, 30, 31, 32, 10, 33, 34, 35, 3, 36, 37). Increased apoptosis in particular seems to play an important role in the toxic effects including tumour induction by FB_1. In animal experiments (when determined), apoptosis is seen at all dose levels of FB1, causing other

toxic including carcinogenic effects. In most studies apoptosis is one of the observations on which the NOAEL is based. The dose level causing apoptosis depends on the duration of exposure and can vary in rodents from 0.9 to 12 mg FB1/kg bw (respectively in long-term and short-term experiments). Oxidative damage has also been indicated in the aetiology of the toxic effects (38).

Toxicity

FB_1 has a low acute oral toxicity in several animal species (4). In addition to the studies with rodents, and pigs and horses, there are several subacute toxicity studies performed with many animal species (poultry, rabbits, hamsters, nonhuman primates, lamb, mink, cattle) not directly useful for quantitative dose response assessment, i.e. not providing a NOAEL. Many of these studies were performed with contaminated feed rather than pure fumonisin (39, 40, 41, 42, 43, 9, 17, 2). The major target organs are liver and kidney in almost all animal species, but particularly in mouse and rat. For the rat whether the liver or the kidney is the most sensitive organ might even depend on the strain or gender.(3). In addition, in pigs and horses some other typical effects are seen, like porcine pulmonary edema (PPE) in pigs (44, 45, 46, 47, 48, 49, 50, 51, 37) and equine leukoencephalomalacia (ELEM) in horses (52, 44, 53, 54, 55, 56, 57). The NOAEL for PPE in pigs fed FB_1 is somewhat lower 5.0 mg FB_1/kg bw/day. The minimum dose that causes ELEM ranges from between 0.2 and 0.44 mg FB_1/kg bw/day (56). The NOAEL for horses is thus estimated at 0.2 mg FB_1/kgbw/day. The lowest NOAEL for FB_1 in a subchronic study with rats was 0.2 mg FB_1/kg bw/day and the lowest NOAEL for mice was 1.8 mg FB_1/kg bw/day (58). The NOAELs established in the long-term toxicity/carcinogenicity studies in mouse and rats were are 0.25 mg FB_1/kg bw/day (male rats) for kidney lesions and 0.7 mg FB_1/kg bw/day (female mice) for liver lesions. The kidney adenomas and carcinomas in rats were only seen at higher doses than the other toxic effects including apoptosis, similarly the hepatocellular neoplasms were only seen at the higher dose levels in female mice (3). The lowest dose level at which increased kidney tumour incidences were observed in rats (males) is 2.5 mg/kg bw, and was 7.0 mg/kg bw in mice (females) for increased liver tumour incidence.

Table 1: NOAELs from diverse studies, expressed as mg FB1/kg body weight

Species	*Duration*	**Target organ/effect**	**NOAEL**
Rat	Shotr-term	liver	<0.75
Pig	Shotr-term	lung/PPE	<0.45
Horse	Shotr-term	Brain/ELEM	0.2
Mouse	subchronic	liver	1.8
Rat	subchronic	kidney	0.2
Rat	chronic	liver	1.25
Mouse	chronic	liver	0.6
Rat	chronic	kidney	0.25

Studies on reproduction and developmental toxicity, with the exception of one study (59, 60), showed either no developmental or reproductive effects or effects only observed at dose levels which also clearly showed maternal toxicity (61, 22, 62, 10, 63, 64, 65, 23, 66, 67, 68). There is some evidence *in vitro* for developmental toxicity but, except for chicken, no teratogenic effects were reported in either *in vitro* or *in vivo* studies. (69, 70, 11, 71). Several animal studies indicate there is little or no transfer through the placenta or to milk. As the human placenta differs in properties from that of most laboratory animals, it has to be considered whether FB_1 could cross the

human placenta. However, even when considering the effect levels of FB_1 causing developmental or embryotoxic effects *in vitro,* and a worst case scenario of distribution of FB_1 assuming complete transfer through human placenta, it is considered unlikely that FB_1 will cause developmental effects in humans.

On the basis of negative genotoxicity data from experiments covering several endpoints (Ames test and *in vitro* and *in vivo UDS assays* (72, 73, 74, 75, 76, 77, 16), and positive results in a non-validated type of bacteria test (78) and a very limited *in vitro* study in which chromosomal aberration and micronucleus tests were performed the overall conclusion is that there is no adequate evidence that FB1 is genotoxic.

Other toxic effects of FB_1 such as neurotoxic, only observed after subcutaneous injection; (79, 80, 81) and immunotoxic effects (primary IGM response in spleen of sheep, IgG, T lymphocytes surface antigen expression; (82) occur at a higher dose level than the hepato- and nephrotoxicity in rats and mice. In some cases these effects may be secondary to the hepato- and nephrotoxicity. On the other hand, there is also some evidence that both effects in brains of horses (ELEM) and the lungs of pigs (PPE) are secondary to cardiovascular dysfunction caused by FB_1. Cardiovascular effects were observed in pigs (49) in vervet monkeys (2), and in baboons (44). An increase in serum cholesterol concentration has been found in many species given FB1 including pigs (as low as 1mg/kg feed/day; (50)), calves (148 mg/kg feed/day (83)), lambs (6 mg/kg feed; (84)), mice (1 mg/kg feed/day; (85)), rats (5 mg/kg feed; (86)), mink (8 mg/kg feed; (87)), and broiler chicken (61 mg/kg/kg; (88)).

On the basis of the observation of apoptosis, changed Sa/So ratios and increased kidney weights, the overall NOAEL in rodents was 0.2 mg/kg bw/day and the LOAEL 1 mg/kg bw/day. In horses the NOAEL was also approximately 0.2 mg/kg bw. The observation of ELEM was reported after short-term exposure and no chronic data are available. Many of the studies in horses are observations from poisoning cases in which the degree of contamination could only be recorded as an approximate estimate. The Committee also considered recent indications that cardiovascular effects of FB1 could play a role in the development of other toxic effects observed.

Epidemiological studies performed in South Africa and China revealed that there might be a correlation between the intake of FB1 and increased oesopagheal cancer incidence (89, 90). Similar studies performed in Italy did not establish any correlation between the intake of FB1 and the oesophageal cancer incidence (91, 2).
In 1993 IARC evaluated FB1 and classified it in Group 2B: “possibly carcinogenic to humans”. It was concluded that for FB1 there was inadequate evidence in humans for carcinogenicity. The available studies are largely inconclusive and no quantitative data enabling a risk assessment on human data are available.

Analysis

Extraction

The extraction of fumonisins B_1 from the ground product, is performed with organic solvents both by shaking (mechanical or magnetic) or blending. The most common extraction solvents are mixtures of acetonitrile, methanol and water.

Clean-up

Basically the clean-up step may consist of the two approaches already described in the aflatoxin section, e.g.: i) the use of Solid Phase Extraction (SPE) columns or ii) the use of ImmunoAffinity (IA) columns or iii) the use of Strong Anion eXchange (SAX).
Purification by the immunoaffinity column can be carried out manually, or by using a commercially available automated sample preparation system. After the conditioning of the immunoaffinity column with PBS (5 ml), the sample extract (10 ml) is pushed through the column at a flow rate of approximately 5 ml/min. The column is washed with distilled water and fumonisin B_1 is eluted from the column with methanol for HPLC. The sample is diluted with water before HPLC analysis.
In some cases (e.g. beer) the sample is loaded directly into the column without any extraction step.

HPLC Analysis

The general principles reported for aflatoxins are applicable also to fumonisin B_1. More specifically, methods currently existing for the determination of FB_1 by HPLC, are based principally on fluorescence detection with an excitation wavelength of 335, and an emission wavelength of 440 nm. A derivatisation step, with OPA (o-phthaldehyde) solution, is requested for FB_1. The mobile phases most commonly used are mixture of methanol:0.1 M sodium dihydrogen phosphate 77:23 (v/v), adjusted to pH 3.35 with o-phosphoric acid.

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Annex 2

Occurrence data from the participant countries, Fumonisin FB_1 (tables 1)

Table 1. Summary of individual occurrence data by food group (Food Categorisation System as in Annex 4 and free categorization system) - **Fumonisin B1 (µg/kg or µg/L)**

Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000	Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
Country: Austria																						
corn	03 01 B	1996	46	50		44	1	1						250	8,3	170	<LOQ	y	Random	HPLC		y
corn	03 01 B	1997	58	50		55	1	1				1		1030	29,1	410	<LOQ	y	Random	HPLC		y
corn	03 01 B	1998	48	50		43		1	1	1		2		1750	97,8	867	<LOQ	y	Random	HPLC		y
corn	03 01 B	2001	19	50		12		3	2	1	1			940	153,2	401,4	<LOQ	y	Random	HPLC		y
Country: Belgium																						
popcorn	03 01B	2001	2	500		2								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
corn starch	02 01C	2001	4	500		4								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
cornflakes	03 01	2001	5	500		5								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
tortilla chips, tacos	03 01	2001	6	500		6								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
popcorn	02 01C	2001	3	500		3								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
sweet corn	02 01C	2001	5	500		5								<0,5	0,08	0	<0,5		random	HPLC	limited	yes
beer	02 05A	2001	5	300		5								<0,3	0,05	0	<0,3		random	HPLC	poor	no
corn for popcorn	03 01B	2002	2	300		2								<300	50	0	<300		random	HPLC	limited	yes
cornflakes	02 01	2002	7	300		7								<300	50	0	<300		random	HPLC	limited	yes
tortilla chips	02 01	2002	3	300		1			1*		1**			800	400	600	<300		random	HPLC	limited	yes
corn based	03 01	2002	3	300		3								<300	50	0	<300		random	HPLC	limited	yes
Country : France																						
corn	03 01 B	2000	55	50			43	3	4	0	2	2	1	3100	184,36	753,0769	8,33	yes	R	HPLC	G	no
corn	03 01 B	2001	14	50			8	2	1	1	1	0	1	2000	298,33	685	8,33	yes	R	HPLC	G	no
corn	03 01 B	2001	25	40	20	19	0	2	2	1	0	1	0	1050	117	473			T	HPLC		
corn	03 01 B	2001	25	20	10	13	5	0	1	3	1	2	0	1750	257	531			T	HPLC		
corn	03 01 B	2000	78	10-500	20-25	4	43	23	1	2	1	3	1	4343	247		25		R	GC or HPLC	L	y
corn	03 01 B	2001	92	10-500	20	13	53	9	4	7	2	4	0	1750	184		36		R	GC or HPLC	L	y
corn fractions	02 01 C	2001	15		12	15	0	0	0	0	0	0	0		6		6	Y	R			no
corn fractions	02 01 C	2002	2		30	2	0	0	0	0	0	0	0		15		15	Y	R			no
corn fractions	02 01 C	2000	3	50	20	1								140	52,8	140	10	Y	R	HPLC	G	no
corn fractions	02 01 C	2001	1							1				735	735	735	735	Y	R	HPLC	G	no
corn fractions	02 01 C	2001	1							1				640	640	640	640	Y	R	HPLC	G	no
corn starch	02 01C	2001	1	50			1								8,33		8,33	Y	R	HPLC	G	no
corn meal	02 01 C	2001	2								2			800	797	797	797	Y	R	HPLC	G	no
corn meal	02 01 C	2001	4	50			3					1		1600	406	1600	8,33	Y	R	HPLC	G	no
corn meal	02 01 C	2002	1									1		1180	1180	1180	1180	Y	R	HPLC	G	no
corn meal	0201C	999-200	62	10	5	16	34	3	0	2	2	2	3	4766	306,7	411	25,6	yes°	random	C-MS; LC; ELISA		yes
wheat bran	02 01 B	2002	5	50			5								8		8,33	Y	R	HPLC	G	no
wheat bran	02 01 B	2000	2	50			2								8,3		8,3	Y	R	HPLC	G	no
white wheat flour	02 01 B	1998	25		30	25	0	0	0	0	0	0	0		15		15	Y	R			no
white wheat flour	02 01 B	1999	4		30	4	0	0	0	0	0	0	0		15		15	Y	R			no
white wheat flour	02 01 B	2000	20		30	16	1	1	1	0	0	0	1	10000	538	2611	25	Y	R			no
white wheat flour	02 01 B	2001	32		30	32	0	0	0	0	0	0	0		13		15	Y	R			no
white wheat flour	02 01 B	2002	10		12	10	0	0	0	0	0	0	0		6		6	Y	R			no
white wheat flour	02 01B	2001	6		15	6									7		7,5	Y	R	HPLC	G	no
white wheat flour	02 01B	2001	34	50	15	21	12	1						140	11,6	140	7,5	Y	R	HPLC	G	no
white wheat flour	02 01 B	2002	2	50			2								8		8,33	Y	R	HPLC	G	no
white wheat flour	02 01B	2002	6	50			6								8		8,33	Y	R	HPLC	G	no

white wheat flour	02 01 B	2000	6	20			6								8,3		8,3	Y	R	HPLC	G	no	
white wheat flour	02 01 B	2000	2	20		1	1								3,3		3,3	Y	R	HPLC	G	no	
white wheat flour	02 01 B	2000	3	50			3								8,3		8,3	Y	R	HPLC	G	no	
white wheat flour	02 01 B	2000	6		15	6									7,5		7,5	Y	R	HPLC	G	no	
white wheat flour	02 01 B	2000	6		20	6									10		10	Y	R	HPLC	G	no	
white wheat flour	02 01 B	2000	12	12-50	-	0	11	0	0	1	0	0	0						R	GC or HPLC	L	y	
white wheat flour	02 01 B	2001	40	12-50	-	0	39	1	0	0	0	0	0						R	GC or HPLC	L	y	
wheat based products	02 01 B	2001	2	50			2								8		8,33	Y	R	HPLC	G	no	
wheat based products	02 01 B	2001	11	50		7	4								7,7		7,7	Y	R	HPLC	G	no	
wheat based products	0201B	2002	1	50			1								8		8,33	Y	R	HPLC	G	no	
wheat based products	02 01 B	2002	7	50			6		1					370	70,8	228	8,33	Y	R	HPLC	G	no	
wheat based products	02 01 B	2000	5	20			5								3,3		3,3	Y	R	HPLC	G	no	
wheat based products	02 01 B	2000	3		15	3									7,5		7,5	Y	R	HPLC	G	no	
pizza	02 01B	2000	1		15	1									7,5		7,5	Y	R	HPLC	G	no	
corn based products	02 01 C	2000	2	20		2									3,3		3,3	Y	R	HPLC	G	no	
corn based products	02 01 C	2001	1							1				696	696	696	696	Y	R	HPLC	G	no	
corn based products	02 01 C	2001	10	50			7	3						205	51,3	148	8,33	Y	R	HPLC	G	no	
corn based products	02 01 C	2002	1	20		1									3,3		3,3	Y	R	HPLC	G	no	
polents	02 01 C	2001	2					2						274	198	198	198	Y	R	HPLC	G	no	
polents	02 01 C	2002	3				1	2						280	163,3333	163,3333	140	Y	R	HPLC	G	no	
polents	02 01 C	2000	5	50			4	1						283	74,1	345,6	8,3	Y	R	HPLC	G	no	
pop corn	02 01 C	2000	4	50			4							78	35,8	45	28,5	Y	R	HPLC	G	no	
pop corn	02 01 C	2001	1							1				657	657	657	657	Y	R	HPLC	G	no	
sweet corn	02 01 B	2001	1	50			1								8,3		8,3	Y	R	HPLC	G	no	
sweet corn	02 01 C	2000	1	50			1								8,3		8,3	Y	R	HPLC	G	no	
sweet corn	02 01 C	2002	13	50		2	11							81	13,9	81	8,3	Y	R	HPLC	G	no	
A - cereal for breakfast		2001	14	50			13					1		1000	79,1	1000	8,3	Y	R	HPLC	G	no	
D5 Rye? Wheat		2000	3	20	15	1	2							47	19,3	47	47	Y	R	HPLC	G	no	
D5 Rye? Wheat		2001	1	50			1								8,3		8,3	Y	R	HPLC	G	no	
D5 Rye? Wheat		2001	4	50	15	3	1								7,5		7,5	Y	R	HPLC	G	no	
D5 Rye? Wheat		2002	1	50			1								8,3		8,3	Y	R	HPLC	G	no	
D9 Buckweat ? Wheat		2000	1		20	1									10		10	Y	R	HPLC	G	no	
D9 Buckweat ? Wheat		2001	5	50		1	4								8,3		8,3	Y	R	HPLC	G	no	
D9		2000	8	50	20	4	4								8,3		8,3	Y	R	HPLC	G	no	
E3 oat derived products		2000	2	20	15	1	1								7,9		7,9	Y	R	HPLC	G	no	
E3 oat derived products		2001	4	50			4								8,3		8,3	Y	R	HPLC	G	no	
E6 Barley derived products		2000	2	50	15	1	1								7,9		7,9	Y	R	HPLC	G	no	
E6 Barley derived products		2001	6	50	15	3	3								7,9		7,9	Y	R	HPLC	G	no	
E7 rice derived products		2000	1	20		1									10		10	Y	R	HPLC	G	no	
E7 rice derived products		2001	1	50			1								8,3		8,3	Y	R	HPLC	G	no	
E7 rice derived products		2001	4	50			4								8,3		8,3	Y	R	HPLC	G	no	
E7 rice derived products		2002	1	20		1									3,3		3,3	Y	R	HPLC	G	no	
E7 rice derived products		2000	3	50			3								8,3		8,3	Y	R	HPLC	G	no	
F7 ?		2000	4	50	15	1	3								8,3		8,3	Y	R	HPLC	G	no	
A*Mix of diff. Cer.deriv. Prod.		2000	3	20			2			1				668	224,8	668	3,3	Y	R	HPLC	G	no	
A Mix of dif. Cer.breakfast cereals		2000	6	20			6								3,3		3,3	Y	R	HPLC	G	no	
A Mix of dif. Cer.breakfast cereals		2000	3	50			3								8,3		8,3	Y	R	HPLC	G	no	
BT soft wheat		2000	45	10-100	20	4	33	2	1	4	0	0	0	736	91		20		R	GC or HPLC	L	y	France	C
BT soft wheat		2001	46	10-100	-	0	36	9	0	0	0	1	0	1044	75		20		R	GC or HPLC	L	y	France	C

Country : Germany																							
GC2 corn grains	0301A	1999-20	107	10	5	35	48	16	6	1	0	1	0	1198	81,5	118,8	25	yes°	random	LC-MS; LC; ELISA		yes	
GC7 rice	0301G	1999-20	81	20	10	78	3	0	0	0	0	0	0	77	6,1	35	5	yes°	random	LC-MS; LC; ELISA		yes	
GC4 millet	0301D	1999-20	50	10	5	38	12	0	0	0	0	0	0	56	5,2	11,7	2,5	yes°	random	LC-MS; LC; ELISA		yes	
CF3B corn meal	0201C	1999-20	62	10	5	16	34	3	0	2	2	2	3	4766	306,7	411	25,6	yes°	random	LC-MS; LC; ELISA		yes	
CF3C corn grits	0201C	1999-20	165	10	5	74	29	14	18	11	7	6	6	4800	318	574,4	7,9	yes°	random	LC-MS; LC; ELISA		yes	
CH5 sweet corn	0201C	1999-20	43	10	5	43	0	0	0	0	0	0	0	<LOD	2,5	0	2,5	yes°	random	LC-MS; LC; ELISA		yes	
breakfast cereals	0301	1999-20	60	10	5	29	25	5	0	0	0	1	0	1068	53,4	100,8	6,3	yes°		LC-MS; LC; ELISA		yes	
cornflakes	0301	1999-20	205	10	5	88	94	22	2	1	0	0	0	600	37,4	63,2	10,5	yes°		LC-MS; LC; ELISA		yes	
cereals grits with supplements	0301	1999-20	93	10	5	34	54	3	1	0	1	0	0	896	36	54,9	12	yes°		LC-MS; LC; ELISA		yes	
manufactured multi ingredients cerea	0301	1999-20	294	10	5	103	115	42	18	13	0	3	0	1260	105	160,3	20,2	yes°		LC-MS; LC; ELISA		yes	
Peanut curls; manufactured multi ingr	0301	1999-20	106	10	5	88	9	1	3	2	2	1	0	1260	58	329,5	2,5	yes°		LC-MS; LC; ELISA		yes	
soya products without oil and sauces	0207A	1999-20	35	10	5	32	3	0	0	0	0	0	0	21	3,3	12	2,5	yes°		LC-MS; LC; ELISA		yes	
potato and dried potato products	0208	1999-20	32	10	5	32	0	0	0	0	0	0	0	<LOD	2,5	0	2,5	yes°		LC-MS; LC; ELISA		yes	
asparagus	0209	1999-20	51	10	5	45	6	0	0	0	0	0	0	49	4,7	21,2	2,5	yes°		LC-MS; LC; ELISA		yes	
infant food	0301	1999-20	387	10	5	213	89	58	20	3	4	0	0	955	72,6	156,7	8	yes°		LC-MS; LC; ELISA		yes	
dietetic nurition without gluten	0301	1999-20	56	10	5	30	21	0	3	2	0	0	0	585	47,9	100,4	2,5	yes°		LC-MS; LC; ELISA		yes	
dietetic nurition for infants	0301	1999-20	62	10	5	37	18	8	1	0	0	0	0	403	42,6	99,5	2,5	yes°		LC-MS; LC; ELISA		yes	
spice sauces	0502C	1999-20	53	10	5	45	8	0	0	0	0	0	0	17	3,8	9,2	2,5	yes°		LC-MS; LC; ELISA		yes	
corn containing beverages	0201C	1999-20	18	10	5	16	1	1	0	0	0	0	0	112	13,4	65,5	2,5	yes°		LC-MS; LC; ELISA		yes	
Country: Italy																							
cereal grain	GC 03 01	1-1999	13	9	3		9	1				2	1	3870	544	544	18	YES	Random	EIA		NO	
cereal grain	GC 03 01	2-98/01	55		30	42	3	3	1		1	2	3	7808	411	1690	15	YES	Random	HPLC		YES	
wheat	GC1 03 01 A	2-99/01	19		30	19								15	15	-	15	YES	Random	HPLC		YES	
white wheat flour	CF2 02 01B	2-97:99	42		30	37	5							63	19	52	15	YES	Random	HPLC		YES	
durum wheat paste	CG3 02 01B	2-2001	11		30	11								15	15	-	15	YES	Random	HPLC		YES	
bran	CF1 02 01B	2-97/00	9		30	7	2							71	25	61	15	YES	Random	HPLC		YES	
whole meal	CF 02 01A	2-98/01	46		30	34	11	1						118	25	52	15	YES	Random	HPLC		YES	
corn	GC2 03 01B	2-97/01	35		30		2	3		5	6	12	7	10200	2059	2059	1074	YES	Random	HPLC		YES	
corn	GC2 03 01B	4-2001	2	70	30								2	5090	4815	4815	4815	YES	Random	HPLC		YES	
corn flour	CF3D 02 01 C	2-99/01	11		30	2	1	3	3	1	1			800	303	367	246	YES	Random	HPLC		YES	
corn flour	CF3D 02 01 C	3-2000	2		30								2	4200	3650	3650	3650	YES	Random	HPLC		YES	
corn flour	CF3D 02 01 C	4-2001	2	70	30				2					450	425	425	425	YES	Random	HPLC		YES	
corn bran	CF3F 02 01 C	4-2001	2	70	30								2	8080	7850	7850	7850	YES	Random	HPLC		YES	
polenta	CH1 02 01C	4-2001	2	70	30			2						140	135	135	135	YES	Random	HPLC		YES	
germ	CF3E 02 01C	4-2001	2	70	30								2	9560	9240	9240	9240	YES	Random	HPLC		YES	
fine grit	CF 02 01A	4-2001	2	70	30					1		1		1010	805	805	805	YES	Random	HPLC		YES	
coarse grit	CF 02 01A	4-2001	2	70	30				2					420	405	405	405	YES	Random	HPLC		YES	
cornflakes	CH 02 01C	5-2000	8	5	2	1	4	1	1			1		1092	233	266	69	YES	Random	HPLC		NO	
corn based products	CH 02 01C	5-2000	10	5	2		6	4						290	98	98	26	YES	Random	HPLC		NO	
oil	CH6 02 01C	2-1998	5		30	5								15	15	-	15	YES	Random	HPLC		YES	
corn gluten	CF3 02 01C	2-97/98	11		30	-		1	2		1	3	2	3774	1543	1543	1430	YES	Random	HPLC		YES	
corn Semolina	CF3 02 01C	2-97/98	8		30	-						1	7	6009	4456	4456	5105	YES	Random	HPLC		YES	
wheat Semolina	CF 02 01A	2-97/01	27		30	27								15	15	-	15	YES	Random	HPLC		YES	
milk chocolate	SB3 04 03C	2-00/01	3		30	3								15	15	-	15	YES	Random	HPLC		YES	
black chocolate	SB3 04 03C	2-00/01	3		30	3								15	15	-	15	YES	Random	HPLC		YES	
cocoa	SB3 04 03C	2-00/01	3		30	3								15	15	-	15	YES	Random	HPLC		YES	
bakery products		2-98/01	33		30	33								15	15	-	15	YES	Random	HPLC		YES	
Country: Netherland																							
corn	GC2	1(2000-1	29		100	26		2	1					400	69,3	237	<100	y	r				
corn for bread	GC2	5 (1997)	19		8	11		7	1					380	100,21	233	<8	y	r				
corn for popcorn	GC2	5 (1997)	10		8	9		1						110	14,6	110	<8	y	r				
cornmeal	CF3B	5 (1997)	7		8	2	5							90	43,7	58	50	y	r				

Country : Norway																						
corn fractions	CF 3	02 01 C	18	60	20	6	2	3	1	1	1	1	3	2879	582	868,0	103	yes	random	HPLC	good	yes
polenta	CH 1	02 01 C	17	60	20		5	8	2	1	1			752	221	221	165	yes	random	HPLC	good	yes
corn flakes	CH	02 01 C	47	60	20	47								.-	10	0	10	yes	random	HPLC	good	yes
sweet corn *	CH5 *	02 01 C	82	60	20	82								.-	10	0	10	yes	random	HPLC	good	yes
maize ***	CH ***	0201 C	26	60	20	26								.-	10	0	10	yes	random	HPLC	good	yes
rice ***	GC7 ***	0301 G	16	60	20	16								.-	10	0	10	yes	random	HPLC	good	yes

Country: Sweden																						
biscuits					<0,2																	
glutenfree paste					<0,2																	
popcorn					<0,2																	
glutenfree paste					<0,2																	
maize flour					<0,2							1		1141	1141	1141	1141					
maize grits					<0,2							1		1345	1345	1345	1345					
popcorn					<0,2																	
popcorn					<0,2																	
chips					<0,2		1							23	23	23	23					
chips					<0,2																	
maize flour					<0,2			1						162	162	162	162					
glutenfritt knäckebröd					<0,2																	
biscuits					<0,2																	
majsvälling					<0,2																	
biscuits					<0,2																	
biscuits					<0,2									15	15	15	15					
cornflakes					<0,2		1															
cornflakes					<0,2																	
					<0,2																	
maizes-and potatopurée					<0,2																	
maizepurée,					<0,2																	
					<0,2																	
micropop with butter taste					<0,2																	
micropop light					<0,2																	
micropop light					<0,2																	
Country : United Kingdom																						
corn	03 01B	1998	92	20		0	14	17	12	17	4	10	18	3406	932,3	932,3		Y	Random	HPLC	G	Y
corn	03 01B	1999	47	20		2	14	11	2	5	2	8	3	2295	550,0	574,2		Y	Random	HPLC	G	Y
rice		2000	100		10	100								<10	5	0	<10	Y	Random	HPLC	G	Y

Table 1A ter - Fumonisin B1 in cereals and derived products in each Member State

Member State	Food	Number of samples	Number of positive samples	LOD/LOQ	Mean of Fumonisins B1 level in food (ug/kg)			
						Mean 1	Mean 2	Range
Austria	Corn	46	2	/50	**Corn**	**56,6**	**512,7**	**<LOD - 1750**
	corn	58	3	/50				
	corn	48	5	/50				
	corn	19	7	/50				
Belgium	popcorn	3		/500	**popcorn**	**83,0**	_____	
	corn starch	4		/500	**corn starch**	**250,0**		
	cornflakes	5		/500	**cornflakes**	**83,0**	**50,0**	**<LOQ**
	cornflakes	7		/300				
	tortilla chips, tacos	6	2	/500				
	tortilla chips	3	2	/300				
	sweet corn	5		/500	**sweetcorn**	**83,0**		
	corn for popcorn	4		/300	**corn**	**200,0**	**0,0**	**<300/<500**
	corn based	3		/300	**cornbased products**	**188,6**	**300,0**	**<LOD - 800**
	cereal products	3		/300	**cereal products**	**50,0**		
France	corn	55	55	/50	**Corn**	**215,7**	**683,2**	**<LOD - 683,8**
	corn	14	14	/50				
	corn	25	25	20/40				
	corn	25	12	10/20				
	corn	78	74	20-25/10-500				
	corn	92	79	20/10-500				
	popcorn	4	4	/50	**popcorn**	**50,0**	**160,0**	**167,0**
	popcorn	1	1					
	white wheat flour	25		30/	**white wheat flour**	**76,3**	**??**	**<LOD - 4343**
	white wheat flour	4		30/				
	white wheat flour	20	4	30/				
	white wheat flour	32		30/				
	white wheat flour	10		12/				
	white wheat flour	6		15/				
	white wheat flour	34	13	15/50				
	white wheat flour	2	2	/50				
	white wheat flour	6	6	/50				
	white wheat flour	6	6	/20				
	white wheat flour	2	1	/20				
	white wheat flour	3	3	/50				
	white wheat flour	6		15/				
	white wheat flour	6		20/				
	white wheat flour	12	12	/12-50				
	white wheat flour	40	40	/12-50				
	wheat bran	5	5	/50				
	wheat bran	2	2	/50	**wheat bran**	**8,1**		
	corn starch	1	1	/50	**corn starch**	**8,3**	**8,3**	
	corn meal	2	2		**corn meal**	**415,1**	**861,5**	**8,3-1600**
	corn meal	4	4	/50				
	corn meal	1	1					
	corn meal	4	4	/50				
	sweet corn	1		/50	**sweet corn**	**30,5**	**71,3**	
	sweet corn	13	2	/50				
	sweet corn	1						

	corn fractions	15		12/	**corn fraction**	**75,2**	**359**	**<LOD-735**
	corn fractions	2		30/				
	corn fractions	3	2	20/50				
	corn fractions	1	1					
	corn fractions	1	1					
	corn based products	2		/20	**cornbased products**	**87,1**	**197,8**	**<LOD - 696**
	corn based products	1	1					
	corn based products	10	10	/50				
	corn based products	1		/20				
	wheat based product	2	2	/50	**wheat based product**	**22,2**	**228,0**	**<LOD - 370**
	wheat based product	11	4	/50				
	wheat based product	1	1	/50				
	wheat based product	7	7	/50				
	wheat based product	5	5	/20				
	wheat based product	3		15/				
	A - cereal for breakfast	14	14	/50	**cereal products**	**29,5**	**??**	**<LOD-1000**
	D5 Rye? Wheat	3	2	15/20				
	D5 Rye? Wheat	1	1	/50				
	D5 Rye? Wheat	4	1	15/50				
	D5 Rye? Wheat	1	1	/50				
	D9 Buckweat ? Wheat	1		20/				
	D9 Buckweat ? Wheat	5	4	/50				
	D9 Buckweat ? Wheat	8	4	20/50				
	E3 oat derived products	2	1	15/20				
	E3 oat derived products	4	4	/50				
	E6 Barley derived products	2	1	15/50				
	E6 Barley derived products	6	3	15/50				
	E7 rice derived products	1		/20				
	E7 rice derived products	1	1	/50				
	E7 rice derived products	4	4	/50				
	E7 rice derived products	1		/20				
	E7 rice derived products	3	3	/50				
	F7 ?	4	3	15/50				
	A*Mix of diff. Cer.deriv. Pro	3	3	/20				
	A Mix of dif. Cer.breakfast c	6	6	/20				
	A Mix of dif. Cer.breakfast c	3	3	/50				
	BT soft wheat	45	41	20/10-100	**soft wheat**	**82,91**	**???**	**<LOD - 736**
	BT soft wheat	46	46	/10-100				
	polents	2	2		**polenta**	**125,7**	**125,7**	**?- 283**
	polents	3	3					
	polents	5	5	/50				
	pizza	1			**pizza**	**7,5**		

Germany	corn grains	107	72	5/10	**corn**	**81,5**	**118,8**	**<LOD - 1198**
	rice	81	3	10/20	**rice**	**6,1**	**35**	**<LOD - 77**
	millet	50	12	5/10	**millet**	**5,2**	**11,7**	**<LOD - 56**
	corn flour	62	46	5/10	**cornmeal**	**306,7**	**411**	**<LOD-4766**
	corn grits	165	91	5/10	**corngrit**	**318**	**574,4**	**<LOD - 4800**
	sweet corn	43		5/10	**sweet corn**	**2,5**		
	corn flakes	205	117	5/10	**cornflakes**	**37,4**	**63,2**	**<LOD - 600**
	breakfast cereals	60	31	5/10	**cereal products**	**78,8**	**143,5**	**<LOD-1260**
	cereals grit	93	59	5/10				
	mixture cereal based produ	294	191	5/10				
	peanut multiingr cereal bas	106	18	5/10				
	infant food	387	174	5/10	**infant food**	**72,6**	**156,7**	**955**
	dietetic nutrition w gluten	56	26	5/10	**dietetic…**	**47,9**	**100,4**	**585**
	dietetic nutrition for infants	62	25	5/10	**dietetic…**	**42,6**	**99,5**	**403**
	corn containing beverages	18	2	5/10	**cornbased products**	**13,4**	**65,5**	**112**
Italy	cereal grain	13	13	3/9	**cereal grains**	**436,4**	**1117,0**	**<LOD - 7808**
	cereal grain	55	13	30/				
	wheat	19		30/	**wheat**	**15**		**64-10200**
	white wheat flour	42	5	30/	**white wheat flour**	**19,0**	**52,0**	**<LOD - 63**
	durum wheat paste	11		30/	**pasta**	**15**		**64-10200**
	bran	9	2	30/	**wheat bran**	**25,0**	**61,0**	**<LOD - 71**
	whole meal	46		30(	**cereal grainsfraction**	**21,3**	**52,0**	**<LOD - 118**
	Wheat Semolina	27		30/				
	corn	35	35	30/	**corn**	**2208,0**	**2208,0**	**64-10200**
	corn	2	2	30/70				
	corn flour	11	9	30/	**corn flour**	**765,5**	**881,0**	**<LOD - 4200**
	corn flour	2	2	30/				
	corn flour	2	2	30/70				
	corn bran	2	2	30/70	**corn bran**	**7850,0**	**7850,0**	**7080- 8080**
	polenta	2	2	30/70	**polenta**	**135,0**	**135,0**	**130-140**
	germ	2	2	30/70	**germ**	**9240,0**	**9240,0**	**8920-9560**
	fine grit	2	2	30/70	**corngrit**	**605,0**	**605,0**	**390-1010**
	Coarse Grit	2	2	30/70				
	Cornflakes	8	7	2/5	**cornflakes**	**233,0**	**266,0**	**<LOD - 1092**
	Corn based products	10	10	2/5	**cornbased products**	**184,0**	**184,0**	**13 - 290**
	Corn gluten	11	11	30/	**corn fraction**	**2769,5**	**2769,5**	**105-6009**
	Corn Semolina	8	8	30/				
	Bakery products	33		30/	**cereal products**	**15,0**		
The Netherlands	corn	29	3	100/	**corn**	**70,0**	**213,0**	**<LOD - 400**
	corn for bread	19	8	8/				
	corn for popcorn	10	1	8/				
	cornmeal	7	5	8/	**cornmeal**	**43,7**	**58,0**	**<LOD-90**

Norway	**Corn fractions**	18	12	20/60	corn fraction	**582,0**	**868,0**	**<LOD-2879**
					corngrit	**1111**	**1111**	**40-2182**
					cornmeal	**636**	**824**	**<LOD-2879**
					corn starch	**10,0**		
	polenta	17	17	20/60	polenta	**221,0**	**221,0**	**40-752**
	Corn flakes	47		20/60	cornflakes	**10**		**<LOD**
	Sweet corn *	82		20/60	sweet corn	**10,0**		
	Maize ***	26		20/60	cornbased products	**10,0**		
	Rice ***	16		20/60	rice	**10**		
Sweden	Biscuits	1			**biscuit**	**0,1**	_____	**<LOD**
	Biscuits	1						
	Biscuits	1						
	Biscuits	1						
	Glutenfree paste	1			**pasta**	**100**		
	Glutenfree paste	1						
	Popcorn	1			**popcorn**	**0,1**		
	Popcorn	1						
	Popcorn	1						
	Maize flour	1	1					
	Maize grits	1	1					
	Chips	1	1		**cornbased products**	**5,8**	**23**	**<LOD - 23**
	Chips	1						
	Maizes-and potatopurée	1						
	Maizepurée,	1						
	Maize flour	1	1		**corn flour**	**651.5**	**651.5**	**162-1141**
	Glutenfritt knäckebröd	1						
	Majsvälling	1						
	Cornflakes	1	1		**cornflakes**	**7,5**	**15**	**<LOD - 15**
	Cornflakes	1						
	Micropop with butter taste	1						
	Micropop light	1						
	Micropop light	1						
UK	corn	92	92	/20	**corn**	**803,0**	**814,7**	**<LOD - 3406**
	corn	47	45	/20				
	rice	100		10/	**rice**	**5,0**		

Member State	Number of samples Toxin		
	FB1	FB2	FB3
Austria	171	171	
Belgium	45		
Germany	1960		
France	786	353	
Italy	368	18	
Norway	206	206	
The Netherlands	65		
Sweden	23	23	
United Kingdom	239	239	239
	3863	1010	239

Figure 1. TOTAL NUMBER OF SAMPLES IN EACH MEMBER STATE
N tot = 5112 (3863+1010+239)

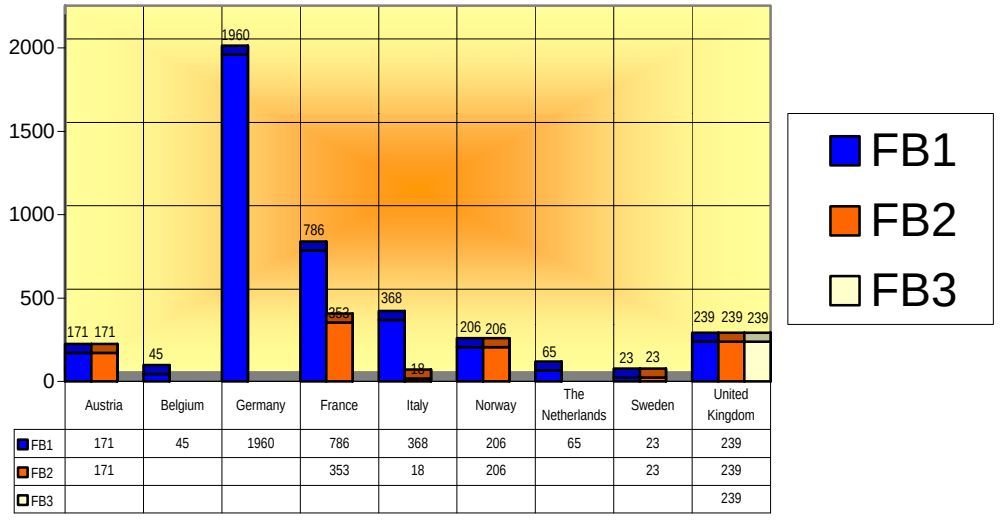


Fig. 1 - Total and FB1 positive samples by Member State

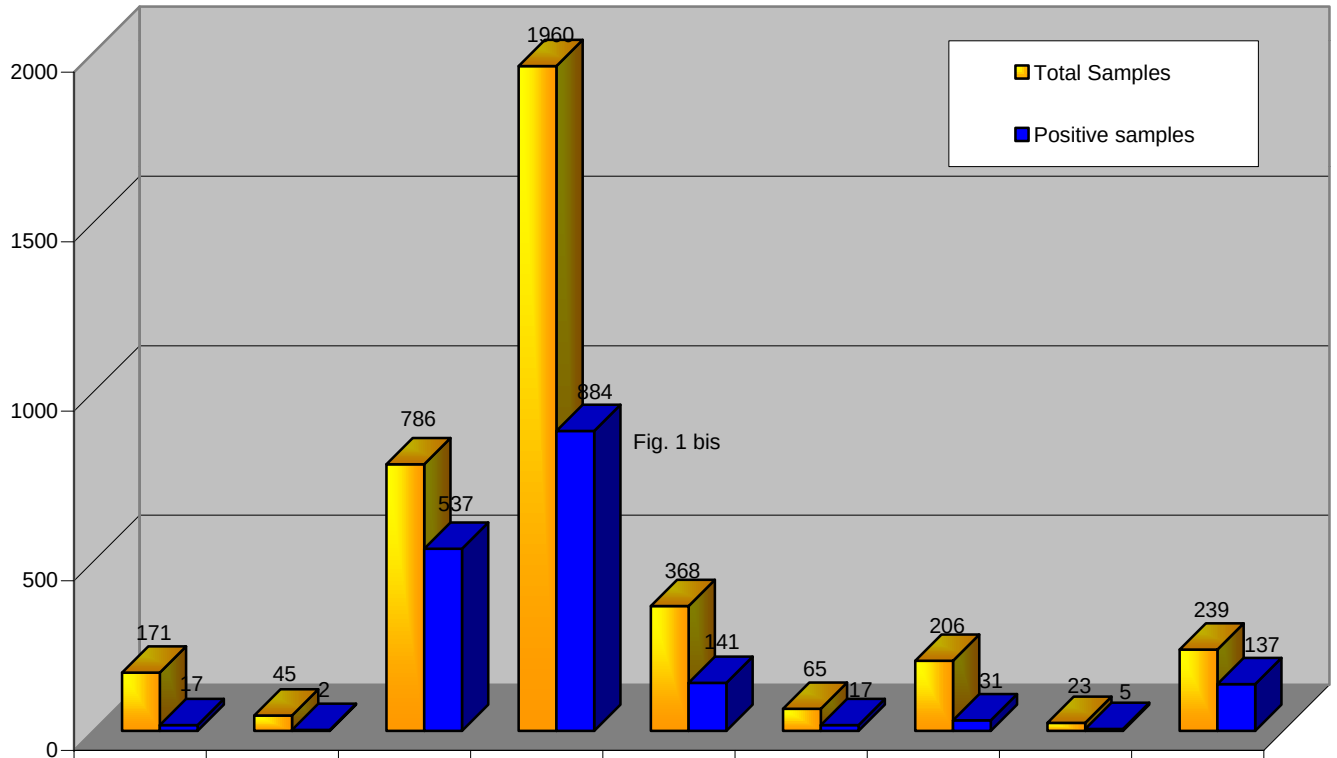


Fig. 1 bis

	Austria (9,9%)	Belgium (4,4%)	France (68,3%)	Germany (45,1%)	Italy (38,3%)	The Netherlands (26,2%)	Norway (15,0%)	Sweden (21,7%)	United Kingdom (57,3%)
Total Samples	171	45	786	1960	368	65	206	23	239
Positive samples	17	2	537	884	141	17	31	5	137

Table 1 ter (I). FB1 occurrence in cereals

Cereals accounted for 82 % of the overall amount of provided data.

Cereal	Number of total samples	Percentage of positive samples %	Maximum value (ug/g)
CORN	801	67	10200
CORNFLAKES	274	46	1092
POLENTA	29	100	752
SWEET CORN	145	9	81
CORN FRACTIONS	41	90	6009
CORN GRITS	172	57	4800
POPCORN	18	28	----
CORN FLOUR	110	79	4766
CORN BASED PRODUCTS	83	31	800
WHEAT	110	79	736
WHITE WHEAT FLOUR	256	16	4343
RICE	197	2	77
CEREAL GRAINS	68	38	7808
CEREAL PRODUCTS	666	54	1260
Others	198	37	9560 (corn germ)

Fig. I ter (I) - Total and FB1 positive samples in cereals

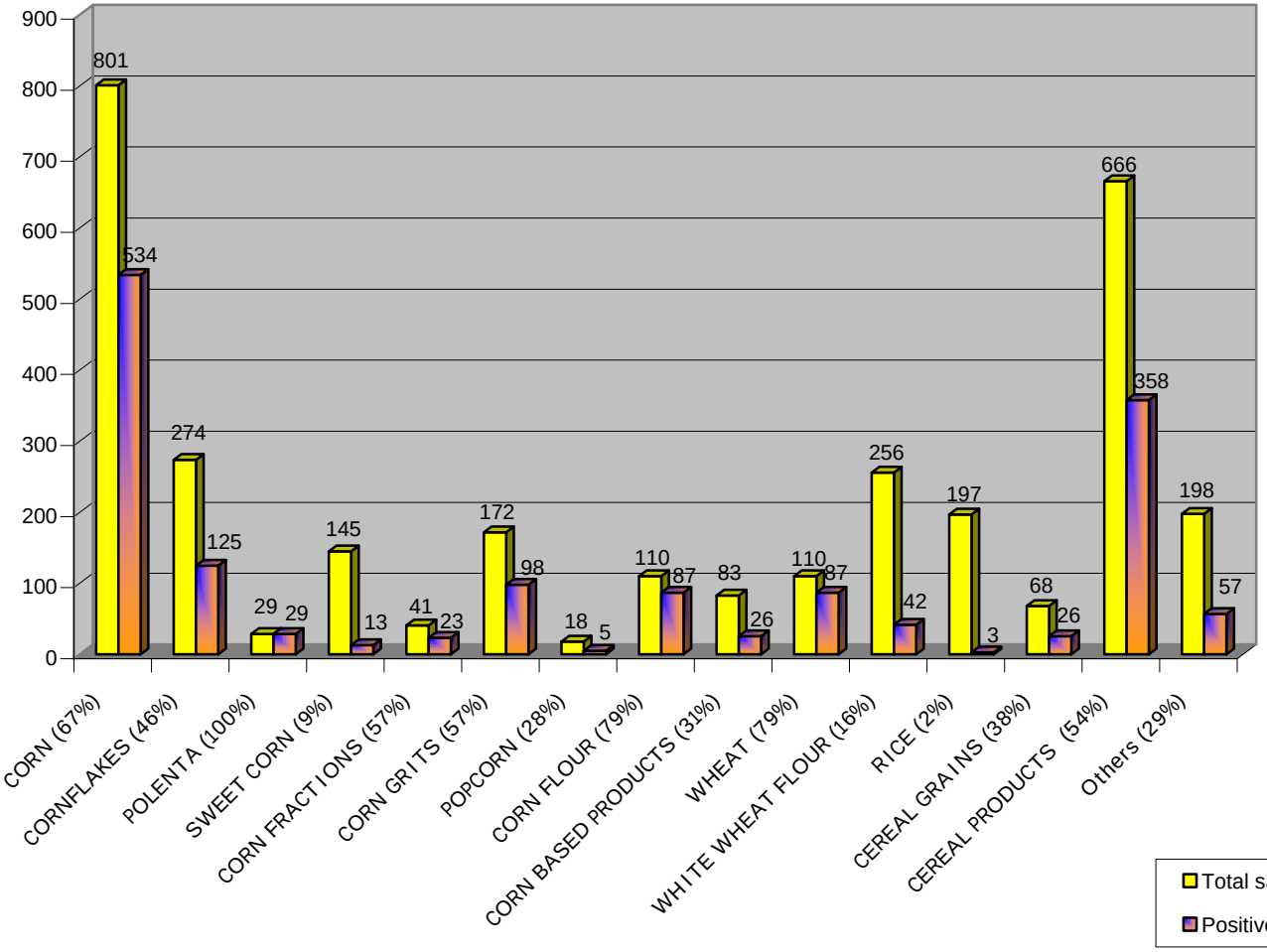
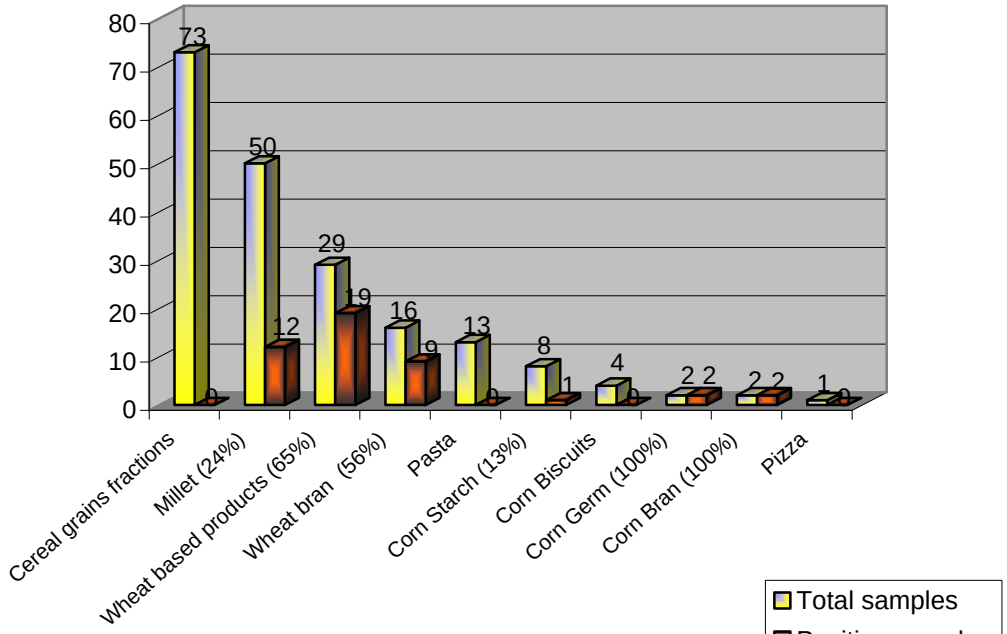


Table 1 ter (II). FB1 occurrence in other cereal products

Cereal	Number of total samples	Percentage of positive samples %	Max value (ug/kg)
Cereal grains fractions	73	0	
Millet	50	24	56
Wheat based products	29	65	370
Wheat bran	16	56	71
Pasta	13	0	
Corn Starch	8	13	?
Corn Biscuits	4	0	
Corn Germ	2	100	9560
Corn Bran	2	100	8080
Pizza	1	0	

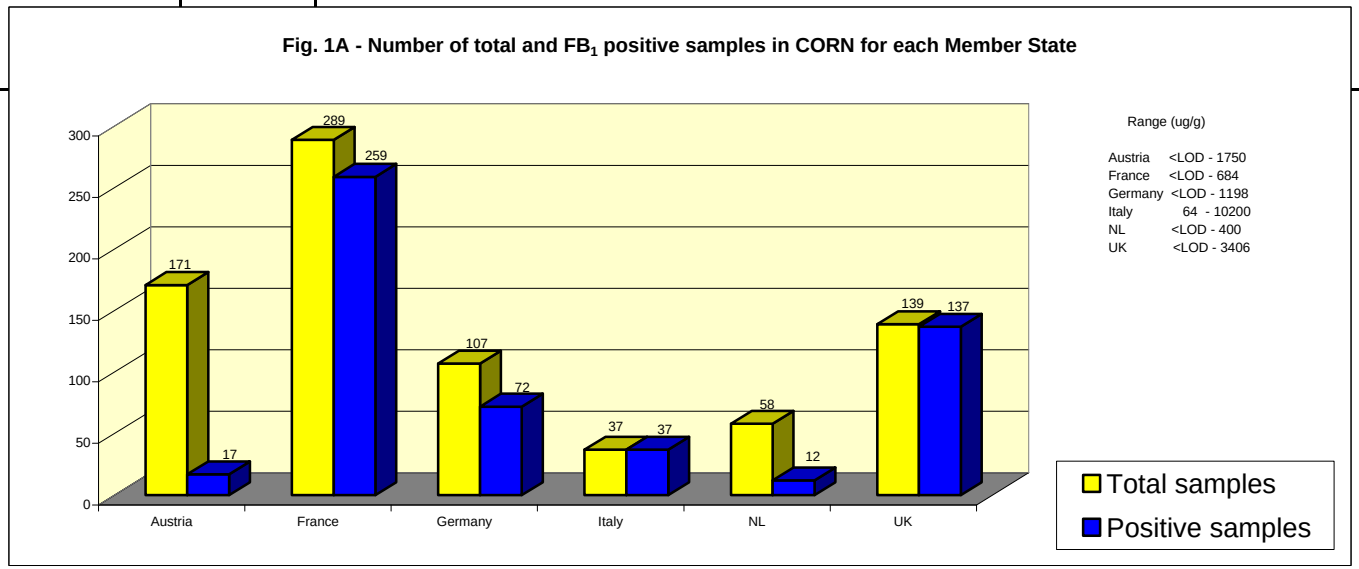
Cereal grains fractions	**73**	**0**	0
Millet (24%)	**50**	**24**	12
Wheat based products (65%)	**29**	**65**	19
Wheat bran (56%)	**16**	**56**	9
Pasta	**13**	**0**	0
Corn Starch (13%)	**8**	**13**	1
Corn Biscuits	**4**	**0**	0
Corn Germ (100%)	**2**	**100**	2
Corn Bran (100%)	**2**	**100**	2
Pizza	**1**	**0**	0

Fig. 1 ter (II) - Total and FB1 positive samples in cereals



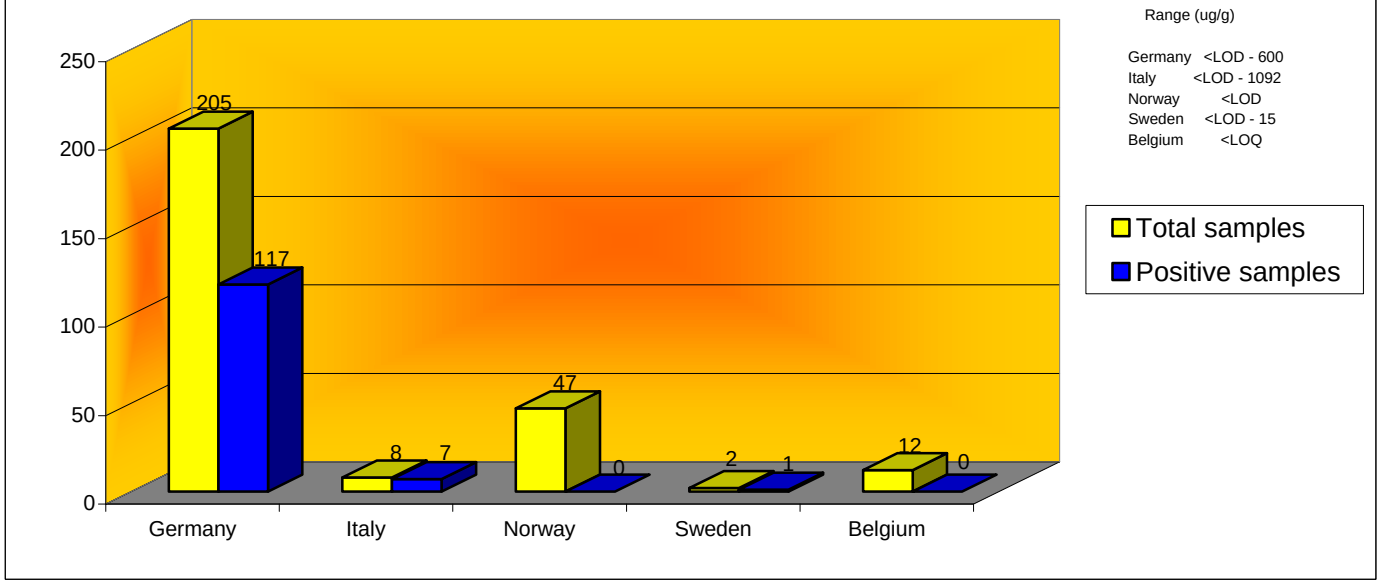
Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD / LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Austria	corn	171	17	9,9	50	56,6	512,7	<LOD - 1750
France	corn	289	259	89,6	10/500	215,66	683,20	<LOD - 683,8
Germany	corn	107	72	67,3	5	81,50	118,80	<LOD - 1198
Italy	corn	37	37	100,0	30	2208	2208	64-10200
The Netherlands	corn	58	12	20,7	8/100	70,00	213,00	<LOD - 400
United Kingdom	corn	139	137	98,6	20	803	814,67	<LOD - 3406
		801	534	67				
Europe						Mean1 346,4	Mean2 730,5	

Fig. 1A - Number of total and FB_1 positive samples in CORN for each Member State

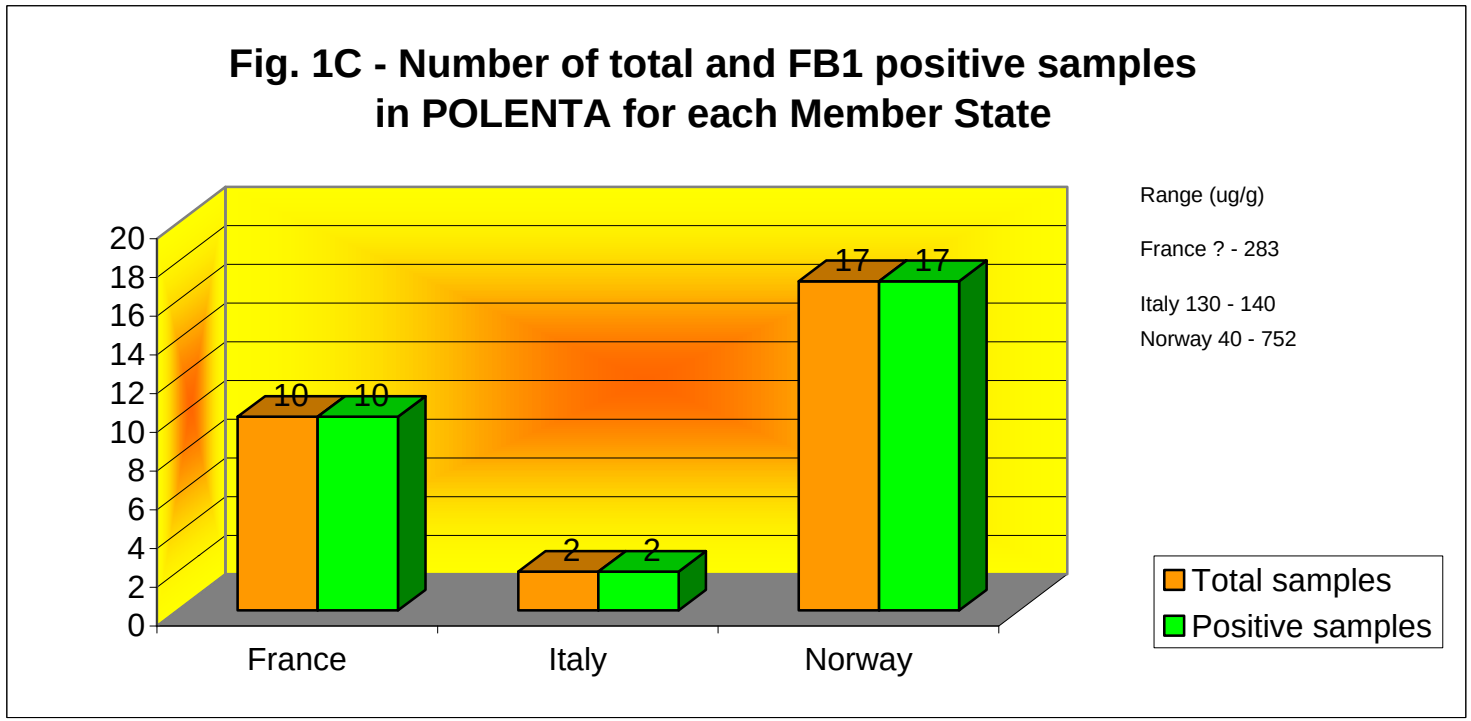


Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD / LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Germany	cornflakes	205	117	57,1	5 / 10	37,4	63,2	<LOD - 600
Italy	cornflakes	8	7	87,5	2 / 5	233	266	<LOD - 1092
Norway	cornflakes	47	0	0,0	20 / 60	10		<LOD
Sweden	cornflakes	2	1	50,0	0,2	7,5	15	<LOD - 15
Belgium	cornflakes	12	0	0,0	300-500	64	0	<LOQ
		274	125	46				
Europe						Mean1 31,54	Mean2 74,17	

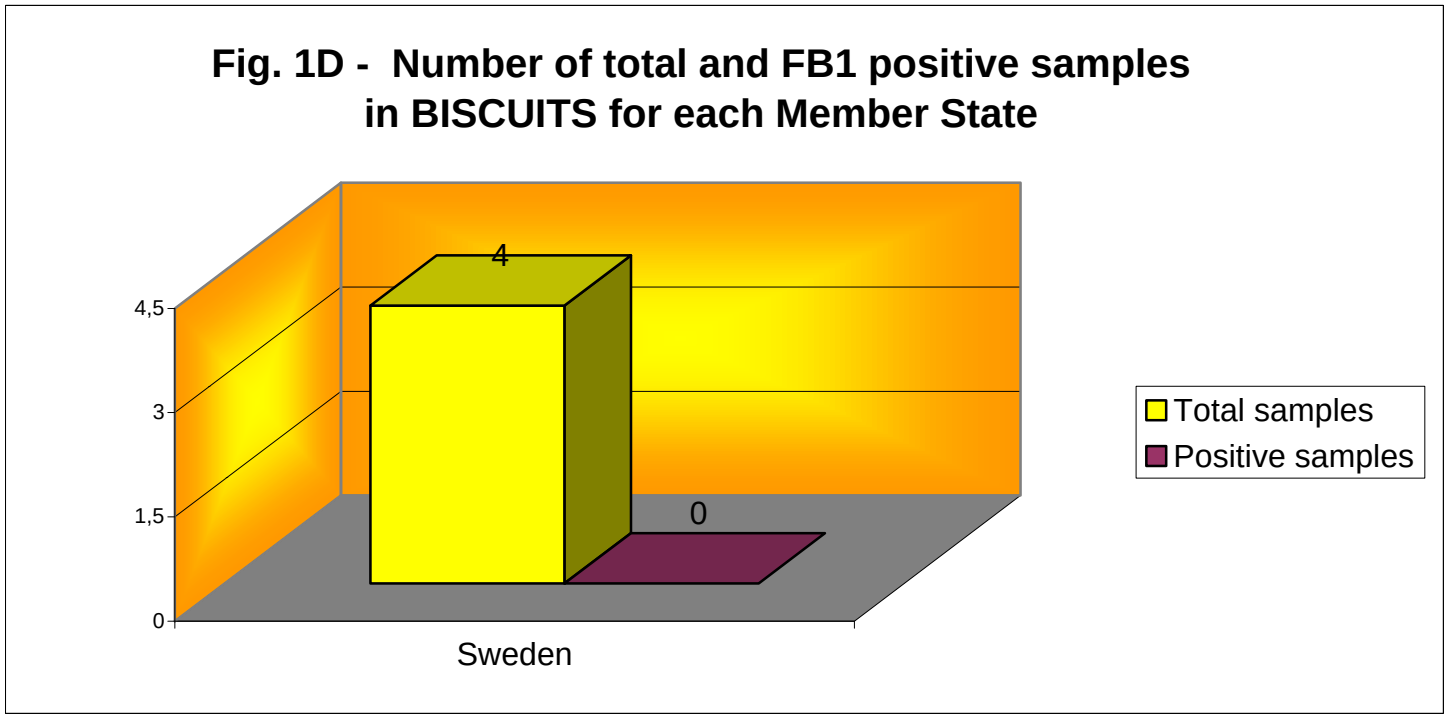
Fig. 1B - Number of total and FB_1 positive samples in CORNFLAKES for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	polenta	10	10	100,0	50	125,65	125,65	?- 283
Italy	polenta	2	2	100,0	30/70	135	135	130-140
Norway	polenta	17	17	100,0	20/60	221	221	40-752
		29	**29**	**100**				

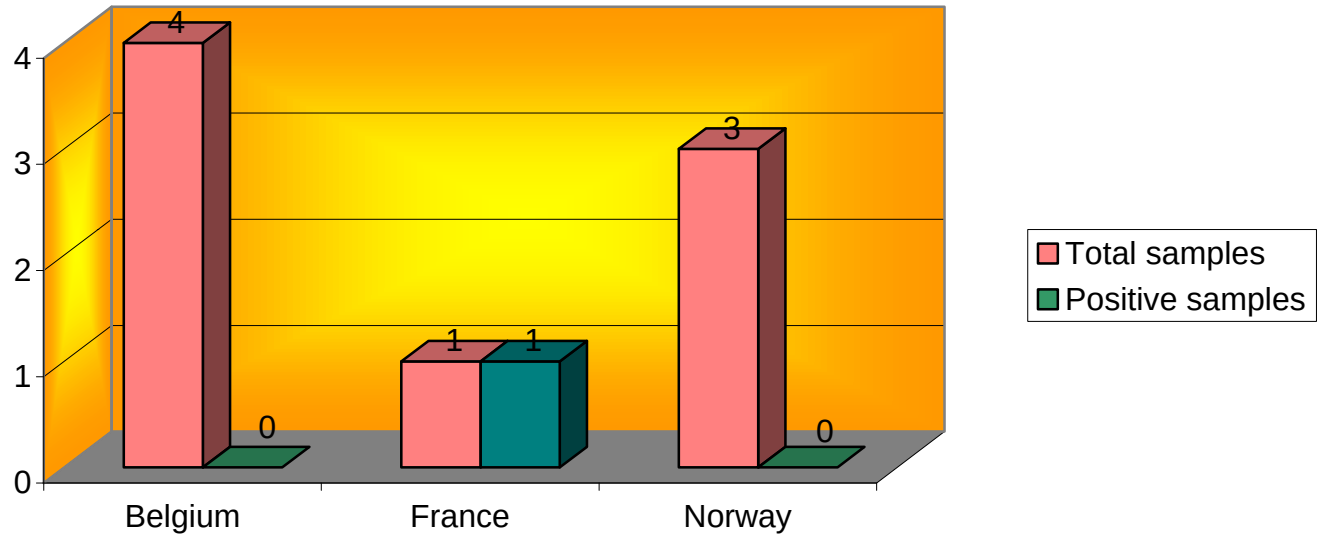


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Sweden	biscuits	4	0	0	0,2	0,10	_____	<LOD
		4	0	0				

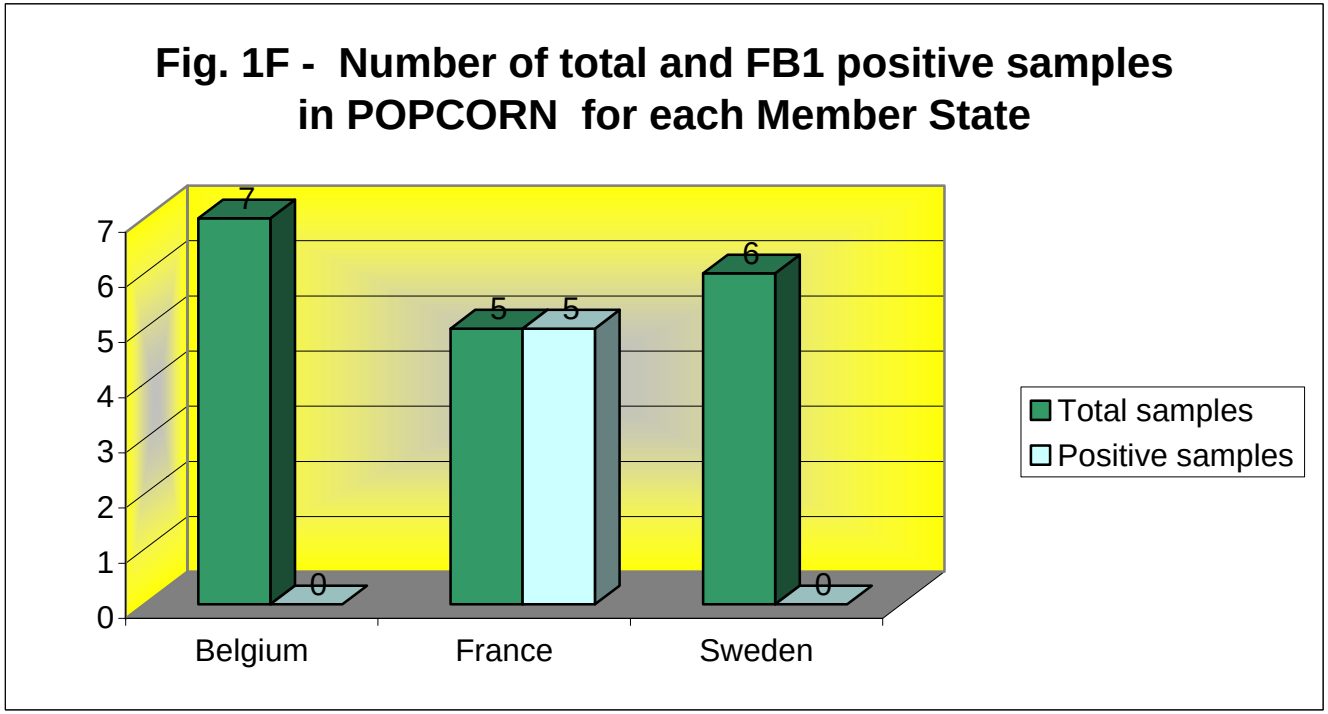


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Belgium	corn starch	4	0	0	500	83		
France	corn starch	1	1	100	50	8,33	8,33	
Norway	corn starch	3	0	0	20/60	10		
		8	**1**	**13**				

Fig. 1E - Number of total and FB1 positive samples in CORN STARCH for each Member State

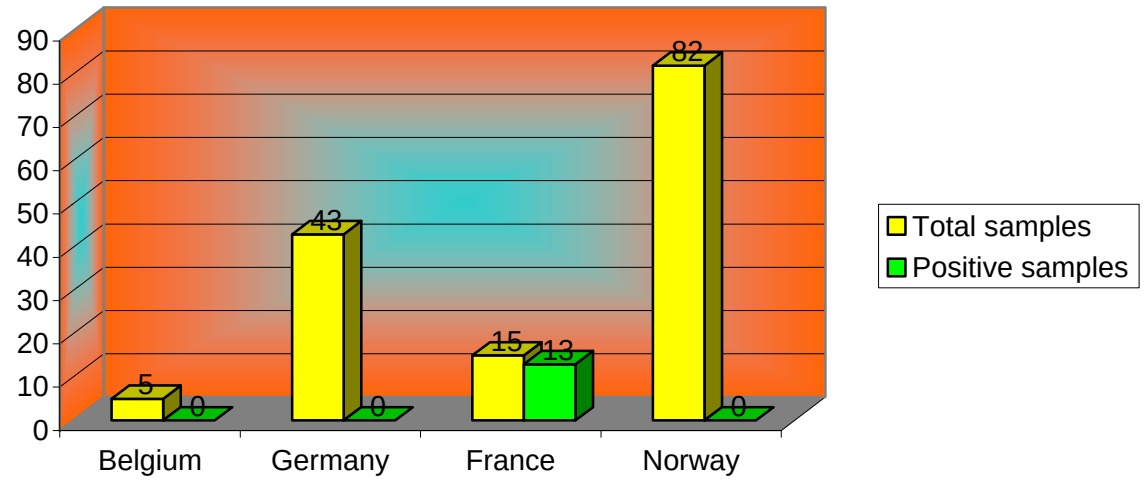


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Belgium	popcorn	7	0	0	300-500	70	_____	
France	popcorn	5	5	100	50	160,04	167	
Sweden	popcorn	6	0	0	0,2	0,1	_____	
		18	5	28				



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Belgium	sweet corn	5	0	0	/500	83		
Germany	sweet corn	43	0	0	5/10	2,5		
France	sweet corn	15	13	86,7	16/50	30,5	71	<LOD - 81
Norway	sweet corn	82	0	0,0	20/60	10		
		145	13	9				

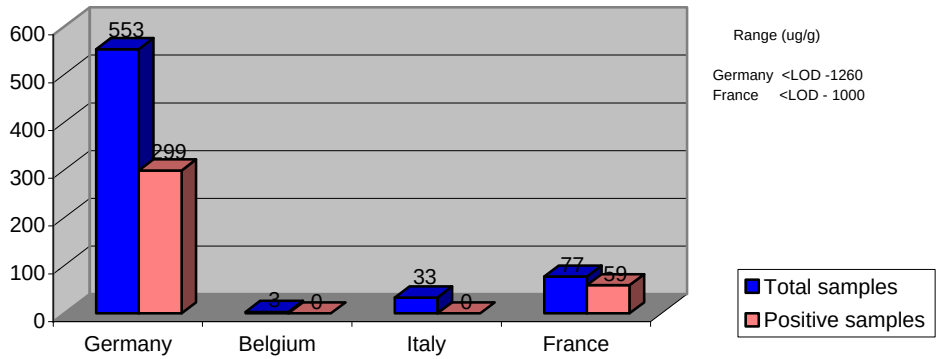
Fig. 1G - Number of total and FB1 positive samples in SWEET CORN for each Member State



Country	Food	Number of samples	Number of positive samples	Percentage of Positive samples	LOD/LOQ	Mean of FB_1 level in food µg/kg		
						Mean1	Mean 2	Range
Belgium	Cereal products	3	0	0	/300	50		
Germany	Cereal products	553	299	54	5/10	78,8	143,5	<LOD-1260
Italy	Cereal products	33	0	0	30	15		
France	Cereal products	77	59	77	15/50	29,5	??	<LOD-1000
		666	**358**	**53,8**				

Europe	Mean1	Mean2
	69,8	

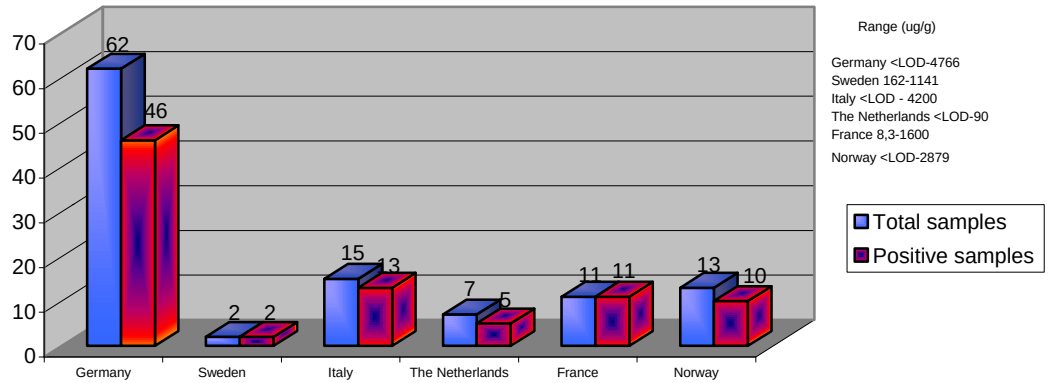
Fig. 1H - Number of total and FB1 positive samples in CEREAL PRODUCTS for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD / LOQ	Mean of FB1 level in food µg / kg		
						Mean 1	Mean 2	Range
Germany	corn flour	62	46	74	5/10	306,7	411	<LOD-4766
Sweden	corn flour	2	2	100	?	651,5	651,5	162-1141
Italy	corn flour	15	13	87	30	765,5	881,0	<LOD - 4200
The Netherlands	corn flour	7	5	71	8	43,7	58	<LOD-90
France	corn flour	11	11	100	50	415,05	861,45	8,3-1600
Norway	corn flour	13	10	77	20/60	636	824	<LOD-2879
		110	**87**	**79,1**				

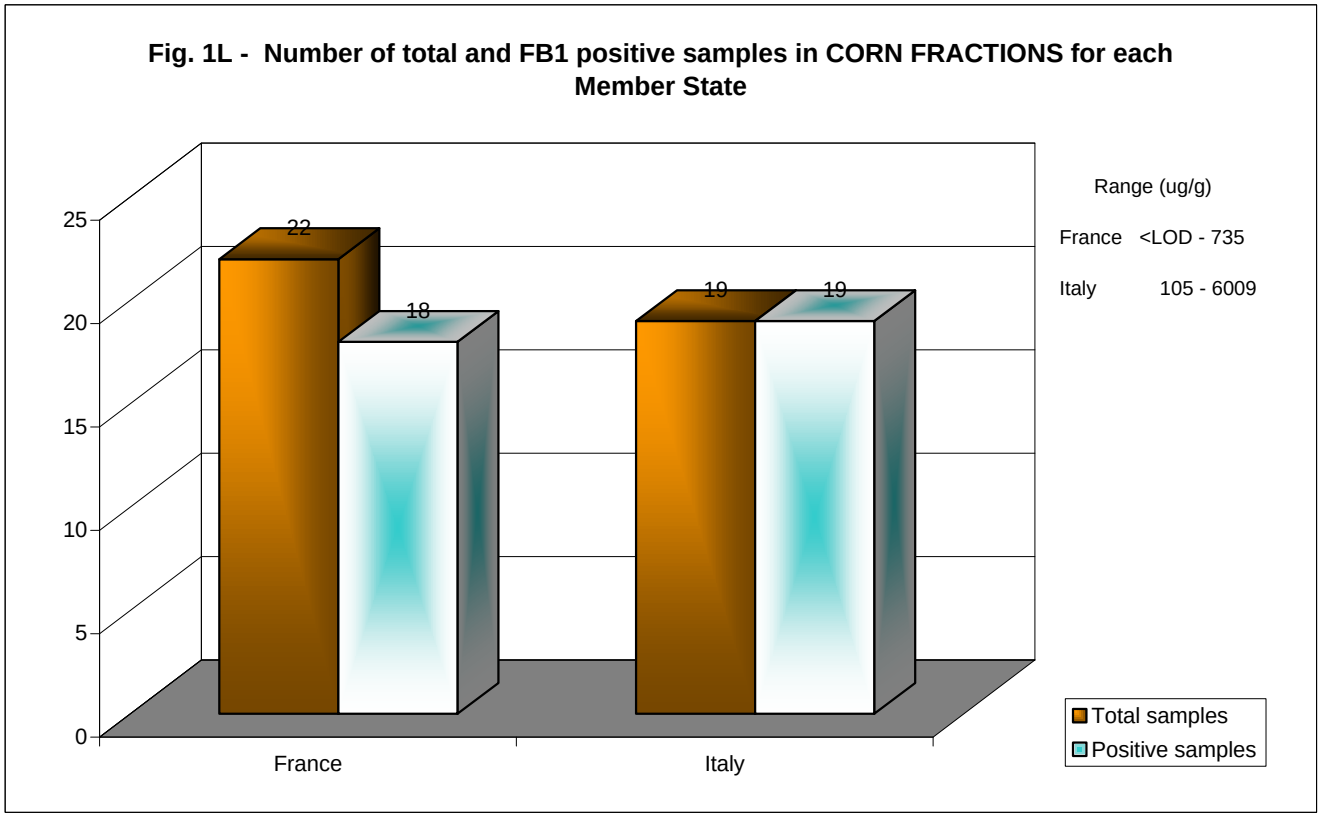
Europe	Mean1	Mean2
	408,5	570,9

Fig. 1l - Number of total and FB1 positive samples in CORN FLOUR for each Member State



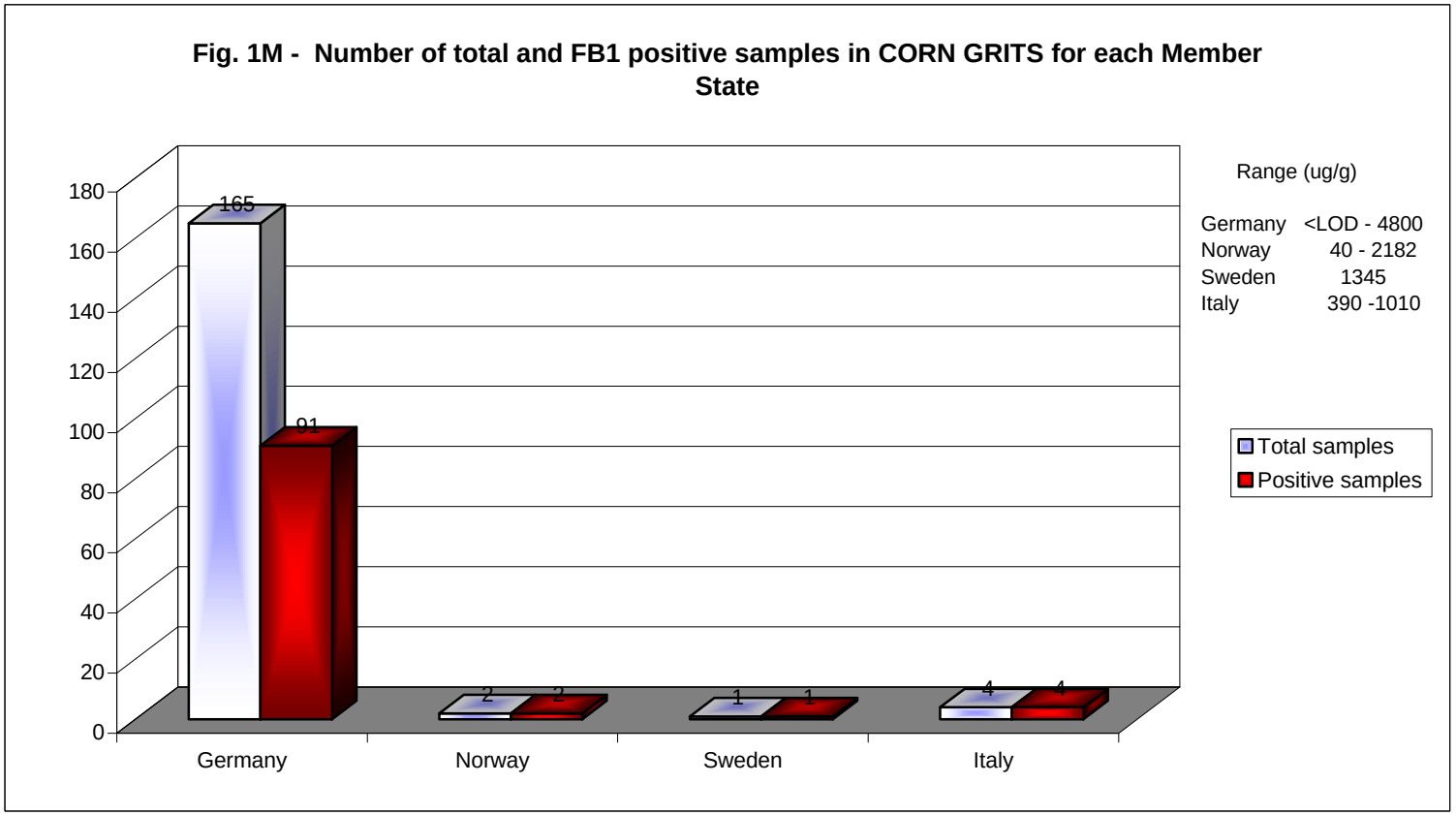
Country	Food	Number of samples	Number of positive samples	Percentage of Positive samples	LOD/LOQ	Mean of FB_1 level in food		
						Mean1	Mean 2	Range
France	corn fractions	22	18	82	12/50	75,2	359	<LOD-735
Italy	corn fractions	19	19	100	30	2769,5	2769,5	105-6009
		41	**37**	**90,2**				

Fig. 1L - Number of total and FB1 positive samples in CORN FRACTIONS for each Member State



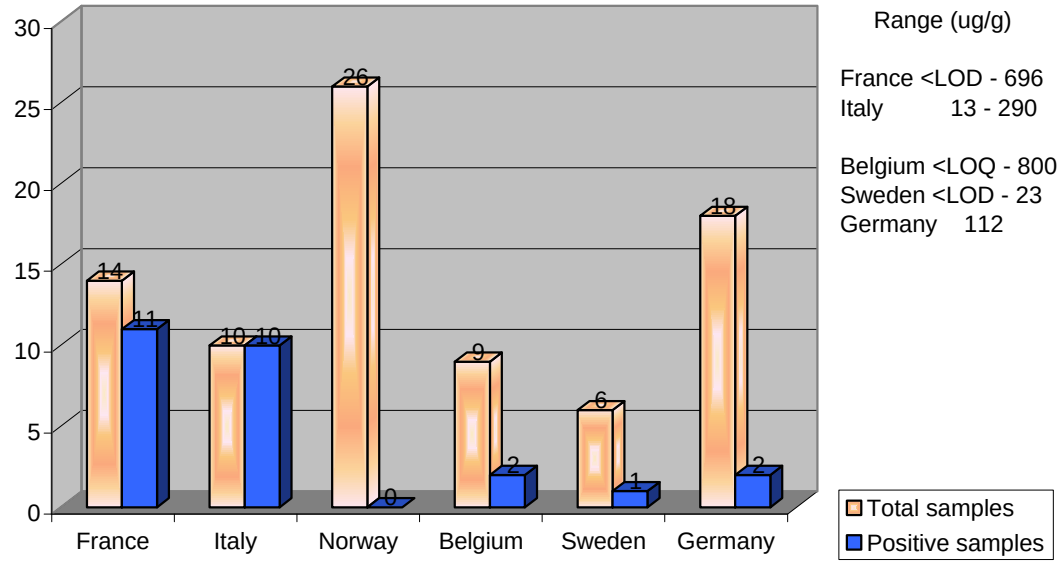
Country	Food	Number of samples	Number of positive samples	Percentage of Positive samples	LOD/LOQ	Mean of FB_1 level in food		
						Mean1	Mean 2	Range
Germany	corn grits	165	91	55	5/10	318	574,4	<LOD - 4800
Norway	corn grits	2	2	100	20/60	1111	1111	40-2182
Sweden	corn grits	1	1	100	?	1345	1345	1345
Italy	corn grits	4	4	100	30/70	605,0	605,0	390-1010
		172	**98**	**57,0**				

Fig. 1M - Number of total and FB1 positive samples in CORN GRITS for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	Corn-based products	14	11	79	20/50	87,1	197,8	<LOD - 696
Italy	Corn-based products	10	10	100	5	184,0	184,0	13 - 290
Norway	Corn-based products	26	0	0	20/60	10		
Belgium	Corn-based products	9	2	22	300-500	189	600	<LOQ - 800
Sweden	Corn-based products	6	1	17	0,2??	5,76	23	<LOD - 23
Germany	Corn-based products (bev)	18	2	11	5/10	13,4	65,5	112
		83	**26**	**31,33**				

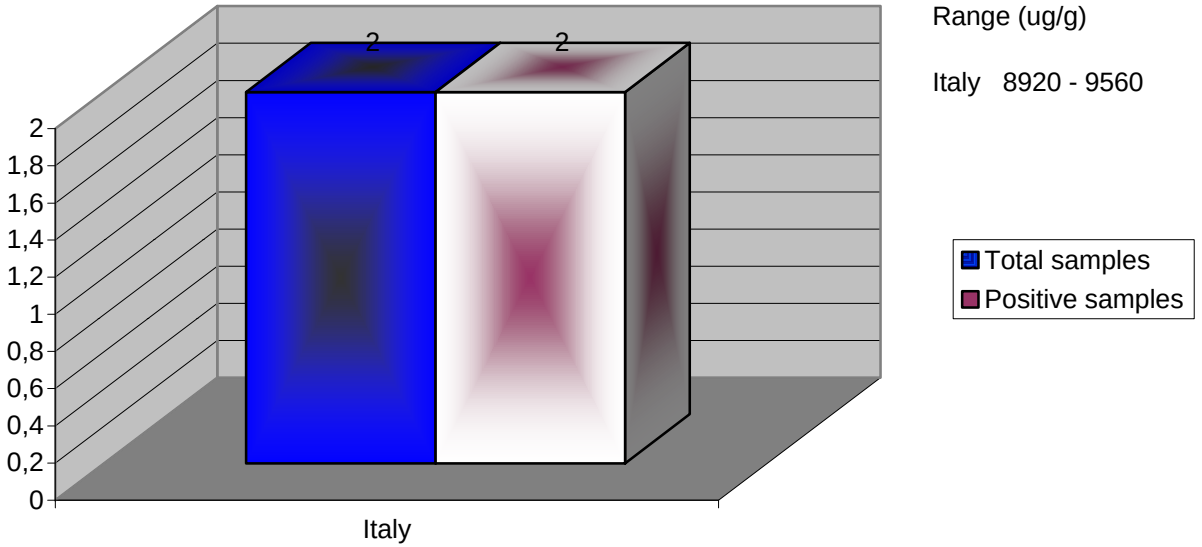
Fig. 1N - Number of total and FB1 positive samples in CORN BASED PRODUCTS for each Member State



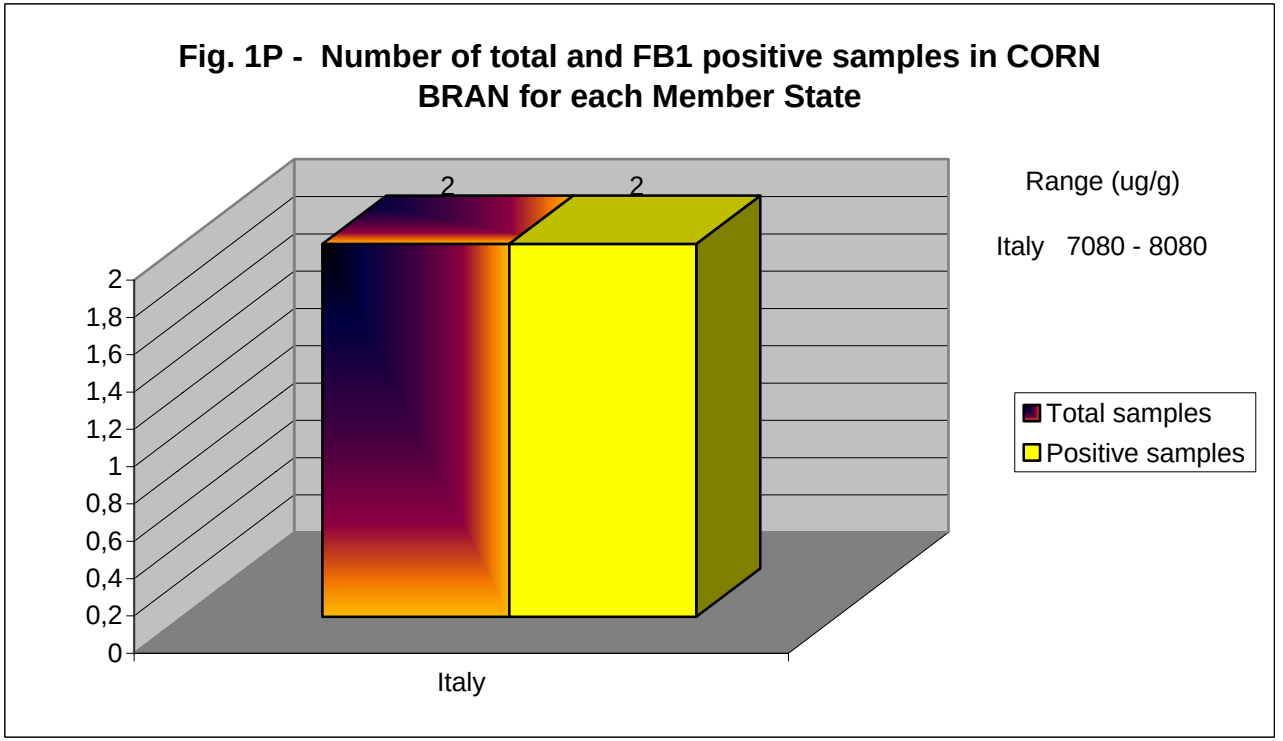
Europe	Mean1	Mean2
	65,2	183,5

Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	Corn Germ	2	2	100	30/70	9240,0	9240,0	8920-9560
		2	**2**	**100**				

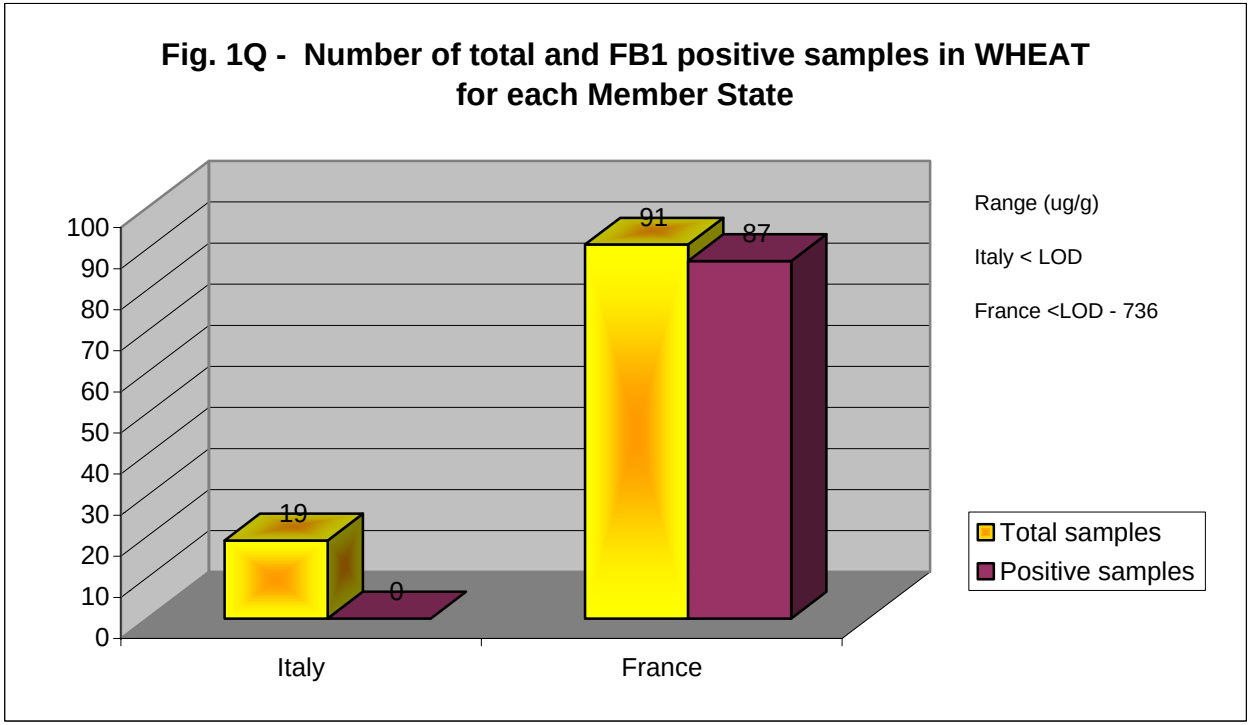
Fig. 1O - Number of total and FB1 positive samples in CORN GERM for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD / LOQ	Mean of FB1 level in food µg / kg		
						Mean 1	Mean 2	Range
Italy	Corn Bran	2	2	100	30/70	7850,0	7850,0	7080- 8080
		2	2	100				



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	wheat	19	0	0	30	15		
France	soft wheat	91	87	96	10/100	82,91	???	<LOD - 736
		110	87	79,09				



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	Wheat bran	7	7	100	50	8,10		
Italy	Wheat bran	9	2	22	30	25	61	<LOD - 71
		16	9	56,3				

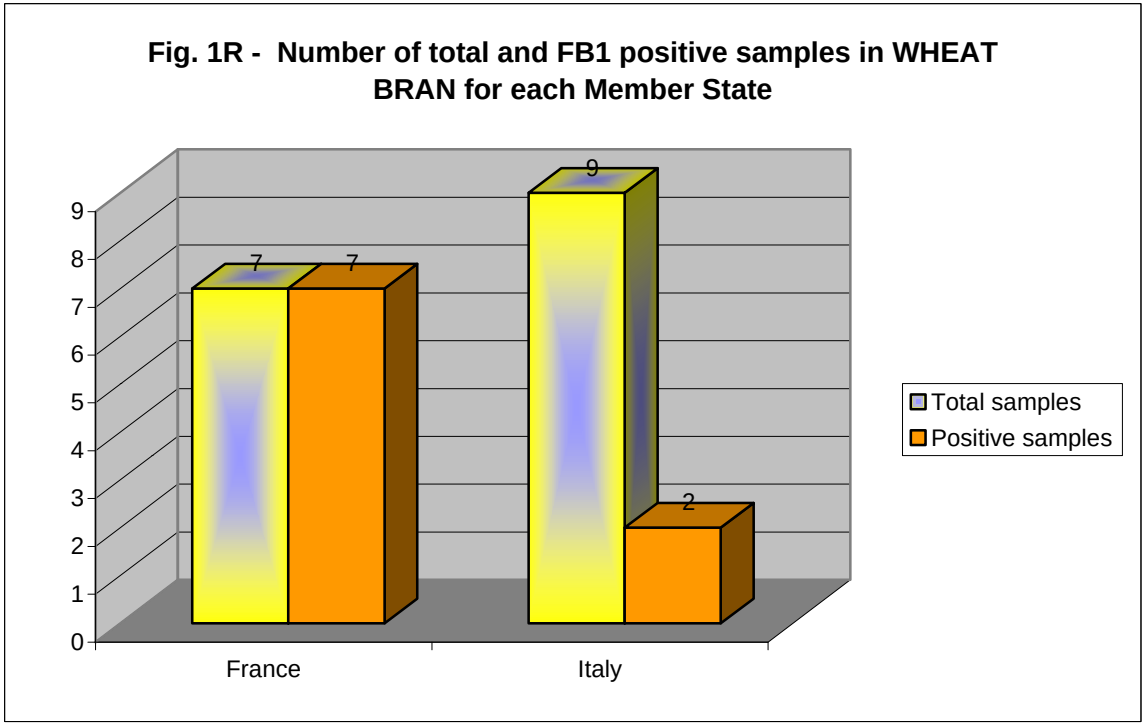
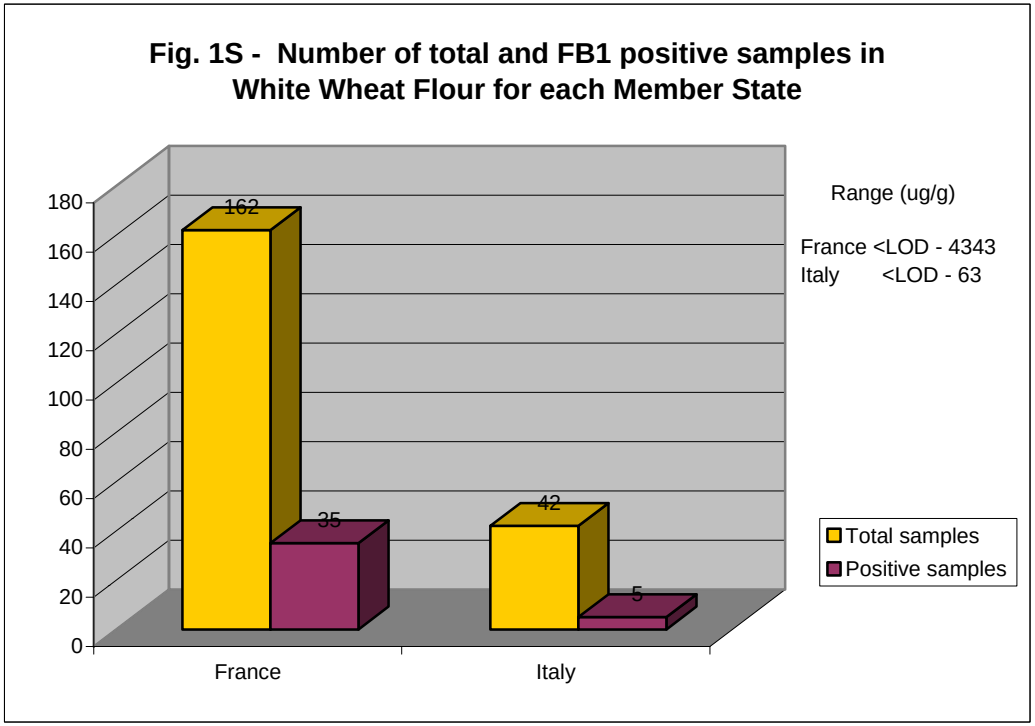


Table 1S. FB1 occurrence in white wheat flour

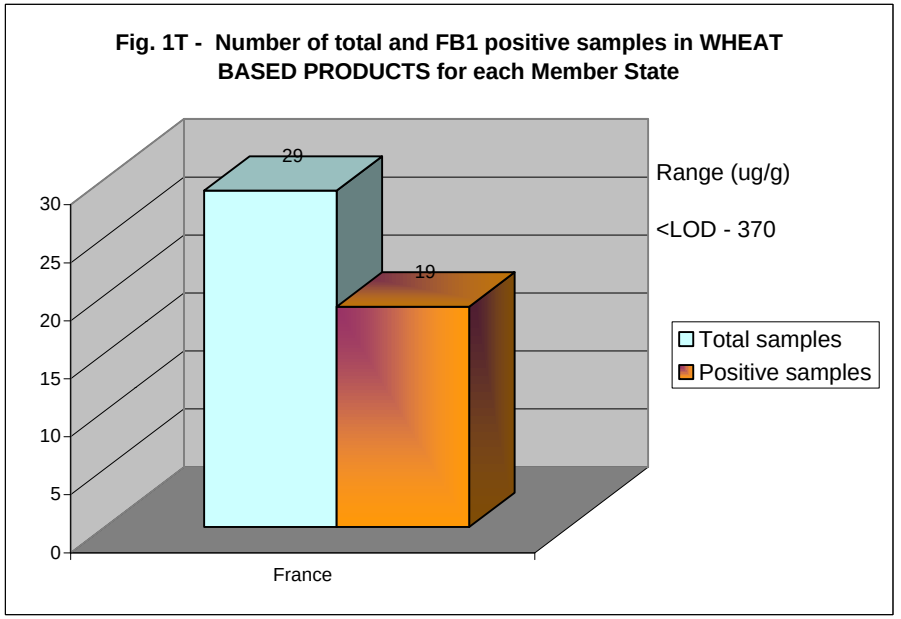
Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	White Wheat flour	214	37	17	12/50	73,30	140,00	<LOD - 4343
Italy	White Wheat flour	42	5	12	30	19	52	<LOD - 63
		256	42	16,4				

France	162	35
Italy	42	5

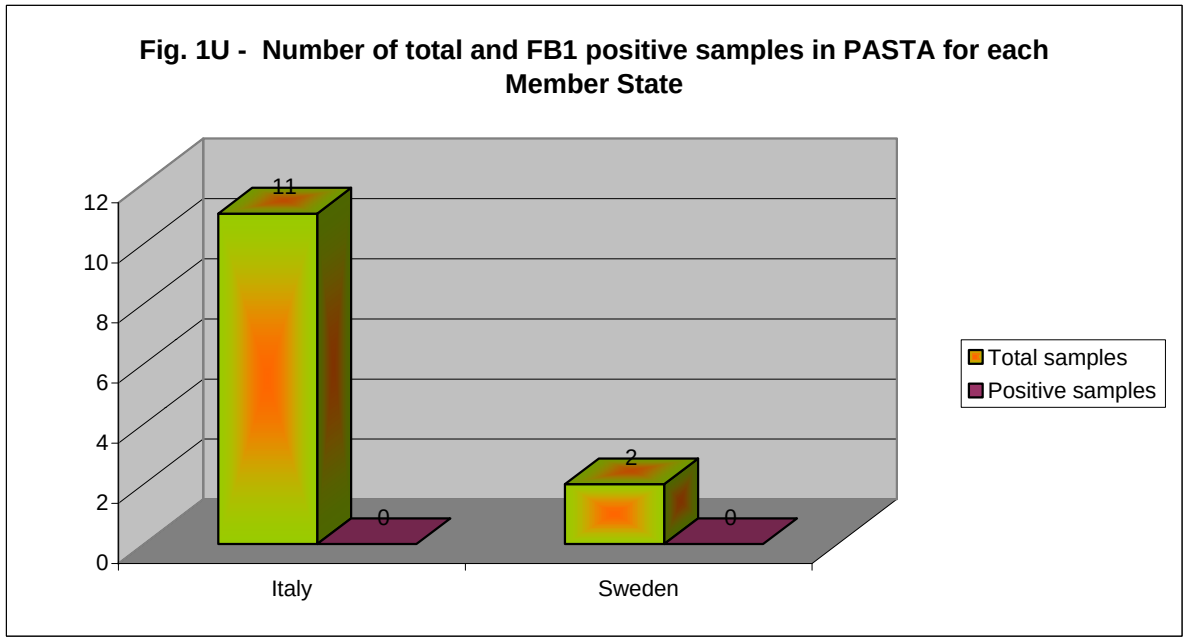


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	Wheat based products	29	19	66	15/50	22,18	228,00	<LOD - 370
		29	**19**	**65,5**				

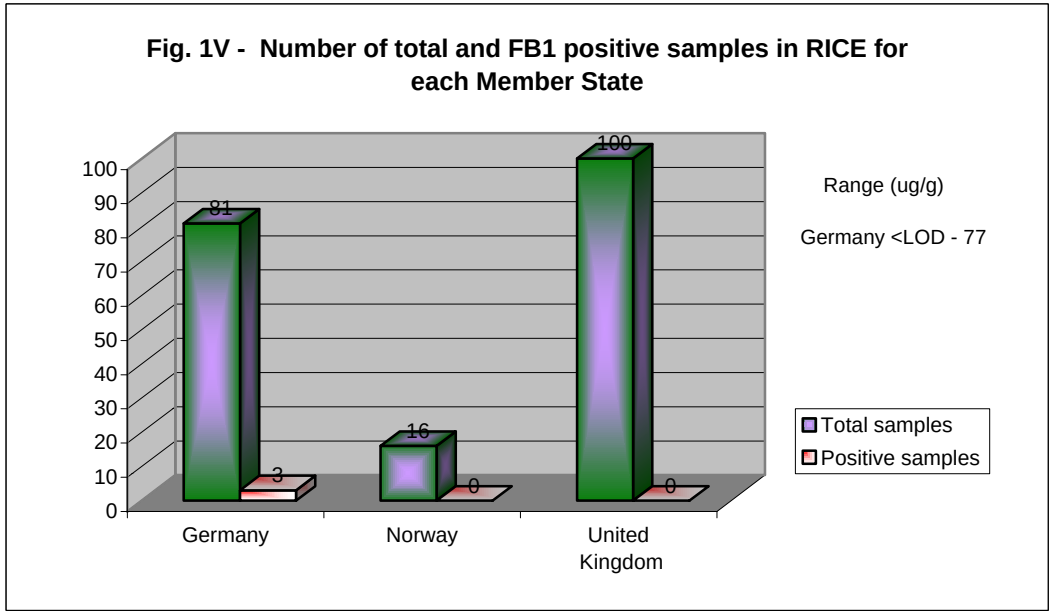
Fig. 1T - Number of total and FB1 positive samples in WHEAT BASED PRODUCTS for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	pasta	11	0	0	30	15		
Sweden	pasta	2	0	0	200	100		
		13	0	0				

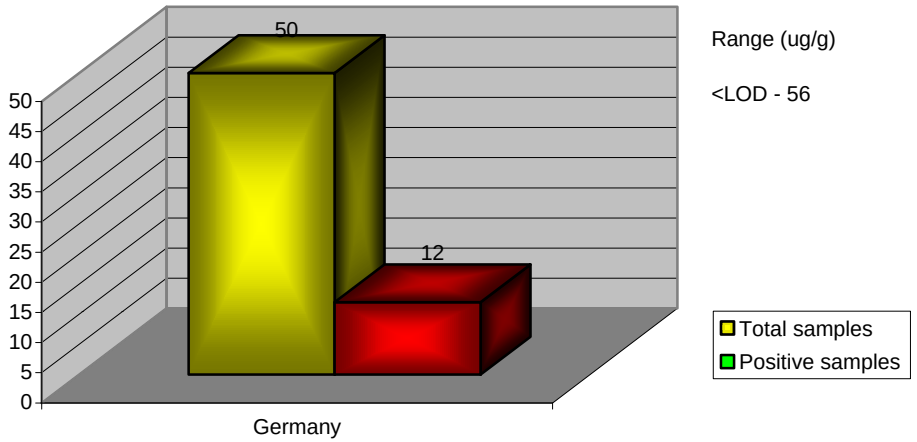


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Germany	rice	81	3	4	10/20	6,1	35	<LOD - 77
Norway	rice	16	0	0	20/60	10		
United Kingdom	rice	100	0	0	10	5		
		197	3	2				

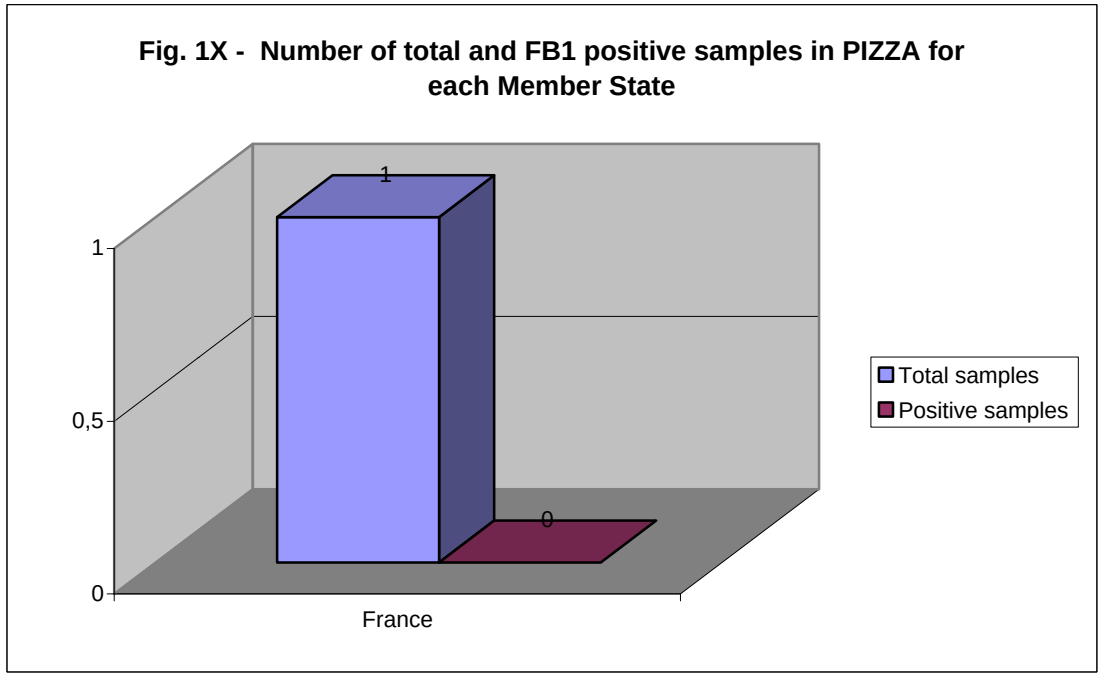


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Germany	millet	50	12	24	5/10	5,2	11,7	<LOD - 56
		50	**12**	**24**				

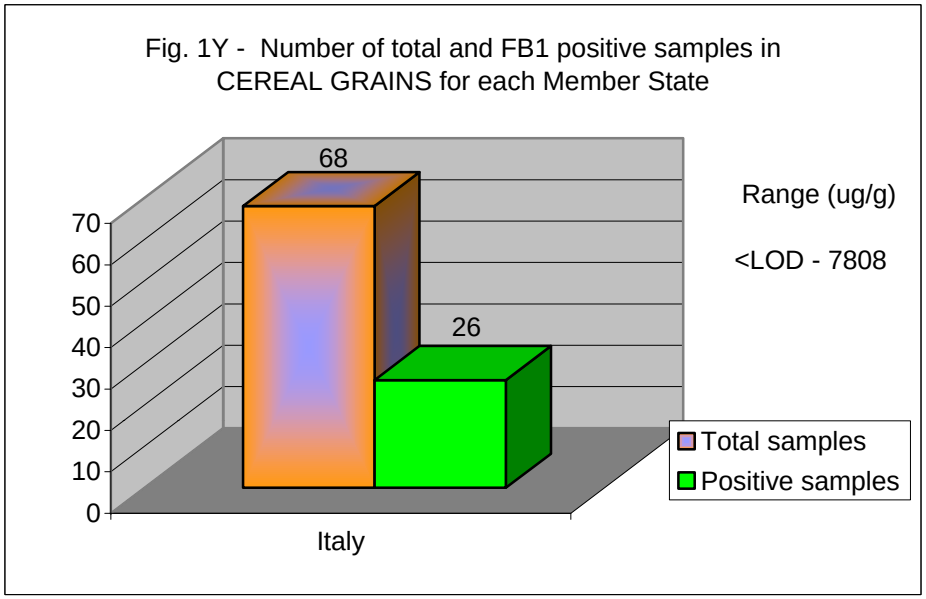
Fig. 1W - Number of total and FB1 positive samples in MILLET for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
France	**pizza**	**1**	**0**	**0**	**15**	7,50	7,50	
		1	**0**	**0**				

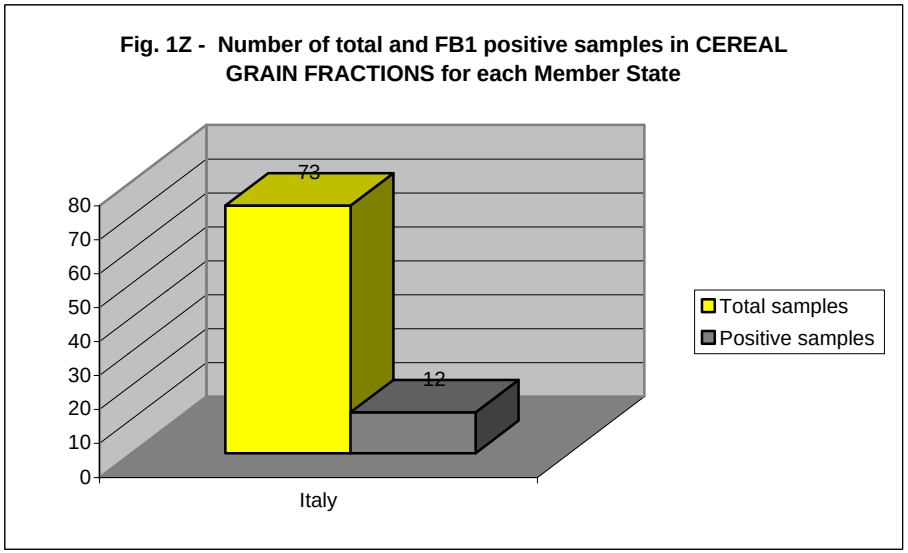


Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	Cereal grains	68	26	38	30	436,4	1117	<LOD - 7808
		68	**26**	**38**				

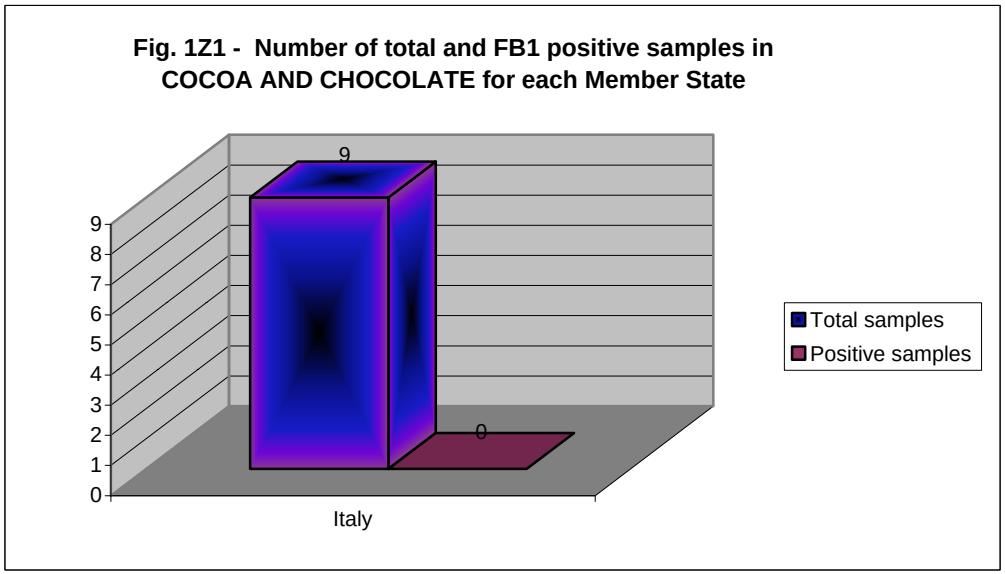


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD / LOQ	Mean of FB1 level in food µg / kg		
						Mean 1	Mean 2	Range
Italy	Cereal Grains Fractions	73	12	16	30	21,3	52	<LOD - 118
		73	12	16,4				

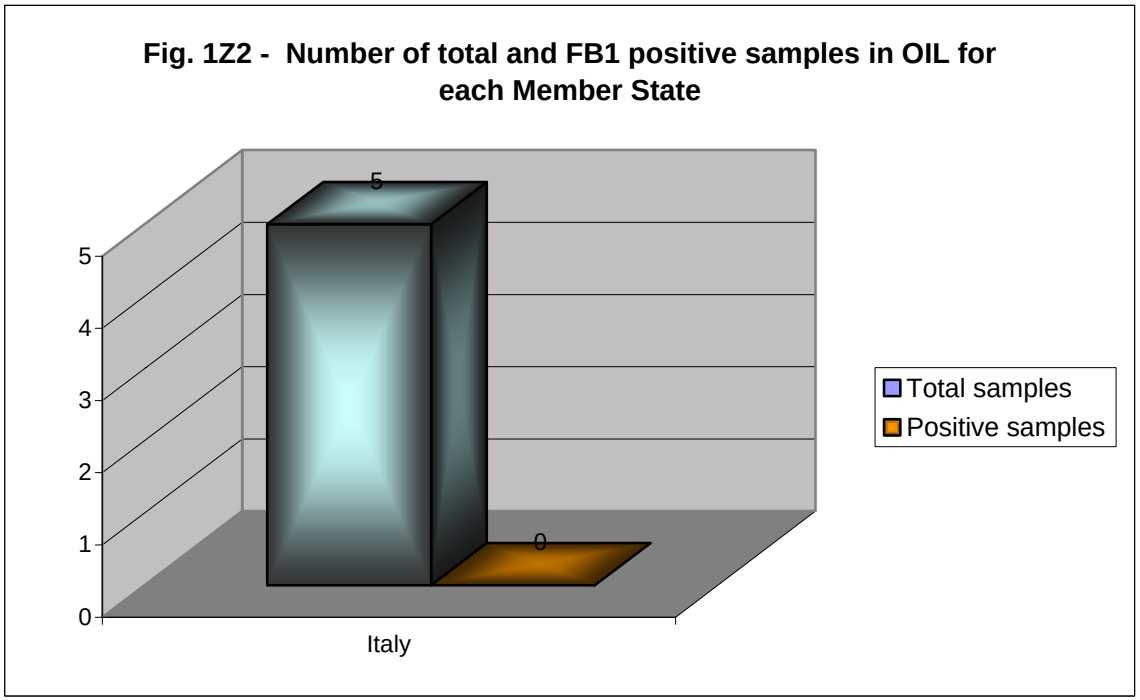
Fig. 1Z - Number of total and FB1 positive samples in CEREAL GRAIN FRACTIONS for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	cocoa and chocolate	9	0	0	30	15		
		9	**0**	**0**				

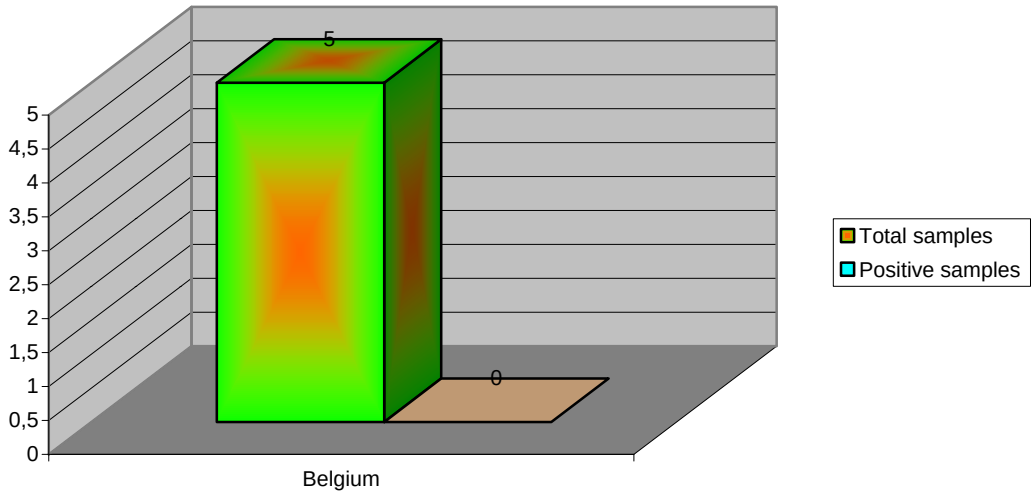


Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Italy	oil	5	0	0	30	15		
		5	**0**	**0**				



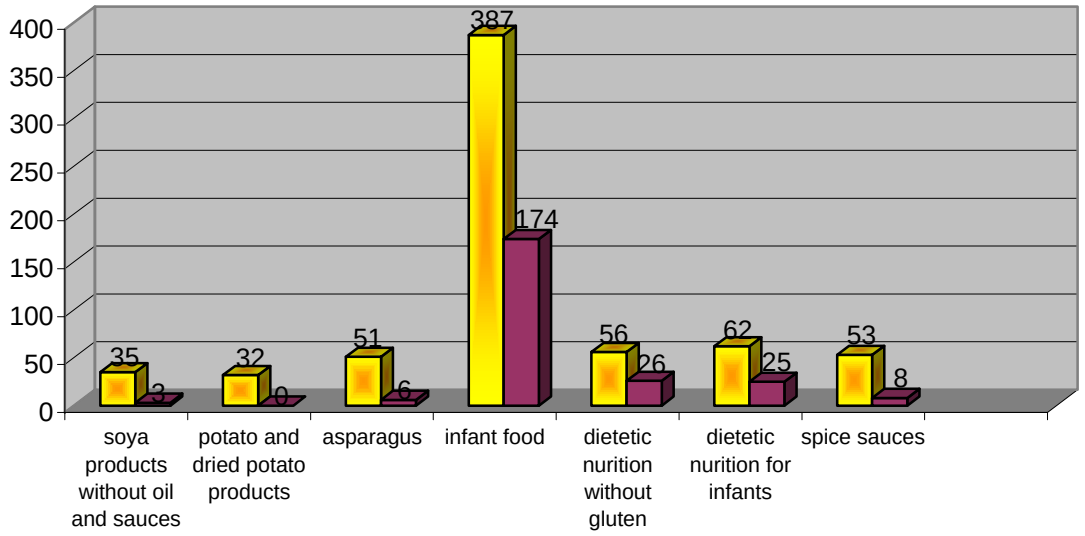
Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Belgium	beer	5	0	0		50		
		5	**0**	**0**				

Fig. 1Z3 - Number of total and FB1 positive samples in BEER for each Member State



Member State	Food	Number of samples	Number of positive sample	Percentage of Positive samples	LOD/LOQ	Mean of FB1 level in food µg/kg		
						Mean 1	Mean 2	Range
Germany	soya products without oil and sauces	35	3	9	5/10	3,3	12	21
	potato and dried potato products	32	0	0	5/10	2,5	0	<LOD
	asparagus	51	6	12	5/10	4,7	21,2	49
	infant food	387	174	45	5/10	72,6	156,7	955
	dietetic nurition without gluten	56	26	46	5/10	47,9	100,4	585
	dietetic nurition for infants	62	25	40	5/10	42,6	99,5	403
	spice sauces	53	8	15	5/10	3,8	9,2	17
		676	**242**	**36**				

Fig. 1Z4 - Number of total and FB1 positive samples in MISCELLANEOUS PRODUCTS for each Member State



Range (ug/g)

soya products <LOD - 21
potato and dried potato products <LOD
asparagus <LOD - 49
infant food <LOD - 955
dietetics without gluten <LOD - 585
dietetic nurition for infants <LOD - 403 spice sauces <LOD - 17

Total samples
Positive samples

Country: Germany

Annex 3

Occurrence data from the participant countries, Fumonisin FB_2 and FB_3 (tables 1)

Table 1bis - Summary of individual occurrence data by food group (Food Categorisation System as in Annex 4 and free categorization system) - Fumonisin B2-B3 (µg/kg or µg/L)																						
Food	Code	Ref and	N° of	LOQ	LOD	N° samples	N° contaminated samples in the range							Max value	Mean(1)	Mean(2)	Median	Evidence	Random	halyt. metho	Sampling	Representative for
or group		year	Samples			< LOD	LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000					of QA	or target		Reliability	Member state
Country: France (FB2+FB3)																						
GC2 corn	03 01 B	2000	55	50			49			0	0	0	4	550	34,06	244,2	8,33	Yes	R	HPLC	G	no
GC2 corn	03 01 B	2001	14	50			11			0	0	1	2	360	60,83	253,33	8,33	yes	R	HPLC	G	no
GC2 corn	03 01 B	2001	25	40	20	19	0	2	2	1	0	1	0	1050	117	473			T	HPLC		
GC2 corn	03 01 B	2000	33	10-50	20-25	9	9	20	1	3	0	0	0	50	21		20		R	GC or HPLC	L	y
GC2 corn	03 01 B	2001	76	10-50	20-25	20	31	34	0	0	0	5	6	1050	64		25		R	GC or HPLC	L	y
GC2 corn	03 01 B	2000	5	10	-	0	4	0	1	0	0	0	0	41	12		5		R	GC or HPLC	L	y
CF2 white wheat flour	02 01 B	2000	5	12	-	0	4	0	0	1	0	0	0	70	19		6		R	GC or HPLC	L	y
CF2 white wheat flour	02 01 B	2001	32	12-40	-	0	29	3	0	0	0	0	0	20	7		6		R	GC or HPLC	L	y
CH corn based products	02 01 C	2001	2		30					1		1		100	72,5	72,5	72,5	Y	R	HPLC	G	no
CH corn based products	02 01 C	2002	1		30	1									15		15	Y	R	HPLC	G	no
CH1 polenta	02 01 C	2002	3	100	30	1	1					1		100	43,3	100	15	Y	R	HPLC	G	no
CG wheat based products	02 01 B	2002	1		30							1		140	140	140	140	Y	R	HPLC	G	no
CG wheat based products	0201B	2001	7		30	7									15		15	Y	R	HPLC	G	no
CF3 corn fractions	02 01 C	2001	1		30								1	240	240	240	240	Y	R	HPLC	G	no
CF3 corn fractions	02 01 C	2001	1		30								1	270	270	270	270	Y	R	HPLC	G	no
CF3B corn meal	02 01 C	2001	2		30								2	280	275	275	275	Y	R	HPLC	G	no
CF3B corn meal	02 01 C	2002	1		30								1	480	480	480	480	Y	R	HPLC	G	no
CF3B corn meal	02 01 C	2001	1		30								1	510	510	510	510	Y	R	HPLC	G	no
CF2 white wheat flour	02 01B	2001	4		30	4									15		15	Y	R	HPLC	G	no
CF2 white wheat flour	02 01B	2001	8		30	8									15		15	Y	R	HPLC	G	no
CH5 sweet corn	02 01 B	2002	1		30	1									15		15	Y	R	HPLC	G	no
CH5 sweet corn	02 01 C	2002	1		30	1									15		15	Y		HPLC		
D5 rye ? Wheat		2001	1		30	1									15		15	Y	R	HPLC	G	no
D9 buckwheat ? Wheat		2001	1		30	1									15		15	Y	R	HPLC	G	no
E6 Barley derived products		2001	3		30	3									15		15	Y	R	HPLC	G	no
BT soft wheat		2000	31	10-100	20	8	21	2	8	0	0	0	0	50	19		10		R	GC or HPLC	L	y
BT soft wheat		2001	32	10-100	-	0	19	3	10	0	0	0	0	50	21		6		R	GC or HPLC	L	y
BT soft wheat		2000	6	10	5	0	6	0	0	0	0	0	0		1,67		1,67		R	GC or HPLC	L	y
Country: Italy																						
fumonisin B2																						
Cornflakes	CH	5-2000	8	5	2	1	2	2		1	1		1	235	54	62	20	Yes	Random	HPLC		NO
Corn based products	CH	5-2000	10	5	2		5	1	1	3				62	22	22	9	Yes	Random	HPLC		NO

Country: Norway	Fumonisins B2+B3																					
Corn fractions	CF 3	2001	18	60	20	9		2	1		2	1	3	1088	158	306	16,5	yes	random	HPLC	good	yes
polenta	CH 1	2001	17	60	20	4		4	2	3		3	1	293	63	80	33	yes	random	HPLC	good	yes
Corn flakes	CH	2001	47	60	20	47								.-	10	0	10	yes	random	HPLC	good	yes
Sweet corn *	CH5 *	2001	82	60	20	82								.-	10	0	10	yes	random	HPLC	good	yes
Maize ***	CH ***	2001	26	60	20	26								.-	10	0	10	yes	random	HPLC	good	yes
Rice ***	GC7 ***	2001	16	60	20	16								.-	10	0	10	yes	random	HPLC	good	yes
corn meal	CF3 B	2001	13	60	20	5		2	1		1	1	3	1088	209	334	32	yes	random	HPLC	good	yes
corn starch	CF3 A	2001	3	60	20	3								.-	10	0	10	yes	random	HPLC	good	yes
corn grits	CF3 C	2001	2	60	20	1					1			83	47	83	47	yes	random	HPLC	good	yes
polenta	CH 1	2001	17	60	20	4		4	2	3		3	1	293	63	80	33	yes	random	HPLC	good	yes
Corn flakes	CH	2001	47	60	20	47								.-	10	0	10	yes	random	HPLC	good	yes
Hermetic maize = sw	CH5	2001	42	60	20	42								.-	10	0	10	yes	random	HPLC	good	yes
Baby maize = sweet	CH5	2001	18	60	20	18								.-	10	0	10	yes	random	HPLC	good	yes
Maize cob = sweet c	CH5	2001	22	60	20	22								.-	10	0	10	yes	random	HPLC	good	yes
Maize, ecological	CH	2001	10	60	20	10								.-	10	0	10	yes	random	HPLC	good	yes
Maize, "usual"	CH	2001	16	60	20	16								.-	10	0	10	yes	random	HPLC	good	yes
Rice, ecological	GC7	2001	7	60	20	7								.-	10	0	10	yes	random	HPLC	good	yes
Rice, "usual"	GC7	2001	9	60	20	9								.-	10	0	10	yes	random	HPLC	good	yes
Country: Sweden Fumonisin B2																						
Biscuits			1			1																
Biscuits			1			1																
Biscuits			1			1																
Biscuits			1			1																
Glutenfree paste			1			1																
Popcorn			1			1																
Popcorn			1			1																
Popcorn			1			1																
Glutenfree paste			1			1																
Maize flour			1						1													
Maize flour			1				1															
Maize grits			1						1													
Chips			1				1															
Chips			1			1																
Glutenfritt knäckebröd			1			1																
Majsvälling			1			1																
Cornflakes			1			1																
Cornflakes			1			1																
Maizes-and potatopurée			1			1																
Maizepurée,			1			1																
Micropop with butter taste			1			1																
Micropop light			1			1																
Micropop light			1			1																
Country United Kingdom																						
FB2																						
GC2 corn	03 01B	1998	92	20		11		6	5	6	5	17	42	1268	336,7	382,0		Y	Random	HPLC	G	Y
GC2 corn	03 01B	1999	47	20		12		8	3	3	1	5	15	1136	195,2	259,2		Y	Random	HPLC	G	Y
GC7 Rice		2000	100		10	100								<10	5	0	<10	Y	Random	HPLC	G	Y
FB3																						
GC2 corn	03 01B	1998	92	20		26		5	16	12	4	11	18	341	91,9	126,8		Y	Random	HPLC	G	Y
GC2 corn	03 01B	1999	47	20		27		0	3	6	3	4	4	308	47,7	104,71		Y	Random	HPLC	G	Y
GC7 Rice		2000	100		10	100								<10	5	0	<10	Y	Random	HPLC	G	Y

Tables 1A1 and 1A2. Fumonisin B2 and B3 occurrence in food

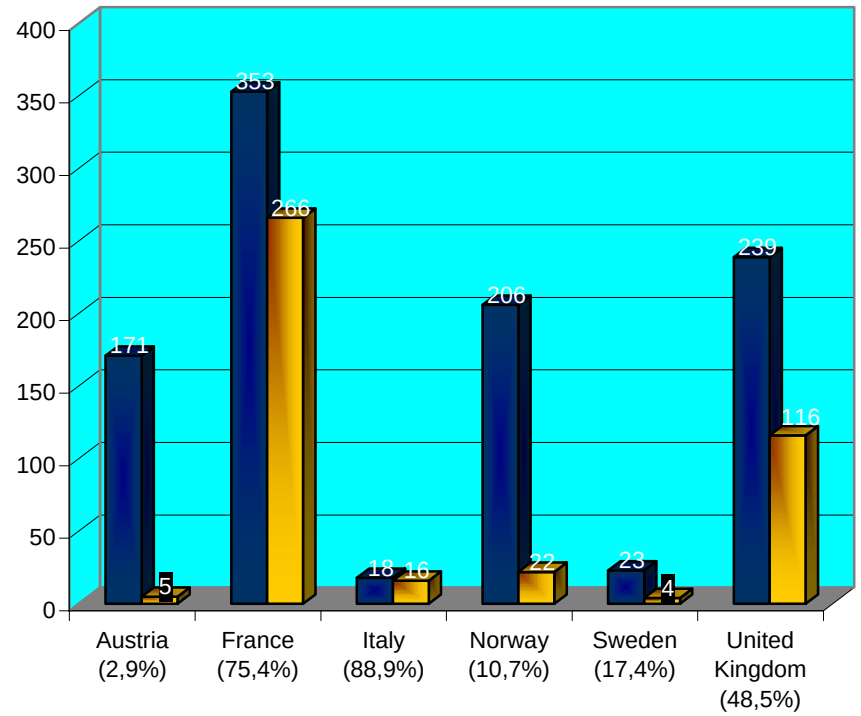
Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
Austria	Corn	**171**	**5**	**2,9**	50	23,7	257	<LOD - 390
France	Corn	208	158	76,0	20/40	41,5	116,4	<LOD - 1050
France	Corn fractions	2	2	100,0	30	255	255	240 - 270
France	Corn meal	4	4	100,0	30	385	385	280 - 510
France	Corn based products	3	2	66,7	30	53,3	72,5	<LOD - 100
France	Polenta	3	1	33,3	100	43	100	<LOD - 100
France	Sweet corn	2	0	0,0	30	15		
France	Wheat based products	8	1	12,5	30	30,6	140	<LOD - 140
France	White wheat flour	49	37	75,5	12/40	10,2		
France	Wheat	69	61	88,4	5/10	18,42		
France	Rye	1	0	0,0	30	15		
France	Buckwheat	1	0	0,0	30	15		
France	Barley	3	0	0,0	30	15		
		353	**266**	**75,4**				
Italy	Cornflakes	8	7	87,5	2/5	54	62	<LOD - 235
Italy	Corn based products	10	9	90,0		22	22	3 - 62
		18	**16**	**88,9**				
Norway	Corn fractions	18	9	50,0	20/60	158	306	<LOD - 1088
Norway	polenta	17	13	76,5	20/60	63	80	<LOD - 293
Norway	Corn flakes	47	0	0,0	20/60	10		
Norway	Hermetic maize = sweet corn	42	0	0,0	20/60	10		
Norway	Baby maize = sweet corn	18	0	0,0	20/60	10		
Norway	Maize cob = sweet corn	22	0	0,0	20/60	10		
Norway	Maize, ecological	10	0	0,0	20/60	10		
Norway	Maize, "usual"	16	0	0,0	20/60	10		
Norway	Rice, ecological	7	0	0,0	20/60	10		
Norway	Rice, "usual"	9	0	0,0	20/60	10		
		206	**22**	**10,7**				

Sweden	Biscuits	1	0	0,0		<0,4		
Sweden	Glutenfree paste	1	0	0,0		<0,4		
Sweden	Popcorn	1	0	0,0		<0,4		
Sweden	Glutenfree paste	1	0	0,0		<0,4		
Sweden	Maize flour	1	1	100,0		378		
Sweden	Maize grits	1	1	100,0		389		
Sweden	Popcorn	1	0	0,0		<0,4		
Sweden	Popcorn	1	0	0,0		<0,4		
Sweden	Chips	1	1	100,0		6,5		
Sweden	Chips	1	0	0,0		<0,4		
Sweden	Maize flour	1	1	100,0		30		
Sweden	Glutenfritt knäckebröd	1	0	0,0		<0,4		
Sweden	Biscuits	1	0	0,0		<0,4		
Sweden	Majsvälling	1	0	0,0		<0,4		
Sweden	Biscuits	1	0	0,0		<0,4		
Sweden	Biscuits	1	0	0,0		<0,4		
Sweden	Cornflakes	1	0	0,0		<0,4		
Sweden	Cornflakes	1	0	0,0		<0,4		
Sweden	Maizes-and potatopurée	1	0	0,0		<0,4		
Sweden	Maizepurée,	1	0	0,0		<0,4		
Sweden	Micropop with butter taste	1	0	0,0		<0,4		
Sweden	Micropop light	1	0	0,0		<0,4		
Sweden	Micropop light	1	0	0,0		<0,4		
		23	**4**	**17,4**				
United Kingdom	Corn	92	81	88,0	20	336,7	382,0	<LOD - 1268
United Kingdom	Corn	47	35	74,5	20	195,2	259,2	<LOD - 1132
United Kingdom	Rice	100	0	0,0	10	5		
		239	**116**	**48,5**				
		1010	**429**	**42**				

Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of **FB3** level in food (µg/kg)		
						Mean 1	Mean 2	Range
United Kingdom	Corn	92	66	71,7	20	91,9	126,8	<LOD - 341
United Kingdom	Corn	47	20	42,6	20	47,7	104,71	<LOD - 308
United Kingdom	Rice	100	0	0	10	5		
United Kingdom		**239**	**86**	**36**				

Austria (2,9%)	**171**	5
France (75,4%)	**353**	**266**
Italy (88,9%)	**18**	**16**
Norway (10,7%)	**206**	**22**
Sweden (17,4%)	**23**	**4**
United Kingdom (48,5%)	**239**	**116**

Fig. 1A1 - Number of total and FB_2 positive samples by Member State



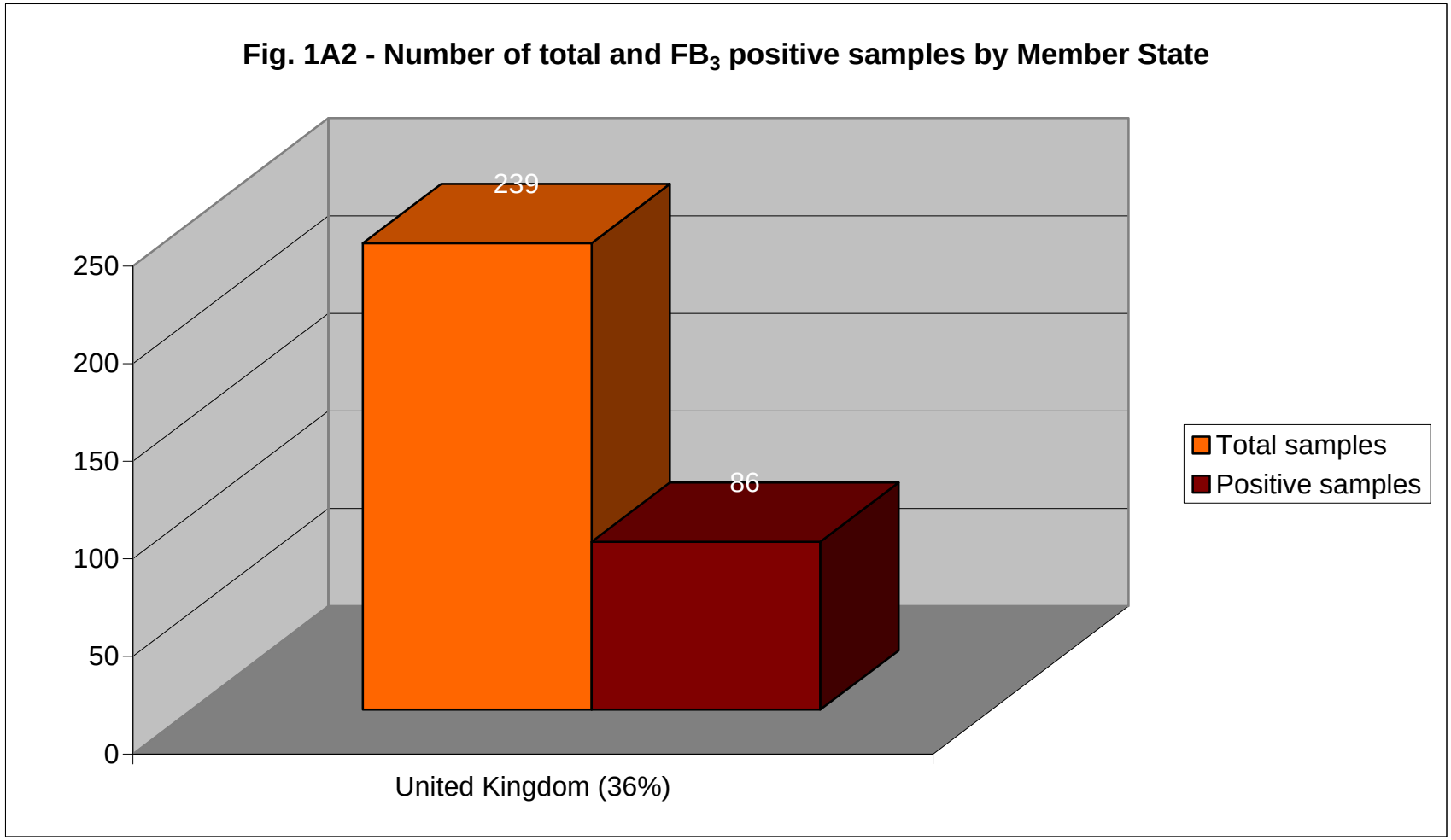


Fig. 1A2 - Number of total and FB3 positive samples by Member State
250
200
150
100
50
0
239
86
United Kingdom (36%)
Total samples
Positive samples

Table 1B1. Fumonisin B2 occurrence in corn

corn fb2	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD / LOQ	Mean of FB2 level in food (µg / kg)		
						Mean 1	Mean 2	Range
Austria	Corn	171	5	2,9	50	23,7	257	<LOD - 390
Norway	Maize	26	0	0,0	20/60	10		
United Kingdom	Corn	139	116	88,0	20	288,8	344,9	<LOD - 1268
France	Corn	208	158	76,0	20/40	41,5	116,4	<LOD - 1050

544 279 51

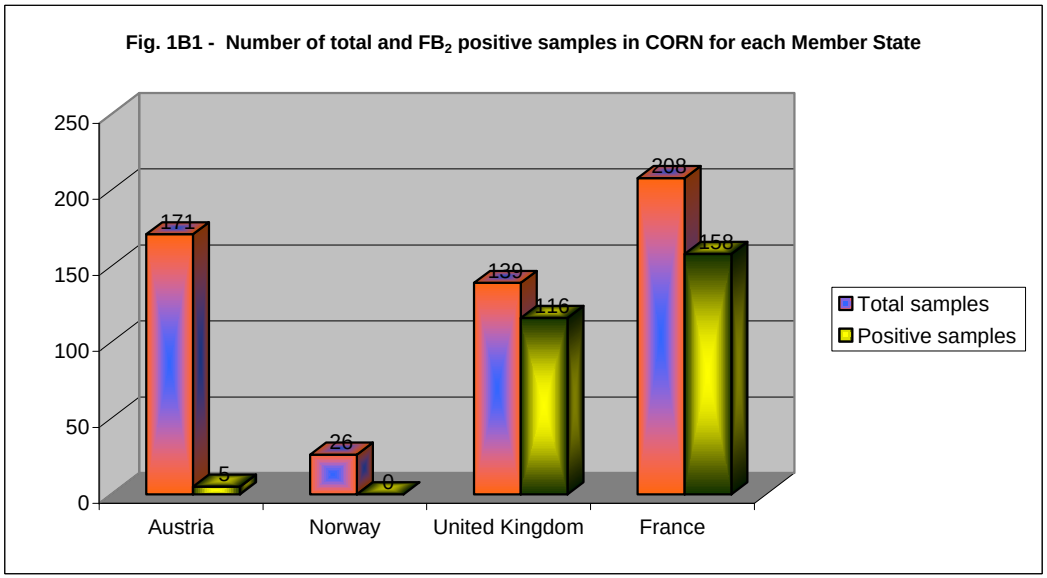


Table 1B2. Fumonisin B3 occurrence in corn

Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB3 level in food (µg/kg)		
						Mean 1	Mean 2	Range
United Kingdom	Corn	92	66	71,7	20	91,9	126,8	<LOD - 341
United Kingdom	Corn	47	20	42,6	20	47,7	104,71	<LOD - 308
		139	**86**	**61,9**				

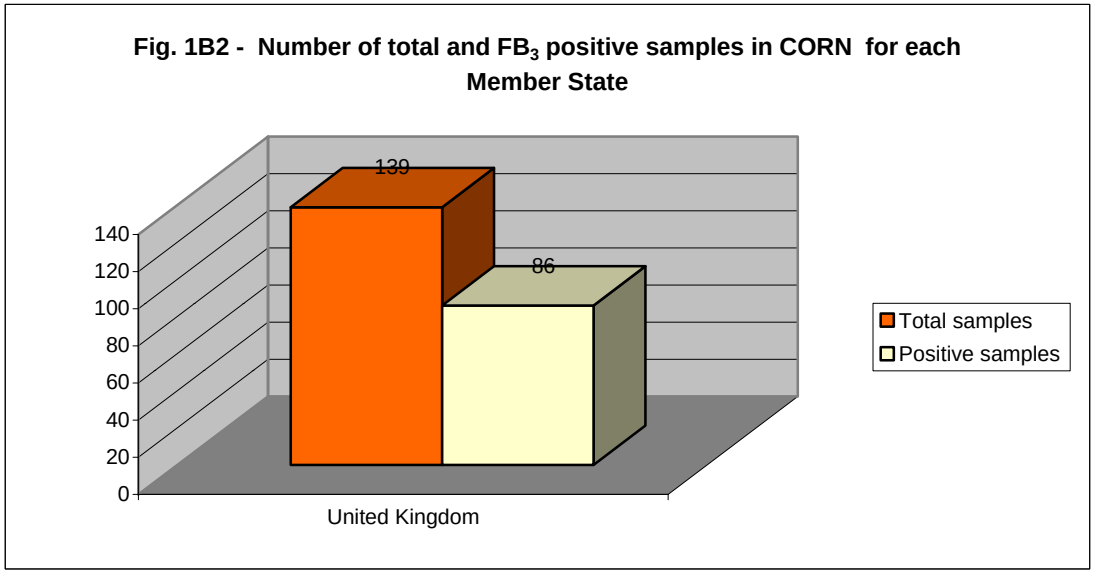


Table 1C1. Fumonisin B2 occurrence in polenta

Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
Norway	polenta	17	13	76,5	20/60	63	80	<LOD - 293
France	Polenta	3	1	33,3	100	43	100	<LOD - 100
		20	14	70,0				

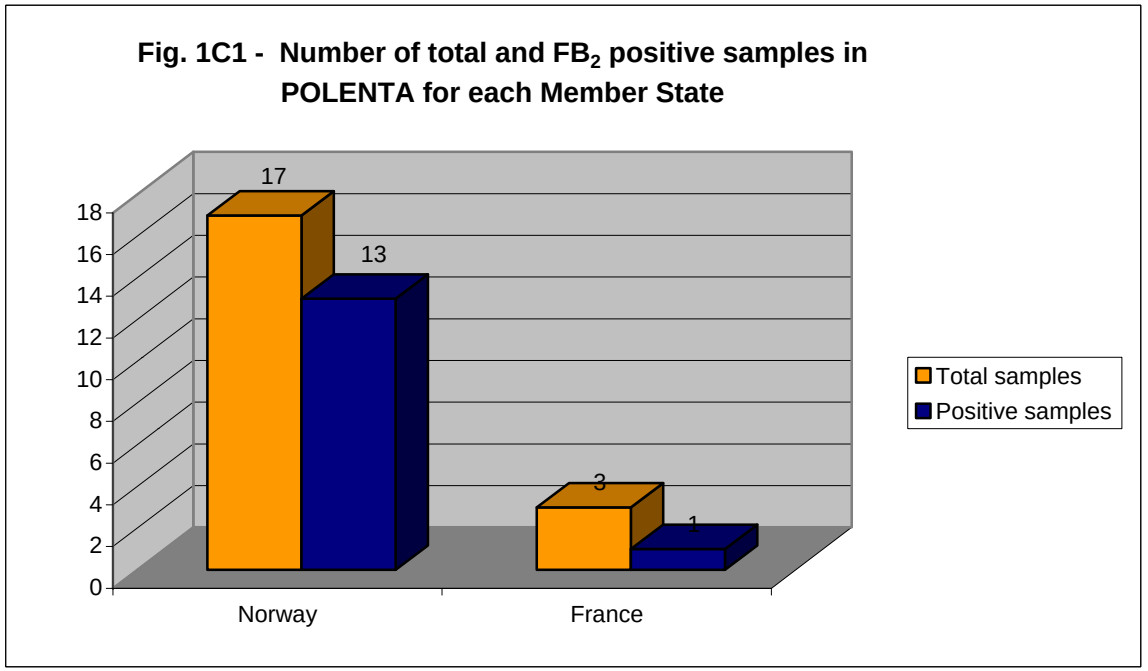
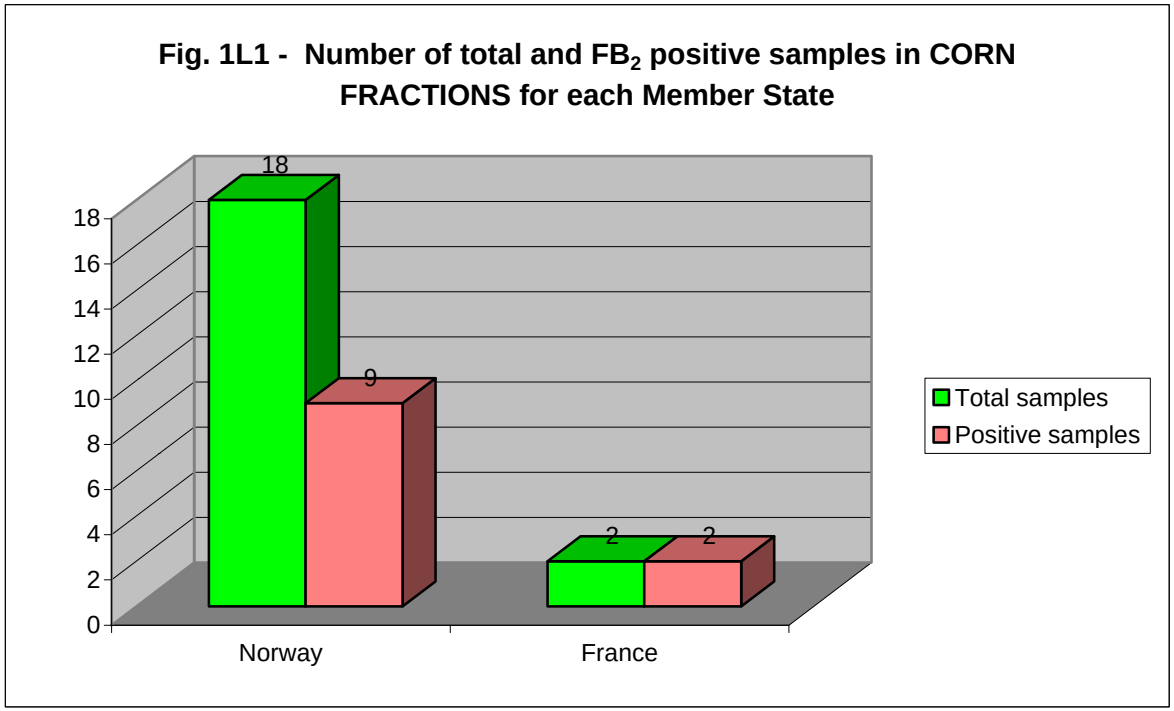
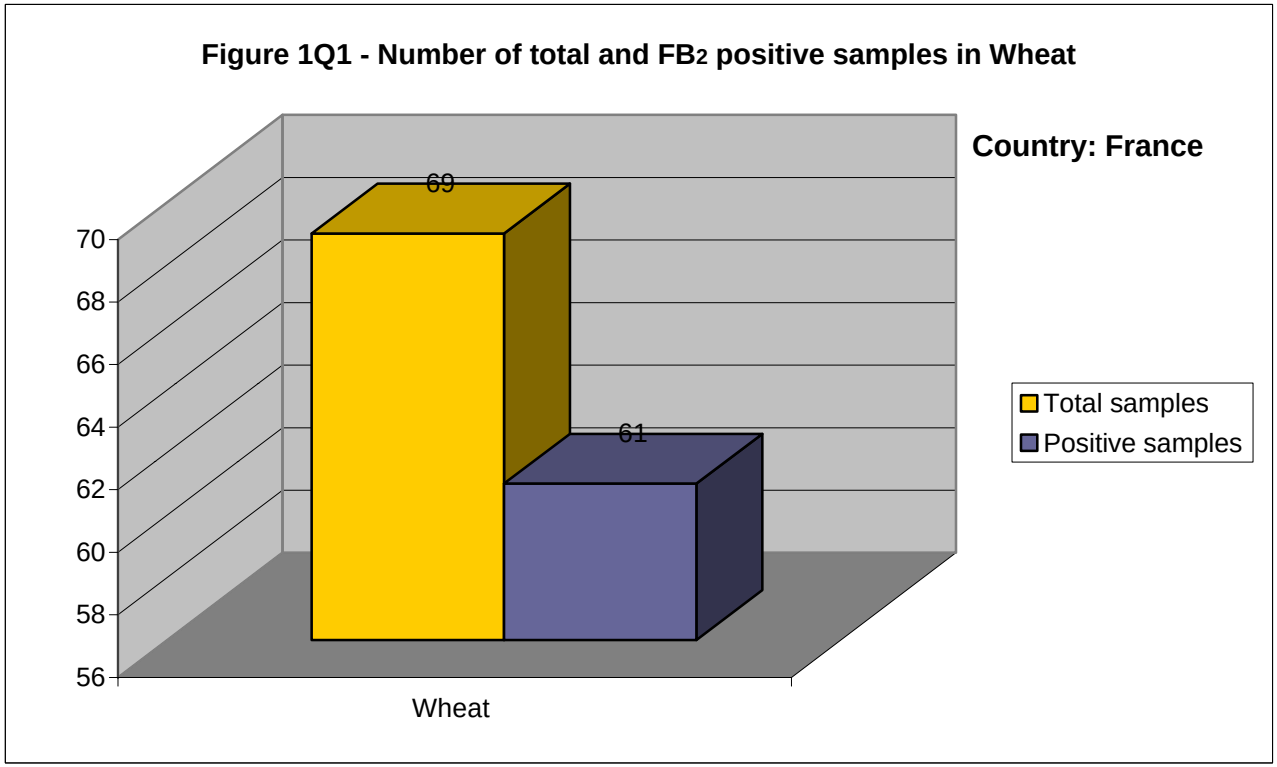


Table 1L1. Fumonisin B2 occurrence in corn fractions

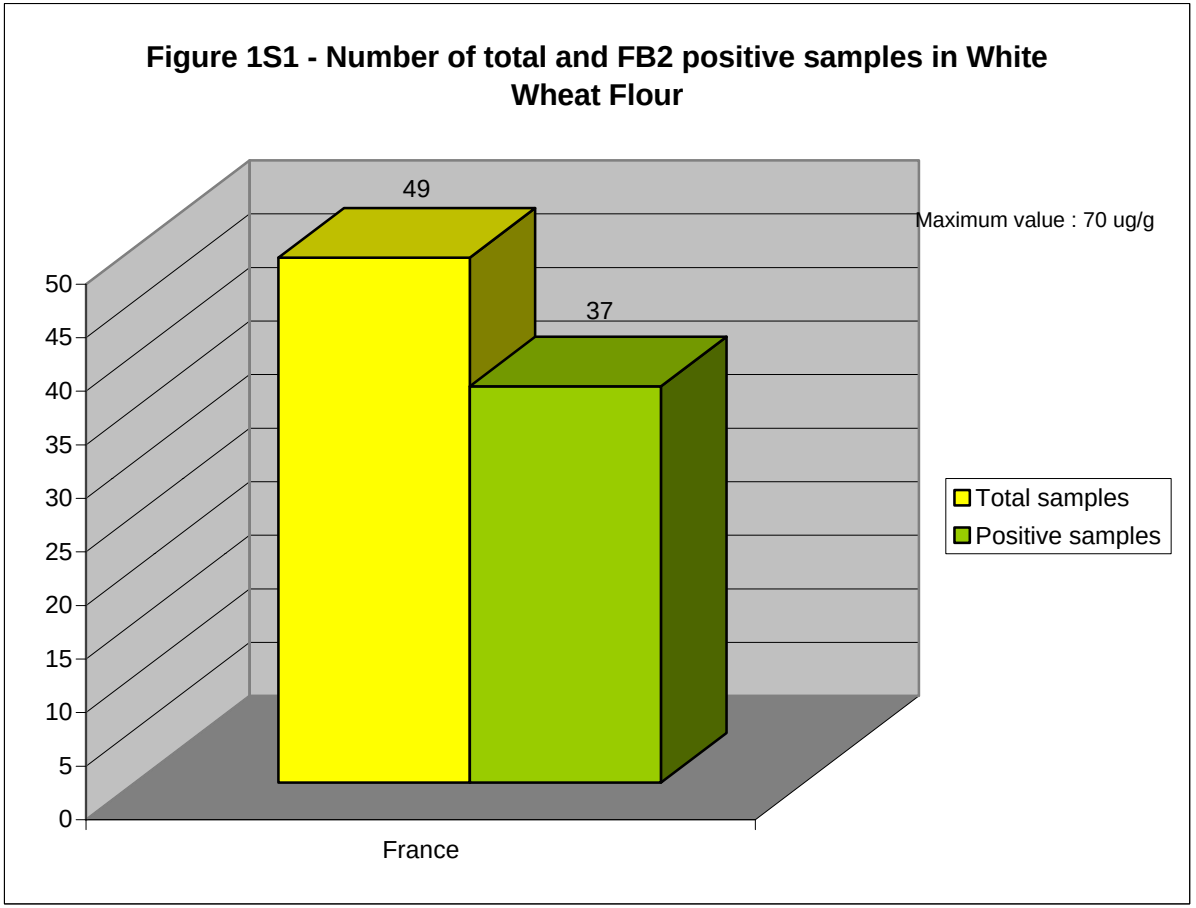
Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
Norway	corn fractions	18	9	50,0	20/60	158	306	<LOD - 1088
France	Corn fractions	2	2	100,0	30	255	255	240 - 270
		20	**11**	**55,0**				



Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
France	Wheat	69	61	88,4	5/10	18,42		



Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
France	White wheat flour	49	37	75,5	12/40	10,2		<LOD - 70



Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
United Kingdom	Rice	100	0	0	10	5		

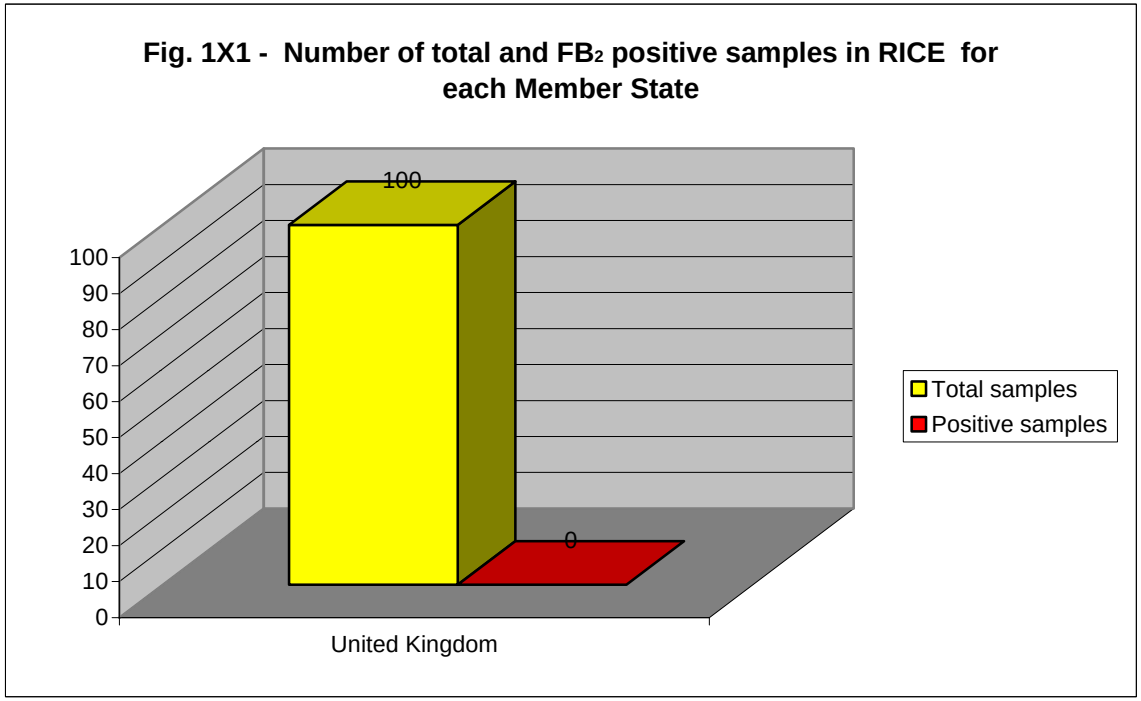


Table 1X2. Fumonisin B3 occurrence in rice

Member State	Food	Number of samples	Number of positive sample	Percentage of positive samples	LOD/LOQ	Mean of FB2 level in food (µg/kg)		
						Mean 1	Mean 2	Range
United Kingdom	Rice	100	0	0	10	5		

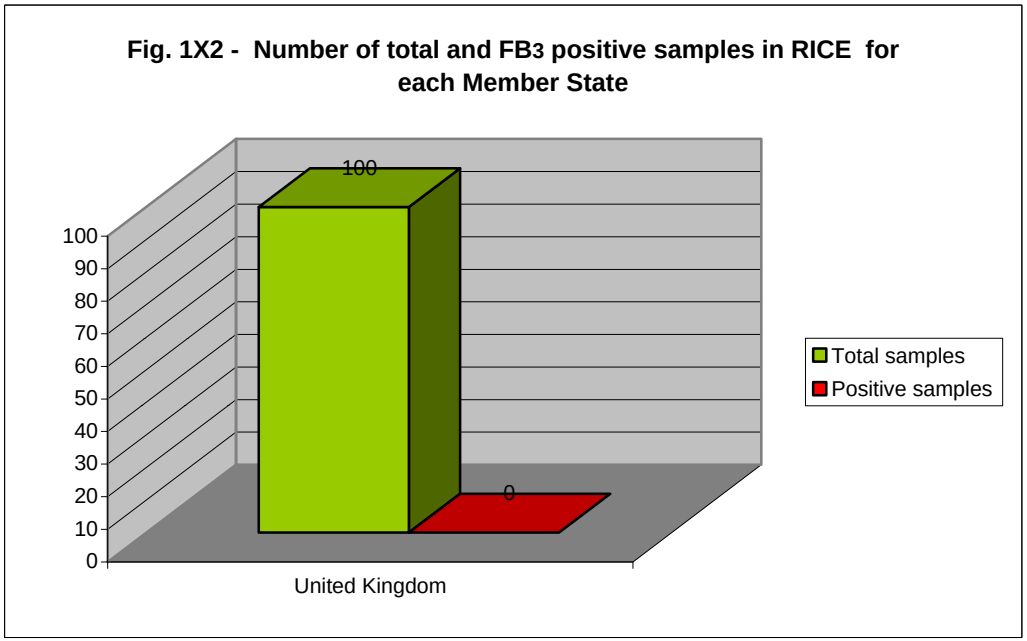


Fig. 1X2 - Number of total and FB3 positive samples in RICE for each Member State

Annex 4

Consumption data, table 2

Table 2. Summary of consumption data by Member State

Food or group	Code	Ref year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile
Austria											
GC	03 01		DS	diary	all foods	2580	24h	national	102,1	50	360
Belgium 13-18 years											
Breakfast Cereals		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	7,62	0	60
breakfast cereals, cornflakes		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	1,55	0	0
corn meal		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	0,01	0	0
corn starch		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	0,09	0	0
crisps		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	5,19	0	34,2
popcorn		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	0,14	0	0
sweet corn		1997	DS	7 day estimated food record	all foods and beverages	341		region of Ghent	0,48	0	0
France	**SEE THE REPORT AND FORMS**										
Germany Consumer,>4 years old											
GC2 corn grains	0301A	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	25	continuous	national without new Länders	7,48		
GC7 rice	0301G	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	10230	continuous	national without new Länders	6,68		
GC4 millet	0301D	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	32	continuous	national without new Länders	15,62		
CF3B corn meal	0201C	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	18	continuous	national without new Länders	3,99		
CF3C corn grits	0201C	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	25	continuous	national without new Länders	11,61		
CH5 sweet corn	0201C	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	1079	continuous	national without new Länders	15,83		
breakfast cereals	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	15	continuous	national without new Länders	8,31		
cornflakes	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	1753	continuous	national without new Länders	18,44		
cereals grits with supplements	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	5	continuous	national without new Länders	6,68		
manufactured multi ingredients cereal products;	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	728	continuous	national without new Länders	8,82		
Peanut curls; manufactured multi ingredients cereal products	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	394	continuous	national without new Länders	10,93		
soya products without oil and sauces	0207A	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	160	continuous	national without new Länders	21,28		
dried potato products	0208	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	2584	continuous	national without new Länders	2		
asparagus	0209	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	2684	continuous	national without new Länders	15,77		
dietetic nurition without gluten	0301	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	2	continuous	national without new Länders	6,4		
spice sauces	0502C	nationale Verzehrsstudie 1985-88	DS	7 day dietary records	all foods and beverages consumed	1212	continuous	national without new Länders	0,34		

Italy - Population											
White wheat flour	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	5,2		28,6
Durum wheat paste	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	42,7		97,3
Bran	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,1		0,0
Whole meal	02 01A		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,1		0,0
Corn Flour	02 01 C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	1,5		9,0
Polenta	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	1,0		0,0
Cornflakes	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,5		0,0
Corn based products	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	11,5		39,3
Oil	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	1,0		4,2
Wheat Semolina	02 01A		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,2		0,0
Milk chocolate	04 03C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	1,1		7,1
Black chocolate	04 03C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,2		0,0
Cocoa	04 03C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,8		3,6
Bakery products			Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	0,1		0,0
Italy - Only Consumer							Continuous (3time)				
White wheat flour	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	15,4		46,7
Durum wheat paste	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	46,1		99,6
Bran	02 01B		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	12,3		24,6
Whole meal	02 01A		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	26,8		54,4
Corn Flour	02 01 C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	25,9		60,8
Polenta	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	35,1		63,6
Cornflakes	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	20,3		54,3
Corn based products	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	20,4		47,2
Oil	02 01C		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	10,3		42,5
Wheat Semolina	02 01A		Household-individual data	Diary self-compiled	All food consumed	1978	Continuous (3time)	National	11,8		34,9
Milk chocolate	04 03C		Household-individual data	Diary self-compiled	All food consumed	1979	Continuous (3time)	National	7,9		25,6
Black chocolate	04 03C		Household-individual data	Diary self-compiled	All food consumed	1980	Continuous (3time)	National	8,1		21,4
Cocoa	04 03C		Household-individual data	Diary self-compiled	All food consumed	1981	Continuous (3time)	National	8,5		27,1
Bakery products			Household-individual data	Diary self-compiled	All food consumed	1982	Continuous (3time)	National	140,0		140,0
The Netherlands											
corn	GC2	1998	DS	diary (2 days)	total corn	6250	every 5 yr	national	3,0***		
Norway Male, all participants											
Wheat flour	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	122	114	211
Wholemeal flour	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	65	62	118
Rye	0301 E	1997	DS	FFQ*	All foods & bev.	1298		National	3	1	16
Barley	0301 F	1997	DS	FFQ*	All foods & bev.	1298		National	3	0	16
Oat flakes	0301 C	1997	DS	FFQ*	All foods & bev.	1298		National	5	1	22
Corn flakes	0201 C	1997	DS	FFQ*	All foods & bev.	1298		National	1	0	5
Rice	0301 G	1997	DS	FFQ*	All foods & bev.	1298		National	10	5	32
Bran, oat	0201C	1999	DS	FFQ*	Certain foods	2874		National	0,5	0,1	3,6
Bran, wheat	0201C	1999	DS	FFQ*	Certain foods	2874		National	0,7	0,1	3,6
Low alcoholic beer	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	15	0	90
Imported beer	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	3	0	7
Domestic beer	0205A	1997	DS	FFQ*	All foods & bev.	1298		National	111	49	540

Norway Male, consumers											
Wheat flour	0201 B	1997	DS	FFQ*	All foods & bev.	1298		National	122	114	211
Wholemeal flour	0201 B	1997	DS	FFQ*	All foods & bev.	1289		National	65	62	119
Rye	0301 E	1997	DS	FFQ*	All foods & bev.	1291		National	3	1	16
Barley	0301 F	1997	DS	FFQ*	All foods & bev.	527		National	6	3	23
Oat flakes	0301 C	1997	DS	FFQ*	All foods & bev.	777		National	8	5	25
Corn flakes	0201 C	1997	DS	FFQ*	All foods & bev.	417		National	2	1	7
Rice	0301 G	1997	DS	FFQ*	All foods & bev.	1154		National	11	7	38
Bran, oat	0201C	1999	DS	FFQ*	Certain foods	1669		National	0,9	0,1	3,6
Bran, wheat	0201C	1999	DS	FFQ*	Certain foods	1952		National	1,1	0,1	3,6
Low alcoholic beer	0205A	1997	DS	FFQ*	All foods & bev.	335		National	60	25	186
Imported beer	0205A	1997	DS	FFQ*	All foods & bev.	128		National	33	7	173
Domestic beer	0205A	1997	DS	FFQ*	All foods & bev.	871		National	165	105	540
Norway - Female all participants											
Wheat flour	0201 B	1997	DS	FFQ*	All foods & bev.	1374		National	88	83	148
Wholemeal flour	0201 B	1997	DS	FFQ*	All foods & bev.	1374		National	45	44	77
Rye	0301 E	1997	DS	FFQ*	All foods & bev.	1374		National	2	1	12
Barley	0301 F	1997	DS	FFQ*	All foods & bev.	1374		National	2	0	12
Oat flakes	0301 C	1997	DS	FFQ*	All foods & bev.	1374		National	4	1	16
Corn flakes	0201 C	1997	DS	FFQ*	All foods & bev.	1374		National	1	0	4
Rice	0301 G	1997	DS	FFQ*	All foods & bev.	1374		National	7	5	25
Bran, oat	0201C	1999	DS	FFQ*	Certain foods	3091		National	0,8	0,1	3,6
Bran, wheat	0201C	1999	DS	FFQ*	Certain foods	3091		National	1,1	0,3	3,6
Low alcoholic beer	0205A	1997	DS	FFQ*	All foods & bev.	1374		National	6	0	39
Imported beer	0205A	1997	DS	FFQ*	All foods & bev.	1374		National	1	0	0
Domestic beer	0205A	1997	DS	FFQ*	All foods & bev.	1374		National	38	0	180
Norway - Female, consumers											
Wheat flour	0201 B	1997	DS	FFQ*	All foods & bev.	1374		National	88	83	148
Wholemeal flour	0201 B	1997	DS	FFQ*	All foods & bev.	1362		National	45	44	77
Rye	0301 E	1997	DS	FFQ*	All foods & bev.	1363		National	2	1	12
Barley	0301 F	1997	DS	FFQ*	All foods & bev.	553		National	5	3	16
Oat flakes	0301 C	1997	DS	FFQ*	All foods & bev.	870		National	6	3	20
Corn flakes	0201 C	1997	DS	FFQ*	All foods & bev.	413		National	2	1	6
Rice	0301 G	1997	DS	FFQ*	All foods & bev.	1275		National	8	5	26
Bran, oat	0201C	1999	DS	FFQ*	Certain foods	2222		National	1,2	0,3	3,6
Bran, wheat	0201C	1999	DS	FFQ*	Certain foods	2535		National	1,4	0,3	3,6
Low alcoholic beer	0205A	1997	DS	FFQ*	All foods & bev.	262		National	34	25	126
Imported beer	0205A	1997	DS	FFQ*	All foods & bev.	61		National	31	5	160
Domestic beer	0205A	1997	DS	FFQ*	All foods & bev.	652		National	80	49	252
Norway - 6-months old babies,consumers											
Porridge		1998-99	DS	FFQ*		2383		National	172	200	400

Annex 5

Intake data, tables 3, 4 and 5

Table 3. Estimate of daily intake of Fumonisin B1 in each Member State

Member State	Food or Group	Food consumption g/person/day		Mean of Fumonisin B1 in foods (ug/kg)			Intake of (ng/person/day)		Fumonisin B1	Intake of (ng/kg body weight/day)		Fumonisin B1
		Mean	95-perc	Mean 1	Mean 2	Range	Mean 1	Mean 2	Mean1*95-perc	Mean 1	Mean 2	Mean1*95-perc
Austria (75)	Corn	102,1	360	56,6	512,7	<LOD - 1750	5778,9	52346,67	20376	77,1	698,0	271,7
Belgium (60) All population	Corn crisps	5,19	34,2	189	600	<300 - 800	980,9	3114	6463,8	16,3	51,9	107,7
Germany (70,4)	GC2 corn grains	7,48		81,5	118,8	<LOD-1198	609,62	888,62		8,66	12,62	
	GC7 rice	6,68		6,1	35	<LOD-77	40,75	233,80		0,58	3,32	
	GC4 millet	15,62		5,2	11,7	<LOD-56	81,22	182,75		1,15	2,60	
	CF3B corn meal°	3,99		306,7	411	<LOD-4766	1223,73	1639,89		17,38	23,29	
	CF3C corn grits	11,61		318	574,4	<LOD-4800	3691,98	6668,78		52,44	94,73	
	CH5 sweet corn	15,83		2,5	0	<LOD	39,58	0,00		0,56	0,00	
	breakfast cereals°	8,31		53,4	100,8	<LOD-1068	443,75	837,65		6,30	11,90	
	cornflakes	18,44		37,4	63,2	<LOD-600	689,66	1165,41		9,80	16,55	
	cereals grits with supplements°	6,68		36	54,9	<LOD-896	240,48	366,73		3,42	5,21	
	manufactured multi ingredients cereal products; retail biscuits, extruded	8,82		105	160,3	<LOD-1260	926,10	1413,85		13,15	20,08	
	Peanut curls; manufactured multi ingredients cereal products; retail biscuits	10,93		58	329,5	<LOD-1260	633,94	3601,44		9,00	51,16	
	soya products without oil and sauces	21,28		3,3	12	<LOD-21	70,22	255,36		1,00	3,63	
	potato and dried potato products	2		2,5	0	<LOD	5,00	0,00		0,07	0,00	
	asparagus	15,77		4,7	21,2	<LOD-49	74,12	334,32		1,05	4,75	
	dietetic nurition without gluten°	6,4		47,9	100,4	<LOD-585	306,56	642,56		4,35	9,13	
	spice sauces	0,34		3,8	9,2	<LOD-17	1,29	3,13		0,02	0,04	
Italy - POPULATION	White wheat flour	5,2	28,6	19,0	53,0	<LOD-63	99,1	276,5	542,8	1,4	4,0	7,8
	Durum wheat paste	42,7	97,3	15,0	-	< LOD	640,0	-	1459,1	9,1	-	20,8
	Bran	0,1	0,0	25,0	61,0	<LOD-71	3,6	8,7	0,0	0,1	0,1	0,0
	Whole meal	0,1	0,0	29,0	52,0	<LOD-118	3,1	5,6	0,0	0,0	0,1	0,0
	Corn Flour	1,5	9,0	766,0	881,0	<LOD-4200	1114,0	1281,3	6926,1	15,9	18,3	98,9
	Polenta	1,0	0,0	135,0	135,0	130-140	134,2	134,2	0,0	1,9	1,9	0,0
	Cornflakes	0,5	0,0	233,0	266,0	<LOD-1092	119,3	136,2	0,0	**1,7**	**1,9**	**0,0**
	Corn based products	11,5	39,3	98,0	98,0	13-290	1123,2	1123,2	3851,6	**16,0**	**16,0**	**55,0**
	Oil	1,0	4,2	15,0	-	<LOD	15,3	-	62,5	0,2	-	0,9
	Wheat Semolina	0,2	0,0	15,0	-	<LOD	2,5	-	0,0	0,0	-	0,0
	Milk chocolate	1,1	7,1	15,0	-	<LOD	15,9	-	107,1	0,2	-	1,5
	Black chocolate	0,2	0,0	15,0	-	<LOD	3,4	-	0,0	0,0	-	0,0
	Cocoa	0,8	3,6	15,0	-	<LOD	12,1	-	53,6	0,2	-	0,8
	Bakery products	0,1	0,0	15,0	-	<LOD	1,1	-	0,0	0,0	-	0,0
	Best estimate of total mean intake								----------	**28,5** **45,5**		----------

Italy - CONSUMERS	White wheat flour	15,4	46,7	19	53	<LOD-63	292,2	815,0	887,3	4,2	11,6	12,7
	Durum wheat paste	46,1	99,6	15	-	< LOD	691,7	-	1494,4	9,9	-	21,3
	Bran	12,3	24,6	25	61	<LOD-71	306,8	748,5	616,1	4,4	10,7	8,8
	Whole meal	26,8	54,4	29	52	<LOD-118	776,8	1392,9	1578,1	11,1	19,9	22,5
	Corn Flour	25,9	60,8	766	881	<LOD-4200	19851,5	22831,8	46542,2	283,6	326,2	664,9
	Polenta	35,1	63,6	135	135	130-140	4738,8	4738,8	8582,2	67,7	67,7	122,6
	Cornflakes	20,3	54,3	233	266	<LOD-1092	4719,3	5387,6	12648,6	**67,4**	**77,0**	**180,7**
	Corn based products	20,4	47,2	98	98	13-290	1998,0	1998,0	4623,7	**28,5**	**28,5**	**66,1**
	Oil	10,3	42,5	15	-	<LOD	153,8	-	637,5	2,2	-	9,1
	Wheat Semolina	11,8	34,9	15	-	<LOD	177,0	-	524,0	2,5	-	7,5
	Milk chocolate	7,9	25,6	15	-	<LOD	119,2	-	384,6	1,7	-	5,5
	Black chocolate	8,1	21,4	15	-	<LOD	122,1	-	321,4	1,7	-	4,6
	Cocoa	8,5	27,1	15	-	<LOD	127,4	-	407,1	1,8	-	5,8
	Bakery products	140,0	140,0	15	-	<LOD	2100,0	-	2100,0	30,0	-	30,0
									0,0	0,0		
									0,0	0,0		
									0,0	0,0		
	Best estimate of total mean intake								----------	591,9 **512,6**		----------
Norway-Male-Population	Corn flakes	1	5	10	0	< LOD	10	0	50	0,12	0	1
Norway-Male-Consumers	Corn flakes	2	7	10	0	< LOD	20	0	70	0,25	0	1
Norway-Female-Population	Corn flakes	1	4	10	0	< LOD	10	0	40	0,12	0	1
Norway-Female consumers	Corn flakes	2	6	10	0	< LOD	20	0	60	0,25	0	1
Norway - babies 6 months	Maize baby porridge	172	400	10,00	0,00	< LOD	1720	0	4000	215	0	500
	Rice baby porridge	172	400	10,00	0,00	< LOD	1720	0	4000	215	0	500
The Netherlands (adults)	Corn	3,0		0,00			0			3,1		
The Netherlands (1-4 yr)	Corn	2,2		0,0			0,00			0,00		
The Netherlands (1-6 yr)	Corn	2,5		0,0			0,00			0,00		
France (Population) (73,9)	bread (without rye bread)	117,35	278,57	70,78	112,00		8306,47	13143,20	19718,29	125,10	197,94	296,96
	pasta	36,09	100,00	27,86	53,20		1005,51	1919,99	2786,13	15,14	28,92	41,96
	semolina	1,67	14,29	8,87	91,20		14,82	152,30	126,76	0,22	2,29	1,91
	corn	2,44	17,86	137,51	326,48		335,53	796,62	2455,59	5,05	12,00	36,98
	biscuits	67,03	191,43	29,33	56,00		1965,83	3753,68	5614,16	29,61	56,53	84,55
	pizzas and tarts	73,32	400,00	15,60	28,00		1143,89	2052,96	6240,53	17,23	30,92	93,98
	sandwiches	13,80	74,29	29,33	56,00		404,72	772,80	2178,63	6,10	11,64	32,81
	compound dishes with pasta	9,01	50,00	13,93	26,60		125,52	239,67	696,53	1,89	3,61	10,49
	other compound dishes	20,85	100,00	29,33	56,00		611,48	1167,60	2932,77	9,21	17,58	44,17
	beer	28,50	142,86	0,00	0,00		0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,31	0,00	9,29	37,60		2,88	11,66	0,00	0,04	0,18	0,00
	buckwheat pancakes	0,60	0,00	8,42	0,00		5,05	0,00	0,00	0,08	0,00	0,00
	breakfast cereals without corn cereals	3,88	28,57	50,09	1000,00		194,35	3880,00	1431,16	2,93	58,43	21,55
	cooked rice	19,12	65,00	19,93	0,00		380,97	0,00	1295,13	5,74	0,00	19,50
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,77	0,00	62,29	167,00		47,96	128,59	0,00	0,72	1,94	0,00
	SOMME						14544,99	28019,07		219,05	421,97	0,00

France (73,9)	bread (without rye bread)	147,92	340,50	70,78	112,00	10470,11	16566,70	24101,88	141,68	224,18	326,14
	pasta	42,11	118,23	27,86	53,20	1173,33	2240,42	3294,10	15,88	30,32	44,58
	semolina	1,62	14,29	8,87	91,20	14,34	147,40	126,76	0,19	1,99	1,72
	corn	2,04	14,69	137,51	326,48	281,06	667,28	2019,74	3,80	9,03	27,33
	biscuits	70,26	205,32	29,33	56,00	2060,57	3934,58	6021,59	27,88	53,24	81,48
	pizzas and tarts	46,53	300,00	15,60	28,00	726,00	1302,97	4680,40	9,82	17,63	63,33
	sandwiches	18,90	97,14	29,33	56,00	554,29	1058,39	2848,98	7,50	14,32	38,55
	compound dishes with pasta	10,65	60,36	13,93	26,60	148,35	283,27	840,82	2,01	3,83	11,38
	other compound dishes	23,61	109,21	29,33	56,00	692,52	1322,34	3202,99	9,37	17,89	43,34
	beer	50,54	250,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,33	0,00	9,29	37,60	3,04	12,31	0,00	0,04	0,17	0,00
	buckwheat pancakes	0,61	0,00	8,42	0,00	5,10	0,00	0,00	0,07	0,00	0,00
	breakfast cereals without corn cereals	3,72	28,57	50,09	1000,00	186,52	3723,53	1431,16	2,52	50,39	19,37
	cooked rice	20,62	73,66	19,93	0,00	410,77	0,00	1467,76	5,56	0,00	19,86
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,59	0,00	62,29	167,00	36,67	98,30	0,00	0,50	1,33	0,00
	SOMME				0,00	16762,67	31357,50		226,83	424,32	0,00
France (60,1)	bread (without rye bread)	91,74	217,98	70,78	112,00	6493,88	10275,17	15429,61	108,05	170,97	256,73
	pasta	31,04	85,71	27,86	53,20	864,82	1651,33	2388,10	14,39	27,48	39,74
	semolina	1,72	14,29	8,87	91,20	15,22	156,44	126,76	0,25	2,60	2,11
	corn	2,77	18,20	137,51	326,48	381,21	905,06	2502,26	6,34	15,06	41,64
	biscuits	64,33	171,43	29,33	56,00	1886,55	3602,30	5027,61	31,39	59,94	83,65
	pizzas and tarts	95,76	498,86	15,60	28,00	1493,91	2681,16	7782,83	24,86	44,61	129,50
	sandwiches	9,52	48,57	29,33	56,00	279,16	533,04	1424,47	4,64	8,87	23,70
	compound dishes with pasta	7,64	46,39	13,93	26,60	106,42	203,21	646,29	1,77	3,38	10,75
	other compound dishes	18,54	92,72	29,33	56,00	543,62	1038,02	2719,21	9,05	17,27	45,24
	beer	10,04	70,42	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,30	0,00	9,29	37,60	2,75	11,14	0,00	0,05	0,19	0,00
	buckwheat pancakes	0,59	0,00	8,42	0,00	5,00	0,00	0,00	0,08	0,00	0,00
	breakfast cereals without corn cereals	4,01	28,57	50,09	1000,00	201,07	4014,00	1431,16	3,35	66,79	23,81
	cooked rice	17,86	57,14	19,93	0,00	355,95	0,00	1138,57	5,92	0,00	18,94
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,92	0,00	62,29	167,00	57,03	152,89	0,00	0,95	2,54	0,00
	SOMME					12686,59	25223,77		211,09	419,70	0,00
France (31,6)	bread (without rye bread)	58,65	173,81	70,78	112,00	4151,14	6568,29	12302,69	131,37	207,86	389,33
	pasta	37,02	100,00	27,86	53,20	1031,41	1969,44	2786,13	32,64	62,32	88,17
	semolina	2,03	20,21	8,87	91,20	18,00	185,00	179,36	0,57	5,85	5,68
	corn	7,94	39,49	137,51	326,48	1091,92	2592,42	5430,58	34,55	82,04	171,85
	biscuits	85,92	210,82	29,33	56,00	2519,82	4811,50	6182,89	79,74	152,26	195,66
	pizzas and tarts	19,59	68,79	15,60	28,00	305,60	548,46	1073,14	9,67	17,36	33,96
	sandwiches	10,24	45,89	29,33	56,00	300,43	573,67	1345,72	9,51	18,15	42,59
	compound dishes with pasta	13,95	57,68	13,93	26,60	194,29	370,98	803,50	6,15	11,74	25,43
	other compound dishes	18,48	75,08	29,33	56,00	542,01	1034,94	2201,82	17,15	32,75	69,68
	beer	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,22	0,00	9,29	37,60	2,07	8,37	0,00	0,07	0,26	0,00
	buckwheat pancakes	0,47	0,00	8,42	0,00	3,96	0,00	0,00	0,13	0,00	0,00
	breakfast cereals without corn cereals	12,31	51,43	50,09	1000,00	616,40	12305,55	2576,15	19,51	389,42	81,52
	cooked rice	19,28	57,14	19,93	0,00	384,08	0,00	1138,57	12,15	0,00	36,03
	other products containing cereals: oat flakes, puff-paste, wheat germ	1,28	0,00	62,29	167,00	79,92	0,00	0,00	2,53	0,00	0,00
	SOMME					11241,05	30968,63		355,73	980,02	0,00

Table 3a. Estimate of daily intake of Fumonisin B2 in each Member State

Member State	Food or Group	Code	Food consumption		Mean of zearalenone (µg/kg)		in foods	Intake of zearalenone (ng/person/day)			Intake of zearalenone (ng/kg body weight/day)		
			Mean	95-perc	Mean 1	Mean 2	Range	Mean 1	Mean 2	Mean1*95-perc	Mean 1	Mean 2	Mean1*95-perc
Austria	GC	03 01	102,1	360	58,5	512,7		5972,85	52346,67	21060	79,638	697,9556	280,8
Italy (ALL Population)	Cornflakes	02 01C	0,5	0,0	54	62	<LOD-235	27,6	31,7	0,0	**0,4**	0,5	0,0
	Corn based products	02 01C	11,5	39,3	22	22	3-62	252,2	252,2	864,6	**3,6**	3,6	12,4
	Best estimate of total mean intake									----------	**4,0**		
Italy (Consumers)	Cornflakes	02 01C	20,3	54,3	54	62	<LOD-235	1093,7	1255,8	2931,4	**15,6**	17,9	41,9
	Corn based products	02 01C	20,4	47,2	22	22	3-62	448,5	448,5	1038,0	**6,4**	6,4	14,8
	Best estimate of total mean intake										----------	**24,3**	
Norway male (ALL)	Corn flakes	02 01 C	1	5	10	0	< LOD	10	0	50	0,12	0	1
Norway male (C)	Corn flakes	0201 C	2	7	10	0	< LOD	126	160	441	1,6	2	5
Norway female (ALL)	Corn flakes	0201 C	1	4	10	0	< LOD	10	0	40	0,2	0	1
Norway female (C)	Corn flakes	0201 C	2	6	10	0	< LOD	20	0	60	0,3	0	1
Norwaybabies 6 months	Rice porridge	0201 C	172	400	10,00	0,00	< LOD	1720	0	4000	215	0	500
	Corn porridge	0301 G	172	400	10,00	0,00	< LOD	1720	0	4000	215	0	500
France (all adults)	bread (without rye bread)	02 01 B	117,35	278,57	120,00			14082,00		33428,52	212,08		**503,44**
	pasta	02 01 B	36,09	100,00	712,50			25714,13		71250,00	387,26		1073,04
	semolina	02 01 B	1,67	14,29	0,00	0,00		0,00	0,00	0,00	0,00	0,00	0,00
	corn	02 01 C	2,44	17,857	141,94	0,00		346,33	0,00	2534,56	5,22	0,00	38,17
	biscuits	02 01 B	67,03	191,43	120,00			8043,60		22971,48	121,14		345,96
	pizzas and tarts	02 01 B	73,32	400,00	120,00			8798,40		48000,00	132,51		722,89
	sandwiches	02 01 B	13,80	74,29	120,00			1656,00		8914,32	24,94		134,25
	compound dishes with pasta	02 01 B	9,01	50,00	356,25			3209,81		17812,50	48,34		268,26
	other compound dishes	02 01 B	20,85	100,00	120,00			2502,00		12000,00	37,68		180,72
	beer	02 05 A	28,50	142,86									
	Rye bread		0,31	0,00	0,00			0,00		0,00	0,00		0,00
	buckwheat pancakes		0,60	0,00	0,00			0,00		0,00	0,00		0,00
	breakfast cereals without corn cereals		3,88	28,57									
	cooked rice		19,12	65,00									
	other products containing cereals: oat flakes, puff-paste, wheat germ		0,77	0,00	0,00			0,00		0,00	0,00		0,00
	SOMME							**64352,26**	0,00		**969,16**	0,00	

France (adult male)	bread (without rye bread)	02 01 B	147,92	340,50	11,44	0,00	0,00	1692,42	0,00	3895,91	22,90	0,00	52,72
	pasta	02 01 B	42,11	118,23	24,19	0,00	0,00	1018,56	0,00	2859,59	13,78	0,00	38,70
	semolina	02 01 B	1,62	14,29	76,56	350,00	0,00	123,74	565,66	1093,75	1,67	7,65	14,80
	corn	02 01 C	2,04	14,69	132,13	185,78	0,00	270,05	379,70	1940,66	3,65	5,14	26,26
	biscuits	02 01 B	70,26	205,32	4,07	0,00	0,00	286,20	0,00	836,37	3,87	0,00	11,32
	pizzas and tarts	02 01 B	46,53	300,00	4,07	0,00	0,00	189,56	0,00	1222,04	2,57	0,00	16,54
	sandwiches	02 01 B	18,90	97,14	4,07	0,00	0,00	76,99	0,00	395,71	1,04	0,00	5,35
	compound dishes with pasta	02 01 B	10,65	60,36	12,09	0,00	0,00	128,78	0,00	729,91	1,74	0,00	9,88
	other compound dishes	02 01 B	23,61	109,21	4,07	0,00	0,00	96,19	0,00	444,88	1,30	0,00	6,02
	beer	02 05 A	50,54	250,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,00	0,33	0,00	12,00	0,00	0,00	3,93	0,00	0,00	0,05	0,00	0,00
	buckwheat pancakes	0,00	0,61	0,00	6,00	0,00	0,00	3,64	0,00	0,00	0,05	0,00	0,00
	breakfast cereals without corn cereals	0,00	3,72	28,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	cooked rice	0,00	20,62	73,66	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,00	0,59	0,00	15,00	0,00	0,00	8,83	0,00	0,00	0,12	0,00	0,00
	SOMME	0,00	0,00	0,00	0,00	0,00	0,00	**3898,89**	**945,37**	0,00	**52,76**	**12,79**	0,00
France (adult female)	bread (without rye bread)	02 01 B	91,74	217,98	11,44	0,00	0,00	1049,69	0,00	2494,09	17,47	0,00	41,50
	pasta	02 01 B	31,04	85,71	24,19	0,00	0,00	750,74	0,00	2073,10	12,49	0,00	34,49
	semolina	02 01 B	1,72	14,29	76,56	350,00	0,00	131,33	600,37	1093,75	2,19	9,99	18,20
	corn	02 01 C	2,77	18,20	132,13	185,78	0,00	366,28	515,01	2404,30	6,09	8,57	40,00
	biscuits	02 01 B	64,33	171,43	4,07	0,00	0,00	262,03	0,00	698,31	4,36	0,00	11,62
	pizzas and tarts	02 01 B	95,76	498,86	4,07	0,00	0,00	390,06	0,00	2032,08	6,49	0,00	33,81
	sandwiches	02 01 B	9,52	48,57	4,07	0,00	0,00	38,77	0,00	197,85	0,65	0,00	3,29
	compound dishes with pasta	02 01 B	7,64	46,39	12,09	0,00	0,00	92,39	0,00	561,04	1,54	0,00	9,34
	other compound dishes	02 01 B	18,54	92,72	4,07	0,00	0,00	75,51	0,00	377,68	1,26	0,00	6,28
	beer	02 05 A	10,04	70,42	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,00	0,30	0,00	12,00	0,00	0,00	3,56	0,00	0,00	0,06	0,00	0,00
	buckwheat pancakes	0,00	0,59	0,00	6,00	0,00	0,00	3,56	0,00	0,00	0,06	0,00	0,00
	breakfast cereals without corn cereals	0,00	4,01	28,57	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	cooked rice	0,00	17,86	57,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,00	0,92	0,00	15,00	0,00	0,00	13,73	0,00	0,00	0,23	0,00	0,00
	SOMME	0,00	0,00	0,00	0,00	0,00	0,00	**3177,65**	**1115,38**	0,00	**52,87**	**18,56**	0,00
France (all children)	bread (without rye bread)	02 01 B	58,65	173,81	11,44	0,00	0,00	671,00	0,00	1988,65	21,23	0,00	62,93
	pasta	02 01 B	37,02	100,00	24,19	0,00	0,00	895,36	0,00	2418,62	28,33	0,00	76,54
	semolina	02 01 B	2,03	20,21	76,56	350,00	0,00	155,31	709,97	1547,66	4,91	22,47	48,98
	corn	02 01 C	7,94	39,49	132,13	185,78	0,00	1049,17	1475,17	5217,96	33,20	46,68	165,13
	biscuits	02 01 B	85,92	210,82	4,07	0,00	0,00	349,99	0,00	858,77	11,08	0,00	27,18
	pizzas and tarts	02 01 B	19,59	68,79	4,07	0,00	0,00	79,79	0,00	280,20	2,53	0,00	8,87
	sandwiches	02 01 B	10,24	45,89	4,07	0,00	0,00	41,73	0,00	186,91	1,32	0,00	5,92
	compound dishes with pasta	02 01 B	13,95	57,68	12,09	0,00	0,00	168,66	0,00	697,51	5,34	0,00	22,07
	other compound dishes	02 01 B	18,48	75,08	4,07	0,00	0,00	75,28	0,00	305,82	2,38	0,00	9,68
	beer	02 05 A	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Rye bread	0,00	0,22	0,00	12,00	0,00	0,00	2,67	0,00	0,00	0,08	0,00	0,00
	buckwheat pancakes	0,00	0,47	0,00	6,00	0,00	0,00	2,82	0,00	0,00	0,09	0,00	0,00
	breakfast cereals without corn cereals	0,00	12,31	51,43	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	cooked rice	0,00	19,28	57,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	other products containing cereals: oat flakes, puff-paste, wheat germ	0,00	1,28	0,00	15,00	0,00	0,00	19,24	0,00	0,00	0,61	0,00	0,00
	SOMME	0,00	0,00	0,00	0,00	0,00	0,00	**3511,03**	**2185,14**	0,00	**111,11**	**69,15**	0,00

Table 4. Estimate of daily intake of Fumonisin B1 in each Member State by commodity (ng/kg bw/day)

Food	Corn	Corn fractions	Corn derived products	Cereal products	Wheat products	Millet	Rice	Others	Sum of dietary intake	
									Population	Consumers
Member State										
Austria	77,1								77,1	
Belgium			16,3						16,3	
Germany	8,7	69,8	10,36	31,8		1,2	0,6	6,6	129,06	
Italy - POPULATION		15,9	19,6		10,6			0,6	46,73	
Italy - CONSUMERS		283,6	163,6		62,1			7,4		516,7
Norway-Male-Population			0,12						0,12	
Norway-Male-Consumers			0,25							0,25
Norway-Female-Population			0,12						0,12	
Norway-Female-Consumers			0,25							0,25
The Netherlands (adults)	3,1								3,1	
The Netherlands (1-4 yr)									0	
The Netherlands (1-6 yr)									0	
France (All Population) (73,9)	5,1			3,6	194,9		5,7	9,21	218,51	
France male adults	3,8			3,1	204,9		5,6	9,37	226,77	
France female adults	6,3			4,4	185,3		5,9	9,1	211	
France all children	34,5			22,2	269,6		12,1	17,1	355,5	

Table 4a. Estimate of daily intake of Fumonisin B1+B2 in each Member State by commodity (ng/kg bw/day)

Food	Corn	Corn fractions	Corn derived products	Cereal products	Wheat products	Millet	Rice	Others	Sum of dietary intake(ng/kg bw/d)	
									Population	Consumers
Member State										
Austria	77,1+79,6?								77,1+79,6?	
Belgium			16,7						16,7	
Germany (Consumers >14 yr)	8,7	69,8	10,4	31,8		1,2	0,6	6,6		129,1
Italy - POPULATION		15,9	19,6+5,0		10,6			0,6	27,1	
Italy - CONSUMERS		283,6	163,6+22		62,1			7,4		353,1
Norway-Male-Population			0,12+0,12						0,24	
Norway-Male-Consumers			0,25+0,25							0,5
Norway-Female-Population			0,12+0,12						0,24	
Norway-Female-Consumers			0,25+0,25							0,5
Norway- Babies (6 months)AP			215+215	215+215					860	
The Netherlands (adults)	3,1								3,1	
The Netherlands (1-4 yr)									0	
The Netherlands (1-6 yr)									0	
France (All Population) (73,9)	5,1+4,86			3,6+0,28	194,9+45,18		5,7	9,2+1,3	264,7	
France male adults	3,8+3,6			3,1+0,1	204,9+51,1		5,6	9,4+0,1	281,7	
France female adults	6,3+6,1			4,4+0,2	185,3+45,5		5,9	9,1+1,3	264,1	
France all children	34,5+11,1			22,2+0,6	269,6+75,5		12,1	17,1+2,4	445,1	

Table 5. Occurrence data in body fluids and tissues

Fumonisin B1 as ratio SA/SO

Country: ITALY

Fluid	Ref and year	N° of Samples	Value of Ratio SA/SO	Evidence of QA	Random or target	Analyt. method	Representative for Member state
Urine from people not exposed to fumonisins	7-(2000)	41	0.34 ÷ 0.17*	yes	Random	HPLC	NO

*Mean control value obtained from people not exposed to fumonisins

Annex 6

References

Austria

- No references provided

Belgium

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Sweden

No references provided

United Kingdom

- Ministry of Agriculture, Fisheries and Food, 1999, Survey for aflatoxins, ochratoxin A, fumonisins and zearalenone in raw maize. Food Surveillance Information Sheet No. 192. Food Survey Information Sheets on the WWW: http://www.food.gov.uk/science/surveillance/

- Scudamore, K.A. and Patel, S., 2000, Survey for aflatoxins, ochratoxin A, zearalenone and fumonisins in maize imported into the United Kingdom. Food Additives and Contaminants, 17 (5), 407-416.

ANNEX I: INFORMATION TO THE PARTICIPATING INSTITUTES

Remark:
For every of the three subtasks the participating institutes received separate documents. These differed only in the name and the concentration range of the particular Fusarium toxin. Since the general information including the forms and tables was identical, in this report only the information on subtask I "Trichothecenes" is given as an example. An overview on the concentration range of all mycotoxins is given in Annex IV.

INFORMATION TO PARTICIPATING INSTITUTES

Task 3.2.10 "Collection of occurrence data of *Fusarium* toxins in food and assessment of dietary intake by the population of EU Member States"

Subtask I: TRICHOTHECENES

BACKGROUND

Council Regulation (EEC) 315/93 of 8 February 1993 provides the legal framework for establishing maximum levels for food contaminants at Community level.

In 2000, task 3.2.7. concerning the assessment of dietary intake of ochratoxin A by the population was completed and resulted in report EU of 17.07.2001 "Assessment of dietary intake of ochratoxin A by the population of EU Member States".

A growing interest and concern of the public authorities for the presence of naturally occurring toxicants in the human food, such as aflatoxins, *Fusarium* toxins or ochratoxin A, and the discussions at Community level concerning the fixing of maximum limits, have resulted in a more frequent control on the presence of naturally occurring toxicants.

Commission Decision of 26. October 2001 amending Decision 94/652/EC establishing the inventory and distribution of the task to be undertaken within the framework of co-operation by Member States in the scientific examination of questions relating to food, established task 3.2.10 "Collection of occurrence data of Fusarium toxins in food and assessment of dietary intake by the population of EU Member States". Germany was designated as Member State to develop the task.

OBJECTIVES

To provide the scientific basis for the evaluation and management of risk to public health arising from dietary exposure to trichothecenes, taking into account recent available data. Special emphasis will be put on the evaluation of the dietary intake of trichothecenes in each of the Member States and in high-risk sub-groups of the population.

TIME SCALE

The time scale for the task is attached in Annex 1 (= *Annex II of the final report*)

GENERAL STATEMENTS ON THE DEVELOPMENT OF THE TASK

The co-ordinator takes overall responsibility for carrying out the agreed work, including inviting further experts to participate, after consultation of the Secretariat, and preparing the working document to fulfil the objective of the task.

In this respect the co-ordinator will:

- Establish a common format for the submission of information
- Obtain and collate relevant information available to the Member States, exploring the quality or validity of data submitted with the expert submitting that data and if necessary with the task group as a whole
- Prepare the working document in an agreed format
- Maintain an agreed time-scale

The participating institutes will provide the co-ordinator with the latest national information in accordance with the agreed format.
They should also:

- Ensure that information provided to the task group and any working papers is regarded as confidential until the final report has been endorsed by the SCOOP Working Group, except where information is already of public domain.
- Ensure that information submitted as part of the task meets the required specification and is provided by the agreed date.

INFORMATION TO BE COLLECTED BY THE PARTICIPATING INSTITUTES

Participating institutes from each country, on the basis of information available in their country (publications, reports and results of surveillance programmes), are requested to provide information related to trichothecenes.

Any relevant information collected over the last 5 years should be included. In case that occurrence data from an earlier period are available, these could also be included. The national representatives should decide which data can be reliable for exposure assessment. Also recent data intended for publication should be included.

Since, in principle, minimum data aimed at gathering information on exposure to Fusarium mycotoxins in support to SCF work are requested, the basic requested information deals with:

1. The occurrence of trichothecenes in foods and beverages imported and commercialised in their country. If data on the occurrence of these mycotoxins in biological fluids are available, these could also be reported.
2. Consumption data of the relevant foods and beverages
3. Dietary intake of trichothecenes for an average person calculated on the basis of the occurrence and consumption data;
4. Regulations related to trichothecenes (maximum limits, sampling plans, others)

However, in view of the peculiarity of the contaminant under discussion and the relevance of several issues, additional data are well accepted. Such data may include information, gathered in participant country, dealing with different topics. Dietary intake and sensitivity of particular group of population are particularly relevant. Also information on influence of technological procedures, changes in agricultural techniques, prevention actions, consideration in HACCP or other systems etc. could be a separate part of the report.
It is accepted that participants will not always be able to provide the information requested. All the information should be given in English and collected electronically.

GUIDELINES FOR PARTICIPANTS

Participating institutes are asked to provide summaries of the raw data for their country as described in the next sections 1-5 using the given Tables (1–7) and Forms (1-5) to report their data. The participants should copy the Tables and Forms in needed quantities. With respect to numeration of the Tables, each number (1,2,...) refers to a topic (occurrence, consumption etc.) and is subdivided in appropriate issues.
The rationale in the organisation of the task is that part of the Tables will provide the basic information for the SCF, while others will contribute with additional information that will be included in the final report and could be taken into consideration by SCF .

Copies of the original literature (original reports, publications etc.) should be sent to the co-ordinator in a reasonable extent (at least main tables and figures from the original literature). All the used references should be numbered consecutively and the numbers should be used in Tables and Forms for identification.

References should be provided in the format prescribed by the journal 'Food Additives and Contaminants' e.g.:

HOAD, A. B., and LUMLEY, R., 1981, Leaching of antioxidants by packaged cheese from film wrappings. Journal of Food Packaging, 18, 179-188.

FOOD CATEGORISATION SYSTEM

As the grouping of the data is rather simple, since trichothecenes have only been found in restricted food categories, the coordinator proposes the groups summarized in Annex 2 (*please see annex III of the final report*). (For instance, for the food “Corn” the letters/number “GC2” should be filled in under the column for “Food or Group” and the Code is 03 01B).

However if this will not be adequate to the purpose, it will be necessary to make further subdivisions of groups. It is suggested that you also use a free food categorisation system in separate table in order to arrange groups that best fit with data available in your country or that could in principle benefit the reliability of the final result.

Please note that data collected following a” free food categorisation system” can be sent to the co-ordinator only <u>together</u> with the tables prepared according to the fixed categorisation system as in Annex 2 *(= Annex III of the final report).* **Data provided only following a “free categorisation system” will not be considered.**
It is very important that participants make the scientific evaluation of the occurrence and consumption data available in their country and <u>combine them in a way, which gives the best estimate of the trichothecene intake in their country.</u>

You are requested to duplicate <u>on your own</u> the tables in building up the tables for every individual trichothecene

OCCURRENCE DATA

Participants are requested to provide raw individual and grouped occurrence data for trichothecenes in food and beverages. Data could be referred to:

1. goods collected at production stage, wholesale and port of entry (in bulk or in packaging)
2. food and beverages sold at retails
3. data related to studies on total diet, market basket, duplicate portion

Please note that:

- Data related to points 1 and 2 will be reported in Tables 1A1. Raw data should be given for all commodities, including cereals.
- Data related to point 3 will be reported in Table 1A2
- Summary of best estimates of occurrence data will be reported in Table 1B.

COMMENTS ON TABLES RELATED TO OCCURRENCE DATA (TABLES 1)

All concentrations should be in ug/ kg with the results given on fresh weight basis or in µg/L. In the case of data that are not reported on fresh weight basis the participant is kindly requested to make the necessary conversion, according to the characteristics of that food in one's country.

Food or group: Name of food commodity as grouped or subgrouped in Annex 2 *(= Annex III of the final report)*

Code: Code as in Annex 2 *(= Annex III of the final report)*

Refer. and year : Reference identification number (source of the occurrence data) and year of sampling.

No. of samples: Number of samples

LOD: Limit of detection.

LOQ: limit of quantification

No. of samples <LOD: Number of samples less than LOD.

No. of samples containing trichothecenes in the range: Subdivision of the data of positive sample results into ranges (µg/kg or µg/L):

type A trichothecenes:

LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	> 200

type B trichothecenes:

LOD-99.9	100-299.9	300-499.9	500-749.9	750-999.9	1000-1999.9	>2000

Maximum value: The highest concentration found

Mean (1): Arithmetic mean value of all samples (both positive and negative samples). In this case samples less than LOD must be considered as LOD/2. If only LOQ is available, the values less than LOQ must be considered as LOQ/6 (considered to be equivalent to LOD/2).

Mean (2): Arithmetic mean value of all positive samples

Median: 50% percentile

Evidence of QA: Evidence of Analytical Quality Assurance for analysis: in tables YES or NO; detailed information (accreditated laboratories etc.) can be given in Form 1.

Random or target: Were the samples taken for suspicion control or randomly for survey?

Analytical method: In tables HPLC, GC, ELISA, …. In Form 1 provide reference of the original employed method.

Sampling Reliability: Reliability of procedures employed for the sampling (both from bulk and at retails). In Tables, indicate G=Good, L=Limited, P=Poor. More details on sampling procedures should be given in Form 1.

Representative for the member state: Are the data evaluated to be representative for the contamination level of trichothecenes in the given food in the member state? In tables YES OR NO; more information should be given in Form 1.

In addition please consider that:

- If only occurrence data are available for unprocessed cereals, for instance wheat grain, and consumption data are available for wheat bread, it will be necessary to calculate how much wheat grain there is in wheat bread taking water content, extraction rate etc. into consideration. A thoroughly description of how this conversion has been done should be given in Form 1.

- If data are available for both foreign and home grown cereals please report them separately. In relation to the estimation of the trichothecenes intake the used data should naturally reflect the consumed cereals in the country, so information on the ratio between foreign/home grown cereals consumed is needed and should be given in Form 1.

- Describe in Form 1 and Form 4 how the used LOD/LOQ has been defined.

COMMENTS ON FORM 1

Every reported reference should be described in Form 1. Participants are strongly requested to give their opinion on the overall level of reliability of the data given in the reference, in relation to the contribution to the estimate of the overall intake of trichothecenes.

COMMENTS RELATED TO BEST ESTIMATE OF OCCURRENCE DATA (TABLE 1B)

In Table 1B, where results from more than one survey are available, for each food commodity listed as group and subgroup (e.g. cereals and individual subgroups of cereals such as corn, wheat etc.), participants should report the best estimates. Please use the code in Annex 2 and one row for each food commodity. These overall best estimates should be used for the intake calculation described in Section 3.

Food or Group: Name of each group and subgroup (Annex 2) taken into consideration.

Code: Code as in Annex 2 *(= Annex III in the final report)*

N° samples: The overall number of samples considered for each food commodity.

Mean (1), Mean (2) and Median as in comments on tables 1A

2. FOOD CONSUMPTION DATA

Institutes should provide an estimate of the food consumption data for an average person in the Member State even for food items for which occurrence data on trichothecenes are not available in that Member State. If data from several sources, such as Food Balance Sheets, Household Budget Surveys or/and dietary surveys, are available, please report the data from all these different sources in Table 2A together with a specification of the data set. Where possible, data for mean/median and high level consumption (95% percentile) for an average adult and data for sub-groups of population (population adult males, adult females, adolescents, children, infants, vegetarians, ethnic etc.) should be provided. In all cases the age range should be specified.
In addition, since the difficulties in obtaining food consumption data exactly relevant to a specific food category are well known, it is suggested that participants provide any information that they have available on consumption of relevant foods and beverages together with comments to allow the estimate of the limitations for the provided data (reliability of consumption data relevant to that specific food).

Therefore participants are requested to fill in the following tables:

1) Tables 2A1, 2A2, 2A3……for each source of data and for each population group using Food Categorisation system as in Annex 2. You are requested to duplicate on your own table 2A1 in building up the tables you need (2A2, 2A3…..).
2) Tables 2B1, 2B2, 2B3..... for the best estimate of the mean consumption and high consumption (95th) for an average person, belonging to group of population, using Food Categorisation system as in Annex 2. You are requested to duplicate on your own table 2B1 in building up the tables you need (2B2, 2B3…..).

The best estimates in tables 2B should be used for the intake calculation described in section 3.

COMMENTS ON TABLES 2 :

Food or group: Name of food commodity as grouped or sub grouped in Annex 2 *(= Annex III of the final report)*

Code: Code as in Annex 2 *(= Annex III of the final report)*

Method: Method for obtaining food consumption data: **FBS** (=Food Balance Sheets), **HBS** (=Household Budget Surveys), **DS** (=dietary surveys).

Survey methods: When data from dietary surveys have been used, a specification of the method (e.g. records, diary) is needed.

Typology of data: all foods and beverages consumed, food intake, purchase records, home grown food, foods eaten outside home. This box should give the information on which kind of food has been taken into consideration.

Sample size: Number of subjects

Data collection: Spot, continuous (specify frequency)? It should give an information on the updating of the survey

Geographical level: National, regional, urban, rural (specify geographical region covered)

Mean: The arithmetic mean consumption (g/person/day)

Median: The median (50% percentile) (g/person/day)

95% percentile: Estimate of high consumption (g/person/day)

Method: Method for obtaining food consumption data: Food balance sheets, household budget surveys, dietary surveys, ….

Representative for the member state: Are the data evaluated to be representative for the average consumption of the item for an average adult person in the member state? YES or NO; more information can be given in form 2.
For each source of the food consumption data, information requested in Form 2 should be given.

3. ESTIMATE OF DAILY INTAKE OF TRICHOTHECENES

Please use Tables 3 and Form 3.

COMMENTS ON TABLES 3:

Body weight: The body weight related to the group under consideration (average person (kg), adult male, adult female, children……..) in the country

Food or group: Name of food commodity as grouped or sub grouped in Annex 2. *(= Annex III of the final report)*

Code: Code as in Annex 2 *(= Annex III of the final report)*

Food consumption:

- Mean: Best estimate from Tables 2 (referred to the corresponding group of population).
- High level 95% percentile: Best estimate from the corresponding Tables 2.

Mean trichothecenes level in food: Overall best estimate from Table 1B (both for mean 1 and mean 2).

Intake of trichothecenes (ng/person/day) (both for mean 1 and 2):
- Mean: (mean intake of food) x (mean level in food)
- High level: (high level intake of food) x (mean 1 level in food)

Intake of trichothecenes (ng/day/kg body weight) (both for mean 1 and 2):
- Mean: (mean intake of food) x (mean level in food) / (body weight)
- High level: (high level intake of food) x (mean 1 level in food) / (body weight)

The best estimate of the total mean intake of trichothecenes for an average person should be given at the bottom of Tables 3. The total mean intake is simply calculated as the sum of the mean intakes of trichothecenes through the different foods and beverages reported.
Each Member State is requested to calculate the best estimate of total dietary intake (ng/kg bw/day) only by summing up the dietary intakes from each food commodity derived from the first column of the intake (Table 3A. mean 1 x mean consumption), since this approach provides the value closest to the real situation.
As far as high level dietary intake is concerned (third column of the intake in Table 3A) no sum should be calculated but only the major contributor food commodity should be reported in bold type.

You are requested to duplicate on your own table 3A1 in building up the Tables you need (3A2, 3A3…..).

4. OTHER SOURCES OF TRICHOTHECENES INTAKE

If data are available on the occurrence of trichothecenes in body -fluids, participants are requested to include them in Table 4 and should give comments in Form 4.

5. PRESENT REGULATIONS FOR TRICHOTHECENES

Information on present maximum limits for content of trichothecenes in food and beverages is to be given in Form 5.

Acknowledgement: This document has been elaborated taking into account the previous ones distributed by Dr. Jorgensen, Mrs Miraglia, Mr. Brera and Mr. Majerus, to whom we give due thanks.

Country:_____

FORM 1. Occurrence data

Reference No.: ____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this Form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) and limits of detection, determination (LOD):
(How are the limit defined, difference in LOQ/LOD for different foods)

Reference no. _____
Form 1/page 2

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Why the data are / are not evaluated to be representative for the member state: (details of sampling procedures, target or random, geographical origin, whether conditions (e.g., average, wet or dry climate during harvest), difference in agricultural techniques (drying, storing, etc), quality of analysis)

Ratio used imported foods/domestically grown foods:

Calculation of how much primary agricultural products, such as grain, there is in processed foods, such as bread:

Other comments:

Country:_____

FORM 2. Food consumption data

Reference No.: _____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Why the data are / are not representative for the consumption of the food item in the member state:

Other comments:

Country:_____

FORM 3: Estimate of daily intake of trichothecenes for an average person and for at risk subgroup of population

Trichothecene: _____

Comments on estimated daily intake of _____
(Adequacy of the data available, need for additional information etc.)

Other comments:

Country:_____

FORM 4. Other sources of trichothecenes exposure

Reference No.: ____

Trichothecene : _____

Summary:
(Main tables, figures and summary from the reference can be copied and attached to this form)

Comments on:

Evidence of Analytical Quality Assurance (AQA):
(Is it an accredited laboratory, which also participates in national or international proficiency test schemes)

Limits of quantification (LOQ) or limits of detection, determination (LOD):
(How is the limit defined, difference in LOQ/LOD for different foods)

Analytical method:
(Validation of method; reproducibility, repeatability, normal recovery range, are the data corrected for recovery etc.)

Other comments:

Country:_____

FORM 5. Present regulations for trichothecenes

Present maximum limits of trichothecenes for foods and beverages:

Trichothecenes	Food/beverages	Maximum limit	Remarks	Reference

TABLES for type A - trichothecenes (*example*)

Table 1A1. Summary of individual occurrence data by food group (Food Categorisation System as in Annex 2)

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range							Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability
							LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200								

Table 1A2. Summary of individual occurrence data by food group (Free Food Categorisation System)

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

Food or group	Code	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range							Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method
							LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200							

Table 1A3. Summary of occurrence data by total diet, market basket, duplicate portion

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

Food or group or study	Ref and year	N° of Samples	LOQ	LOD	N° samples < LOD	N° contaminated samples in the range							Max value	Mean(1)	Mean(2)	Median	Evidence of QA	Random or target	Analyt. method	Sampling Reliability	Representative for Member state
						LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200									

Table 1B.: Summary of best estimates of occurrence data reported in tables 1A1, 1A2 and 1A3

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

	Food or group or study	Code	N° samples	Maximum value	Mean (1)	Mean (2)	Median
Data in Table 1A1							
Data in Table 1A2							
Data in Table 1A3							
Overall best estimate							

Table 2A1, 2A2, 2A3 etc.: Estimate of food consumption for an average person belonging to the group* ……using Food Categorisation System as in Annex 2

Trichothecene type A:

Country: **Units: g or ml**

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State

Table 2B1, 2B2, 2B3 etc.: Estimate consumption for an average person belonging to the group*……..…using Free Categorisation System

Trichothecene type A:

Country: **Units: g or ml**

Food or group	Code	Ref. Year	Method	Survey Methods	Typology of data	Sample size	Data collection	Geographical level	Mean	Median	95th percentile	Representative for Member State

Table 2C1, 2C2, 2C3 etc.: Summary of best estimates of consumption data as reported in tables 2A and 2B for an average person belonging to the group*

Trichothecene type A:

Country: **Units: g or ml**

	Food or group	Code	Mean	Median	95th percentile

Data in Tables 2A

Data in Tables 2B

Overall best estimate

Table 3A1, 3A2, 3A3 etc. Estimate of daily intake of trichothecenes for each group of population*……

Trichothecene type A:
Country :
Body Weight for average person (kg):

Food or Group	Code	Food Consumption g/person/day		Mean of trichothecene level in food (ug/kg)			Intake of trichothecene ng/person/day			Intake of trichothecene ng/kg body weight/day		
		Mean	High level (95th percentile)	Mean 1	Mean 2	Range	Mean1	Mean2	Mean 1x High level	Mean 1	Mean 2	Mean1xHigh level
Best estimate of total mean intake												

Table 4. Occurrence data in body fluids and tissues

Trichothecene / metabolites

Country:

Fluid	Ref and year	N° of Samples	Toxin	Concentration	Evidence of QA	Random or target	Analyt. method	Representative for Member state

Table 5. Other sources of Trichothecene intake

Country: **Units: µg/kg or µg/L**

Trichothecene type A:

Source	N. of samples	Mean	Median	Maximum value

Table 6. Maximum tolerable limits for trichothecenes in food products

Country: **Units: µg/kg or µg/L**

Trichothecene type A:

Food/Beverage	Maximum limit	Legal basis*	Comments	Reference

Table 7A. List of raw individual trichothecene occurrence data according to Food Categorisation system as in Annex 2

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

Food or group	Code	Ref and year	LOQ	LOD	Level of contamination							Evidence of QA	Random or target	Analyt. metho	Sampling Reliability	Representative for Member state	Country of origin	Processing details	Type of cultivation
					LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200								

Table 7B. List of raw individual trichothecene occurrence data according to Free Categorisation system

Trichothecene type A:

Country: **Units: µg/kg or µg/L**

Food or group	Code	Ref and year	LOQ	LOD	Level of contamination							Evidence of QA	Random or target	nalyt. metho	Sampling Reliability	Representative fo Member state	Country of origin	Processing details	Type of* cultivation
					LOD-24.9	25-49.9	50-74.9	75-99.9	100-149.9	150-199.9	>200								

ANNEX II: TIME TABLE

Event	Scheduled time
Meeting of participants for exchange of view and instruction	4th February 2002
Final version of questionnaire	14th February 2002
Mailing of questionnaire to participating institutes	End of February 2002
Deadline of receiving data from participants	End of July 2003 (new: 10th January 2003)
Meeting of co-ordinators	9th- 10th December 2002
Preparation of a draft report and circulation among participants for comments	11th February 2003 (new: March/April 2003)
Final meeting	26th-27th February 2003 (new: 29th – 30th April 2003)
Preparation of the final report and completion of the task	February/ March 2003 (new: April 2003)

ANNEX III: FOOD CATEGORISATION SYSTEM

Remark: For every subtask relevant food commodities (presumably contaminated with the particular toxins) has been marked in bold

Class: A – PRIMARY FOOD COMMODITIES OF PLANT ORIGIN

FRUITS

Type	*Group-No.*	*Group-Letter*	*Description*
01	01	FC	Citrus Fruits
01	02	FP	Pome Fruits
01	03	FS	Stene Fruits
01	04	FB	Berries and other small Fruits
01	05	FT	Asserted tropical and sub-tropical Fruit-edible peel
01	06	FI	Asserted tropical and sub-tropical Fruit-inedible peel

VEGETABLES

02	01	VA	Bulb Vegetables
02	02	VB	Brassica (cele or cabbage), vegetables, read cabbage, flowerhead brassicas
02	03	VC	Fruiting vegetables, cucurbits
02	04	VO	Fruiting vegetables, other than cucurbits
02	05	VL	Leafy vegetables (including rassica leafyvegetables)
02	06	VP	Legume vegetables
02	07	VD	Pulses
02	07 A	VD1	Beans
02	07 B	VD2	Lentils
02	07 C	VD3	*(Others)*
...	...	...	...
02	08	VR	Root and tuber vegetables
02	09	VS	Stalk and stem vegetables

GRASSES

03	01	GC	Cereal grains
03	01 A	GC1	Wheat
03	01 B	GC2	Corn
03	01 C	GC3	Oat
03	01 D	GC4	Millet
03	01 E	GC5	Rye
03	01 F	GC6	Barley
03	01 G	GC7	Rice
03	01 H	GC8	Sorghum
03	01 I	GC9	*(others)*
03	02	GS	Grasses for sugar or syrup production

NUTS AND SEEDS

Type	*Group-No.*	*Group-Letter*	*Description*
04	01	TN	Tree nuts
04	02	SO	Oilseed
04	03	SB	Seed for beverages and sweats
04	03 A	SB1	Green coffee
04	03 B	SB2	Cocoa beans
04	03 C	SB3	*(Others)*

HERBS AND SPICES

05	01	HH	Herbs
05	02	HS	Spices
05	02 A	HS1	Nutmeg
05	02 B	HS2	Pepper
05	02 C	HS3	*(Others)*

Class: B – PRIMARY FOOD COMMODITIES OF ANIMAL ORIGIN

MAMMALIAN PRODUCTS

01	01	MM	Meat (Muscle meat from mammals other than marine mammals)
01	01 A	MM1	Pork meat
01	01 B	MM2	*(Others)*
…	…	…	…
01	02	MF	Mammalian fats
01	02 A	MF1	Pork fat
01	02 B	MF2	*(Others)*
…	…	…	…
01	03	MO	Edible offal (mammalian)
01	03 A	MO1	Pork edible offal
01	02 B	MO2	*(Others)*
…	…	…	…
01	04	ML	Milks

POULTRY PRODUCTS

02	01	PM	Poultry meat (including pigeon meat)
02	02	PF	Poultry fats
02	03	PO	Poultry, edible offal of
02	04	PE	Eggs

Class: C – PRIMARY ANIMAL FEED COMMODITIES

PRIMARY FEED COMMODITIES OF PLANT ORIGIN

Type	*Group-No.*	*Group-Letter*	*Description*
01	01	AL	Legume animal feeds
01	02	AF	Straw, fodder and forage of cereal grains and grasses (including buckwheat fodder) (forage)
01	03	AS	Straw, fodder and forage of cereal grains and grasses including buckwheat fodder) (straws and fodder dry)
01	04	AM	Miscellaneous fodder and forage crops (fodder)
01	04	AV	Miscellaneous fodder and forage crops (forage)

Class: D – PROCESSED FOODS OF PLANT ORIGIN

SECONDARY FEED COMMODITIES OF PLANT ORIGIN

01	01	DF	Dried Fruits
01	02	DH	Dried herbs
01	03	CM	Milled cereal products (early milling stages)
01	04	SM	Miscell. secondary food commodities of plant origin
01	05	DV	Dried vegetables

DERIVED PRODUCTS OF PLANT ORIGIN

02	01 A	CF	Cereal grain milling fractions
02	01 B	CF1	Wheat bran
02	01 B	CF2	White wheat flour
02	01 C	CF3	Corn fractions
02	01 C	CF3A	Corn Starch
02	01 C	CF3B	Corn meal
02	01 C	CF3C	Corn grits
02	01 C	CF3D	Flour
02	01 C	CF3E	Germ
02	01 C	CF3F	Bran
02	01 B	CG	Wheat based products
02	01 B	CG1	Biscuits
02	01 B	CG2	Bread
02	01 B	CG3	Pasta
02	01 B	CG 4	Pizza
02	01 C	CH	Corn-based products
02	01 C	CH1	Polenta
02	01 C	CH2	Biscuits
02	01 C	CH3	Bread
02	01 C	CH4	Popcorn
02	01 C	CH5	Sweet corn

DERIVED PRODUCTS OF PLANT ORIGIN (continued)

Type	*Group-No.*	*Group-Letter*	*Description*
02	01 C	CH6	Oil
02	01 C	CH7	Margarine
02	01 D	CF4	*(Others)*
02	02	DT	Teas
02	03	OC	Vegetable oils, cruda
02	04	OR	Vegetable oils, edible (or refined)
02	05	DM	Miscellaneous derived edible products of plant origin
02	05 A	DM1	Beer
02	05 A	DM2	Low alcoholic beer
02	05 A	DM3	Imported beer
02	05 A	DM4	Domestic beer
02	05 C	DM5	Red wine
02	05 C	DM6	Rose wine
02	05 C	DM7	Sweet wine
02	05 D	DM8	Roasted coffee
02	05 E	DM9	Instant coffee
02	05 F	DM10	Decaffeinated coffee
02	05 G	DM11	*(Others)*
02	06	JF	Fruit juices
02	06 A	JF1	Grape iuice
02	06 B	JF2	*(Others)*
02	07	AB	By-products, used for animal feeding purposes, derived from fruit and vegetable processing

MANUFACTURED FOODS (MULTI-INGREDIENT) OF PLANT ORIGIN

03	01	CP	Manufactured multi-ingredient cereal products

Class: E – PROCESSED FOODS OF ANIMAL ORIGIN

SECONDARY FOOD COMMODITIES OF ANIMAL ORIGIN

01	01	MD	Dried meat and fish products
01	01 A	MD1	Sausages
01	01 B	MD2	Pork derived dried meat
01	01 C	MD3	Ham
01	01 D	MD4	Salami
01	01 E	MD5	*(Others)*
02		LS	Secondary milk products

DERIVED EDIBLE PRODUCTS OF ANIMAL ORIGIN

Type	*Group-No.*	*Group-Letter*	*Description*
02	01	SC	Crustaceans, processed
02	02	FA	Animal fats, processed
02	03	FM	Milk fats
02	04	LD	Derived milk products

MANUFACTURED FOOD (SINGLE-INGREDIENT) OF ANIMAL ORIGIN

03	01	LI	Manufactured milk products (single-ingredient)

MANUFACTURED FOOD (MULTI-INGREDIENT) OF ANIMAL ORIGIN

04	01	LM	Manufactured milk products (multi-ingredient)

ANNEX IV: CONCENTRATION RANGE (LOD : Limit of Detection)

	Range of Concentrations (µg/kg or µg/L)						
DEOXYNIVALENOL	LOD-99.9	100 -299.9	300 – 499.9	500 – 749.9	750 – 999.9	1000 –1999.9	> 2000
NIVALENOL	LOD-99.9	100 -299.9	300 – 499.9	500 – 749.9	750 – 999.9	1000 –1999.9	> 2000
AC-DON	LOD-99.9	100 -299.9	300 – 499.9	500 – 749.9	750 – 999.9	1000 –1999.9	> 2000
T-2 TOXIN	LOD-24.9	25-49.9	50 – 74.9	75-99.9	100-149.9	150-199.9	> 200
HT-2 TOXIN	LOD-24.9	25-49.9	50 – 74.9	75-99.9	100-149.9	150-199.9	> 200
ZEARALENONE	LOD-9.9	10 -29.9	30 – 49.9	50 – 74.9	75 – 99.9	100 –199.9	> 200
FUMONISIN B1	LOD-99.9	100 -299.9	300 – 499.9	500 – 749.9	750 – 999.9	1000 –1999.9	> 2000
FUMONSINS B2/B3	LOD-9.9	10 -29.9	30 – 49.9	50 – 74.9	75 – 99.9	100 –199.9	> 200

ANNEX VI: GLOSSARY

3-AcDON	3-acetyl-deoxynivalenol
15-AcDON	15-acetyl-deoxynivalenol
bw	body weight
DAS	Diacetoxyscirpenol
DON	Deoxynivalenol
ECD	Eectron-Capture Detection
ELISA	Enzyme-Linked Immunosorbent Assays
FID	Flame Ionisation Detection
FLD	Fluorescence Detection
FUS-X	Fusarenon X
GC	Gas Chromatography
HACCP	Hazard Analysis Critical Control Point
HPLC	High Performance Liquid Chromatography
JECFA	Joint Expert Committee on Food Additives
LOD	Limit of Detection
LOQ	Limit of Quantification (determination)
MAS	Monoacetoxyscirpenol
MS	Mass Spectrometry
NEOSOL	Neosolaniol
NIV	Nivalenol
NOEL	no effect level
PMTDI	provisional maximum tolerable daily intake
QA	Analytical Quality Assurance
SFC	Supercritical Fluid Chromatography
SCF	Scientific Committee for Food
SCOOP	Scientific Co-operation on Question relating to Food (Directive 93/5/EEC)
TDI	Tolerable daily intake
TLC	Thin Layer Chromatography
t-TDI	Temporary TDI
UK	United Kingdom
UV	Ultra Violet
VOL	Verrucarol