Reports on tasks for scientific cooperation

Report of experts participating in Task 3.2.7

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Assessment of dietary intake of Ochratoxin A by the population of EU Member States

Directorate-General Health and Consumer Protection

TASK 3.2.7 "ASSESSMENT OF DIETARY INTAKE OF OCHRATOXIN A BY THE POPULATION OF EU MEMBER STATES"

Co-ordinators: Marina Miraglia and Carlo Brera

Istituto Superiore di Sanità – Rome – Italy

Collaborators: Barnaba Pazzaglini and Silvana Grossi

Istituto Superiore di Sanità – Rome – Italy

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FOREWORD

According to Council Directive 93/5/EEC "on the assistance to the Commission and co-operation by the Member States in the scientific examination of questions relating to food" Member States of the European Union can co-operate on problems facing the Commission in the area of food. Directive 93/5/EEC also indicates that an inventory of Tasks to be undertaken has to be published as a Commission Decision at least every six months. For each Task, the participating Member States, the Member State which provides co-ordination and time limit for completion will be indicated.

The rationale for each Task is to provide harmonised and reliable information to be used by the Commission for the management of problems related to food.

With this aim the Competent Authorities responsible for Scientific Co-operation in the Member States nominate experts in the specific field of interest, that will provide the Co-ordinator with the information necessary to prepare a final report.

In principle the final report should contain factual information, but it should be underlined that gathering and presenting scientific data, especially deriving from sources of different origin, can require a degree of interpretation by experts and by Co-ordinator.

It is therefore important to stress that the interpretation and views in the present report are not necessarily those of the participating Member States or those of the European Commission.

INTRODUCTION

As reported the document SCOOP/CNTM/9 Rev 3 “Council Regulation (EEC) 315/93 of 8 February 1993 provides the legal framework for establishing maximum levels for food contaminants at Community level”.
In 1995, a Task 3.2.2 concerning the assessment of dietary intake of Ochratoxin A by the population was completed and resulted in report EUR 17523 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States". The report was extremely useful as a tool for basic information and future decision, but it was admitted that the estimates of dietary intakes of Ochratoxin A in that report were based on a limited amount of data.
Due to the growing interest and concern of the public authorities for the presence of naturally occurring toxicants in the human food, such as mycotoxins, and to the discussions at Community level concerning the fixing of maximum limits, a more frequent control on the presence of mycotoxins and in particular Aflatoxins and Ochratoxin A, was carried out in food. Researches have also been launched to investigate the frequency and level of Ochratoxin A in human biological fluids such as blood, plasma and breast milk. As a consequence, many recent data on the occurrence of Ochratoxin A in human food and human biological fluids have become available since 1995 and new sources of exposition (i.e. raisins, wine and spices) were reported only recently. In addition a specific emphasis was also given to the evaluation of the impact of Ochratoxin A on human health, therefore asking for a more accurate evaluation of the exposure to this toxin by the European population.
It seems therefore appropriate to update the Task undertaken in 1995 and complete it with recent data, in order to check whether the recent data change or not the conclusions of the report EUR 17523.
Commission Decision 1999/143/EC, of January the 27th 1999 amending Decision 94/652/EC establishing the inventory and distribution of the Tasks to be undertaken within the framework of co-operation by Member States in the scientific examination of questions relating to food, established Task 3.2.7 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States". Italy was designated as Member State to develop the Task.
Basic information on Ochratoxin A are given in Annex 1.

Following the appointment of Italy as Co-ordinator, the timetable of the Task (Annex 2) was decided jointly with representatives of the Commission. For administrative reasons the Commission has decided to postpone the deadline for the completion of the Task to the end of June 2001.

After receiving the list of experts nominated by the Competent Authorities of the Member States, in May 1999, the instructions for Task 3.2.7 (Annex 3) were issued to participants, who were also asked for comments.
Basically, participants were asked to provide information on the exposure of the population to OA 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 and intake as derived from data on serum
5. Data of intake for lactating babies through the ingestion of breast milk.

Additional information was also asked, among others and whenever possible, on the following issues:

- Sampling procedures employed
- Quality Assurance of Analytical data
- Data on OA occurrence in working places
- Regulations related to the toxin (maximum limits, sampling plans, others).

The draft version of the instructions for participants was sent in June 1999.
In July 1999 a meeting was organised in Rome, Italy, with the aim of illustrating and discussing the final version of the Instructions to participants, modified according to the suggestions previously received.
The format for collecting and sending data was also agreed in order to allow the drawing of summary Tables by the Co-ordinators.
Information from participants was gathered during the period November 1999-September 2000. After the evaluation and harmonisation by the Co-ordinators of the provided information a set of Tables was prepared.
All 13 participating countries have sent results on occurrence of OA in food. Six participants have sent results on serum/blood and 4 on breast milk. Results on other human fluids (urine and amniotic fluid) and tissues (placenta and funiculum) were also provided by 3 countries. Since consumption data were not provided by Ireland, Co-ordinators included the Irish data in Tables whenever appropriate.
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 OA contamination in foodstuffs in each participating Member State
- To group available information on each raw material and/or food products
- To evaluate the best estimates of the OA dietary intake from food, and to compare them with the dietary intake as calculated from biological fluids, both for each participating Member State and at European level
- To evaluate the OA dietary intake of particular groups of population (high consumers, children, babies etc.).

A glossary of the employed terms and the list of participants are reported in Annex 4 and 5.

1. OA OCCURRENCE IN FOOD

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 Ochratoxin A and Aflatoxins 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 ochratoxin A.

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/2 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 spectra 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 presents the occurrence data as provided by participants (N = 13). The total number of analysed samples for each Member State is graphically represented in **Fig.1**. According to the request of information reported in Annex 3, most of the participants have sent their information on the occurrence of OA 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. 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. Whenever provided by participants, the sum of the subgroups for some food categories (cereals together, wine together, coffee together etc.) as calculated by participants is reported in Table 1 (grey rows).
The Co-ordinators decided to omit in Table 1 the provided information on AQA, sampling, and if representative of the Member State, since almost in all cases the provided data were indicated by participants as deriving from good sampling procedures, analysed according to quality assurance principles, and representative of the Member State. Data on OA occurrence in susceptible food commodities as provided by each country are represented in **Fig.2**.
The total number of reported occurrence data in Task 3.2.2 was N = 11.085, while in Task 3.2.7 a total of N = 18.599 was processed. In order to account for the increase in the knowledge on OA contamination in food products in Europe, the total number of data available in Task 3.2.2 and 3.2.7 for selected commodities are reported in **Table 1bis** and represented in **Fig.1bis**. In this figure, as far as Task 3.2.7 is concerned, under the category "Others", a number of data higher than elsewhere given in this Report, was due to the different food categorisation systems used in the two Tasks. Wine, coffee, dried fruits and cocoa were by far much more investigated in Task 3.2.7 than in the previous Task, while the opposite trend was shown by cereals (barley, bran, maize, rye and wheat).
In addition, the comparison between available data in the two Tasks, for each Member State, is reported in **Table 1tris**.
Irish data has been included only in Tables 1,1bis and 1tris, and in Figg.1-16, since the provided information did not allow the inclusion neither in the European means (Tables 1A-1I), nor in the calculation of the intake (Tables 3A-3I).

Occurrence data for selected commodities

In order to account for the overall incidence of OA contamination in different food matrices in European countries (both raw material and derived products), all provided data on the occurrence in cereal grains, coffee (green and processed), beer, wine, cocoa products, dried fruits, meat products, spices and "others" are gathered in **Tables 1A, 1B1 and 1B2, 1C, 1D, 1E, 1F, 1G, 1H** and **1I** respectively. In these Tables, all available occurrence data were included, even though in some cases the corresponding consumption data were not available. In order to have realistic values for the intake, in some cases OA levels in finished products (such as bread for Denmark and Spain, and coffee for France) were calculated by participants on the basis of the level of contamination in the raw material used as ingredient (wheat or rye bread, and green coffee), and of the percentage of destruction by technological procedures (coffee). The calculated occurrence data on finished products were not included in the corresponding Tables (1,1A and 1B2), but they were used for the calculation of the intakes.
Weighed mean 1 and 2 were calculated for each commodity.
At the bottom of the Tables 1A-1I the weighed mean 1 and 2 among all participating countries (Europe) were calculated, and, whenever a sufficient number of data were available, also means for North Europe (Denmark, Finland, France, Germany, Norway, Sweden, the Netherlands and UK) and South Europe (Italy, Greece, Spain and Portugal) were calculated. Countries were assigned to only two geographical areas (North and South Europe), since the available number of data did not allowed a more detailed attribution.

- ***Cereals***

The occurrence data for cereals (raw material and derived products) in each participating country are gathered in **Table 1A.** The total number of results was 5.180, with 55% of positive samples, and they ranged from LOD (0,005 ug/kg) to 33,3 ug/kg (Denmark). All participating countries provided results on this food matrices except Greece. The weighed means 1 and 2 for Europe were 0,294 ug/kg and 0,484 ug/kg respectively. Weighed mean 1 for North Europe and South Europe was rather similar (N tot = 4.832; positive: 56% and N tot = 348; positive: 31% respectively). The number of available data for North Europe was much higher than for South Europe, the level of contaminated samples being slightly higher in the latter (mean 2: 0,482 ug/kg *vs* 0,519 ug/kg). The number of total and OA positive samples in each Member State for different types of cereal grain and for cereal derived products is shown in **Fig.3** and **Fig.4** respectively.

Cereal grains: since information on the extent of contamination in raw materials is very relevant not only from the health, but also from the economic and commercial point of view, the occurrence data on cereal raw materials (wheat, corn, oat, millet, rye, barley and rice) were derived from Table 1A and reported in a separate Table (**Table 1A1**).

Wheat
Contributions were given by all countries except Greece, Ireland and Spain. The mean 1 ranged between 0,025 ug/kg for Italy and 0,76 ug/kg for the Netherlands, for a total of N = 979 samples (positive: 28%). Weighed mean 1 for Europe was 0,269 ug/kg, the contamination in North Europe (0,281 ug/kg) being more relevant than in South Europe (0,102 ug/kg), the latter having provided data on 64 samples only, all of them reported as negative. In **Fig.5** the number of total and OA positive samples in wheat for each Member State is shown.

Corn
Contributions were provided by five countries (France, Germany, Italy, Spain and UK), with a total of 267 analysed samples (positive: 13%). Weighed mean 1 was 0,165 ug/kg (all contributing

countries), 0,123 ug/kg for North Europe (Germany and France) and 0,266 ug/kg for South Europe (Italy and Spain). In **Fig.6** the number of total and OA positive samples in corn for each Member State is shown.

Oat
Contributions were provided only by seven Northern European countries (Finland, France, Germany, Ireland, Norway, Sweden and UK) with a total of 164 analysed samples (positive: 30%). Weighed mean 1 was 0,192 ug/kg. In **Fig.7** the number of total and OA positive samples in oat for each Member State is shown.

Millet
Only two countries (Finland and Germany) provided data (24 positive out of 34 samples) for millet. Due to the low number of the available data, weighed mean 1 (0,136 ug/kg) does not fully account for contamination in millet at European level. In **Fig.8** the number of total and OA positive samples in millet for each Member State is shown.

Rye
A total of N = 444 (positive: 53%) data were provided by seven countries (Denmark, Finland, Germany, Italy, Norway, Sweden and UK). Weighed mean 1 for Europe was 0,597 ug/kg, reflecting mainly the contamination in North Europe (0,654 ug/kg), since the only contribution from South Europe (mean 1 = 0,050 ug/kg) was provided by Italy (N = 42, all negative). In **Fig.9** the number of total and OA positive samples in rye for each Member State is shown.

Barley
Five countries (Finland, France, Germany, Italy, UK) provided data on barley (N = 142; positive: 24%), weighed mean 1 for Europe (0,301 ug/kg) being particularly influenced by weighed mean 1 = 0,515 ug/kg for South Europe (represented by Italy), while for North Europe, weighed mean 1 was 0,255 ug/kg. In **Fig.10** the number of total and OA positive samples in barley for each Member State is shown.

Rice
Data on 63 samples (4 positive) were provided by four countries (France, Germany, Ireland, Italy and Spain), the weighed mean 1 being 0,217 ug/kg for Europe. Weighed mean 1 and 2 for North and South Europe are not representative of the OA contamination due to the paucity of data. In **Fig.11** the number of total and OA positive samples in rice for each Member State is shown.

Comments on OA Occurrence in Cereals

A considerable number of data was provided for cereals and derived products, even if the most relevant part of information was derived from North European countries.

Cereal grains
- Weighed mean 1 (Europe) ranged from 0,136 ug/kg for millet (N = 34) to 0,597 ug/kg for rye (N = 444)
- Weighed mean 2 (all positive samples) (Europe) ranged from 0,120 ug/kg for millet to 1,095 ug/kg for rye
- Among the individual cereal commodities, wheat has been investigated more widely in comparison with the other grains, especially in North Europe
- Rye showed the highest level of contamination as derived from both the mean 1 and mean 2 levels, with 50% of positive samples.

Cereals and derived products

For comments on these commodities see section on best estimate intake from cereals.

- ***Coffee***

In consideration of the ascertained destruction of OA during technological procedures, still matter of debate in terms of percentage, two separate Tables were prepared for this food matrix, **Table 1B1** (green coffee) and **Table 1B2** (processed coffee).

Green coffee: six participating countries (Finland, France, Greece, Italy, Norway and UK) have provided data on green coffee (N = 1.704; positive: 36%), with contribution from North and South Europe of N = 1.096 and N = 608 respectively. Weighed mean 1 level was 1,620 ug/kg for Europe, it being higher in South Europe (2,290 ug/kg) than in North Europe (1,248 ug/kg). In this respect an even more striking difference is shown by weighed mean 2 (Europe 3,641 ug/kg, North Europe 2,681 ug/kg, South Europe 6,376 ug/kg). This trend could be attributable to differences in hygienic quality of the imported green coffee. It should be noted that during the past few years prevention measures for OA in green coffee were studied and probably somehow applied in the producing countries. In **Fig.12** the number of total and OA positive samples in green coffee for each Member State is shown.

Processed coffee: all countries have provided data on roasted coffee and many provided information on different kind of processed coffee (Europe : N = 1.184; positive: 46%; North Europe: N = 862; positive: 51%; South Europe: N = 322; positive: 34 %). Weighed mean 1 levels were 0,724 ug/kg, 0,749 ug/kg and 0,656 ug/kg for Europe, North Europe and South Europe respectively. Weighed mean 2 levels were 1,092 ug/kg, 0,971 ug/kg and 1,582 ug/kg for Europe, North Europe and South Europe respectively. In **Fig.13** the number of total and OA positive samples in roasted coffee for each Member State is shown.

Comments on OA Occurrence in Coffee

The overall number of data provided for coffee was sufficiently high to provide sound information on the problem of contamination by OA, both for green and for processed coffee. Green coffee is confirmed to be a raw material susceptible of OA contamination. In this respect it is foreseen that in the next future the preventing measures put into practice at world-wide level will decrease the overall OA contamination in the countries of origin. The percentage of positive samples in processed coffee was higher than in green coffee (46% *vs* 36%) suggesting that sampling procedures in raw material should still be improved. Also the practice of blending coffee to obtain different flavours (Robusta and Arabica varieties) could account for the above difference.
The comparison between European means 2 in green and processed coffee samples (3,641 ug/kg *vs* 1,092 ug/kg) indicates a marked reduction of OA to be probably attributed both to blending and to losses during the technological procedures usually adopted in South Europe, where more drastic roasting procedures are employed with respect to Northern countries.

- ***Beer***

OA occurrence data in beer are shown in **Table 1C**.
Data were provided by all countries except France, Greece, Norway and the Netherlands, and they are rather representative of Europe (N = 496; positive: 39%), North Europe (N = 376; positive:

32%) and South Europe (N = 120; positive: 58%). Weighed mean 1 and mean 2 were rather similar (0,028 ug/kg and 0,032 ug/kg respectively) for Europe, North Europe and South Europe.
In **Fig.14** the number of total and OA positive samples in beer for each Member State is shown.

Comments on OA Occurrence in Beer

The extent OA incidence of contamination in beer was rather low as well as the average levels (mean 1 similar to mean 2). In addition no difference was found in the different parts of Europe, neither for imported nor low alcoholic beer.

- ***Wine***

Ten out of 13 countries provided occurrence data on wine (**Table 1D**). The types of analysed wines were rather different (sweet, sparkling, red, white, rosé, domestic, imported etc.) and the range of LODs was quite wide (0,003 ug/kg – 1 ug/kg).
The total number of data was N = 1.470, with positive: 59%. The levels of contamination ranged from 0,003 ug/kg (Spain) to 15,60 ug/kg (Italy). Among countries, mean 1 values were in the range 0,01ug/kg – 1,29 ug/kg.
The number of data for North Europe (N = 835; positive: 50,3%) and South Europe (N = 625; positive: 72,3%) was similar, the percentage of positive samples being higher in South than in North Europe.
Weighed mean 1 levels for North Europe and South Europe were 0,181 ug/kg and 0,636 ug/kg respectively, with a European mean level of 0,357 ug/kg.
The number of total and OA positive samples in red and white wine for each Member State is shown in **Fig.15 and Fig.16** respectively.

Comments on OA Occurrence in Wine

In consideration of the wide variety of monitored wine, and of the differences in the LODs of the employed methods of analysis, it seems rather difficult to make sound comparisons among countries, both for the percentage of positive samples and for the resulting levels of contamination. Nevertheless the means seem to be quite close together.
Among the different types, red and sweet wine seem to be the most contaminated, even if on the basis of a rather low number of samples for sweet wine.

- ***Cocoa derived products***

Occurrence data in cocoa and cocoa derived products are shown in **Table 1E**.
OA occurrence in cocoa and cocoa derived products was much better evaluated than in previous Task 3.2.2, even if data were provided by three countries only (Germany, the Netherlands and UK). The total number of data was N = 547, with an high incidence of contamination (81,3%), even though OA levels in contaminated samples were not high (mean 2 = 0,277 ug/kg, rather close to mean 1= 0,236 ug/kg). In **Fig.17** the number of total and OA positive samples in cocoa and derived products for each Member State is shown.

Comments on OA Occurrence in Cocoa Derived Products

No data was provided on OA contamination in cocoa beans. However results on processed products confirmed cocoa beans as a raw material largely susceptible to OA contamination. Since most of the data was provided by Germany, the available information was neither sufficient to draw conclusions on the relevance of the problem all over the European countries, nor on the influence of technological procedures on the reduction of OA contamination.

- ***Dried fruits***

Data on dried fruits (**Table 1F**) were rather numerous (N = 800), even if many of them concerned vine fruits derived products (raisins, sultanas, currants). Northern European countries (Finland, France, Germany and UK) provided most of the data, while only Greece provided information (N = 82) on the OA contamination in such products in South Europe. Details on data from Sweden were not included in the Table due to the lack of sufficient information on the data. The percentage of contaminated samples was rather high (73% in Europe, 75% in North Europe).
Mean 1 and 2 for Europe were 2,298 ug/kg and 3,078 ug/kg respectively. The mean 1 and 2 levels were nearly equal in North Europe and in South Europe (mean 1 = 2,339 ug/kg *vs* 1,933 ug/kg and mean 2 = 3,077 ug/kg *vs* 3,092 ug/kg respectively).

Comments on OA Occurrence in Dried Fruits

Data on dried fruits, with particular reference to vine fruits derived products, indicate these commodities to be highly susceptible to OA contamination.

- ***Meat products***

A considerable number of data (N = 1.860) were provided by four countries (France, Germany, Italy and UK) on meat products (**Table 1G**). Almost all of them concerned pork derived products, 41 data (all negative) was given for poultry meat. The percentage of positive results was rather low (18%), but mean 2 was quite higher than mean 1, indicating the possibility of high levels in some samples, mainly pig kidney and pork offal.

Comments on OA Occurrence in Meat Products

The results on meat products suggest the need for more investigation in South Europe countries on these and similar products.

- ***Spices***

A total of N = 361 data were presented on spices by four countries (Germany, Italy, Portugal and the Netherlands). Results **(Table 1H)** indicate that also these food products are susceptible to OA contamination (positive 52%).

Comments on OA Occurrence in Spices

Among different spices, nutmeg, paprika, coriander and pepper powder were the most highly and frequently contaminated, most of the data being provided by North Europe. Mean 1 and 2 for Europe were 1,150 ug/kg and 5,061 ug/kg respectively. The marked difference between mean 1 in North and South Europe (0,980 ug/kg *vs* 4,659 ug/kg) could be attributed to the different country of origin of the products.

- ***Other food commodities***

Information on food commodities other than those so far taken into consideration were provided by participants and gathered in **Table 1I**. Fruit juice, including grape juice, milk and pulses were the main categories of contaminated food.

2. CONSUMPTION DATA

Consumption data as provided by participating countries are presented in **Table 2**.
Most countries (except France, Germany, Norway, Sweden and UK) provided consumption data for all population.
In addition since in the instruction for participants it was requested, whenever possible, to provide consumption data also for specific groups of consumers (consumers only, by age, by gender, by living area), France, UK, Germany, Greece, Italy, Norway, the Netherlands and Sweden provided also information in this respect.
Consumption data was either provided as grouped foods and/or as individual foods by almost all participants.
Information on finished cereal based products was generally rather insufficient, since the majority of data was given for raw materials.
For coffee, an adequate number of data were provided, even if for some type of coffee products (instant, decaffeinated, etc.) information is still lacking.
A lack of information does still exist on different types of wine and beer (red, white, rosé, table wine, sweet etc. for wine and strong , black, white etc. for beer).
As far as coffee is concerned, some participants provided consumption data of the generic category "coffee", while some others could indicate consumption of roasted, instant and decaffeinated coffee. UK provided occurrence and consumption data in terms of soluble coffee powder.
In some case conversion factors, as provided by Member States, from the beverage (ml) to the powder (g), have been used to calculate the intake from coffee consumption.
As for consumption data of cocoa powder, UK included a contribution from the cocoa powder contained within chocolate.
Mean, median and 95th percentile, and information on the adopted methodology for recording the consumption data were generally also sent, and reported in **Table 2A**.
In some cases (Italy, Sweden and Greece) consumption data of groups or subgroups of food commodities was presented, even if the corresponding data of OA occurrence was not available.

3. OA DIETARY INTAKE

In order to obtain the overall European scenario of the exposure to OA, through the combination of OA occurrence data in food products and consumption data, various approaches were followed, namely by country, by food commodity and by groups of population. Another approach, through the occurrence in biological fluids will be presented in sections 4 and 4A.

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, were calculated (**Tables 3; 3A-3I**):

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

In order to harmonise the results, all the figures were re-arranged by the Co-ordinators, by considering only two decimal figures. This could have caused minor discrepancies with the provided data.

For each Member State, the best estimate of **total dietary intake** (ng/kg bw/day) was calculated only by summing up the dietary intakes A from each food commodity, since this approach provides the value closest to the real situation.
As far as dietary intake C is concerned, it was agreed that the summing up of the contribution from each contributing food commodities should provide an overestimation of the total dietary intake; therefore only the major contributor food commodity was considered relevant and reported in bold type in the Tables 3 and 3A-3I.
Dietary intakes B and D for each food commodity were also calculated, but they had not been summed up for the evaluation of total dietary intakes, since they would represent a gross overestimation.
The intake estimates were calculated as referred both to person and per kg of body weight (bw), the latter being calculated on the bw values (**Table 3.1**) as sent by participants.
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……..".

Total dietary intake in participating countries

Participants calculated the best estimates of OA dietary intake for all population and/or for specific groups of population, and for groups and/or specific subgroups of food products (Table 3).
Table 3 reports only dietary intake values related to commodities on which both occurrence and consumption data were available, the corresponding consumption and occurrence data also being reported in the same Table.
In addition, on the basis of the available data, the total dietary intakes A (ng/kg bw/day) were calculated by Co-ordinators for each Member State by summing up the contributions from each commodities. From these values, a decreasing order among countries for dietary intake A was derived and reported below. Information on the consistent group of population (all population or

consumers only), on the range of age (whenever relevant) and on the main contributing food commodity is also given.

It should be underlined that, as shown in Table 1tris and Fig. 2, most countries did not provide information on all food products potentially affected by OA contamination; therefore the total dietary intake A by country, as shown in Table 3, should be generally considered underestimated (see Discussion and Conclusions section).

Total dietary intake A and main contributing food commodity.

UK (3,55 ng/kg bw/day, consumers only, 1,5÷4,5 years; dried fruits: 2,20 ng/kg bw/day)
Italy (3,52 ng/ kg bw/day, consumers only; red wine: 2,94 ng/kg bw/day)
France (3,39 ng/kg bw/day, consumers only, children; cereals and cereal products: 2,26 ng/kg bw/day)
Germany (3,14 ng/kg bw/day, all population, girls- 4÷6 years; bread and rolls: 0,90 ng/kg bw/day)
France (2,51 ng/kg bw/day, consumers only, 2÷65 years; cereal and cereal products:1,24 ng/kg bw/day)
France (2,31 ng/kg bw/day, consumers only, 15÷65 years; cereal and cereal products: 1,14 ng/kg bw/day)
Sweden (2,03 ng/kg bw/day, consumers only, children; rye: 0,75 ng/kg bw/day)
Germany (1,82 ng/kg bw/day, all population, children <14 years; bread and rolls: 0,58 ng/kg bw/day)
Finland (1,71 ng/kg bw/day, all population; rye: 0,65 ng/kg bw/day)
The Netherlands (1,59 ng/kg bw/day, all population; wheat:1,28 ng/kg bw/day)
Sweden (1,42 ng/kg bw/day, consumers only, adults; rye: 0,55 ng/kg bw/day)
UK (1,42 ng/kg bw/day, all population, 1,5÷4,5 years; wheat and cocoa, included cocoa powder contained within chocolate: 0,55 ng/kg bw/day)
The Netherlands (1,26 ng/kg bw/day, consumers only; red wine: 0,58 ng/kg bw/day)
Denmark (1,19 ng/kg bw/day, all population; rye bread: 0,50 ng/kg bw/day
Spain (1,18 ng/kg bw/day, all population; wheat bread: 0,77 ng/kg bw/day)
Italy (1,13 ng/kg bw/day, all population; red wine: 0,86 ng/kg bw/day)
Germany (1,09 ng/kg bw/day, all population, adult >14 years; bread and rolls: 0,36 ng/kg bw/day)
Norway (1,04 ng/kg bw/day, consumers only, men; wheat: 0,73 ng/kg bw/day)
UK (0.91 ng/kg bw/day, consumers only, 16÷64 years; cereals: 0,32 ng/kg bw/day)
Norway (0,97 ng/kg bw/day, consumers only, all population (men and women); wheat : 0,67 ng/kg bw/day)
Norway (0,88 ng/kg bw/day, consumers only, women; wheat: 0,59 ng/kg bw/day)
Portugal (0,81 ng/kg bw/day, all population; wheat and white wheat flour: 0,69 ng/kg bw/day)
UK (0,53 ng/kg bw/day, all population, 16÷64 years; wheat: 0,31 ng/kg bw/day)
Greece (0,23 ng/kg bw/day, all population, rural; coffee: 0,12 ng/kg bw/day)
Greece (0,16 ng/kg bw/day, all population, semi-urban; coffee : 0,10 ng/kg bw/day)
Greece (0,15 ng/kg bw/day, all population; coffee: 0,10 ng/kg bw/day)
Greece (0,13 ng/kg bw/day, all population, urban; coffee: 0,10 ng/kg bw/day)

Estimated dietary intake from susceptible food commodities

With the aim to evaluate the contribution to the OA dietary intake by European population from each food matrix, the estimated dietary intakes from each commodity were also calculated, and presented in **Tables 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, 3I**.
The sum of contributions from processed foods derived from the same raw matrix was also calculated.

The best estimates of dietary intakes were calculated only for those commodities, for which both consumption and occurrence data were provided.
In order to provide a more exhaustive overview of all data available for each commodity, OA occurrence values related to food commodities for which consumption data were not available are also reported in the Tables.
Underneath comments on calculated dietary intakes A from food matrices are given; please note that, consistently with the information provided by participants, comments refer both to all population **in general** and to **specific groups of population** (consumers, population divided by age, gender, and geographical area).

- ***Cereals***

The best estimate dietary intakes from cereals and cereal products are reported in **Table 3A**. In some cases the best estimate was rearranged by Co-ordinators in order to harmonise treatment of individual data on occurrence.
The OA dietary intake from cereals has been calculated by summing up the dietary intakes from each subgroup of cereals.

- All population: all countries except Germany, France, Norway, Sweden and UK provided consumption data for all population. The among countries range of dietary intake A was 0,06 ng/kg bw/day (Italy) – 1,28 ng/kg bw/day (The Netherlands).
- Specific groups of population: France, Germany, Italy, Norway, Sweden, the Netherlands and UK provided dietary intake estimate for various groups of population. As a general trend, intakes for bw were higher in the young than in the adult population.

- ***Coffee***

The best estimate dietary intakes from coffee are reported in **Table 3B**. The best estimates of OA dietary intake were not calculated for green coffee, but only for the total consumed coffee products (i.e. roasted, instant and decaffeinated).
All participant countries have provided best estimate of dietary intakes on the basis of the available occurrence and consumption data.

- All population: the dietary intakes A among countries ranged from 0,06 ng/kg bw/day (Italy) to 0,42 ng/kg bw/day (Finland).
- Specific groups of population: in most countries no marked differences in dietary intake values among groups of population were found. The increase in dietary intake, within each country, was not very relevant for consumers (0,06 ng/kg bw/day *vs* 0,09 ng/kg bw/day in Italy; 0,23 ng/kg bw/day *vs* 0,32 ng/kg bw/day in the Netherlands; 0,05 ng/kg bw/day *vs* 0,06 ng/kg bw/day in UK). An intake of 0,04 ng/kg bw/day was reported for children (consumers) in UK.

- ***Beer***

The best estimates dietary intakes from beer are reported in **Table 3C**.
Seven out of 12 participants provided best estimate of dietary intake from beer.

- All population: the dietary intakes A ranged from 0,01 ng/kg bw/day (Italy), to 0,14 ng/kg b w/day (Denmark).

- Specific groups of population: no marked differences were found nor among different groups of population neither in comparison with all population.

- ***Wine***

The best estimate dietary intakes from wine are reported in **Table 3D**. Ten out of 12 participants evaluated dietary intake A from wine.

- All population: the dietary intakes A ranged from 0,02 ng/kg bw/day (Portugal) to 0,86 ng/kg bw/day (Italy).
- Specific groups of population: the dietary intakes ranged from 0,03 ng/kg bw/day (French, consumers children) to 2,94 ng/kg bw/day (Italy, consumers only).

- ***Cocoa derived products***

The best estimate dietary intakes from cocoa and cocoa products are reported in **Table 3E**.
Only Germany and UK provided best estimates.

- All population: no data was provided.
- Specific groups of population: the highest best estimate was related to children in both countries (0,67 ng/kg bw/day in UK and 0,66 ng/kg bw/day in Germany).

- ***Dried fruits***

In **Table 3F** the best estimate dietary intakes from dried fruits (mainly various types of vine fruit products) are reported.
Four out of 12 countries provided estimates on dietary intake.

- All population: only Greece and Finland provided suitable data for the calculation of dietary intake A (Greece: 0,001 ng/kg bw/day – Finland: 0,02 ng/kg bw/day).
- Specific groups of population: the highest best estimates were related to consumers aged 1,5-4,5 in UK (2,20 ng/kg bw/day as sum of various types of vine fruit products) while the lowest level was for Greece (all group of population).
  As for UK data the difference between values for consumers 16-64 and 1,5-4,5 years, is due to different consumption rates within these two groups, as provided by the Member State.

- ***Meat products***

Three countries provided estimates of dietary intakes from meat.
Best estimates of the dietary intakes from meat and meat products are shown in **Table 3G**.

- The highest calculated intake value was observed for Germany (girls 4-6 year; 0,2 ng/kg bw/day).

- ***Spices***

Best estimates of the dietary intake from spices are shown in **Table 3H**. The calculation is related only to Italian data.

- ***Other food commodities***

Six countries provided occurrence and consumption data necessary for the intake calculation from other food commodities. Best estimates of the dietary intakes are shown in Table 3I. Among all the food categories included in this group, fruit juices seem to play the major contributing role with the highest value reported by France for 2-14 years children (0,88 ng/kg bw/day).

4. OA OCCURRENCE IN BIOLOGIC FLUIDS

Another approach to assess the exposure to mycotoxins in general and OA in particular is represented by monitoring programmes also in biological fluids. This approach for the evaluation of dietary intake can be compared to that calculated through consumption data and incidence of contamination in food.
Data deriving from studies on biomarkers represents also a tool for supplying information on the impairment to human health attributable to mycotoxins.
A total of N = 2.712 data on OA occurrence in serum and plasma was provided by 6 countries (Germany, Italy, Norway, Spain, Sweden and UK).
A summary of OA occurrence data in human biological fluids and tissues is reported in **Table 4**. The considered biological fluids and tissues were serum (included one sample of umbilical cord), plasma, urine, milk, amniotic fluid, placenta and funiculum. OA levels in samples of urine and plasma as derived from special diets (ethnic and vegetarian) were provided by UK. Some countries provided also data on serum samples collected from defined groups of population (male, female, children, pregnant women, women at birth). One country (Italy) has reported data on OA in serum samples associated to working places. In some specific groups of population the number of samples seems not to be representative of the group.
The range of OA concentration in individual serum/plasma samples was 0,11 ug/L (Germany) – 5,58 ug/L (Spain), the wide range not being explained in terms of differences in LOD.
The weighed mean 1 (as defined for occurrence data) for adult European population was 0,34 ug/L and the mean 2 (as defined for occurrence data) was 0,35 ug/L.
The means 1 for pregnant women (Germany and Italy) was 0,31 ug/L and 0,25 ug/L, and the mean 1 for children (Germany) was 0,15 ug/L (see Table 4).
The mean 1 level for adult population among countries ranged from 0,18 ug/L (Norway) to 1,19 ug/L (Spain).

4 A. ESTIMATE OF THE OA DIETARY INTAKE ON THE BASIS OF OA LEVEL IN SERUM/PLASMA

OA levels in serum/plasma samples as reported in Table 4 were used to calculate the estimate daily intake through the Klaassen equation:

$K_0 = ClpxCp/A = 1.97\ Cp$

K_0 = continuous dietary intake (ng/Kg bw/ day)
Clp = plasma clearance (ml/kg bw/ day)
Cp = plasma concentration of OA (ng/ml)

A = bioavailability
According to Hagelberg (J. of Appl. Toxic., 9, 91, 1989) the bioavailability of OA is around 50% and plasma clearance is calculated by considering renal filtration as the only route of elimination.
In **Table 4A** the estimated daily intakes calculated from OA serum/ plasma concentration according to Klaassen equation are reported. It was assumed that Cp values in plasma can be considered similar to Cp in serum.
In the same Table, means 1 for OA level in serum/plasma in each country and for group of population, and the estimated daily intakes, as calculated on the basis of occurrence and consumption data, are also reported.
In order to make the correlation as representative as possible, figures associated to similar groups of population have been compared.
Calculation was not performed for samples of workers (Italy), since the subjects were exposed to a source of exposure (inhalation of OA contaminated dust) additional to ingestion. Also data from umbilical cord, amniotic fluid, placenta and funiculum was not used in the calculation of intakes by Klaassen equation.
The estimated daily intake by Klaassen equation ranged from 0,41 ug/L (Sweden) to 2,34 ug/L (UK).

By comparing results of the two approaches (estimated daily intake from serum/plasma and from occurrence/consumption data in all population), each country presented rather unaccountable results: in Germany, Sweden and Norway the estimated daily intakes from fluids are lower than those deriving from food occurrence data; Spain and UK presented the opposite trend since intakes calculation from human fluids were higher than those from occurrence in food commodities. Italy presents a different situation depending on the group of population taken into account.

5. OA LEVEL IN HUMAN MILK AND ESTIMATED DIETARY INTAKES FOR BABIES

Data on human milk (N = 324) were provided by Germany, Italy, Norway and Sweden and are reported in **Table 5**. The range of mean 1 values on individuals was 0,01 – 0,24 ug/L and the max value was 2,35 ug/L (Italy). The overall weighed means 1 and 2, approximately indicating an average European level, were 0,09 and 0,18 ug/L.
Even if at quite low levels of contamination, OA level in milk samples from Italy were ten fold higher than in other countries. No other data from Southern countries in human milk were available.

In **Table 5A** the calculated OA intake from human milk is reported.
The intake was calculated on the basis of the 600 ml milk consumption (100 ml/suck) and on mean 1 as OA level in milk. The average calculated intake from human milk ranged from 1,00 ng/kg bw/day (Norway) to 24,00 ng/kg bw/day (Italy).

DISCUSSION AND CONCLUSIONS

Participating countries provided a conspicuous number of data on OA occurrence, related to food commodities considered as the most susceptible to OA contamination, and on their consumption.
The considerably high number of data on biological fluids also demonstrated the interest in this area.
The bulk of information allows to draw relevant conclusions from different points of view and to provide recommendation for future work.

OCCURRENCE

- Status of OA contamination of foodstuffs in each European country (for detailed comments on each food commodities see Section on Occurrence):
    - the number of positive samples in Task 3.2.7 (48.8%) was much higher than in the previous Task (18.6%), probably due to the improvement in the detection limits of the employed methods of analysis and to the higher number of analysis.
    - even though to a less extent with respect to previous Task, 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 OA occurrence depicted a sufficient overall scenario of OA contamination, to be used as the benchmark for future European legislation.
    - a lack of information on many susceptible food commodities still persists in many countries, strongly influencing the evaluation of the overall intake both at European and at national level.
    - in consideration of the forthcoming communitary maximum limits that most probably will be put into force in the next future for cereals and dried vine fruits, the provided occurrence data for cereals showed levels of contamination much lower than the proposed legal limits, leading to a general conclusion that cereal products circulating in EU are of good sanitary quality with respect to OA contamination.

CONSUMPTION

- A scarcity of consumption data does still persist in some countries. In particular, information on single food products are generally not available for the main contributors like cereals, wine, coffee, and beer.
- In addition, it has not been possible to handle the provided data homogeneously, since they were referred, in some cases, to all population and in other cases to specific groups of population.

DIETARY INTAKE

The summary of contribution to dietary intake A **(mean level for food consumption and mean 1 level for OA occurrence),** from each group of commodities in participating Member States is presented in **Table 6,** both for all population and for specific groups of consumers. The **total** dietary intake, as obtained by the summing up of contributions from the data available for

commodities is also given. **Only the dietary intake A was taken into consideration due to its closeness to real situation.**
Each commodity considered in Table 6 contributed to the OA intake, but it should be noted that no participating country could estimate intakes from all the commodities known to be susceptible to OA contamination.
In consideration of the already mentioned limiting factors (see occurrence and consumption sections) some aspects 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 OA 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 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 6 and keeping into due consideration the limitations above mentioned, the following are the resulting contributions of each commodity to the total exposure in each country (the number of countries that provided data for the considered commodity is indicated in brackets):

- Cereals (11 countries) represent the main source of intake in Denmark, Finland, France, Germany, Norway, Portugal, Spain, Sweden for all groups of population taken into consideration, and they represent the major source of intake only for all population in the Netherlands and UK. Greece did not provide any occurrence data on cereals. Among cereal grains, rye generally seems to be the most frequently and heavily contaminated.
- Coffee (all countries) is the main contributor in Greece.
- Beer (7 countries) contributes to the total intake to a low extent.
- Wine (10 countries) represents the main source of intake in Italy and, as far as consumers are concerned, in the Netherlands.
- Cocoa (2 countries), including cocoa powder contained within chocolate, provides a considerable contribution to the total intake in UK; such contribution for 1,5-4,5 years population was similar to that attributed to cereals.
- Dried fruits (4 countries) contribute generally to a low extent to the total intake, except for young population in UK; in this country this commodity, especially raisins, represents the main source for children consumers.
- Meat and spices contribute to a low extent to the total intake.
- As far as intakes from other source of contamination is concerned, the high percentage of contribution to the overall intake is mainly due to the wide variety of specific group of food commodities taken into consideration by each Member State. Among the category “Others”, fruit juice seems to be the more susceptible commodity.
- Breast milk represents a relevant source of exposure for lactating babies. Taking into consideration that in the earlier stage of life this food often represents the main component of the diet, and considering that this group

of population should be considered highly susceptible to exposure to contaminants, preventing measures should be designed in this respect in order to prevent any possible risk.

The contribution of each food groups, as derived from the data in table 6, is shown in Fig.18. Cereals resulted the main contributors (50%) followed by wine (13%), coffee (10%), spices (8%), others (6%), beer (5%), cocoa (4%), dried fruits (3%) and meat (1%).
As for the contribution from the wide category of "Others", fruit juice provide the most relevant contributors.

As far as the comparison with TDI (5ng/kg bw/day) for OA suggested by SCF (Scientific Committee for Food. Working Group on Contaminants, 17 September 1998, SCF opinion on Aflatoxin, Ochratoxin A and Patulin.) is concerned, from the observations reported in tables 6, the exposure seems to be in most cases quite below the value indicated by SCF. Nevertheless, some countries seem to be suffering from a more relevant contamination especially if specific group of consumers are considered.

Since almost all countries did not provide information for some food products, a tentative calculation of the overall intake from **all** OA susceptible food commodities was performed by Co-ordinators (**Table 6bis**) by including **surrogate values** according to the following rationale:

- Whenever only occurrence data were lacking, the intake data were calculated by taking into account the mean occurrence values as derived for the countries belonging to the same geographical area. The obtained intakes were divided by the body weight corresponding to the country under examination.
- The same procedure was applied also in the case of lack of information on consumption data. In this case, whenever possible, consumption data were employed for the calculation of the intake. For France, Norway and Sweden, consumption data related to consumers only were employed since the only available.
- For those food matrices where the data from the same geographical area was scarce, the lacking data (occurrence or consumption) was derived from the mean of all countries.

The calculated surrogate values, are typed in blue, and they were applied both to all population (normal font) and to other groups of population (italic font) as shown in **Fig.19**.
Cereals are the main contributors (44%) followed by others (15%), wine (10%), coffee (9%), beer (7%), cocoa and derived products (5%), dried fruits (4%), meat (3%) and spices(3%).

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 ochratoxin A 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. 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.
By comparing results from Fig.18 and 19, it should be noted that the contribution to the total OA intake by cereals, wine and coffee, is rather similar, while minor modifications as shown within the remaining food groups.

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Annex 1

Basic information on Ochratoxin A

Sources and properties

Ochratoxins are a group of structurally related secondary metabolites, that are produced by some toxic fungi such as *Penicillium Verrucosum* and b*y Aspergillus ochraceus;* occasionally also isolates of the common species *Aspergillus niger* can produce Ochratoxin A (OA) (1). OA is the main mycotoxin in the group of Ochratoxins, and it appears to be the only one of toxicological significance. OA contains an isocoumarin moiety linked by a peptide bond to phenylalanine and it is generally found in cereals, oleaginous seeds, green coffee, pulses, wine, and poultry meat. OA production depends on both environmental and processing conditions (climatic conditions, abnormally long storage, transportation, wet or dry milling , roasting procedures, fermentation etc.).

Biosynthesis of OA

The effects of water activity (a_w) and temperature, the main factors controlling mycotoxin formation, have been elucidated for three fungal organism: *A. ochraceus*, P. cyclopyium, and P. viridicatum. The minimum a_w values for Ochratoxin production are 0.83-0.87, 0.87-0.90, and 0.83-0.86 respectively. At 24°C, optimum a_w values for *A. ochraceus* are 0.99 and for both *Penicillium* fungi are 0.95-0.99. At optimum a_w, the temperature range for OA production by *A ochraceus* is 12-37°C, whereas that for *Penicillium* ones is 4-31 °C (2).

The biosynthesis of OA has been studied using both ^{14}C- and ^{13}C- labelled precursors. DL-[1-^{14}C]-α-phenylalanine was incorporated into OA by cultures of *A. ochraceus*. Hydrolysis of the labelled OA gave the isocoumarin acid and L-phenylalanine with the amino-acid containing all the activity. The isocoumarin acid derived upon acid hydrolysis of OA contained all activity. Kuhn-Roth oxidation and subsequent Schmidt degradation of the acetic acid provided evidence for the pentaketide origin of the dihydroisocoumarin moiety. The origin of the carboxy group at C (8) was established through the addition of DL-[methyl-^{14}C] methionine to a resting culture of *A. ochraceus*. Selective degradation experiments established that the C(12) was derived from methyl-methionine (3).

Toxicity

Ochratoxin A (OA) has been shown to be nephrotoxic, hepatotoxic, teratogenic and immunotoxic to several species of animals and to cause kidney and liver tumours in mice and rats (4). As far as humans are concerned, the IARC (International Agency for Research on Cancer) classified OA as a possible carcinogen to humans (Group 2B), (5). With regard to nephrotoxicity, OA is considered to be involved in the Balkan Endemic Nephropaty (BEN), a severe kidney pathology, generally occurring in some areas of South-Eastern Europe (Bosnia, Croatia, Bulgaria and Romania) and linked to urinary tracts tumours (6). Wider possibilities of impact on human health are reviewed by J. L. Richard, J. Fink-Gremmels and M. Kontaxi *et al*. in "Mycotoxins and Phycotoxins – Developments in Chemistry, Toxicology and Food Safety", edited by M. Miraglia, H. P. van Egmond, C. Brera and J. Gilbert, Alaken (1998). As regards to the toxicity of OA, it was observed that its biotransformation is cytochrome P450 dependent in animals and humans, and it results in the formation of metabolic intermediates active in the carcinogenic and other toxic activities. The cytochrome stimulates the OA induced lipids peroxidation, this process involves moreover some enzymes, present in the cell, and leads to the formation of toxic metabolites (7). Actually the metabolites of OA involved in its genotoxic power are not exactly known, but it is demonstrated

that dietary feeding of this toxin induces renal adenomas and hepatocellular carcinomas in mice and in rats, and it is suspected for humans.
As regards oral LD_{50} values, they are 20 mg/kg and 3.6 mg/kg in young rats and in day-old chicks, respectively; OA is also lethal to mice, trout, dogs and pigs (1).
The complex toxic activity of OA is multifaceted in relation to the role of one of its structural components, L-phenylalanine, which is involved in the inhibition of numerous reactions where it is known to function. The covalent bonds of chemical substances, or their metabolites, to DNA are considered a key step in the processes which induces to carcinogenesis.
OA, as not ionized form, is passively absorbed in the gastrointestinal tract and through enterohepatic circulation can undergo secretion and reabsorption (8). Moreover the absorption of this mycotoxin occurs in the kidney proximal and distal tubules.
It has been observed that OA induces the formation of several DNA-adducts, because of its chemical structure, in many tissues. These ones are generally repaired in a few time, but in kidney they are still present after 16 days (9). OA mean-life is longer than 500 hours, as it was established according to some studies concerning the metabolism of the toxin in monkeys, which are the animal species the most similar to humans (10).

Recommendations for maximum exposure

The Joint FAO/WHO Expert Committee on Food Additives (JEFCA), on the basis of the nephrotoxicity of OA, proposed a provisional tolerable weekly intake (PTWI) for OA of 0.1 μg/kg body mass (equivalent to 14 ng/kg body mass/day) (11). However on the basis of carcinogenity data, The Working Group of the Nordic Council of Ministers proposed a maximum tolerable daily intake of 5 ng/kg bw of toxin (12), similar to the provisional tolerable daily intake (PTDI) established by the Canadian authority (1.2 - 5.7 ng/kg bw) (13).
In 1998, taking into account the SCOOP data, the Scientific Committee for Food of the European Commission suggested that it was prudent to reduce exposure to OA as much as possible, “ensuring that exposures are towards the lower end of the range of tolerable daily intakes of 1.2-14 ng/kg bw/day which have been estimated by other bodies, e.g. below 5 ng/kg bw/day” (14).

Ochratoxin A regulation in EU Member States

As far as regulation is concerned, nine countries set specific regulations for OA in one or more commodities at levels ranging from 1 to 50 μg/Kg for foods, and from 5 to 300 μg/Kg for animal feeds (15). In 1999, a regulation was taken into force in Italy, establishing the maximum acceptable values for the contamination by OA in some food commodities (cereals and derived products coffee, baby foods, cocoa and derived products, beer, pig meat).

Table 7
Present regulations of Ochratoxin A in the EU Member States

Country	Commodity	Maximum limit (ug/kg)	Legal basis	Comments
Denmark	Pig kidneys Pig kidneys Cereals and cereals products	25 10 5	Official Official Official	Whole carcass condemned Viscera condemned From 1 July 1995
Finland	Coffee	5	Guideline level	
France	Cereals	4	Guideline level	Recommendation of CSHPF (1999)
Germany	No specific regulation			
Greece	Coffee (all types)	20	Official	Decision of the Minister of Agriculture No. 91587/1992
Ireland				
Italy	Cereals and derived products Baby foods Green coffee Roasted and instant coffee Cocoa derived products Beer Pork meat and derived products	3 0.5 8 4 0.5 0.2 1	Guideline level	From 9 June 1999
Norway				
Portugal				
Spain	No specific regulation			
Sweden	Cereals and Cereal products	5	Official	
The Netherlands	All foods	10	Action level	Organisation: FIS
United Kingdom	No specific regulation			
EU	Cereals raw Cereals intended for human consumption Vine dried fruits	5 3 10	Official	Taken into force from 1 October 2001

Analysis

Preparation of Standard Solutions

A stock solution containing approximately 40 µg/ml of Ochratoxin A in benzene:acetic acid (99:1) is prepared. The concentration as described for aflatoxins is determined by measuring the optical density at 333 nm (peak absorption wavelength for this toxin) and applying the following formula:

$$\mu g \text{ of Ochratoxin A/ml} = \frac{OD*\text{molecular weight}*1000*CF}{\varepsilon}$$

molecular weight = 403
ε = 5550
CF = Correction Factor

This solution is diluted with benzene to obtain a working solution of 1 µg/ml. More information on the preparation of standards are given by the AOAC Official Methods of Analysis (16).

Extraction

The extraction of Ochratoxin A from the ground product, is consistent with the acid nature of Ochratoxin A (pK_a = 7.1) due to the co-presence of phenolic and carboxylic groups. It is thus

possible to extract Ochratoxin A with organic solvents in acid medium, especially when immunoaffinity columns are used for further purification. Extraction methods are similar to those described for aflatoxin, i.e. shaking (mechanical or magnetic) for 30 - 60 min. or blending from 1 to 3 min. with Ultra Turrax apparatus or Waring Blendor. The most common extraction solvents are mixtures of acetonitrile or methanol and water, chloroform and 0.1 M H_3PO_4, toluene/2N hydrochloric acid /$MgCl_2$ or aqueous solutions in alkaline medium, e.g. bicarbonate.

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.

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 (20 ml), the sample extract (50 ml) is pushed through the column at a flow rate of approximately 5 ml/min. The column is washed with distilled water and Ochratoxin A is eluted from the column with methanol for HPLC over 2 min., collecting the eluate in a 4 ml amber vial. The sample is diluted with water before HPLC analysis.

In some cases (e.g. beer and wine) the sample is loaded directly into the column without any extraction step. A unique IA column with a specificity both for aflatoxins and Ochratoxin A has also recently become available.

The main disadvantages of an immunoaffinity clean-up for OA, could in some cases be the lack of specificity for Ochratoxin A, since a cross-reaction with Ochratoxin C can occur (17), the potential contamination with release of Ochratoxin A from the support of the IA (18), and the high cost of each column, even though some authors considered the possibility of regenerating the column for further analyses (19).

HPLC Analysis

The general principles reported for aflatoxins are applicable also to Ochratoxin A. More specifically, methods currently existing for the determination of Ochratoxin A by HPLC, are based principally on fluorescence detection with an excitation wavelength of 330-333 nm, and an emission wavelength of 445-470 nm. The mobile phases most commonly used are a binary mixture of water : acid (acetic or phosphoric): acetonitrile in ratios such as 99:2:99, 100:1:100, 47:2:51, 220:2:99, and 43:2:57. Retention times vary from 6 to 14 minutes depending on the type of LC column.

Confirmation of the identity

Three methods are usually adopted for confirmation of Ochratoxin A:

i) Methylation (Method A and B)
ii) Ammonia derivative formation
iii) LC-MS confirmation.

i) Methyl ester formation:

Method A: 50 µl (ca 250 ng) of the stock solution or of the purified extract is transferred into a reaction tube. 1 ml of boron trifluoride is added to the methanol, the cap is closed and the tube kept on a block heater (80°C) for 10 min. 2 ml of water and 2 ml of n-hexane are added. After mixing thoroughly the layers are left to separate. Using disposable glass Pasteur pipettes, the upper layer is transferred to a clean small vial. The extraction is repeated another two times with 2 ml portions of n-hexane. The hexane extracts are taken to dryness with a nitrogen stream, and the residue dissolved in 1-2 ml of injection solvent. OA is confirmed by the presence of an OA-methyl ester peak at delayed retention time, and the disappearance of the OA peak (20).

Method B: This method was originally published by Uchiyama et al.(21): two hundred microliters of the purified extract was evaporated to dryness and 2.5 ml methanol and 0.1 ml concentrated HCl were added. The solution was left standing overnight at room temperature. The methanol was evaporated and the residue was taken up in 200 µl acetonitrile.

ii) Ammonia derivative formation: the derivatisation is carried out using a 10% ammonia solution mixed with the column effluent (22). The main advantages are an increase in sensitivity (1.7 times the signal of the underivatised Ochratoxin A), and the availability of a confirmation test for Ochratoxin A, as a consequence of this change of sensitivity. A second HPLC pump, similar to that described in fig.2 for aflatoxins, and a reaction coil of 10 cm are necessary. Conditions are as follows: 0.5 ml/min as flow rate, room temperature, excitation wavelength of 370 nm, and emission wavelength of 460 nm . Further confirmation can be obtained by making a chromatographic run of the derivatised Ochratoxin A, at the wavelengths normally used for underivatised Ochratoxin A, i.e. 333 nm for excitation and 470 nm for emission. The disappearance of the derivatised Ochratoxin A peak will act as a confirmation of its presence (23).

iii) Confirmation by LC-MS, is not largely used, since it involves expensive apparatus, and rather good experience in the technique is needed. Abramson (24) illustrated the advantages resulting from the combination of liquid chromatography and mass spectrometry for Ochratoxin A in barley. Among the types of interfaces most used for Ochratoxin A analysis were thermospray, direct liquid induction (DLI) and the moving belt. Sensitivity is one of the weakest point of this technique, but can be enhanced by operating MS in selected ion monitoring (SIM) mode and in some cases with negative-ion chemical ionisation (NCI). Ominski et al.(25) used LC-MS for the confirmation of Ochratoxin A in serum samples of swine. The quadruple mass spectrometer was equipped for negative-ion chemical ionisation and Ochratoxin A standards were chromatagraphed and scanned from masses 150-450 to determine retention time and ion mass. For maximum sensitivity, sample extracts were analysed by monitoring the ion of mass 403.1.

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Annex 2

Timetable

Event	Scheduled time	Place
I step: Planning of methodologies		
Identification of participants at national level		
Identification of guidelines for the questionnaire to be sent to participants	May, 15th 1999	
Development of the draft of the questionnaire	End of May 1999	
II step: Request of data		
Mailing of the draft of the developed questionnaire to the participants for comments, suggestion and possible difficulties that could be met at national country	June, 10th	
Deadline for comments	End of June	
Meeting of participants for exchange of view and instruction	July, 6th 1999	Rome, Istituto Superiore di Sanità
Mailing of the final draft of the questionnaire	End of July 1999	
Deadline for receiving data from participants	End of June 2000	
Elaboration of data derived from the questionnaire and preparation of the preliminary report	End of October 2000	
III step: Finalisation of the Task		
Preparation of a draft report of obtained results and conclusions	End of December 2000	

Circulation of the draft report among participants for comments	February 2001	
Final meeting	5 April 2001	Brussels
Preparation of the second draft of the Task report and circulation among participants for comments	End of April 2001	
Deadline for comments	Middle of May 2001	
Preparation of the final report	End of May 2001	
Deadline of the Task	For administrative reasons the Commission decided to postpone the deadline for the completion of the Task to end of June 2001.	

Annex 3

Instruction for participants

Subject: SCIENTIFIC COOPERATION ON QUESTIONS RELATING TO FOOD; Task 3.2.7 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States"

*INFORMATION TO PARTICIPATING INSTITUTES**

Scientific Co-operation on Questions Relating to Food: preparation of a working document updating the report EUR 17523 (November 1997)

Task 3.2.7 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States"

Background

As reported the document SCOOP/CNTM/9 Rev 3 *"Council Regulation (EEC) 315/93 of 8 February 1993 provides the legal framework for establishing maximum levels for food contaminants at Community level.*
In 1995, a Task 3.2.2 concerning the assessment of dietary intake of Ochratoxin A by the population has been completed and resulted in report EUR 17523 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States". It was admitted that the estimates of dietary intakes of Ochratoxin A in that report were based on a limited amount of data.
A grawing interest and concern of the public authorities for the presence of naturally occurring toxicants in the human food, such as aflatoxins, 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, in particular aflatoxins and Ochratoxin A, in food. Research has also been launched to link the occurrence of Ochratoxin A in human blood plasma with dietary intake patterns.
As a consequence, many recent data on the occurrence of Ochratoxin A in human food and human blood plasma has become available since 1995 i.e the presence of Ochratoxin A in raisins was-reported only recently. It seems therefore appropriate to update the Task undertaken in 1995 and complete it with the recent data, in order to check if these recent data do not change the conclusions of the report EUR 17523."

Commission Decision 1999/143/EC, of 27 January 1999 amending Decision 94/652/EC establishing the inventory and distribution of Task to be undertaken within the framework of co-operation by Member States in the scientific examination of questions relating to food, established Task 3.2.7 "Assessment of dietary intake of Ochratoxin A by the population of EU Member States". Italy 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 Ochratoxin A, taking into account recent available data. Particular emphasis is placed on evaluation of dietary intake of Ochratoxin A in each Member State and in high-risk sub-groups of the population.

Timetable

The timescale for the Task is attached in Annex 2.

General statements on the development of the Task (according to document SCOOP/ GEN/ 25 Rev.3 , January 1998)
The Co-ordinators take 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-ordinators will:

- Establish a common format for the submission of information
- Obtain and collate relevant information available to the Member State, 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
- Maintaining 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 the 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 Ochratoxin A.

Any relevant information collected over the last four years should be included i.e., from 1995 inclusive.
Also recent data intended for publication should be included.

Since in principle minimum data aimed at gathering information on exposure to Ochratoxin A in support to SCF work are requested, the basic requested information mainly deals with:

1. The occurrence of Ochratoxin A in foods and beverages imported and commercialised in their own country.
2. Consumption data of the relevant foods and beverages.
3. Dietary intake of Ochratoxin A for specific groups of population on the basis of occurrence and consumption data.
4. Occurrence of Ochratoxin A in human blood , milk and other biological fluids and tissues.
5. Occurrence of Ochratoxin A in working places.
6. Regulations related to Ochratoxin A (maximum limits, sampling plans, others).

In addition, 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, sensitivity of particular group of population, influence of technological or cooking procedures, changes in agricultural techniques, prevention actions, consideration in HACCP or other systems etc.) to be included in 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 data for their country as described in the next sections 1, 2, 3, 4, 5 and 6 using the given Tables (1-5) and forms (1-6) to report their data. The Tables and forms should be copied in needed quantities by the participants. With respect to numeration of the Tables, each number(1,2……..) is referred a topic (occurrence, consumption etc) and is subdivided for the different issues. The Tables and forms are also distributed as……..
The rationale in the organisation of the Task is that the 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.
Original reports, publications and analytical raw data cannot be evaluated, but 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 in food categories is concerned, the CODEX ALIMENTARIOUS System ……..is adopted as basic system. However, since it has been shown not fully adequate to the purpose, it was considered necessary to make further subdivisions to the groups. A modified system for food grouping and sub grouping is given in Anne 1 , in which subgroupings that take into account specific foods for which OA contamination is considered relevant. In the subgroup "other" participants can allocate data related to foods other than those specifically indicated. For each food category for which data (occurrence, consumption, intake) are reported in subgroups it is requested to calculate also the sum for the subgroups and refer it to the group. The previous procedure should, in principle, allow the collection of all possible data. However, if in the opinion of the participant an alternative "free food categorisation system" better fits with the bulk of the available data, he/she can, in addition to the fixed categorisation system, collect data in separate Tables you can use a "free" categorisation system and therefore 1) arrange groups that best fit with data available in your country or that could in principle benefit the reliability of the final result 2) report occurrence data for single kind of food that are part of a category in Annex 3. As an example it might be necessary to combine kind of foods in one group, because only consumption data are available for that group and not for the separate products and vice versa. It is very important that you make the scientific evaluation of the occurrence and consumption data available in your country and combine them in a way, which gives the best estimate of the Ochratoxin A intake in your country. Suggestions and comments from participants on the adapted version (Annex 2) of the CIAA Food Categorisation system on the food labelling and food grouping and sub grouping is well accepted for discussion a few days before the first meeting (6th July)

1. Occurrence data

Participants are requested to summaries occurrence data for Ochratoxin A in food and beverages. Data could be referred to:

1. *goods collected at 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*

- Data related to points 1 and 2 will be reported in Tables 1A (Table 1A: occurrence data according to food categorisation in Annex 2; Table 1A bis: occurrence data according to "free " food categorisation, Table 1A tris : best estimates of the data reported in Tables 1a and 1a bis);
- Data related to points 3 will be reported in Tables 1B (Table 1B: data indicated in point 3, Table 1B bis: best estimate of data in Table 1B)

Comments on Tables related to occurrence data

All concentrations should be in ug/ kg with the results given on fresh weight basis. 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 the food in their country.

Food or group: Name of food or beverage use

Ref. and year : Reference identification number (source of the occurrence data) and year of sampling

Eventual geographic or other characteristic of the region from which samples are derived

No. of samples: Number of samples

LOQ/LOD: Limit of quantification (LOQ) or limit of detection, determination (LOD)

No. of samples < LOQ (or LOD): Number of samples less than LOQ or LOD

No. of samples containing Ochratoxin A in the range ... : Subdivision of the data of positive sample results into ranges LOQ (or LOD)-4.9, 5.0-9.9, 10.0-24.9, and > 25 pg/kg. If this subdivision is considered inadequate, please fill the Table in the best possible way and in addition report the same data in a similar Table with "free" subdivision.

Maximum value: The highest concentration found

Mean (1): Arithmetic mean value of all samples (both positive and negative samples)
Mean (2) Arithmetic mean value of all positive samples
Median: 50^{th} percentile

Evidence of AQA: Evidence of Analytical Quality Assurance both for sampling and for analysis: Yes or no; more information (accredited laboratories etc.) can be given in form 1.

Random or target: Were the samples taken for suspicion control or randomly for survey

Sampling strategy : procedures employed for the sampling (both from bulk and at retails)

Representative for the Member State: Are the data evaluated to be representative for the contamination level of Ochratoxin A in the given food in the Member State?: Yes or no; more information can be given in form 1

Analytical method: HPLC/Fluor, TLC …, possibly provide reference of the employed methodology if different from the authors of the occurrence data

For each food or beverages, where results from more than one survey are available, best estimates should be given in appropriate Tables. These best estimates should be used for the intake calculation described in section 3.

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.
- If data are available for both foreign and home grawn cereals please report them separately. In relation to the estimation of the Ochratoxin A intake the used data should naturally reflect the consumed cereals in the country, so information on the ratio between foreign/home grawn cereals consumed is needed.
- Since different definitions are used for the limit of quantification (LOQ), determination, detection (LOD), participant must use the occurrence data as they are available and describe in form 1 and form 4 how the used limits are defined and used .

Comments on Form 1

Every reported reference should be described in form 1. Participant are strongly request to give their opinion on the overall level of reliability of the data given in the reference, in relation to the their contribution to the estimate of the overall intake of Ochratoxin A

2. Food consumption data

Institutes should provide an estimate of the food consumption data for an average adult person in the Member State even for food items for which occurrence data on OA are not available in that Member State. Where possible, values for mean/median and high level consumption (95th percentile) for an average adult and data for sub-group 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 the Institutes 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). As an example average alcoholic beverages consumption should be calculated taking into account groups of population that do not consume alcohol containing beverages. If data allowing such correction are not available comments and indications on that should be given.

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 CIAA Food Categorisation system (Annex 2)
2) Tables 2B1,2B2,2B3…… for each source of data and for each population group using “free” categorisation system
3) Table 2C1 for the best estimate of the mean consumption and high consumption (90th , , 9 7^{th}) , for an average adult person ,using CIAA Food Categorisation system (Annex 2)
4) Table 2C2 for the best estimate of the mean consumption and high consumption (90th , , 9 7^{th}) for an average adult person, using “free” categorisation system
5) Tables 2D1 for the best estimate of consumption for particular group of population using CIAA Food Categorisation system (Annex 2)
6) Tables 2D2 for the best estimate of consumption for particular group of population using “free” categorisation system

The best estimates in Tables 2D1 and 2D2 should be used for the intake calculation described in section 3.

Comments on Tables 2:

Food or group: Name of food or beverage

Ref. and year: Identification number of the reference (source of the consumption data) and period over which data were collected

Survey methods: dietary records/diary (specify period and frequency weighed intake, interview, purchase records).

Typology of Data: (all foods and beverages consumed, food intake, purchase records, home grown food, foods eaten outside the home…..)

Sample size: Number of subjects

Data Collection: Spot, continuous (specify frequency)

Geographical level: National, regional, urban, rural (specify geographical region covered)

Mean: The arithmetic mean consumption (g/person/day)

Median: The median (50^{th} percentile) (g/person/day)

95th percentile: Estimate of high consumption (g/person/day)

Method: Method for obtaining food consumption data: Food balance sheets, household budget surveys, dietary surveys .....
Region : Specify geographical region covered (national, regional, urban, rural)

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 Ochratoxin A

Please use Tables 3(A,B,C,…….) and form 3.
Comments on Tables 3:

Body weight: The body weight related to the group under consideration (average adult person (kg), adult male, adult female, ……..) in the country

Food or group: Name of food, group or beverage

Intake Mean: Best estimate from Table 2 (referred to the corresponding group of population).

High level 95^{th} percentile: Best estimate from the corresponding Table 2.

Mean Ochratoxin A level in food: Best estimate from Table 1.

Intake of Ochratoxin A * (ng/day):
Mean: (mean intake of food) x (mean level in food)
High level: (high level intake of food) x (mean level in food)

Intake of Ochratoxin A (ng/day/kg body weight):
Mean: (mean intake of food) x (mean level in food) / (body weight)
High level: (high level intake of food) x (mean level in food) / (body weight)

The best estimate of the total mean intake of Ochratoxin A for an average adult person should be given at the bottom of Table 3. The total mean intake is simple calculated as the sum of the mean intakes of Ochratoxin A through the different foods and beverages reported.

4. Occurrence of Ochratoxin A in human blood, milk and other biological fluids

In some Member States data are available for occurrence of Ochratoxin A in human blood and milk. These data is asked to be reported in Table 4 and form 4.

Comments on Table 4 (All concentrations in µg/1).

Biological fluid, Ref: biological fluid, reference identification number

Year: Year of sampling

No. of samples: Number of samples

LOQ/LOD: Limit of quantification (LOQ) or limit of detection, determination (LOD)

No. of samples < LOQ (or LOD): Number of samples less than LOQ or LOD
No. of samples containing Ochratoxin A in the range ... : Subdivision of the number of positive sample results into ranges LOQ (or L0D)-0.9, 1.0-1.9, 2.0-4.9, and > 5 µg /1.

Maximum value: The highest concentration found

Mean 1: Arithmetic mean value of all samples (both positive and negative samples).

Mean 2: Arithmetic mean value of positive samples.

Median: 50^{th} percentile

Evidence of AQA: Evidence of Analytical Quality Assurance: Yes or no; more information can be given in form 4.

Random or target: Were the samples. taken randomly or from a special group of people.

Geographical origin: Specify geographical region covered (national, regional, urban, rural)

Representative for the Member State: Are the data evaluated to be representative for the contamination level of Ochratoxin A in human blood/milk in the Member State: Yes or no; more information can be given in form 4.

Analytical method: HPLC/Fluor, TLC .....

5.Other sources of Ochratoxin A intake

It is recognised that airborne particulate contaminated by mycotoxin can represent a source of mycotoxin for human. Participant are requested to fill in Table 5 with data on Ochratoxin A contamination in workplaces and house, wherever available. Form 5 should contain relevant information on the source of the data provided in Table 5.

6. Present regulations for Ochratoxin A

Information on present maximum limits for content of Ochratoxin A in food and beverages is asked to be given in form 6.

Form 1. Occurrence data Country:

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)

Annex 4

Glossary

AQA Analytical Quality Assurance

HPLC High Performance Liquid Chromatography

LOD Limit of Detection

LOQ Limit of Quantification (determination)

OA Ochratoxin A

SCF Scientific Committee for Food

SCOOP Scientific Co-operation on Question relating to Food (Directive 93/5/EEC)

Annex 5

List of participants

Participating Country	Nominated Institute
Italy (Co-ordinators)	Marina Miraglia Istituto Superiore di Sanità Laboratorio Alimenti Reparto Chimica dei Cereali Viale Regina Elena 299 I -00161 Rome Tel: 39 6 4990 2367 Fax: 39 6 4990 2377 e-mail: miraglia@iss.it Carlo Brera Istituto Superiore di Sanità Laboratorio Alimenti Reparto Chimica dei Cereali Viale Regina Elena 299 I -00161 Rome Tel: 39 6 4990 2367 Fax: 39 6 4990 2377 e-mail: carlo.brera@iss.it
Denmark	Kevin Jorgensen Danish Veterinary and Food Administration, IFEF Morkhoj Bygade 19 DK-2860 Soborg Tel: 45 33 95 64 93 Fax: 45 33 95 66 96 e-mail: kej@vfd.dk
Finland	Anja Hallikainen National Food Agency P.O. Box 28 FIN-00581 Helsinki Tel: 358 9 3931 540 Fax: 358 9 3931 592 e-mail: anja.hallikainen@elintarvikevirasto.fi
France	Jean-Charles Leblanc Institut National de la Recherche Agronomique INA-PG 16 rue Claude Bernard F-75231 Paris CEDEX 05 Tel: 33 144 08 72 79 Fax: 33 144 08 72 76 e-mail: jleblanc@inapg.inra.fr

	Philippe Verger Institut National de la Recherche Agronomique 147, rue de l'université F-75338 Paris CEDEX 07 Tel: 33 142 75 94 93 Fax: 33 142 75 91 87 e-mail: Philippe.Verger@paris.inra.fr
Germany	Rudolf Weber Bundesinstitut fur gesundheitlichen Verbraucherschutz und Veterinarmedezin (BGVV) Thielallee 88-92, (Postfach 14191) D-14195 Berlin Tel: 49 30 84 12 32 98 Fax: 49 30 84 12 47 41 e-mail: r.weber@bgvv.de
Greece	Eleni Foufa and Mrs Irene Stefanaki Ministry of Finance General State Chemical Laboratory Division of Environment 16 An. Tsocha Str GR- 115 21 Athens Tel: 30 1 64 79 427, 64 79 457 Fax: 30 1 64 65 123 e-mail: gxk-environment@ath.forthnet.gr
Ireland	Alan W.D. Dobson University College Cork Microbiology Department IRE - Cork Tel: 353 21902 743 Fax: 353 21903 101 e-mail: a.dobson@ucc.ie
Norway	Arne Vidnes Norwegian Food Control Authority Postbox 8187 Dep. N - 0034 Oslo Tel: 47 22 24 67 59 Fax: 47 22 24 66 99 e-mail: arne.vidnes@snt.dep.telemax.no
Portugal	Ilidia Felgueiras Departamento de Tecnologia das Industrias Alimentares INETI-DTIA Estrada do Pago do Lumiar 22 1694-038 Lisboa Tel., 351 1716 27 12 Ext.2921 Fax: 351 1 716 37 86 e-mail: Ilidia.Felgueiras@mail2.ineti.pt

Spain	Marìa Isabel Garcìa Fajardo Servicio de Normativa Técnica Subdirecciòn General de Higiene Alimentaria Direcciòn General de Salud Pùblica y Consumo Paseo del Prado, 18-20 28078 Madrid Tel: 34 91 59 61 999 Fax: 34 91 59 64 487 e-mail: igarciaf@msc.es Pedro A. Burdaspal Area Quìmica Centro Nacional de Alimentaciòn Instituto de Salud Carlos III 28220 MAJADAHONDA (Madrid) Tel: 34 91 5097931 Fax: 34 91 5097926 e-mail: pburdas@isciii.es
Sweden	Ann Thuvander National Food Administration Hamnesplanaden 5, (Box 622) SE 751 26 Uppsala Tel: 46 18 17 57 63 Fax: 46 18 10 58,48 e-mail: anth@slv.se
The Netherlands	H.P.van Egmond National Institute for Public Health and Environmental Protection Antonie van Leeuwenhoeklaan 9 NL - 3721 MA Bilthoven Tel: 3130 274 24 40 Fax: 3130 274 44 03 e-mail: hp.vanegmond@rivm.nl
United Kingdom	Wendy Matthews Food Standards Agency Rm 703C Aviation House 125 Kingsway London WC2B 6NH Tel: 44 20 7276 8708 Fax: 44 20 7276 8717 e-mail: wendy.matthews@foodstandards.gsi.gov.uk

Scientific Advisers

Anna Ferro luzzi
Director Unit of Human Nutrition
National Research Institute for Food and Nutrition
Via Ardeatina 546
00178 Rome, Italy
Tel: 39 06 5032412
Fax: 39 06 5031592
e-mail: afl@inran.it

Aida Turrini
Unit of Statistics ad Food Economics
National Research Institute for Food and Nutrition
Via Ardeatina 546
00178 Rome, Italy
Tel: 39 06 5032412
Fax: 39 06 5031592
e-mail: turrini@inran.it

Annex 6

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Denmark														
Beer	DM2	2/1995	21	0,001		21						0,16	0,049	0,029
Roasted coffee	DM5	2/1995	11	0,1		10		1				3,17	0,51	0,21
Wheat	GC1	1/1993-97	247	0,01	101	139	4	1	1	0	1	31,6	0,27	0,03
Rye	GC5	1/1993-97	247	0,01	67	158	12	3	4	1	2	33,3	0,70	0,07
Wheat flour	CF2	1/1993-97	116	0,01	27	85	3			1		16	0,36	0,15
Rye flour	CF4	1/1993-97	107	0,01	11	85	6		4		1	29,7	0,89	0,22
Pulses	VD	2/1995	22	0,1	22							0,05	0,05	0,05
Finland														
Raisins	DF	1998	2	0,2/0,5	0/0	1/1			1			5,0	2,85	0,7/5,0
Raisins	DF	1999	29	0,2/0,5	9/13	9/5	9	1	1			7,0	1,24	0,7
Beer	DM2	1999	13	0,05/	5/12	8/1						0,06	0,03	0,01
Red wine	DM3	1998	54	0,01/0,05	17/26	35/26	2					1,9	0,14	0,05
Red wine	DM3	1999	112	0,01/	43/67	69/45	3					1,29	0,13	0,03
White wine	DM11	1999	10	0,05/	3/5	7/5						0,39	0,14	0,05
Red fruit wine	DM9	1999	2	0,05/	2/2	0/0						0,025	0,025	0,025
White fruit wine	DM9	1999	1	0,05/	1/1	1/0						0,025	0,025	0,025
Roasted coffee	DM5	1997	15	0,5/1,0	10/15	5/0						0,9	0,39	0,25
Roasted coffee	DM5	1998	10	0,2/0,5	1/5	4/0	4	1				3,0	1,03	1,2
Roasted coffee	DM5	1999	11	0,2/0,5	8/10	3/1						0,7	0,21	0,1
Instant coffee	DM6	1997	25	0,5/1,0	5/10	5/0	12	2	1			5,0	1,45	1,3
Instant coffee	DM6	1998	7	0,2/0,5	1/2	3/2	1	1	1			6,0	1,77	1,8
Instant coffee	DM6	1999	8	0,2/0,5	2/3	1/0	4		1			7,0	1,98	1,6
Green coffee	SB1	1995	99	0,5/1,0	78/82	4/0	10		5	2		23,0	1,02	0,25
Green coffee	SB1	1996	202	0,5/1,0	120/128	8/0	36	14	18	6		19,0	1,69	0,25
Green coffee	SB1	1997	148	0,5/1,0	82/110	28/0	22	5	6	2	3	80,0	2,06	0,25
Green coffee	SB1	1998	119	0,2/0,5	55/68	29/16	16	12	6	1		24	1,27	0,3
Green coffee	SB1	1999	97	0,2/0,5	70/81	13/2	10	2	2			7,0	0,55	0,1
Wheat	GC1	1995	19	0,5/1,0	18/19	1/0						0,7	0,27	0,25
Wheat	GC1	1996	23	0,5/1,0	22/22	0/0	1					2,0	0,33	0,25
Wheat	GC1	1997	16	0,5/1,0	15/16	1/0						0,7	0,28	0,25
Wheat	GC1	1998	21	0,2/0,5	20/20		1					1,0	0,14	0,1
Wheat	GC1	1999	46	0,2/0,5	43/44	2/1		1				3,0	0,18	0,1
Oat	GC3	1999	7	0,2/0,5	7/7							<LOD	0,10	0,1
Millet	GC4	1996	5	0,5/1,0	5/5							<LOD	0,25	0,25
Millet	GC4	1997	2	0,5/1,0	2/2							<LOD	0,25	0,25
Millet	GC4	1998	1	0,2/0,5	1/1							<LOD	0,10	0,1
Rye	GC5	1995	13	0,5/1,0	13/13							<LOD	0,25	0,25
Rye	GC5	1996	8	0,5/1,0	7/7	0/0	1					1,6	0,42	0,25
Rye	GC5	1997	5	0,5/1,0	4/4					1		17,0	3,6	0,25
Rye	GC5	1998	15	0,2/0,5	12/12		3					2,3	0,37	0,1
Rye	GC5	1999	11	0,2/0,5	7/10	4/1						0,7	0,24	0,1
Barley	GC6	1997	6	0,5/1,0	6/6							<LOD	0,25	0,25
Barley	GC6	1998	4	0,2/0,5	3/4	1/0						0,2	0,10	0,1
Barley	GC6	1999	11	0,2/0,5	8/10	3/1						0,7	0,21	0,1
Other cereals	GC7	1996	12	0,5/1,0	10/10	0/0				1	1	41,0	5,04	0,25

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Other cereals	GC7	1997	7	0,5/1,0	6/6			1				3,0	0,64	0,25
Other cereals	GC7	1998	7	0,2/0,5	6/7	1/0						0,3	0,13	0,1
Other cereals	GC7	1999	11	0,2/0,5	10/10		1					2,0	0,27	0,1
Other derived products of plant origin	CF4	1998	9	0,2/0,5	7/8	1/0	1					1,0	0,23	0,1
Other juice fruit	JF2	1998	3	0,01/0,05	1/2	2/1						0,14	0,057	0,03
Miscellaneous commodities of plant origin	SM	1999	3	0,2/0,5	3/3							<LOD	0,10	0,1
Miscellaneous commodities of plant origin	SM	1998	15	0,2/0,5	11/11		2		2			7,0	1,21	0,1
France														
Dried fruits (raisins)	DF	98/99	13	0,03/0,2	7 / -	3	2	1				4,3	0,66	0,2
Dried fruits (others)	DF	98/99	33	0,03/0,5	31 / -	1	1					1,6	0,18	0,1
Domestic wines (all types)	DM9	98/99	34	0,01/0,1	20 / -	14						0,36	0,05	0,01
Imported wines (all types)	DM10	98/99	70	0,01/0,1	20 / -	47	3					1,64	0,22	0,05
Wines together		98/99	104	0,01/0,1	- / 69	31	4					1,64	0,16	0,05
Roasted coffee	DM5	98/99	34	0,3/1	- / 31	1	2					1,6	0,58	0,5
Instant coffee	DM6	98/99	13	0,3/1	- / 10			2	1	0	0	6,4	1,34	0,5
Green coffee	SB1	98/99	42	0,3/1	- / 22	6	2	5	1	1	5	65,5	6,55	0,2
Coffee together (green, instant & roasted)		98/99	89	0,3/1	- / 64	6	4	7	2	1	5	65,5	1,03	0,5
Wheat	GC1	98/99	22	0,2/0,5	- / 21	1						0,9	0,28	0,25
Corn	GC2	98/99	18	0,2/0,5	- / 17		1					1,1	0,3	0,25
Oat	GC3	98/99	1	0,2/0,5	- / 1							0,25	0,25	0,25
Barley	GC6	98/99	7	0,2/0,5	- / 6		1					2	0,5	0,25
Rice	GC7	98/99	16	0,2/0,5	- / 14		2					1,4	0,37	0,25
Breakfast food grains		98/99	11	0,2/0,5	- / 7	2	2					1,8	0,56	0,25
Cereals together	GC	98/99	75	0,2/0,5	- / 66	3	6					2,0	0,35	0,25
Fruit juices	JF	98/99	19	0,01/0,2	- / 18			1				3,45	0,22	0,05
Pork edible offal	MO1	97/98	1011	0,05/0,5	- / 908	83	18	1	1			6,1	0,14	0,05
Germany														
Sultanas	DF1	1/1995-98	106	0,01	6	69	19	4	6	2		21,4000	1,2750	0,3150
Others	DF2	1/1995-98	114	0,01	39	74		1				3,9500	0,0790	0,0200
Dried fruits	DF	1/1995-98	220	0,01	45	143	19	5	6	2		21,4000	0,6550	0,0600
Low alcoholic beer	DM1	1/1995-98	66	0,005	17	49						0,0810	0,0140	0,0100
Beer	DM2	1/1995-98	251	0,005	212	39						0,2930	0,0276	0,0210
Red wine	DM3	1/1995-98	172	0,01	93	69	8	1	1			7,0000	0,2260	0,0100
Rose wine	DM4	1/1995-98	51	0,01	33	16	2					2,3800	0,1430	0,0100
Sweet wine	DM8	1/1995-98	1	0,01			1					1,04	1,0400	1,0400
White wine	DM11	1/1995-98	56	0,01	44	10	2					1,3600	0,0960	0,0100
Vinegar		1/1995-98	87	0,01	43	33	8	3				4,3500	0,3670	0,0110
Roasted coffee	DM5	1/1995-98	183	0,30	107	51	20	3	2			6,3200	0,5370	0,3000
Instant coffee	DM6	1/1995-98	55	0,30	9	16	19	8	3			9,4700	1,7430	1,0400

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Decaffeinated coffee	DM7	1/1995-98	94	0,30	49	23	21	1				3,3400	0,5960	0,3000
Malt coffee	DM9	1/1995-98	33	0,30	28	5						0,96	0,23	0,15
Cocoa	SB2	1/1995-98	96	0,01	5	88	3					1,8000	0,3650	0,3050
Chocolate + sweets	DM15	1/1995-98	352	0,01	55	295	2					3,6000	0,1000	0,0600
Wheat	GC1	1/1995-98	27	0,01	17	10						0,2600	0,0430	0,0100
Corn	GC2	1/1995-98	31	0,01	17	13		1				3,3470	0,1700	0,0100
Oat	GC3	1/1995-98	29	0,01	5	24						0,55	0,14	0,0510
Millet	GC4	1/1995-98	26	0,01	2	24						0,8310	0,1070	0,0830
Rye	GC5	1/1995-98	26	0,01	14	12						0,8000	0,0490	0,0100
Barley	GC6	1/1995-98	22	0,01	6	16						0,4950	0,0610	0,0370
Rice	GC7	1/1995-98	22	0,10	20	2						0,2800	0,0680	0,1000
Buckwheat	GC8	1/1995-98	20	0,01	11	9						0,5940	0,0490	0,0100
German wheat	GC9	1/1995-98	13	0,01	4	9						0,1800	0,0200	0,0100
Cereal grain	GC	1/1995-98	204	0,01	80	123		1				3,3470	0,0760	0,0240
Milled cereal products (early milling stages) incl. rise	CM	1/1995-98	81		74	7						0,7300	0,0810	0,1000
Bran	CF1	1/1995-98	51	0,01	34	15	2					1,5900	0,0900	0,0100
White wheat flour	CF2	1/1995-98	181	0,01	22	154	5					1,7320	0,1410	0,0590
Corn fractions	CF3	1/1995-98	28	0,01	22	4	2					1,5300	0,1390	0,0100
Rye flour	CF4	1/1995-98	135	0,01	18	107	9		1			6,4000	0,2730	0,0730
(Others)		1/1995-98	72	0,01	18	49	3		1	1		12,0700	0,4440	0,0630
Cereal grain milling fractions	CF	1/1995-98	467	0,01	114	329	21		2	1		12,0700	0,2230	0,0560
Manufactured multi-ingredient cereal products	CP	1/1995-98	682	0,01	240	433	4	1	2		2	31,8000	0,2060	0,0500
Bread and rolls		1/1995-98	986	0,01	89	876	18	1	2			5,5420	0,1720	0,0300
Pasta		1/1995-98	191	0,10	114	84	1			1	1	29,7700	0,4480	0,1000
Beans	VD1	1/1995-98	39	0,10	39							0,1000	0,0500	0,1000
Lentils	VD2	1/1995-98	21	0,10	21							0,1000	0,0500	0,1000
Peas	VD3	1/1995-98	37	0,10	37							0,1000	0,0500	0,1000
Chickpea	VD4	1/1995-98	7	0,10	6	1						0,8600	0,1630	0,1000
Pulses without soya	VD	1/1995-98	104	0,10	103	1						0,8600	0,0580	0,1000
Soya	VD5	1/1995-98	31	0,01	26	5						0,0900	0,0140	0,0100
Tree Nuts	TN	1/1995-98	142	0,01	109	33						0,2700	0,0150	0,0100
Oilseed	SO	1/1995-98	144	0,01	115	27	2					1,7900	0,0500	0,0100
Nuts and seeds														
Herbs	HH		13		11	2						0,1100	0,0800	0,0800
Nutmeg	HS1	1,2,3/1995-98	35		7	7	9	7	4	1		15,2300	3,2900	2,6400
Peppers	HS2	1,2,3/1995-98	32		11	18	3					2,0400	0,4000	0,0700
Paprika	HS4	1,2,3/1995-98	58		7	32	16			3		16,4300	1,5300	0,4600
Macis	HS5	1,2,3/1995-98	5		2	3						0,2100	0,1200	0,0900
Coriander	HS6	1,2,3/1995-98	31		10	10	6	5				3,8800	1,4800	1,0800

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Seed	HS7	1,2,3/1995-98	5		3	2						0,1700	0,1500	0,1500
Spice sauces	HS8	1,2,3/1995-98	122	0,10	97	20	3	2				3,8000	0,0090	0,1000
Other spices	HS9	1,2,3/1995-98	20		12	6	2					1,9200	0,4900	0,1300
Teas	DT	1/1995-98	139	0,30	131	2	5			1		10,3000	0,2840	0,3000
Vegetable oils edible (or refined)	OR	1/1995-98	30	0,10	30							0,1000	0,0500	0,1000
			317	0,005	56	261						0,2930	0,0276	0,0190
			1973	0,01	410	1508	46	6	3			7,0000	0,1727	0,0600
			191	0,10	114	74	1			1	1	29,7700	0,4484	0,0100
			365	0,30	194	94	60	12	5			9,4700	0,7085	0,3000
Miscellaneous derived edible products of plant origin	DM	1/1995-98	2846		774	1937	107	18	8	1	1	29,7700	0,2434	0,0900
Grape juice	JF1	1/1995-98	90	0,01	15	50	20	4	1			5,2610	0,7430	0,1550
(Others)	JF2	1/1995-98	162	0,01	154	8						0,1800	0,0080	0,0100
Fruit juices	JF	1/1995-98	252	0,01	169	58	20	4	1			5,2610	0,0100	0,2700
Meat (from mammals other than marine)	MM	1/1995-98	116	0,01	107	9						0,1360	0,0080	0,0100
Pork meat	MM1	1/1995-98	58	0,01	50	8						0,1360	0,0130	0,0100
Pork edible offal	MO1	1/1995-98	120	0,01	83	33	1		3			9,3300	0,7950	0,0100
Poultry meat (including pigeon meat)	PM	1/1995-98	41	0,01	41							0,005	0,005	0,01
Sausages	MD1	1/1995-98	201	0,01	105	93	1	2				4,5600	0,0940	0,0110
Ham	MD3	1/1995-98	57	0,01	41	16						0,1750	0,0160	0,0100
Salami	MD4	1/1995-98	68	0,01	39	29						0,2650	0,0330	0,0100
(Others)	MD5	1/1995-98	25	0,01	14	11						0,1920	0,0080	0,0100
Dried meat and fish products	MD	1/1995-98	351	0,01	199	149	1	2				4,56	0,064	0,01
Milks	ML	1/1995-98	69	0,005	69							0,0050	0,0025	0,0050
Derived milk products	LD	1/1995-98	195	0,01	176	19						0,8600	0,0160	0,0100
Jam		1/1995-98	75	0,10	71	4						0,2700	0,0570	0,1000
Baby food		1/1995-98	97	0,01	34	60	3					2,1300	0,1170	0,0200
Greece														
Currants	DF4	1/unpubl,1997	20	0,5	-/11		7	1	1			8,4	1,55	0,5
Currants	DF4	1/unpubl,1998	15	0,5	-/10		4	1				3,5	1,0	0,5
Currants	DF4	1/unpubl,1999	12	0,5	3/-	1	4	2	1	1		12,38	3,03	1,81
Sultanas	DF1	1/unpubl,1997	1	0,5	-/1								0,5	
Sultanas	DF1	1/unpubl,1998	15	0,5	-/4		7	3		1		16,5	2,8	1,8
Sultanas	DF1	1/unpubl,1999	3	0,5	3/-								0,25	
Sultanas	DF1	1/unpubl,1999	16	0,5	5/-	2	7	1		1		13,17	1,80	1,09

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Red wine	DM3	1/unpubl,1999	38	0,05	17/-	20	1					2,61	0,16	0,05
Rose wine	DM4	1/unpubl,1999	5	0,05	2/-	3						0,13	0,07	0,07
White wine	DM11	1/unpubl,1999	45	0,05	22/-	22	1					1,17	0,13	0,06
Sweet wine		1/unpubl,1999	7	0,05	1/-	4	2					1,68	0,54	0,22
Green coffee	SB1	1/unpubl,1997	14	0,5	-/1		2		2	3	6	200,9	43,4	18,9
Green coffee	SB1	1/unpubl,1997	7	0,5	-/1		2		2	2		13,6	7,2	7,7
Green coffee	SB1	1/unpubl,1998	6	0,5	-/1		2	1		2		13,3	5,6	3,0
Green coffee	SB1	1/unpubl,1999	17	0,5	14/-			2	1			7,4	1,1	0,25
Roasted coffee	DM5	1/unpubl,1998	5	0,5	-/5								0,5	0,5
Roasted coffee	DM5	1/unpubl,1999	11	0,5	1/-		7	1	2			7,2	2,5	1,2
Instant coffee	DM6	1/unpubl,1999	3	0,5	-		3					2,6	2,1	2,4
Decaffeinated coffee	DM7	1/unpubl,1999	2	0,5	2/-								0,25	
Ireland														
Roasted coffee	DM5	1998	6	0,36						6		<20	<20	
Roasted coffee	DM5	1999	15	0,36		13	1			1		10	1,6	
Rice	GC7	1999	5	0,36			3	2				<5	<3,2	
Oat	GC3	1999	1	0,36				1				<5		
Cereals	CF	1998	17	0,36		17						<1	<1	
Cereals	CF	1999	13	0,36		12	1					1,9	<1	
Cereals	CF	1999	12	0,36		11	1					<1	<1	
Bran	CF1	1998	1	0,36		1					1	27	27	
Bran	CF1	1999	1	0,36				1				<5		
White wheat flour	CF2	1998	15	0,36		15						<1	<1	
White wheat flour	CF2	1999	19	0,36		19						<1	<1	
White wheat flour	CF2	1998	7	0,36			1	6				<4	3,7	
White wheat flour	CF2	1999	3	0,36		3						<1	<1	
Oat cereals	CF4	1998	3	0,36				3				<4	<4	
Rice cereals	CF4	1998	2	0,36				2				<4	<4	
Cereal grain milling fraction (*wholemeal*)	CF	1998	3	0,36		10		3				<4	<4	
Manufactured multi-ingredient cereal products (*breakfast cereals*)	CP	1998	6	0,36				6				<4	<4	
Manufactured multi-ingredient cereal products (*bran and breakfast cereals*)	CP	1999	9	0,36			4	5				<5	4,1	
Cereal grains (*buckwheat*)	GC	1999	1	0,36				1				<5	<5	
Baby food	SM	1999	6	0,36				6				<5	<5	

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Italy														
Beer	DM2	1999	6	0,025	6							0,0125	0,0125	0,0125
Beer	DM2	1999	8	0,025	8							0,0125	0,0125	0,0125
Domestic beer	DM2	1999	10	0,005	7	3						0,022	0,0098	0,005
Imported beer	DM2	1999	51	0,005	24	27						0,135	0,022	0,012
Red wine	DM3	1999	60	0,01	9	43	8					1,5	0,461	0,41
Red wine	DM3	1992-1999	184	0,005	25	89	42	9	12	7		15,6	1,565	0,357
White wine	DM11	1999	20	0,005	13	5	1		1			8,864	0,596	0,0025
Rosé wine	DM4	1999	4	0,005	2	2						0,283	0,131	0,122
Sweet wine	DM8	1988-1997	15	0,005	6	5	2	2				3,856	0,736	0,008
Roasted coffee	DM5	1999	24	0,05	22			2				3,2	0,3	0,05
Roasted coffee	DM5	1999	3	0,1		3						0,6	0,4	0,4
Roasted coffee	DM5	1999	26	0,1	24	2						2,7	0,23	0,05
Roasted coffee	DM5	1999	19	0,4	12	2	2	3				3,6	0,2	0,2
Roasted coffee	DM5	1999	40	0,5	26	7	7					2,79	0,559	0,25
Roasted coffee	DM5	1999	17	0,5	17							0,25	0,25	0,25
Roasted coffee	DM5	1999	5	0,5	4			1				3,6	0,92	0,25
Roasted coffee	DM5	1999	16	0,5	16							0,25	0,25	0,25
Roasted coffee	DM5	1999	40	0,6	23	4	10	2		1		11,5	1,13	0,3
Roasted coffee	DM5	1999	8	1	8							0,50	0,50	0,50
Instant coffee	DM6	1999	3	0,1	3							0,05	0,05	0,05
Instant coffee	DM6	1999	6	0,5	3	2	1					1,6	0,64	0,475
Instant coffee	DM6	1999	1	0,5	1							0,25	0,25	0,25
Instant coffee	DM6	1999	3	0,6	3							0,3	0,3	0,3
Decaffeinated roasted coffee	DM7		2	0,5	2							0,25	0,25	0,25
Instant decaffeinated coffee	DM12		2	0,1	2							0,05	0,05	0,05
Green coffee	SB1	1999	15	1	11			3			1	33,7	3,37	0,5
Green coffee	DM5	1999	4	0,1	1	3						0,35	0,21	0,225
Green coffee	DM5	1999	15	0,1	15							0,05	0,05	0,05
Green coffee	DM5	1999	137	0,1	77	11	12	20	11	5	1	30,5	2,18	0,005
Green coffee	DM5	1999	34	0,2	14	2	7	5	6			7,4	2,16	1,1
Green coffee	SB1	1999	11	0,5	10				1			5	0,68	0,25
Green coffee	SB1	1999	1	0,5	1							0,25	0,25	0,25
Green coffee	SB1	1999	264	0,6	246	3	9	2	2	1	1	28	0,58	0,3
Green coffee	SB1	1999	38	0,2	20	15	2	1				3,10	0,38	0,1
Green coffee	SB1	1999	27	0,5	27							0,25	0,25	0,25
Green coffee	SB1	1999	18	0,5	10	3	1	1	1	1	1	42	4,07	0,25
Coffee	DM13	1999	10	0,25	10							0,125	0,125	0,125
Wheat	GC1	1999	30	0,05	30							0,025	0,025	0,025
Corn	GC2	1999	9	0,5	9							0,25	0,25	0,25
Corn	GC2	1999	40	0,05	33	4	2	1				4,9	0,28	0,25
Rye	GC5	1999	42	0,1	42							0,05	0,05	0,05
Barley	GC6	1999	1	0,5	1							0,25	0,25	0,25

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Barley	GC6	1999	24	0,05	18	5	1					3,9	0,523	0,025
Rice	GC7	1999	1	0,5	1							0,25	0,25	0,25
Malt	GC11	1999	9	0,5	9							0,25	0,25	0,25
Olive oil		1999	12	0,01	11	1						0,6	0,0545	0,005
Wheat flour	CF2	1999	1	0,2		1						0,2	0,2	0,2
White wheat flour	CF2	1999	2	0,4	2							0,2	0,2	0,2
Spices	HS	1999	5	0,4		1	2			2		23,8	8,04	2,4
Salami	MD4	1999	8	0,5	8							0,25	0,25	0,25
Norway														
Roasted coffee	DM5	6/1997	50	0,1	28	29	2	1				4,1	0,29	0,1
Green coffee	SB1	7/1999	98	0,01	17	53	21	4	3			7,9	0,9	0,27
Wheat	GC1	2/1995	13	0,25	10	1	1		1			8,2	0,89	0,125
Wheat	GC1	2/1995	32	0,25	29	3						0,6	0,15	0,125
Wheat	GC1	3/1996	14	0,3	12	1			1			7,48	0,68	0,15
Wheat	GC1	3/1996	28	0,3	28							0,15	0,15	0,15
Wheat	GC1	4/1997	10	0,01	2	8						0,56	0,144	0,04
Wheat	GC1	4/1997	25	0,01	7	16	1	1				3,52	0,218	0,01
Wheat	GC1	5/1998	18	0,05	13	5						0,54	0,1	0,025
Wheat	GC1	5/1998	53	0,05	45	6	1			1		19,9	0,47	0,025
Oat	GC3	2/1995	21	0,25	20			1				4,2	0,32	0,125
Oat	GC3	3/1996	14	0,3	14							0,15	0,15	0,15
Oat	GC3	4/1997	14	0,01	7	7						0,23	0,053	0,0075
Oat	GC3	5/1998	23	0,05	16	7						0,47	0,06	0,025
Rye	GC5	2/1995	4	0,25	3		1					2,5	0,72	0,125
Rye	GC5	3/1996	4	0,3	4							0,15	0,15	0,15
Fruit juice	JF	10 /1999	3	0,001	3							0,0005	5E-04	0,0005
Fruit juice	JF	10/1999	4	0,0005	4							0,00025	3E-04	
Fruit juice	JF	10/1999	5	0,001	4	1						0,003	0,001	0,0005
Fruit juice	JF	10/1999	7	0,0005	5	2						0,006	0,001	
Grape juice	JF1	10/1999	28	0,001	1	27						0,56	0,13	0,042
Other fruit Juice	JF2	10/1999	4	0,0005		4						0,016	0,007	0,005
Derived milk product	LD	8/1998	100	0,01/0,03	57/85	/15						0,119	0,01	0,005
Milk	ML	1/1998	40	0,01	34	6						0,058	0,009	0,005
Milk	ML	1/1998	47	0,01	40	7						0,028	0,007	0,005
Milk	ML	1/1998	20	0,01	20							0,005	0,005	0,005
Milk	ML	9/1998	58	0,03	58							0,015	0,015	0,015

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				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Portugal														
Beer	DM2	1/1999	7	0,0005/0,002	3/4	3						0,006	0,002	0,00025
Rose wine	DM4	3/1999	30	0,02/0,04	30/30							0,01	0,01	0,01
Sweet wine	DM8	3/1999	31	0,02/0,04	31/31							0,01	0,01	0,01
Roasted coffee	DM5	1/1998	8	0,3/0,9	0/3		5					2,20	1,70	1,80
Roasted coffee	DM5	1/1999	25	0,3/0,9	7/24		1					2,70	0,25	0,15
Instant coffee	DM6	1/1998	2	0,3/0,9	2/2							0,15	0,15	0,15
Succedaneum coffee	DM12	1/1998	1	0,3/0,9	0/1							0,15	0,15	0,15
Succedaneum coffee	DM12	1/1999	2	0,3/0,9	0/2							0,15	0,15	0,15
Wheat	GC1	1/1998	26	0,3/0,9	26/26							0,15	0,15	0,15
Wheat	GC1	2/1999	8	0,5/1	6/8							0,25	0,25	0,25
White wheat flour	CF2	2/1999	8	0,5/1	6/8							0,25	0,25	0,25
Nutmeg	HS1	1/1999	3	0,2/0,7		1			2			8,5	5,5	7,1
Sweet pepper	HS10	1/1999	6	0,2/0,7	2/3		2	1				4,3	1,42	0,73
Spain														
Low alcoholic beer	DM1	1997	8	0,004		8						0,024	0,02	0,02
Beer	DM2	1997	30	0,004	1	29						0,075	0,04	0,02
Red wine	DM3	1997	72	0,003	6	66						0,603	0,04	0,01
Rose wine	DM4	1997	26	0,003	2	24						0,155	0,03	0,02
Sweet wine	DM8	1997	16	0,003	1	7	8					2,54	1,09	0,86
White wine	DM11	1997	44	0,003	8	36						0,267	0,03	0,01
Aperitif wine	DM12	1997	27	0,003	4	23						0,254	0,06	0,01
Sparkling wine	DM13	1997	12	0,003	2	10						0,037	0,01	0,01
Roasted coffee	DM5	1997	29	0,11	0	15	13		1			5,64	1,17	0,93
Instant coffee	DM6	1997	9	0,11	0	8	1					1,08	0,5	0,37
Corn	GC2	1992	30	0,5	29		1					2,5	0,56	0,25
Rice	GC7	1992	24	0,5	24							0,25	0,25	0,25
Wheat bread		1998/1999	93	0,005/0,01	0	89	3		1			7,37	0,45	0,28
Grape juice	JF2	1997	8	0,003		8						0,176	0,04	0,04
Sweden														
Beer	DM2	2/1999	5	0,003		5						0,03	0,02	0,01
Red wine	DM3	2/1999	32	0,003	1	29	2					2,47	0,21	0,05
Roasted coffee	DM5	2/1999	20	0,01	1	19						0,49	0,16	0,11
Instant coffee	DM6	2/1999	5	0,01		4	1					1,2	0,37	0,13
Wheat	GC1	1/97-98	37	0,1	30	6	1					1	0,17	0,05
Wheat	GC1	1/97-98	20	0,1	11	6	3					2,3	0,47	0,05
Wheat	GC1	2/1999	73	0,1	35	34	2	1	1			5,2	0,36	0,06
Wheat	GC1	2/1999	2	0,1	1		1					2,9	1,50	1,5
Oat	GC3	1/97-98	23	0,1	16	6		1				3,6	0,32	0,05
Oat	GC3	2/1999	10	0,1	8	2						0,15	0,07	0,05
Rye	GC5	1/97-98	28	0,1	8	15	5					2,3	0,77	0,37
Rye	GC5	2/1999	19	0,1	6	10	1	1			1	27	1,8	0,13
Chick peas	VD4	1/97-98	10	0,1	9		1					1,2	0,17	0,05
Yellow peas	VD6	1/97-98	20	0,1	19	1						0,78	0,09	0,05
Brown peas	VD7	1/97-98	20	0,1	18	1	1					1,9	0,18	0,05
Milks	ML	3/1991	36	0,01	31	5						0,03	0,008	0,005

Table 1
Summary of occurrence data for Ochratoxin A in different food products reported from the participating countries.

Food product	Code	Ref/Year	No. of samples	LOD/LOQ	N° of samples	Number of samples containing Ochratoxin A in the range (ug/kg)						Max value	Mean 1 value	Median value
				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
The Netherlands														
Red wine	DM3	2/1999	84	0,05	55	28	1					1,20	0,15	0,050
Red wine	DM3	5/1999	66	0,1	34	23	8	1				3,10	0,36	0,0500
White wine	DM11	2/1999	16	0,05	14	1	1					2,10	0,20	0,050
White wine	DM11	5/1999	4	0,01	4							0,005	0,005	0,005
Roasted coffee	DM5	3/1995	38	0,5	1	3	33	1				3,90	1,79	1,60
Roasted coffee	DM5	3/1995	39	1	34		3	2				3,40	0,70	0,50
Roasted coffee	DM5	4/1997,1999	67	0,5	52	12	2	-	1			5,00	0,40	0,25
Roasted coffee	DM5	2/1999,1998	14	0,13	7	6		1				3,30	0,41	0,13
Instant coffee	DM6	3/1995	6	0,5	3		2	1				3,60	1,50	1,05
Instant coffee	DM6	3/1995	7	1	5		2					2,80	0,90	0,50
Instant coffee	DM6	2/1998-99	2	0,25	1			1				4,50	2,3125	0,25
Roasted decaffeinated coffee	DM7	3/1995	6	0,5	2	2	2					2,30	0,90	0,55
Roasted decaffeinated coffee	DM7	3/1995	4	1	4							0,50	0,50	0,50
Roasted decaffeinated coffee	DM7	2/1998-99	5	0,13	4	1						0,20	0,10	0,13
Cocoa (powder)	SB3	2/1996	6	0,25	6							0,125	0,125	0,125
Cocoa mass	SB4	2/1996	1	0,25	1							0,125	0,125	0,125
Cocoa butter	SB5	2/1996	4	0,25	4							0,125	0,125	0,125
Chocolate spread	SB6	2/1996	8	0,25	8							0,125	0,125	0,125
Wheat domestic	GC1	1/1995	7	1	7							0,50	0,5	0,5
Wheat import	GC1	1/1995	24	1	23				1			8,70	0,8	0,5
White wheat flour	CF2	2/1996,97	31	0,25	30		1					1,50	0,17	0,13
Buckwheat (flour)	CF6	2/1998	1	0,25			1					2,00	2,00	2,00
Whole-wheat meal	CF7	2/1996-98	19	0,25	19							0,125	0,125	0,125
Peanuts (ready for consumption)	SO	2/1996	12	0,25	12							0,125	0,125	0,125
Pepper (Piper nigrum)	HS2	2/1996-97	6	0,25	5	1						0,80	0,24	0,125
Paprika powder (Capsicum annuum)	HS4	2/1996-98	12	0,25	3	4	3	1	1			9,80	1,74	0,60
Peppers Powder (Capsicum frutescens)	HS9	2/1996	8	0,25	2	1	1			4		14,5	6,47	6,10
Peanut butter		2/1996	4	0,25	4							0,125	0,125	0,125
Tree nuts (pistachio)	TN	2/1996	3	0,25	3							0,125	0,125	0,125
United Kingdom														
Dried fruits (sultanas)	DF1	FSIS 130/1997	20	0,2/0,2	3	2	6	2	3	4		18,10	4,9	2,0
Dried fruits (sultanas)	DF1	FSIS 185/1999	100	0,1/0,2	13	23	33	13	8	9	1	25,10	3,4	1,6
Dried fruits (apricots)	DF3	FSIS 130/1997	20	0,2/0,2	20							0,10	0,1	0,1
Dried fruits (currants)	DF4	FSIS 130/1997	20	0,2/0,2	1		4	4	6	3	2	53,60	9,2	5,4
Dried fruits (currants)	DF4	FSIS 185/1999	100	0,1/0,2	4	13	38	17	16	8	4	40,80	5,0	2,6
Dried fruits (dates)	DF5	FSIS 130/1997	20	0,2/0,2	19	1						0,20	0,10	0,1
Dried fruits (raisins)	DF6	FSIS 130/1997	20	0,2/0,2	3	10	2	1	3	1		20,00	2,8	0,7
Dried fruits (raisins)	DF6	FSIS 185/1999	101	0,1/0,2	8	39	28	11	8	6	1	29,80	2,9	1,1
Dried fruits (figs)	DF7	FSIS 185/1999	20	0,1/0,2	18	2						0,80	0,10	0,05
Dried vegetables (butter beans)	DV1	FSIS 130/1997	12	0,2/0,2	11					1		13,70	1,2	0,1
Dried vegetables (butter beans)	DV1	FSIS 185/1999	24	0,1/0,2	24							0,05	0,05	0,05
Dried Vegetables (chick peas)	DV2	FSIS 130/1997	14	0,2/0,2	14							0,10	0,1	0,1
Dried vegetables (green lentils)	DV3	FSIS 130/1997	10	0,2/0,2	10							0,10	0,1	0,1
Dried vegetables (red kidney beans)	DV4	FSIS 130/1997	17	0,2/0,2	16					1		15,40	1,0	0,1
Dried vegetables (red kidney beans)	DV4	FSIS 185/1999	26	0,1/0,2	26							0,05	0,05	0,05

Table 1
Summary of occurrence data for Ochratoxin A in different food products reported from the participating countries.

Food product	Code	Ref/Year	No. of samples	LOD/LOQ	N° of samples	Number of samples containing Ochratoxin A in the range (ug/kg)						Max value	Mean 1 value	Median value
				ug/kg	<LOD/LOQ	LOD/LOQ-0,9	1,0-2,9	3,0-4,9	5,0-9,9	10,0-24,9	> 25,0	ug/kg	ug/kg	ug/kg
Dried vegetables (red lentils)	DV5	FSIS 130/1997	11	0,2/0,2	11							0,10	0,1	0,1
Beer	DM2	FSIS 130/1997	20	0,2/0,2	20							0,10	0,1	0,1
Red wine	DM3	FISIS 185/1999	50	0,01/0,02	22	28						0,80	0,1	0,0
Red wine	DM3	FSIS 130/1997	10	0,2/0,2	6	2	2					1,10	0,5	0,4
White wine	DM11	FSIS 130/1997	10	0,2/0,2	10							0,10	0,1	0,1
Roasted coffee	DM5	FSIS 73/1995	20	0,1/0,2	3	12	5					2,10	0,6	0,4
Instant coffee	DM6	FSIS 73/1995	71	0,1/0,2	11	41	12	4	3			8,00	1,0	0,5
Decaffeinated coffee	DM7	FSIS 73/1995	9	0,1/0,2	5	2	2					2,50	0,5	0,05
Green coffee	SB1	FSIS 80/1996	291	0,2/0,26	181	67	28	2	11		2	27,30	0,8	0,1
Others (cocoa powder)		FSIS 130/1997	20	0,2/0,2	1	14	5					1,10	0,7	0,7
Others (chocolate)		FSIS 185/1999	40	0,1/0,2	22	18						0,60	0,2	0,1
Others (cocoa powder)		FSIS 185/1999	20	0,1/0,2			20					2,40	1,7	1,5
Others (coconut desiccated)		FSIS 130/1997	10	0,2/0,2	10							0,10	0,1	0,1
Wheat	GC1	FSIS 130/1997	76	0,2/0,2	74	1	1					2,4	0,14	0,1
Wheat	GC1	FSIS171/1999	62*	0,1/0,2	57	2	2		1			6,3	0,21	0,05
Maize	GC2	FSIS 192/1999	139	0,1/0,2	127	10	2					1,5	(?)	0,05
Oats	GC3	FSIS 130/1997	18	0,2/0,2	17				1			5,9	0,42	0,1
Oats	GC3	FSIS171/1999	4*	0,1/0,2	4							0,05	0,05	0,05
Rye	GC5	FSIS 130/1997	22	0,2/0,2	21		1					1,1	0,15	0,1
Barley	GC6	FSIS171/1999	30*	0,1/0,2	26	2		2				4,50	0,32	0,05
Barley	GC6	FSIS 130/1997	37	0,2/0,2	34	2			1			6,40	0,30	0,10
White wheat flour	CF2	FSIS 95/1996	6	0,1/0,2	1	4	1					1,70	0,50	0,30
Wholemeal flour		FSIS 95/1996	8	0,1/0,2	1	6			1			5,30	1,00	0,50
Manufactured multi-ingredients (retail biscuits)	CP	FSIS 95/1996	1	0,1/0,2	0	1						0,40	0,40	0,40
Others (biscuits-raw materials)		FSIS 95/1996	18	0,1/0,2	8	8		1	1			6,40	0,80	0,20
Others (breakfast cereal-raw materials)		FSIS 95/1996	54	0,1/0,2	38	12	3		1			6,50	0,40	0,05
Others (breakfast cereal-retail)		FSIS 95/1996	29	0,1/0,2	16	9	4					1,70	0,40	0,05
Others (pasta-dried)		FSIS 95/1996	8	0,1/0,2	2	3	3					1,30	0,70	0,70
Others (raw material for pasta)		FSIS 95/1996	13	0,1/0,2	5	6	2					1,60	0,50	0,40
Others (baked beans-cut price)		FSIS130/1997	25	0,2/0,2	25							0,10	0,10	0,10
Others (baked beans-normal price)		FSIS 130/1997	25	0,2/0,2	24	1						0,30	0,11	0,10
Black pudding	MO2	25/1990	32	/1,0	28	N/A	N/A	N/A	N/A	N/A	N/A	1,80	0,60	0,05
Pig kidney	MO3	25/1990	104	/1,0	89	N/A	N/A	N/A	N/A	N/A	N/A	9,30	0,80	0,05
Others (pork liver sausage/pate)		FSIS 130/1997	10	0,2/0,2	9	1						0,20	1,10	0,10
Salami (pork)	MD4	FSIS 130/1997	9	0,2/0,2	9							0,10	0,10	0,10
Tree nuts	TN	FSIS 130/1997	10	0,2/0,2	10							0,10	0,10	0,10
Grape juice	JF1	FSIS 185/1999	20	0,01/0,02	1	16	3					2,10	0,50	0,30

Table 1 bis
Summary of contributions of member states to OA occurrence data in foodstuffs in each task

Food product	Task 3.2.2			Task 3.2.7		
	n. samples	n. positive	% positive samples	n. samples	n. positive	% positive samples
Baby food	59	2	3,4%	103	69	67,0%
Barley	414	37	8,9%	142	34	23,9%
Barley and derivatives	15	0	0,0%	-	-	-
Beer	300	99	33,0%	496	162	32,7%
Black pudding	32	4	12,5%	32	4	12,5%
Bran	293	113	38,6%	53	19	35,8%
Cocoa and products	20	1	5,0%	547	445	81,4%
Cereal and products	1202	338	28,1%	2212	1543	69,8%
Corn	-	-	-	128	23	18,0%
Corn and derivatives	-	-	-	28	6	21,4%
Dried fruits	137	9	6,6%	800	582	72,8%
Fruit products	-	-	-	353	147	41,6%
Green coffee	46	22	47,8%	1704	620	36,4%
Maize	1431	93	6,5%	139	12	8,6%
Maize and derivatives	4	1	25,0%	-	-	-
Malt	-	-	-	9	0	0,0%
Meat and products	2009	209	10,4%	1828	332	18,2%
Millet	2	1	50,0%	34	24	70,6%
Millet and derivatives	1	0	0,0%	81	7	8,6%
Milk and derivatives	36	0	0,0%	565	52	9,2%
Oat	197	55	27,9%	165	50	30,3%
Oat and derivatives	94	4	4,3%	-	-	-
Olive oil	-	-	-	12	1	8,3%
Rice	122	10	8,2%	68	9	13,2%
Coffee	177	111	62,7%	1205	570	47,3%
Rye	1403	387	27,6%	444	236	53,2%
Rye and derivatives	64	14	21,9%	242	213	88,0%
Spices and derivatives	107	64	59,8%	361	188	52,1%
Wheat	2909	487	16,7%	867	275	31,7%
Wheat and derivatives	11	0	0,0%	608	371	61,0%
Wine	-	-	-	1470	872	59,3%
Others	-	-	-	3903	2211	56,6%
Total	**11085**	**2061**	**18,6%**	**18599**	**9077**	**48,8%**

Table 1tris

Comparison of data between Task 3.2.2 and Task 3.2.7 as provided by Member States for each commodity

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Denmark	Barley	41	11	26,8%			
	Beer				21	21	100%
	Meat	189	126	66,7%			
	Oat	50	21	42,0%			
	Roasted coffee				11	11	100,0%
	Rye	1006	354	35,1%	247	180	72,9%
	Rye flour				107	96	89,7%
	Wheat	804	238	29,6%	247	146	59,1 %
	Wheat flour				116	89	76,7%
	Pulses				22	0	0%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Finland	Barley	21	0	0,0%	21	4	19,0%
	Beer				13	8	61,5%
	Green Coffee				665	260	39,1%
	Millet				8	0	0,0%
	Oat	24	0	0,0%	7	0	0,0%
	Other food commodities				30	8	26,7%
	Other cereals				37	5	13,5%
	Pig meat (total)	85	3	3,5%			
	Coffee				76	49	64,5%
	Raisins				31	22	71,0%
	Rye	25	0	0,0%	52	9	17,3%
	Wheat	50	0	0,0%	125	7	5,6%
	Wine				179	113	63,1%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
France	Cereal products	40	4	10,0%	11	4	36,4%
	Dried fruits				46	8	17,4%
	Fruit juice	19	1	5,3%			
	Green coffee				42	20	47,6%
	Maize, corn	1099	18	1,6%	18	1	5,5%
	Pig meat (offals)				1011	103	10,2%
	Oat				1	0	0%
	Rice	28	28	0,0%	16	2	12,5%
	Coffee				47	6	12,8%
	Wheat and barley	13	1	7,7%	29	2	6,9%
	Wine				104	64	61,5%

Table 1tris

Comparison of data between Task 3.2.2 and Task 3.2.7 as provided by Member States for each commodity

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Germany	Barley	20	0	0,0%	22	16	72,7%
	Beer	300	99	33,0%	317	88	27,8%
	Bran	71	12	16,9%	51	17	33,3%
	Cacao products	20	1	5,0%	448	388	86,6%
	Cereal products	596	128	21,5%	2389	1777	74,4%
	Corn				31	14	45,2%
	Dried fruits	69	4	5,8%	220	175	79,5%
	Hazelnuts	68	5	7,3%			
	Meat (total)				686	206	30,1%
	Millet				26	24	92,3%
	Noodles	138	19	13,8%			
	Oat				29	24	82,8%
	Rice	36	2	5,5%	22	2	9,1%
	Coffee	77	27	35,1%	365	172	47,1%
	Rye and products	777	159	20,5%	26	12	46,1%
	Spices and derivatives				321	161	50,1%
	Wheat	1242	331	26,6%	27	10	37,0%
	Wine				280	110	39,3%
	Other products (plant product, baby food, …)				4211	2361	56,1%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Greece	Dried fruit				82	45	54,9%
	Green coffee				44	17	38,6%
	Coffee				21	13	61,9%
	Wine				95	53	55,8%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Ireland	Baby food				6	6	100,0%
	Bran				2	2	100,0%
	Cereals and derivatives				110	110	100,0%
	Green coffee	2	2	100,0%			
	Oat				1	1	100,0%
	Rice				5	5	100,0%
	Roasted coffee				21	21	100,0%

Table 1tris

Comparison of data between Task 3.2.2 and Task 3.2.7 as provided by Member States for each commodity

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Italy	Barley				25	6	24,0%
	Beer				75	30	40,0%
	Bran	35	5	14,3%			
	Cereal products				3	1	33,3%
	Corn				49	7	14,3%
	Extruded foods	15	8	53,3%			
	Green coffee	29	17	58,6%	564	132	23,4%
	Maize	202	52	25,7%			
	Malt				9	0	0,0%
	Meat				8	0	0,0%
	Olive oil				12	1	8,3%
	Rice	15	8	53,3%	1	0	0,0%
	Coffee				225	52	23,1%
	Rye				42	0	0,0%
	Spices				5	5	100%
	Wheat	20	19	95%	30	0	0,0%
	Wine				283	228	80,6%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
The Netherlands	Barley	2	0	0,0%			
	Cereal and products	38	7	18,4%	51	2	3,9%
	Cacao and products				19	0	0,0%
	Green coffee	14	2	14,3%			
	Maize	9	0	0,0%			
	Meat and products	133	56	42,1%			
	Millet	2	1	50,0%			
	Oat	14	2	14,3%			
	Coffee				188	75	39,9%
	Rye	12	2	16,7%			
	Spices				26	16	61,5%
	Other food commodities				19	0	0%
	Wheat	27	7	25,9%	31	1	3,2%
	Wine				170	63	37.1%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Norway	Fruit products				51	34	66,7%
	Green coffee				98	81	82,6%
	Oat	46	14	30,4%	72	15	20,8
	Milk and derived				265	28	10,6%
	Coffee				50	22	44,0 %
	Rye	24	14	58,3%	8	1	12,5%
	Wheat	157	39	24,8%	193	47	24,4%

Table 1tris

Comparison of data between Task 3.2.2 and Task 3.2.7 as provided by Member States for each commodity

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Portugal	Beer				7	3	42,9%
	Instant coffee				2	0	0,0%
	Nutmeg				3	3	100%
	Roasted coffee				33	6	18,2%
	Succedaneum coffee				3	0	0,0%
	Sweet pepper				6	3	50,0%
	Wheat				34	0	0,0%
	White wheat flour				8	0	0,0%
	Wine				61	0	0,0%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Spain	Beer				38	37	97,4%
	Corn				30	1	3,3%
	Grape juice				8	8	100,0%
	Maize	31	2	6,5%			
	Rice				24	0	0,0%
	Roasted coffee				38	38	100,0%
	Wheat	30	7	23,3%			
	Wheat bread				93	93	100,0%
	Wine				196	173	88,3%

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
Sweden	Beer				5	5	100,0%
	Brown kidney beans	127	9	7,1%			
	Cereals	134	72	53,7%			
	Cereals products	64	24	37,5%			
	Meat (total)	1371	0	0,0%			
	Milk	36	0	0,0%	36	5	13,9%
	Oat				33	9	27,3%
	Other foods (grape juice, etc.)				50	4	8,0%
	Rye	94	43	45,7%	47	33	70,2%
	Coffee				25	24	96,0%
	Wheat	35	6	17,1%	132	55	41,7%
	Wine				32	31	96,9%

Table 1tris

Comparison of data between Task 3.2.2 and Task 3.2.7 as provided by Member States for each commodity

Country	Food product	Task 3.2.2			Task 3.2.7		
		n. samples	n. positive samples	% positive samples	n. samples	n. positive samples	% positive samples
United Kingdom	Barley	125	7	5,6%	67	7	10,4%
	Beer				20	0	0,0%
	Black pudding	32	4	12,5%			
	Bran	43	12	27,9%			
	Cacao products				80	57	71,3%
	Cereal products	226	154	68,1%	137	66	48,2%
	Corn				139	12	8,6%
	Dried fruits				421	332	78,9%
	Green coffee				291	110	37,8%
	Maize	81	21	25,9%	139	12	8,6%
	Meat				155	19	12,3%
	Muesli	50	6	12,0%			
	Oat	57	17	29,8%	22	1	4,5%
	Pig kidney	104	15	14,4%			
	Rice	8	0	0,0%			
	Roasted coffee	100	81	81,0%	100	81	81,0%
	Rye				22	1	4,5%
	Spices and derivatives	65	35	5308%			
	Wheat	1078	75	7,0%	138	7	5,1%
	Wine				70	32	45,7%
	Other products (butter beans, grape juice,etc.)				204	22	10,8%

Table 1 A
OA occurrence in cereals (raw materials and derived products)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Denmark	Wheat	247	146	0,01	0,27	0,46	<LOD - 31,6
	Rye	247	180	0,01	0,70	1,00	<LOD - 33,3
	Wheat flour	116	89	0,01	0,36	0,46	<LOD - 16
	Rye flour	107	96	0,01	0,89	0,99	<LOD - 29,7
Finland	Wheat	125	7	0,2 -0,5	0,22	1,31	<LOD - 3
	Rye	52	9	0,2 -0,5	0,63	2,80	<LOD - 17
	Oat	7	0	0,2	0,1	-	<LOD
	Millet	8	0	0,2 - 0,5	0,23	-	<LOD
	Barley	21	4	0,2 - 0,5	0,20	0,40	<LOD - 0,7
	Other cereals	37	5	0,2 - 0,5	1,86	15,75	<LOD - 41
France	Cereal & cereal products	75	9	0,2	0,35	1,14	<LOD - 2,00
	Wheat	22	1	0,2	0,28	0,90	<LOD - 0,90
	Corn	18	1	0,2	0,30	1,10	<LOD - 1,10
	Oat	1	0	0,2	0,25	-	<LOD
	Barley	7	1	0,2	0,50	2,00	<LOD - 2,00
	Rice	16	2	0,2	0,37	1,20	<LOD - 1,40
	Breakfast food grains	11	4	0,2	0,56	0,80	<LOD - 1,80

Table 1 A
OA occurrence in cereals (raw materials and derived products)

Member State	Food	Number of samples	Number Of positive sample	LOD	Mean of Ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Germany	Bread and rolls	986	897	0,01	0,17	0,19	<LOD-5,54
	Pasta	191	87	0,1	0,45	1,04	<LOD-29,77
	Manufactured multi-ingredient cereal products	682	442	0,01	0,21	0,32	<LOD - 31,80
	Wheat	27	10	0,01	0,04	0,11	<LOD-0,26
	Corn	31	14	0,01	0,17	0,37	<LOD-3,35
	Oat	29	24	0,01	0,14	0,17	<LOD-0,55
	Millet	26	24	0,01	0,11	0,12	<LOD-0,83
	Rye	26	12	0,01	0,05	0,10	<LOD-0,80
	Barley	22	16	0,01	0,06	0,08	<LOD-0,50
	Rice	22	2	0,1	0,07	0,25	<LOD-0,28
	Buckwheat	20	9	0,01	0,05	0,11	<LOD-0,59
	German wheat	13	9	0,01	0,02	0,03	<LOD-0,18
	Milled cereal products (early milling stages) inl, rice	81	7	--	0,08	--	< LOD-0,73
	Bran	51	17	0,01	0,09	0,26	<LOD-1,59
	White wheat flour	181	159	0,01	0,14	0,16	< LOD-1,73
	Corn fraction	28	6	0,01	0,14	0,63	< LOD-1,53
	Rye flour	135	117	0,01	0,27	0,31	< LOD-6,4
	Others	72	54	0,01	0,44	0,59	<LOD-12,07

Table 1 A
OA occurrence in cereals (raw materials and derived products)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Greece							
Italy	Barley	25	6	0,05 - 0,5	0,52	2,52	<LOD-3,9
	Corn	49	7	0,05 - 0,5	0,28	1,49	<LOD-4,9
	Rice	1	0	0,5	0,25	-	<LOD
	Rye	42	0		0,05	-	<LOD
	Wheat	30	0	0,05	0,025	-	<LOD
	Malt	9	0	0,5	0,25	-	<LOD
	Wheat flour	1	1	0,2	0,20	0,20	0,2
	White wheat flour	2	0	0,4	0,2	0,2	<LOD
Norway	Wheat	193	47	0,01 - 0,30	0,33	1,12	<LOD-8,2
	Oat	72	15	0,01 - 0,30	0,15	0,40	<LOD-4,2
	Rye	8	1	0,25 - 0,30	0,43	2,50	<LOD-2,5
Portugal	Wheat	34	0	0,2 - 0,5	0,19	-	<LOD-<Loq
	White wheat flour	8	0	0,5	0,25	-	<LOD
Spain	Rice	24	0	0,5	0,25	-	<LOD
	Wheat bread	93	93	0,005	0,30	0,30	0,005 - 7,37
	Corn	30	1	0,5	0,25	2,50	<LOD-2,5
Sweden	Wheat	132	55	0,1	0,34	0,73	<LOD-5,2
	Oat	33	9	0,1	0,24	0,76	<LOD-3,6
	Rye	47	33	0,1	1,06	1,47	<LOD-27

Table 1 A
OA occurrence in cereals (raw materials and derived products)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
The Netherlands	Wheat	31	1	1	0,76	8,70	<LOD-8,7
	Whole-wheat meal	19	0	0,25	0,13	-	<LOD
	White wheat flour	31	1	0,25	0,17	1,50	<LOD - 1,50
	Buckwheat flour	1	1	0,25	2,00	2,00	2,00
United Kingdom	Wheat	138	7	0,1	0,17	1,90	<LOD-6,3
	Barley	67	7	0,1 - 0,2	0,31	2,30	<LOD-6,4
	Oats	22	1	0,1 - 0,2	0,35	5,90	<LOD-5,9
	Rye	22	1	0,2	0,15	1,10	<LOD-1,1
	Maize	139	12	0,1	0,09	0,50	<LOD - 1,5
	White wheat flour	6	5	0,1	0,50	0,60	<LOD - 1,7
	Whole meal flour	8	7	0,1	1,00	1,10	<LOD - 5,3
	Manufactured multi-ingredient products	1	1	0,1	0,40	0,40	0,40
	Biscuits-raw materials	18	10	0,1	0,80	1,40	<LOD - 6,4
	Breakfast cereals-retail	29	13	0,1	0,40	0,80	<LOD - 1,70
	Pasta - dried	8	6	0,1	0,70	0,90	<LOD - 1,30
	Pasta - raw materials	13	8	0,1	0,50	0,80	<LOD - 1,60
	Breakfast cereals-raw materials	54	16	0,1	0,40	1,00	<LOD - 6,50
Europe		**5180**	**2825**		**0,294**	**0,484**	
North Europe		**4832**	**2717**		**0,298**	**0,482**	
South Europe		**348**	**108**		**0,236**	**0,519**	

Table 1A1
OA occurrence in cereal grains (wheat, corn, oat, millet, rye barley and rice)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Denmark	Wheat	247	146	0,01	0,27	0,46	<LOD - 31,6
Finland	Wheat	125	7	0,2 - 0,5	0,22	1,31	<LOD - 3
France	Wheat	22	1	0,2	0,28	0,90	<LOD - 0,9
Germany	Wheat	27	10	0,01	0,04	0,11	<LOD - 0,26
Greece							0,00
Italy	Wheat	30	0	0,05	0,025	-	<LOD
Norway	Wheat	193	47	0,01 - 0,30	0,33	1,12	<LOD - 19,9
Portugal	Wheat	34	0	0,2 - 0,5	0,17	-	<LOD
Spain							
Sweden	Wheat	132	55	0,1	0,34	0,73	<LOD - 5.2
The Netherlands	Wheat	31	1	1	0,76	8,70	<LOD - 8,7
United Kingdom	Wheat	138	6	0,1	0,17	1,90	<LOD - 6,3
		979	**273**				
					Mean1	**Mean2**	
			Europe		**0,269**	**0,700**	
			North Europe		**0,281**	**0,703**	
			South Europe		**0,102**	**-**	
Denmark							
Finland							
France	Corn	18	1	0,2	0,30	1,10	<LOD - 1,1
Germany	Corn	31	14	0,01	0,17	0,37	<LOD - 3,35
Greece							
Italy	Corn	49	7	0,05 -0,5	0,28	1,49	<LOD - 4.9
Norway							
Portugal							
Spain	Corn	30	1	0,5	0,25	2,50	<LOD - 2,5
Sweden							
The Netherlands							
United Kingdom	Maize	139	12	0,1	0,09	0,50	<LOD - 1,5
		267	**35**				
					Mean1	**Mean2**	
			Europe		**0,165**	**0,719**	
			North Europe		**0,123**	**0,455**	
			South Europe		**0,266**	**1,613**	

Table 1A1
OA occurrence in cereal grains (wheat, corn, oat, millet, rye barley and rice)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland	Oat	7	0	0,2	0,10	-	<LOD
France	Oat	1	0	0,2	0,25	-	<LOD - 0,25
Germany	Oat	29	24	0,01	0,14	0,17	<LOD - 0,55
Greece							
Italy							
Norway	Oat	72	15	0,1 - 0,30	0,15	0,40	<LOD - 4,2
Portugal							
Spain							
Sweden	Oat	33	9	0,1	0,24	0,76	<LOD - 3.6
The Netherlands							
United Kingdom	Oat	22	1	0,1 - 0,2	0,35	5,90	<LOD-5,9
		164	**49**				
					Mean1	**Mean2**	
			Europe		**0,192**	**0,465**	
			North Europe		**0,192**	**0,465**	
			South Europe		**-**	**-**	
Denmark							
Finland	Millet	8	0	0,2 - 0,5	0,23	-	<LOD
France							
Germany	Millet	26	24	0,01	0,11	0,12	<LOD - 0,831
Greece							
Italy							
Norway							
Portugal							
Spain							
Sweden							
The Netherlands							
United Kingdom							
		34	**24**				
					Mean1	**Mean2**	
			Europe		**0,136**	**0,120**	
			North Europe		**0,136**	**0,120**	
			South Europe		**-**	**-**	

Table 1A1
OA occurrence in cereal grains (wheat, corn, oat, millet, rye barley and rice)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Denmark	Rye	247	180	0,01	0,70	1,00	<LOD - 33
Finland	Rye	52	9	0,2 - 0,5	0,63	2,80	<LOD - 17
France							
Germany	Rye	26	12	0,01	0,05	0,10	<LOD - 0,8
Greece							
Italy	Rye	42	0	0,1	0,05	-	<LOD
Norway	Rye	8	1	0,25 - 0,30	0,43	2,50	<LOD - 2,5
Portugal							
Spain							
Sweden	Rye	47	33	0,1	1,05	1,47	<LOD - 27
The Netherlands							
United Kingdom	Rye	22	1	0,2	0,15	1,10	<LOD-1,1
		444	**236**				
					Mean1	**Mean2**	
			Europe		**0,597**	**1,095**	
			North Europe		**0,654**	**1,095**	
			South Europe		**0,050**	**-**	
Denmark							
Finland	Barley	21	4	0,2 - 0,5	0,20	0,40	<LOD - 0,7
France	Barley	7	1	0,2	0,50	2,00	<LOD - 2
Germany	Barley	22	16	0,01	0,06	0,08	<LOD - 0,495
Greece							
Italy	Barley	25	6	0,05 - 0,5	0,52	2,52	<LOD - 3,9
Norway							
Portugal							
Spain							
Sweden							
The Netherlands							
United Kingdom	Barley	67	7	0,1	0,31	2,30	<LOD - 6,4
		142	**34**				
					Mean1	**Mean2**	
			Europe		**0,301**	**1,061**	
			North Europe		**0,255**	**0,749**	
			South Europe		**0,515**	**2,517**	

Table 1A1
OA occurrence in cereal grains (wheat, corn, oat, millet, rye barley and rice)

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food		
					µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland							
France	Rice	16	2	0,2	0,37	1,20	<LOD - 1,4
Germany	Rice	22	2	0,1	0,07	0,25	<LOD - 0,28
Greece							
Italy	Rice	1	0	0,5	0,25	-	<LOD
Norway							
Portugal							
Spain	Rice	24	0	0,5	0,25	-	<LOD
Sweden							
The Netherlands							
United Kingdom							
		63	**4**				
					Mean1	**Mean2**	
			Europe		**0,217**	**0,725**	
			North Europe		**0,195**	**0,725**	
			South Europe		**0,250**	**-**	

Table 1B1
OA occurrence in green coffee

	Food	Number of samples	Number Of Positive Sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark	Green coffee						
Finland	Green coffee	665	260	0,2 - 0,5	1,16	2,65	<LOD - 80
France	Green coffee	42	20	0,2 - 1	6,55	13,58	<LOD - 65,5
Germany	Green coffee						
Greece	Green Coffee	44	17		16,14	25,20	<LOD - 200,9
Italy	Green coffee	564	132	0,1 - 0,6	1,21	4,29	<LOD - 42
Norway	Green coffee	98	81	0,01	0,90	1,08	<LOD - 7,9
Portugal	Green coffee						
Spain	Green coffee						
Sweden	Green coffee						
The Netherlands	Green coffee						
United Kingdom	Green coffee	291	110	0,2	0,80	1,95	<LOD - 27,30
Europe		**1704**	**620**		**1,620**	**3,641**	
North Europe		**1096**	**471**		**1,248**	**2,681**	
South Europe		**608**	**156**		**2,290**	**6,376**	

Table 1B2
OA occurrence in processed coffee

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark	Roasted coffee	11	11	0,1	0,51	0,51	0,17 - 3,17
Finland	Roasted coffee	36	17	0,2 - 0,5	0,51	0,89	<LOD - 3,00
	Instant coffee	40	32	0,2 - 0,5	1,61	1,97	<LOD - 7,00
France	Roasted coffee	34	3	0,3	0,58	1,04	<LOD - 1,60
	Instant coffee	13	3	0,3	1,34	4,30	<LOD - 6,40
Germany	Roasted coffee	183	76	0,3	0,54	1,07	<LOD - 6.32
	Instant coffee	55	46	0,3	1,74	2,05	<LOD - 9,47
	Decaffeinated coffee	94	45	0,3	0,60	1,07	<LOD - 3.34
	Malt coffee	33	5	0,3	0,23	0,65	<LOD - 0,96
Greece	Roasted coffee	16	10	0,5	1,79	2,72	<LOD - 7,20
	Instant coffee	3	3	0,5	2,10	2,10	1,3 - 2,6
	Decaffeinated coffee	2	0	0,5	0,25	-	<LOD
Italy	Roasted coffee	198	49	0,05 - 1	0,55	1,8	<LOD - 11,5
	Instant coffee	13	3	0,5 - 0,6	0,4	1,03	<LOD - 1,60
	Decaffeinated roasted coffee	2	0	0,5	0,25	-	<LOD
	Instant decaffeinated coffee	2	0	0,1	0,05	-	<LOD
	Coffee	10	0	0,25	0,125	-	<LOD
Norway	Roasted coffee	50	22	0,1	0,29	0,41	<LOD - 4,10
Portugal	Roasted coffee	33	6	0,3	0,60	1,54	< LOD-2,7
	Instant coffee	2	0	0,3	0,15	-	< LOD
	Coffee succedaneous	3	0	0,3	0,45	-	<LOQ (0,9)
Spain	Roasted coffe	29	29	0,11	1,17	1,17	0,22 - 5,64
	Instant coffee	9	9	0,11	0,50	0,50	0,19 - 1,08
Sweden	coffee	20	19	0,01	0,16	0,17	< LOD - 0,49
	Instant coffee	5	5	0,01	0,37	0,37	0,07 - 1,2
The Netherlands	Roasted coffee	158	64	0,13-1	0,81	1,54	< LOD-5,00
	Instant coffee	15	6	0,25-1	1,33	2,77	<LOD-4,50
	Roasted decaf coffee	15	5	0,13-1	0,53	1,00	< LOD-2,30
United Kingdom	Roasted coffee	20	17	0,1	0,60	0,70	<LOD - 2,10
	Instant coffee	71	60	0,1	1,00	1,17	<LOD - 8,00
	Decaffeinated coffee	9	4	0,1	0,50	1,06	<LOD - 2,50
Europe		**1184**	**549**		**0,724**	**1,092**	
North Europe		**862**	**440**		**0,749**	**0,971**	
South Europe		**322**	**109**		**0,656**	**1,582**	

Table 1C
OA occurrence in beer

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark	Beer	21	21	0,001	0,05	0,05	0,007 - 0,16
Finland	Beer	13	8	0,05	0,03	0,06	<LOD - 0,06
France							
Germany	Low alcoholic beer	66	49	0,005	0,01	0,02	<LOD - 0,08
	Beer	251	39	0,005	0,03	0,03	<LOD - 0,29
Greece							
Italy	Beer	14	0	0,025	0,01	-	<LOD
	Domestc beer	10	3	0,005	0,01	0,02	<LOD - 0,02
	Imported beer	51	27	0,005	0,02	0,04	<LOD - 0,14
Norway							
Portugal	Beer	7	3	0,0005	0,002	0,004	<LOD - 0,006
Spain	Low alcoholic beer	8	8	0,004	0,02	0,02	0,015 - 0,024
	Beer	30	29	0,004	0,04	0,04	<LOD - 0,075
Sweden	Beer	5	5	0,003	0,02	0,02	0,01 - 0,03
The Netherlands							
United Kingdom	Beer	20	0	0,2	0,1	-	<LOD
Europe		**496**	**192**		**0,028**	**0,032**	
North Europe		**376**	**122**		**0,030**	**0,031**	
South Europe		**120**	**70**		**0,022**	**0,035**	

Table 1D
OA occurrence in wine

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland	Red Wine	166	113	0,010	0,14	0,20	<LOD - 1,90
	White wine	10	7	0,050	0,14	0,19	<LOD - 0,39
	Red fruit wine	2	0	0,050	0,03	-	<LOD
	White fruit wine	1	0	0,050	0,03	-	<LOD
France	Domestic wines	34	14	0,01-0,1	0,05	0,11	<LOD - 0,36
	Imported wines	70	50	0,01-0,1	0,22	0,29	<LOD - 1,64
Germany	Red wine	172	79	0,010	0,23	0,49	<LOD - 7
	Rose wine	51	18	0,010	0,14	0,31	<LOD - 6,32
	White wine	56	12	0,010	0,10	0,43	<LOD - 1,36
	Sweet wine	1	1	0,010	1,04	1,04	1,040
Greece	Red wine	38	21	0,050	0,16	0,27	<LOD - 2,61
	Rose wine	5	3	0,050	0,07	0,09	<LOD - 0,13
	White wine	45	23	0,050	0,13	0,23	<LOD - 1,17
	Sweet wine	7	6	0,050	0,54	0,63	<LOD - 1,68
Italy	Red wine	244	210	0,005/0,01	1,29	1,49	<LOD - 15,60
	White wine	20	7	0,005	0,59	1,70	<LOD - 8,86
	Rose wine	4	2	0,005	0,13	0,26	<LOD - 0,28
	Sweet wine	15	9	0,005	0,74	1,23	<LOD - 3,86
Norway							
Portugal	Rose wine	30	0	0,020	0,01	-	<LOD
	Sweet wine	31	0	0,020	0,01	-	<LOD
Spain	Red wine	72	66	0,003	0,04	0,04	<LOD - 0,60
	Rose wine	26	24	0,003	0,03	0,03	<LOD - 0,16
	White wine	43	35	0,003	0,03	0,03	<LOD - 0,27
	Sparkling wine (champagne, cava, etc)	12	10	0,003	0,01	0,02	<LOD - 0,24
	Aperitif wine	27	23	0,003	0,06	0,07	<LOD - 0,25
	Sweet wine	16	13	0,003	1,09	1,17	<LOD - 2,54
Sweden	Red wine	32	31	0,003	0,21	0,21	<LOD - 2,49
The Netherlands	Red wine	150	61	0,05 - 1	0,24	0,55	<LOD - 3,10
	White wine	20	2	0,01 - 0,5	0,16	1,25	<LOD - 2,10
United Kingdom	Red wine	60	32	0,01 - 0,2	0,17	0,29	<LOD - 1,1
	White wine	10	0	0,200	0,10	-	<LOD
Europe		**1470**	**872**		**0,357**	**0,591**	
North Europe		**835**	**420**		**0,181**	**0,338**	
South Europe		**625**	**452**		**0,636**	**1,664**	

Table 1E
OA occurrence in cocoa and derived products

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland							
France							
Germany	Chocolate + sweet	352	297	0,01	0,10	0,12	<LOD - 3,6
	Cocoa	96	91	0,01	0,37	0,38	<LOD - 1,8
Greece							
Italy							
Norway							
Portugal							
Spain							
Sweden							
The Netherlands	Cocoa (powder)	6	0	0,25	0,13	-	<LOD
	Cocoa mass	1	0	0,25	0,13	-	<LOD
	Cocoa butter	4	0	0,25	0,13	-	<LOD
	Chocolate spread	8	0	0,25	0,13	-	<LOD
United Kingdom	Cocoa powder	40	39	0,2	1,20	1,20	<LOD - 2,4
	Chocolate	40	18	0,1	0,20	0,38	<LOD - 0,6
Europe		**547**	**445**		**0,236**	**0,277**	
North Europe		**-**	**-**		**-**	**-**	
South Europe		**-**	**-**		**-**	**-**	

Table 1F
OA occurrence in dried fruit

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of Ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland	Raisins	31	22	0,2	1,34	1,85	<LOD - 7
France	Dried fruits (raisins)	13	6	0,03	0,66	1,54	<LOQ - 4,3
	Dried fruits (others)	33	2	0,03	0,18	1,05	<LOQ - 1,6
Germany	Sultanas	106	100	0,01	1,28	1,35	<LOD - 21,4
	Other dried fruits	114	75	0,01	0,08	0,10	<LOD - 3,95
Greece	Sultanas	35	22	0,50	2,26	3,22	<LOQ - 16,5
	Currants	47	23	0,50	1,69	2,97	<LOQ - 12,38
Italy							
Norway							
Portugal							
Spain							
Sweden							
The Netherlands							
United Kingdom	Currants	120	115	0,20	5,70	5,90	<LOD - 53,6
	Raisins	121	110	0,20	2,90	3,10	<LOD - 29,8
	Sultanas	120	104	0,20	3,65	4,20	<LOD - 25,1
	Apricots	20	0	0,20	0,10	-	<LOD
	Dates	20	1	0,20	0,10	0,20	<LOD - 0,2
	Figs	20	2	0,10	0,10	0,55	<LOD - 0,8
Europe*		**800**	**582**		**2,298**	**3,078**	
North Europe*		**718**	**537**		**2,339**	**3,077**	
South Europe**		**82**	**45**		**1,933**	**3,092**	

*Data from Sweden are not included in the calculation of European and North European means because of the lack of information on the examinated samples

**South Europe data are referred only to Greece

Table 1G
OA occurrence in meat products

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland							
France	Pork edible offal	1011	103	0,05	0,14	1,14	<LOD - 6,1
Germany	Sausages	201	96	0,01	0,09	0,18	<LOD - 4,56
	Meat (from mammals other than marine)	116	9	0,01	0,01	0,04	<LOD - 0,136
	Pork Meat	58	8	0,01	0,01	0,01	<LOD - 0,136
	Pork Edible Offal	120	37	0,01	0,80	2,57	<LOD - 9,33
	Poultry Meat (Including Pigeon Meat)	41	-	0,01	0,005	-	<LOD
	Ham	57	16	0,01	0,02	0,04	<LOD - 0,175
	Salami	68	29	0,01	0,03	0,07	<LOD - 0,265
	(Others)	25	11	0,01	0,01	0,01	<LOD - 0,192
Greece							
Italy	Salami	8	-	0,5	0,25	-	<LOD
Norway							
Portugal							
Spain							
Sweden							
The Netherlands							
United Kingdom	Black Pudding	32	4	1,00	0,60		<LOQ - 1,80
	Pig Kidney	104	15	1,00	0,80	2,58	<LOQ -9,30
	Salami (pork)	9	-	0,20	0,10	-	<LOQ
	Other (pork liver sausage/paté)	10	-	0,20	0,10	-	<LOQ - 0,2
Europe		**1860**	**328**		**0,198**	**0,830**	
North Europe		**1852**	**328**		**0,197**	**0,830**	
South Europe*		**8**	**-**		**0,250**	**-**	

*Mean 1 for South Europe has been calculated only on the basis of the Italian data.

Table 1H
OA occurrence in spices

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark							
Finland							
France							
Germany	Herbs	13	2		0,08		<LOD - 0,11
	Nutmeg	35	28		3,29		<LOD - 15,23
	Peppers	32	21		0,40		<LOD - 2,04
	Paprika	58	51		1,53		<LOD - 16,43
	Macis	5	3		0,120		<LOD - 0,21
	Coriander	31	21		1,48		<LOD - 3,88
	Seed	5	2		0,15		<LOD - 0,17
	Spice Sauces	122	25	0,10	0,01		<LOD - 3,8
	Other Spices	20	8		0,49		<LOD - 1,92
Greece							
Italy	Spices	5	5	0,4	8,04	8,04	<LOD - 23,8
Norway							
Portugal	Nutmeg	3	3	0,2	5,50	5,50	<LOD - 8,5
	Sweet pepper	6	3	0,2	1,42	2,50	<LOD - 4,3
Spain							
Sweden							
The Netherlands	Pepper (Piper nigrum)	6	1	0,25	0,24	0,80	<LOD - 0,80
	Pepper powder (Capsicum frutescens)	8	6	0,25	6,47	8,58	<LOD - 14,5
	Paprika powder (Capsicum annuum)	12	9	0,25	1,74	2,24	<LOD - 9,80
United Kingdom							
Europe*		**361**	**188**		**1,150**	**5,061**	
North Europe*		**347**	**177**		**0,980**	**4,528**	
South Europe		**14**	**11**		**4,659**	**5,836**	

*The mean 2 has been calculated without considering the samples from Germany since individual data were not provided.

Table 1I
OA occurrence in other food commodities

Member State	Food	Number of samples	Number of positive sample	LOD	Mean of ochratoxin A level in food µg/kg		
					Mean 1	Mean 2	Range
Denmark	Pulses	22	0	0,10	0,05	-	< LOD
Finland	Others derived products of plant origin	9	2	0,20	0,23	1,00	< LOD - 1
	Miscellaneous Commodities of plant origin	18	4	0,20	1,03	4,26	< LOD-7,00
	Other juice fruit	3	2	0,01	0,06	0,08	< LOD -0,14
France	Fruit juice	19	1	0,01	0,22	3,45	<LOQ-3,45
Germany	Vinegar	87	44	0,01	0,37	0,86	<LOD - 4,35
	Beans	39	0	0,10	0,05	-	<LOD
	Lentils	21	0	0,10	0,05	-	<LOD
	Peas	37	0	0,10	0,05	-	<LOD
	Chick-Pea	7	1	0,10	0,16	0,86	<LOD - 0,86
	Soya	31	5	0,01	0,01	0,04	<LOD - 0,09
	Tree nuts	142	33	0,01	0,02	0,07	<LOD - 0,27
	Oliseed	144	29	0,01	0,05	0,23	<LOD - 1,79
	Teas	139	8	0,30	0,28	2,40	<LOD - 10,3
	Vegetable oil, edible (or refined)	30	0	0,10	0,05	-	<LOD
	Miscellaneous derived edible products of plant origin	2846	2072	0,01	0,24	0,55	<LOD - 29,77
	Grape juice	90	75	0,01	0,74	0,89	<LOD - 5,26
	Other fruit juices	162	8	0,01	0,01	0,11	<LOD - 0,18
	Milk	69	0	0,005	0,00	-	<LOD
	Derived milk products	195	19	0,01	0,02	0,16	<LOD - 0,86
	Jam	75	4	0,10	0,06	0,24	<LOD - 0,27
	Baby food	97	63	0,01	0,12	0,18	<LOD - 2,13
Greece							
Italy	Olive oil	12	1	0,01	0,06	0,60	<LOD - 0,60
Norway	Other fruit juice	4	4	0,0005	0,01	0,01	0,002 - 0,02
	Milk	165	13	0,1 - 0,3	0,01	-	<LOD - 0,06
	Derived milk product	100	15	0,01 - 0,03	0,01	0,02	<LOQ - 0,12
	Fruit juice	19	3	0,0005 - 0,001	0,001	0,004	<LOD - 0,006
	Grape juice	28	27	0,0010	0,13	0,14	<LOD - 0,56
Portugal							
Spain	Grape juice	8	8	0,003	0,04	0,04	0,15 - 0,18
Sweden	Brown beans	20	2	0,10	0,18	1,31	<LOD - 1,9
	Yellow peas	20	1	0,10	0,09	0,78	<LOD - 0,78
	Chick peas	10	1	0,10	0,17	1,20	<LOD - 1,2
	Milk	36	5	0,01	0,008	-	<LOD - 0,03

Table 1I (cont'd)
OA occurrence in other food commodities

The Netherlands	Peanutbutter	4	0	0,25	0,13		<LOD
	Peanuts	12	0	0,25	0,13		< LOD
	Pisatacho	3	0	0,25	0,13		<LOD
United Kingdom	Butter beans	36	1	0,1 - 0,2	0,07	13,70	<LOD - 13,70
	Chick peas	14	0	0,20	0,10	-	<LOD
	Green lentils	10	0	0,20	0,10	-	<LOD
	Red kidney beans	43	1	0,1 - 0,2	1,00	15,40	<LOD - 15,40
	Red lentils	11	0	0,20	0,10	-	<LOD
	Coconuts desiccated	10	0	0,20	0,10	-	<LOD
	Baked beans (cut price)	25	0	0,20	0,10	-	<LOD
	Baked beans (normal price)	25	1	0,20	0,11	-	<LOD-0,30
	Tree nuts	10	0	0,20	0,10	-	<LOD
	Grape juice	20	19	0,01	0,50	0,53	<LOD - 2,10
Europe		**4927**	**2472**		**0,197**	**0,551**	
North Europe		**4907**	**2463**		**0,198**	**0,550**	
South Europe		**20**	**9**		**0,049**	**0,102**	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Denmark					
Beer		203,8	70,7	848,6	Danskernes Kostvaner 1995. Levnedsmiddelstyrelsen, pubblication No. 235, May 1996 No. of subjects: 1837
Red wine		66,7	35,7	250	
Roasted coffee		26,4	24,2	64,5	
Wheat flour		19,8	17,4	44,9	
Wheat bread white		70,5	64,3	148,5	
Wheat bread coarsely		23,7	11,4	97,1	
Rye bread		71,7	65,9	150,5	
Finland					
Beer		230			The 1997 Dietary Survey of Finnish Adults, National Public Health Institute B8/1998,Helsinky, Finland No. of subjects: 2862
Red wine		50			
Roasted coffee		46			
Instant coffee		1			
Wheat		93			
Rye		62			
Oat		25			
Raisins		1			
France (consumers only)					
All population 2->65 years					
Wines (all types)	704	181,3	115	569,7	ASPCC, CREDOC 1993/1994: Rigaud et al., 1997, Enquête française de consommation alimentaires.. Cahier de Nutrition et Diététiques, 32. 6
Coffee (all types)	825	15,2	13,4	38	
Cereal & cereal products	1161	204,6	191,6	358,7	
Fruit juices	596	106	72,9	278,6	
Dried fruits (raisins)	114	5,3	2,9	10,8	
Dried fruits (others)	90	13,2	7,1	39	
Pork edible offal	<58	0,03	-	-	
Adults 15->65 years					
Wines (all types)	681	187,9	125	571,4	No. of subjects: All population:1161 Adults: 929 Children: 232
Coffee (all types)	803	15,5	13,9	38,1	
Cereal & cereal products	929	206,9	192,9	360,3	
Fruit juices	441	100,9	74,3	269,1	
Dried fruits (raisins)	99	5,6	2,9	10,7	
Dried fruits (others)	77	14,5	7,1	45,7	
Pork edible offal	<58	0,05	-	-	
Children 2-14 years					
Wines (all types)	23	4,9	2,9	18,9	
Coffee (all types)	22	3,3	1,9	8,7	
Cereal & cereal products	232	195,4	184,9	343,2	
Fruit juices	155	120,7	71,4	300,7	
Dried fruits (raisins)	15	3,4	2,9	8,7	
Dried fruits (others)	13	6,3	4,3	15,1	
Pork edible offal	0	0	0	0	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Germany					
Adults >14 years					
Low alcoholic beer		21,32			Wolff, J. et al. 1999
Beer		192,29			Belastung des Verbrauchers und der lebensmittel mit
Red wine		4,88			Ochratoxin A (Dietary intake of Ochratoxin A by the
Rose wine		4,88			population of Germany, unpublished)
Roasted coffee		16,06			
Decaffeinated coffee		1,97			No. of subjects
White wine		16,65			Adult >14: 2005
Bread and rolls		146,99			Children <14: 574
Pasta		14,02			Girls 4-6: 81
Chocolate + sweets		51,82			
Grape juice		3,69			
Manufactured multi-ingredient cereal products		67,55			
Sausages		46,86			
Children <14 years					
Low alcoholic beer		10,65			
Beer		3,48			
Roasted coffee		0,47			
Bread and rolls		102,83			
Pasta		17,39			
Chocolate + sweets		89,81			
Grape juice		6,21			
Manufactured multi-ingredient cereal products		62,35			
Sausages		36,30			
Girls 4-6 years					
Low alcoholic beer		6,17			
Beer		9,69			
Bread and rolls		70,60			
Pasta		14,93			
Chocolate + sweets		88,63			
Grape juice		2,99			
Manufactured multi-ingredient cereal products		46,07			
Sausages		28,59			

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Greece					
Urban					Methodology for the exploitation of HBS food data and results on food availability in six European countries. Directorate – General, Science, Research and Development, EUR 18357 EN, European Commission 1998
Wine (all types)		12			
Coffee (all types)		4,1			
Bread (all types)		159			
Rusks + biscuits (pastries incl.)		14			
Rice cereals and others cereal based products (quaker etc.)		15			
Flour (wheat, corn)		14			
Pasta		22			
Dried vine fruits		0,03			
Semiurban					No. of subjects 6756: Bread, rusks, rice, cereals, flour, pasta (all population):
Wine (all types)		25			
Coffee (all types)		4,1			
Bread (all types)		210			
Rusks + biscuits (pastries incl.)		12			
Rice. cereals and others cereal based Products (quaker etc.)		17			
Flour (wheat, corn)		23			
Pasta		24			
Dried vine fruits		0,01			
Rural					
Wine (all types)		46			
Coffee (all types)		4,8			
Bread (all types)		271			
Rusks + biscuits (pastries incl.)		11			
Rice. cereals and others cereal based Products (quaker etc.)		21			
Flour (wheat, corn)		43			
Pasta		30			
Dried vine fruits		0,02			
All population					
Wine (all types)		22	0	139	
Coffee (all types)		4,3	2,4	16	
Bread (all types)		193			
Rusks + biscuits (pastries incl.)		13			
Rice, cereals and others cereal based products (quaker etc.)		17			
Flour (wheat, corn)		22			
Pasta		24			
Dried vine fruits		0,03	0	0	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Italy					
All population					No. of subjects: 1978
Beer		23,029	0,000	123,2	
Red wine		46,927	0,000	292	
Roasted coffee		6,942	6,000	19,6	
Decaffeinated roasted coffee		0,205	0,000	0,6	
Corn		0,747	0,000	0,0 (?)	
Barley		0,221	0,000	0,0 (?)	
Rice		10,844	5,714	37,9	
Rye		0,000	0,000	0,0	
Wheat flour		5,426	0,000	28,6	
Olive oil		7,369	0,000	29,4	
Salami		2,506	0,000	14,3	
Spices		1,411	0,412	5,3	
Consumers					
Beer		110,829	62,500	384,5	
Red wine		159,763	114,286	450,4	
Roasted coffee		9,285	7,886	21	
Decaffeinated roasted coffee		5,476	5,000	15,8	
Corn		16,978	12,000	41,2	
Barley		8,231	7,125	17,5	
Rice		20,255	15,237	46,4	
Rye		0,000	0,000	0,0	
Wheat Flour		15,377	8,556	46,7	
Olive Oil		15,152	13,571	36,7	
Salami		10,612	7,857	28,6	
Spices		2,126	0,992	6,5	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Norway (consumers only)					
All population					Johansson et al. 1997
Roasted coffee	2643	561	480	1260	Dietary habits among Norwegian Men and
Wheat	3144	144	133	265	Women, Scand. J Nutr.
Oat	1566	7	4	24	Vol. 41 : 63-70, 1997
Rye	1865	10	7	28	
Other juice fruit	1908	27	12	118	
Milk	3139	463	391	1113	
Derived milk product	2574	24	19	71	
Men					
Roasted coffee	912	609	600	1320	
Wheat	690	173	163	305	
Oat	834	8	4	28	
Rye	1514	10	7	30	
Other juice fruit	1517	30	19	120	
Milk	1293	549	494	1231	
Derived milk product	1313	26	19	71	
Women					
Roasted coffee	1330	513	420	1140	
Wheat	1627	116	110	196	
Oat	876	6	3	19	
Rye	1031	9	7	29	
Other juice fruit	996	25	11	88	
Milk	1625	384	330	907	
Derived milk product	1461	22	19	57	
Portugal					
Beer		177,3			Balança Alimentar Portuguesa (BAP)
Rose wine ("vinho verde")		149,3			1990-1197
Sweet wine		1,1			Istituto Nacional de Estatistica
Coffee (all type)		10,1			Estudo nà 79, 1990-1997
Wheat and white wheat flour		235,1			
Spices					

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Spain					
Wheat bread		153,74			La alimentaciòn en Espana 1996-1997 Ministerio de Agricultura. Pesca y Alimentacion. 1998
Low alcoholic beer		16,27			
Beer		130,72			
Red wine		51,96			
Rose wine		17,32			
White wine		19,71			
Sparkling wine (champagne, cava, etc)		4,07			
Other wines (including sweet wine)		2,93			
Roasted coffee		7,46			
Instant coffee		1,1			
Rice		18,49			
Grape juice		3,85			
Sweden (consumers only)					Mycotoxins in food – Levels, intake and risk. Report from the national Food Administration, Sweden, no 22/98
Adults					
Beer		310	57	950	
Wine		61	0	157	
Roasted coffee		13,1	10,7	26,7	
Wheat		78	74	140	
Oat		34	64	75	
Rye		36	32	77	
Pulses		12	0	27	
Milks		420	*	960	
Children					
Beer		69	0	143	
Wine		33	0	57	
Roasted coffee		2,9	0	8,5	
Wheat		76	74	120	
Oat		28	5	64	
Rye		27	25	58	
Pulses		12	0	25	
Milks		710	*	1300	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
The Netherlands					
All population					
Low alcoholic beer		1	0		All population No. of subjects: 6250
Brown beer		2	0		
Heavy beer		3	0		
Red wine		16	0		
White wine		10	0		
Spanish sweet wine		1	0		
Sherry		2	0		
Port wine		1	0		
Pilsner		112	0		
Roasted coffee		18,3	15,1		
Wheat		111	105		
Consumers only					
Low alcoholic beer	13	383	150		
Brown beer	33	326	225		
Heavy beer	67	218	250		
Red wine	619	160	125		
White	437	146	113		
Spanish sweet wine	37	97	84		
Sherry	149	94	75		
Port wine	86	69	54		
Pilsner	1160	603	450		
Roasted coffee	4417	26	23,1		
United Kingdom					
Consumers 16-64 years					J. Gregory et al. 1990 Dietary and nutritional survey of British adults. HSMO Dietary and nutritional survey of British adults. Ministry of Agriculture, fishery and Food: further analysis. 1994 HSMO
Wine	728	74,2	50	213,9	
Instant coffee	1592	4,5	2,9	13,0	
Cocoa powder	1300	5,3	3,1	16,9	
Wheat	2196	127,4	120,8	224,5	
Barley	7	4,9	4,7	8,3	
Oats	554	11,6	7,6	36,9	
Rye	191	7,4	3,7	23,7	
CEREALS	2196	131,0	123,3	230,8	
Dried fruits (currants)	183	2,5	1,5	6,4	
Dried fruits (raisins)	176	6,7	2,9	23,2	
Dried fruits (sultanas)	228	4,1	2,5	14,1	
DRIED FRUIT	423	6,1	3,0	19,9	

Table 2
Summary of consumption data from each Member State

Food product	No. of subjects	Mean value (g/person/day)	Median (g/person/day)	95th percentile (g/person/day)	References
Consumers1,5-4,5 years					
Wine	12	4,4	3,5	10,7	
Instant coffee	106	0,7	0,4	2,3	
Cocoa powder	1390	8,1	5,4	23,9	
Wheat	1671	47,4	44,9	88,2	
Barley	3	1,1	0,6	2,0	
Oats	418	4,1	2,2	14,0	
Rye	19	2,0	1,7	4,6	
CEREALS	1671	48,5	45,8	89,5	
Dried fruits (currants)	83	3,0	1,0	9,1	
Dried fruits (raisins)	124	11,8	8,4	34,3	
Dried fruits (sultanas)	76	6,5	3,3	22,5	
DRIED FRUIT	240	9,2	5,4	35,3	
Population 16-64 years					
Wine		24,6	0,0	132,2	
Instant coffee		3,3	1,4	11,0	
Cocoa powder		3,2	0,9	14,0	
Wheat		127,3	120,7	224,5	
Barley		0,0	0,0	0,0	
Oats		2,9	0,0	19,2	
Rye		0,6	0,0	3,3	
CEREALS		130,9	123,3	230,8	
Dried fruits (currants)		0,2	0,0	1,3	
Dried fruits (raisins)		0,5	0,0	2,1	
Dried fruits (sultanas)		0,4	0,0	2,6	
DRIED FRUIT		1,2	0,0	6,8	
Population 1,5-4,5 years					
Wine		0,0	0,0	0,0	
Instant coffee		0,0	0,0	0,1	
Cocoa powder		6,7	4,1	22,4	
Wheat		47,3	44,7	88,2	
Barley		0,0	0,0	0,0	
Oats		1,0	0,0	6,0	
Rye		0,0	0,0	0,0	
CEREALS		48,3	45,6	89,4	
Dried fruits (currants)		0,1	0,0	0,0	
Dried fruits (raisins)		0,9	0,0	4,6	
Dried fruits (sultanas)		0,3	0,0	0,0	
DRIED FRUIT		1,3	0,0	9,7	

Table 2A
Summary of food consumption data methodologies

Member State	Method used
Denmark	Personal interview and self administrative diet records. Period of collection 7 days. Number of sampled population: 1837 adults.
Finland	The 1997 Dietary Survey of Finnish Adults, aged 24-64 years, n=2862. The dietary data consisted of 24-hour recall.
France	National individuals food consumption survey, representative for the whole population. Precoded 7-days records and data were collected so as consumed. Number of sampled population: 1500 consumers in 1993/1994. After adjusting of under informants: 1161 consumers from 2 to > 65 years old.
Germany	3 days protocol: 2005 adults >14 years and 574 children. Randomly selected.
Greece	Database DAFNE II (Data Food Networking) was used on Household budget survey (HBS).
Italy	Individual food intake registration The number of sampled population was 1978
Norway	National dietary survey in 1993/1994 (NORKOST). The number of sampled population was 3144 people (children excluded). The method was a quantitative food frequency questionnaire only on consumers basis.
Portugal	Produced + Imported = Resource = Employment Employment = Exported + Consumption - Stock variation Human consumption = Rate between annual human consumption and population number.
Spain	5400 Households, 700 catering business and 200 institutions (elderly, children, etc.) were sampled, filling a questionnaire every day over a year period.
Sweden	Food survey of 3000 households over a 4-week period. Portion guide was used for estimating sizes of cooked-food portions.
The Netherlands	VCP.
United Kingdom	National Diet and Nutrition Survey (NDNS) of 2197 British adults (pregnant women excluded) was used and refers to 1986/1987 period. The method based upon a weighed questionnaire of all the food and drinks consumed over a 7-days period.

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
Denmark													
Beer	203,8	848,6	0,05	0,05	0,007 – 0,16	9,99	9,99	41,58	41,58	0,14	0,14	0,59	0,59
Roasted coffee	26,4	64,5	0,51	0,51	0,17 – 3,17	13,46	13,46	32,90	32,90	0,19	0,19	0,47	0,47
Wheat flour	19,8	44,9	0,36	0,46	<LOD – 16,00	7,13	9,11	16,16	20,65	0,10	0,13	0,23	0,30
Wheat bread white	70,5	148,5	0,19	0,32	<LOD – 31,60	13,32	22,70	28,07	47,82	0,19	0,32	0,40	0,68
Wheat bread coarsely	23,7	97,1	0,19	0,32	<LOD – 31,60	4,48	7,63	18,35	31,27	0,06	0,11	0,26	0,45
Rye bread	71,7	150,5	0,49	0,70	<LOD – 33,30	35,13	50,19	73,75	105,35	0,50	0,72	**1,05**	1,51
										1,19			
Finland													
Beer	230		0,03	0,06	<LOD – 0,06	6,90	13,80			0,12	0,23		
Red wine	50		0,14	0,20	<LOD – 1,90	7,00	10,00			0,12	0,17		
Roasted coffee	46		0,51	0,89	<LOD – 3,00	23,46	40,94			0,39	0,68		
Instant coffee	1		1,61	1,97	<LOD – 7,00	1,61	1,97			0,03	0,03		
Wheat	93		0,22	1,31	<LOD – 3,00	20,46	121,83			0,34	2,03		
Oat	25		0,1	0,00	<LOD	2,5	0,00			0,04	0,00		
Rye	62		0,63	2,80	<LOD – 17,00	39,06	173,60			0,65	2,89		
Raisins	1		1,34	1,85	<LOD – 7,00	1,34	1,85			0,02	0,03		
										1,71			
France (consumers only)													
All population (2->65 years)													
Wines (all types)	181,3	569,7	0,16	0,43	<LOD – 1,64	29,01	77,96	91,15	244,97	0,50	1,35	1,57	4,23
Coffee (all types)	15,2	38	1,03	2,8	<LOD – 13,10	15,66	42,56	39,14	106,40	0,27	0,74	0,68	1,84
Cereal & cereal products	204,6	358,7	0,35	1,14	<LOD – 2,00	71,61	233,24	125,55	408,92	1,24	4,03	**2,17**	7,06
Fruit juices	106	278,6	0,22	3,45	<LOD – 3,45	23,32	365,70	61,29	961,17	0,40	6,32	1,06	16,60
Dried fruits (raisins)	5,3	10,8	0,66	1,54	<LOD – 4,30	3,50	8,16	7,13	16,63	0,06	0,14	0,12	0,29
Dried fruits (others)	13,2	39	0,18	1,05	<LOD – 1,60	2,38	13,86	7,02	40,95	0,04	0,24	0,12	0,71
Pork edible offal	0,03	-	0,14	1,14	<LOD – 6,10	0,00	0,03	-	-	0,00	0,00	-	-
										2,51			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
France (consumers only) (cont'd)													
Adults (15->65 years)													
Wines (all types)	187,9	571,4	0,16	0,43	<LOD – 1,64	30,06	80,80	91,42	245,70	0,47	1,27	1,44	3,87
Coffee (all types)	15,5	38,1	1,03	2,8	<LOD – 13,10	15,97	43,40	39,24	106,68	0,25	0,68	0,62	1,68
Cereal & cereal products	206,9	360,3	0,35	1,14	<LOD – 2,00	72,42	235,87	126,11	410,74	1,14	3,71	**1,99**	6,47
Fruit juices	100,9	269,1	0,22	3,45	<LOD – 3,45	22,20	348,11	59,20	928,40	0,35	5,48	0,93	14,62
Dried raisins (raisins)	5,6	10,7	0,66	1,54	<LOD – 4,30	3,70	8,62	7,06	16,48	0,06	0,14	0,11	0,26
Dried fruits (others)	14,5	45,7	0,18	1,05	<LOD – 1,60	2,61	15,23	8,23	47,99	0,04	0,24	0,13	0,76
Pork edible offal	0,05	-	0,14	1,14	<LOD – 6,10	0,01	0,06	-	-	0,00	0,00	-	-
										2,31			
Children(2-14 years)													
Wines	4,9	18,9	0,16	0,43	<LOD – 1,64	0,78	2,11	3,02	8,13	0,03	0,07	0,10	0,27
Coffee	3,3	8,7	1,03	2,8	<LOD – 13,10	3,40	9,24	8,96	24,36	0,11	0,31	0,30	0,81
Cereal & cereal products	195,4	343,2	0,35	1,14	<LOD – 2,00	68,39	222,76	120,12	391,25	2,26	7,38	**3,98**	12,96
Fruit juices	120,7	300,7	0,22	3,45	<LOD – 3,45	26,55	416,42	66,15	1037,42	0,88	13,79	2,19	34,35
Dried raisins (raisins)	3,4	8,7	0,66	1,54	<LOD – 4,30	2,24	5,24	5,74	13,40	0,07	0,17	0,19	0,44
Dried fruits (others)	6,3	15,1	0,18	1,05	<LOD – 1,60	1,13	6,62	2,72	15,86	0,04	0,22	0,09	0,53
Pork edible offal	0	0	0,14	1,14	<LOD – 6,10	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
										3,39			
Germany													
Adult >14 years													
Low alcoholic beer	21,32		0,01	0,02	<LOD - 0,08	0,30	0,38			0,00	0,01		
Beer	192,29		0,03	0,03	<LOD - 0,29	5,31	6,15			0,08	0,09		
Red wine	4,88		0,23	0,49	<LOD - 7,00	1,10	2,38			0,02	0,03		
Rose wine	4,88		0,14	0,31	<LOD - 2,38	0,70	1,53			0,01	0,02		
Roasted coffee	16,06		0,54	1,07	<LOD - 6,32	8,62	17,20			0,12	0,24		
Decaffeinated coffee	1,97		0,60	1,07	<LOD - 3,34	1,17	2,10			0,02	0,03		
White wine	16,65		0,10	0,43	<LOD - 1,36	1,60	7,18			0,02	0,10		
Bread and rolls	146,99		0,17	0,19	<LOD - 5,54	25,28	27,78			0,36	0,39		
Pasta	14,02		0,45	1,04	<LOD -29,77	6,28	14,55			0,09	0,21		
Chocolate + sweets	51,82		0,10	0,12	<LOD - 3,60	5,18	6,11			0,07	0,09		
Grape juice	3,69		0,74	0,89	<LOD - 5,26	2,74	3,29			0,04	0,05		
Manufactured multi-ingredient cereal products	67,55		0,21	0,32	<LOD - 31,80	13,92	21,28			0,20	0,30		
Sausages	46,86		0,09	0,18	<LOD - 4,56	4,40	8,58			0,06	0,12		
										1,09			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
Children <14 years													
Low alcoholic beer	10,65		0,01	0,02	<LOD - 0,08	0,15	0,19			0,00	0,01		
Beer	3,48		0,03	0,03	<LOD - 0,29	0,10	0,11			0,00	0,00		
Roasted coffee	0,47		0,54	1,07	<LOD - 6,32	0,25	0,50			0,01	0,02		
Bread and rolls	102,83		0,17	0,19	<LOD - 5,54	17,69	19,43			0,58	0,63		
Pasta	17,39		0,45	1,04	<LOD - 29,77	7,79	18,05			0,25	0,59		
Chocolate + sweets	89,81		0,10	0,12	<LOD -3,60	8,98	10,60			0,29	0,35		
Manufactured multi-ingredient cereal products	62,35		0,21	0,32	<LOD - 31,80	12,84	19,64			0,42	0,64		
Grape juice	6,21		0,74	0,89	<LOD - 5,26	4,61	5,53			0,15	0,18		
Sausages	36,3		0,09	0,18	<LOD - 4,56	3,41	6,64			0,11	0,22		
										1,82			
Girls 4-6 years													
Low alcoholic beer	6,17		0,01	0,02	<LOD - 0,08	0,09	0,11			0,01	0,01		
Beer	9,69		0,03	0,03	<LOD - 0,29	0,27	0,31			0,02	0,02		
Bread and rolls	70,6		0,17	0,19	<LOD - 5,54	12,14	13,34			0,90	0,99		
Pasta	14,93		0,45	1,04	<LOD - 29,77	6,69	15,50			0,50	1,15		
Chocolate + sweets	88,63		0,10	0,12	<LOD - 3,60	8,86	10,46			0,66	0,77		
Manufactured multi-ingredient cereal products	46,07		0,21	0,32	<LOD - 31,80	9,49	14,51			0,70	1,07		
Grape juice	2,99		0,74	0,89	<LOD - 5,26	2,22	2,66			0,16	0,20		
Sausages	28,59		0,09	0,18	<LOD - 4,56	2,69	5,23			0,20	0,39		
										3,14			
Greece													
All population													
Wine	22	139	0,17	0,28	<LOD – 2,61	3,74	6,16	23,63	38,92	0,05	0,09	0,34	0,56
Coffee	4,3	16	1,69	2,58	<LOD – 7,20	7,27	11,09	27,04	41,28	0,10	0,16	**0,39**	0,59
Dried vine fuits	0,03	0	1,88	3,09	<LOD – 16,50	0,06	0,09	0,00	0,00	0,00	0,00	0,00	0,00
										0,15			
Urban													
Wine	12		0,17	0,28	<LOD – 2,61	2,04	3,36			0,03	0,05		
Coffee	4,1		1,69	2,58	<LOD – 7,20	6,93	10,58			0,10	0,15		
Dried vine fruits	0,03		1,88	3,09	<LOD – 16,50	0,06	0,09			0,00	0,00		
										0,13			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
Greece (cont'd)													
Semi-Urban													
Wine	25		0,17	0,28	<LOD – 2,61	4,25	7,00			0,06	0,10		
Coffee	4,1		1,69	2,58	<LOD – 7,20	6,93	10,58			0,10	0,15		
Dried vine fruits	0,01		1,88	3,09	<LOD – 16,50	0,02	0,03			0,00	0,00		
										0,16			
Rural													
Wine	46		0,17	0,28	<LOD – 2,61	7,82	12,88			0,11	0,18		
Coffee	4,8		1,69	2,58	<LOD – 7,20	8,11	12,38			0,12	0,18		
Dried vine fruits	0,02		1,88	3,09	<LOD – 16,50	0,04	0,06			0,00	0,00		
										0,23			
Italy													
All population													
Beer	23,03	123,2	0,02	0,04	<LOD - 0,14	0,46	0,92	2,46	4,93	0,01	0,01	0,04	0,07
Red wine	46,93	292	1,29	1,49	<LOD – 15,60	60,54	69,93	376,68	453,08	0,86	1,00	**5,38**	6,22
Roasted coffee	6,94	19,6	0,55	1,80	< OD – 11,5	3,82	12,49	10,78	35,28	0,06	0,18	0,15	0,50
Decaffeinated roasted coffee	0,20	0,6	0,25	-	< LOD	0,05	-	0,15	-	0,00	-	0,00	-
Barley	0,22	0,0 (?)	0,52	2,52	<LOD - 3,9	0,11	0,55	-	-	0,00	0,01	-	-
Corn	0,75	0,0 (?)	0,28	1,49	<LOD - 4,9	0,21	1,12	-	-	0,00	0,02	-	-
Wheat flour	5,43	28,6	0,20	0,20	0,20	1,09	1,09	5,72	5,72	0,02	0,02	0,08	0,08
Rice	10,84	37,9	0,25	-	< LOD	2,71	-	9,48	-	0,04	-	0,14	-
Rye	0,00	0,0	0,05	-	< LOD	0,00	-	0,00	-	0,00	-	0,00	-
Olive oil	7,37	29,4	0,05	0,6	<LOD - 0,6	0,37	4,42	1,47	17,64	0,01	0,06	0,02	0,25
Salami	2,51	14,3	0,25		< LOD	0,63	-	3,58	-	0,01	-	0,05	-
Spices	1,41	5,3	5,74	8,04	0,8-23	8,09	11,34	30,42	42,61	0,12	0,16	0,43	0,61
										1,13			
Consumers													
Beer	110,83	384,5	0,02	0,04	< LOD – 0,14	2,22	4,43	7,69	15,38	0,03	0,06	0,11	0,22
Red wine	159,76	450,4	1,29	1,49	<LOD – 15,60	206,09	238,04	581,02	671,10	2,94	3,40	8,30	9,59
Roasted coffee	9,28	21,0	0,55	1,80	< LOD – 11,5	5,10	16,70	11,55	37,80	0,07	0,24	0,17	0,54
Decaffeinated roasted coffee	5,48	15,8	0,25	-	< LOD	1,37	-	3,95	-	0,02	-	0,06	-
Barley	8,23	17,5	0,52	2,52	<LOD - 3,9	4,24	20,74	9,01	44,10	0,06	0,30	0,13	0,63
Corn	16,98	41,2	0,28	1,49	<LOD - 4,9	4,67	25,30	11,33	61,39	0,07	0,36	0,16	0,88
Wheat flour	15,38	46,7	0,20	0,2	< LOD	3,08	3,08	9,34	9,34	0,04	0,04	0,13	0,13
Rice	20,25	46,4	0,25	-	< LOD	5,06	-	11,60	-	0,07	-	0,17	-
Rye	0,00	0,0	0,05	-	< LOD	0,00	-	0,00	-	0,00	-	0,00	-
Olive oil	15,15	36,7	0,05	0,6	<LOD - 0,6	0,76	9,09	1,84	22,02	0,01	0,13	0,03	0,31
Salami	10,61	28,6	0,25	-	< LOD	2,65	-	7,15	-	0,04	-	0,10	-
Spices	2,13	6,5	5,74	8,04	<LOD - 23	12,23	17,13	37,31	52,26	0,17	0,24	0,53	0,75
										3,52			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
Norway(consumers only)													
All population													
Roasted coffee	39,27	88,20	0,29	0,41	< LOD – 4,10	11,39	16,10	25,58	36,16	0,16	0,23	0,36	0,51
Wheat	144	265	0,33	1,12	< LOD – 19,90	47,52	161,28	87,45	296,80	0,67	2,27	**1,23**	4,18
Oat	7	24	0,15	0,40	< LOD - 4,20	1,05	2,80	3,60	9,60	0,01	0,04	0,05	0,14
Rye	10	28	0,43	2,50	< LOD - 2,50	4,30	25,00	12,04	70,00	0,06	0,35	0,17	0,99
Other fruit juice	27	118	0,01	0,01	0,002 - 0,02	0,27	0,27	1,18	1,18	0,00	0,00	0,02	0,02
Milk	463	1113	0,01	-	< LOD - 0,06	4,63	-	11,13	-	0,07	-	0,16	-
Derived milk product	24	71	0,01	0,02	< LOD - 0,12	0,24	0,48	0,71	1,42	0,00	0,01	0,01	0,02
										0,97			
Men													
Roasted coffee	42,63	92,40	0,29	0,41	< LOD – 4,10	12,36	17,48	26,80	37,88	0,16	0,22	0,34	0,49
Wheat	173	305	0,33	1,12	< LOD – 19,90	57,09	193,76	100,65	341,60	0,73	2,48	**1,29**	4,38
Oat	8	28	0,15	0,40	< LOD - 4,20	1,20	3,20	4,20	11,20	0,02	0,04	0,05	0,14
Rye	10	30	0,43	2,50	< LOD - 2,50	4,30	25,00	12,90	75,00	0,06	0,32	0,17	0,96
Other fruit juice	30	120	0,01	0,01	0,002 - 0,02	0,30	0,30	1,20	1,20	0,00	0,00	0,02	0,02
Milk	549	1231	0,01	-	< LOD - 0,06	5,49	-	12,31	-	0,07	-	0,16	-
Derived milk product	26	71	0,01	0,02	< LOD - 0,12	0,26	0,52	0,71	1,42	0,00	0,01	0,01	0,02
										1,04			
Women													
Roasted coffee	35,91	79,80	0,29	0,41	< LOD – 4,10	10,41	14,72	23,14	32,72	0,16	0,23	0,36	0,50
Wheat	116	196	0,33	1,12	< LOD – 19,90	38,28	129,92	64,68	219,52	0,59	2,00	**1,00**	3,38
Oat	6	19	0,15	0,40	< LOD - 4,20	0,90	2,40	2,85	7,60	0,01	0,04	0,04	0,12
Rye	9	29	0,43	2,50	< LOD - 2,50	3,87	22,50	12,47	72,50	0,06	0,35	0,19	1,12
Other fruit juice	25	88	0,01	0,01	0,002 - 0,02	0,25	0,25	0,88	0,88	0,00	0,00	0,01	0,01
Milk	384	907	0,01	-	< LOD - 0,06	3,84	-	9,07	-	0,06	-	0,14	-
Derived milk product	22	57	0,01	0,02	< LOD - 0,12	0,22	0,44	0,57	1,14	0,00	0,01	0,01	0,02
										0,88			
Portugal													
Beer	177,3		0,00	0,00	< LOD – 0,006	0,35	0,71			0,01	0,01		
Rose wine	149,3		0,01	-	< LOD	1,49	-			0,02	-		
Sweet wine	1,1		0,01	-	< LOD	0,01	-			0,00	-		
Coffee (all type)	10,1		0,60	1,87	< LOD – 2,7	6,06	18,89			0,09	0,29		
Wheat / white wheat flour	235,1		0,19	-	< LOD	44,67	-			0,69	-		
										0,81			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
Spain													
Low alcoholic beer	16,27		0,02	0,02	0,015 - 0,024	0,33	0,33			0,01	0,01		
Beer	130,72		0,04	0,04	< LOD – 0,08	5,23	5,23			0,09	0,09		
Red wine	51,96		0,04	0,04	< LOD – 0,60	2,08	2,08			0,03	0,03		
Rose wine	17,32		0,03	0,03	< LOD – 0,16	0,52	0,52			0,01	0,01		
White wine	19,71		0,03	0,03	< LOD – 0,27	0,59	0,59			0,01	0,01		
Sparkling wine (champagne. cava. etc)	4,07		0,01	0,02	< LOD – 0,04	0,04	0,08			0,00	0,00		
Other wines (including sweet wine)	2,93		0,41	0,67	< LOD - 2,54	1,20	1,96			0,02	0,03		
Roasted coffee	7,46		1,17	1,17	0,22 – 5,64	8,73	8,73			0,15	0,15		
Instant coffee	1,1		0,5	0,5	0,19 – 1,08	0,55	0,55			0,01	0,01		
Rice	18,49		0,25	-	< LOD	4,62	-			0,08	-		
Wheat bread	153,74		0,30	0,30	0,005 - 7,37	46,12	46,12			0,77	0,77		
Grape juice	3,85		0,04	0,04	0,15 – 0,18	0,15	0,15			0,00	0,00		
										1.18			
Sweden (consumers only)													
Adults													
Beer	310	950	0,02	0,02	0,01 – 0,03	6,20	6,20	19,00	19,00	0,09	0,09	0,27	0,27
Wine	61	157	0,21	0,21	< LOD – 2,47	12,81	12,81	32,97	32,97	0,18	0,18	0,47	0,47
Roasted coffee	13,1	26,7	0,16	0,17	< LOD – 0,49	2,10	2,23	4,27	4,54	0,03	0,03	0,06	0,06
Wheat	78	140	0,34	0,73	< LOD – 5,20	26,52	56,94	47,60	102,20	0,38	0,81	0,68	1,46
Oat	34	75	0,24	0,76	< LOD – 3,60	8,16	25,84	18,00	57,00	0,12	0,37	0,26	0,81
Rye	36	77	1,06	1,47	< LOD – 27,0	38,16	52,92	81,62	113,19	0,55	0,76	**1,17**	1,62
Pulses	12	27	0,14	1,16	< LOD - 1,90	1,68	13,92	3,78	31,32	0,02	0,20	0,05	0,45
Milks	420	960	0,008	-	< LOD – 0,03	3,36	-	7,68	-	0,05	-	0,11	-
										1,42			
Children													
Beer	69	143	0,02	0,02	0,01 – 0,03	1,38	1,38	2,86	2,86	0,04	0,04	0,08	0,08
Wine	33	57	0,21	0,21	< LOD – 2,47	6,93	6,93	11,97	11,97	0,18	0,18	0,32	0,32
Roasted coffee	2,9	8,5	0,16	0,17	< LOD – 0,49	0,46	0,49	1,36	1,44	0,01	0,01	0,04	0,04
Wheat	76	120	0,34	0,73	< LOD – 5,20	25,84	55,48	40,80	87,60	0,68	1,46	1,07	2,31
Oat	28	64	0,24	0,76	< LOD – 3,60	6,72	21,28	15,36	48,64	0,18	0,56	0,40	1,28
Rye	27	58	1,06	1,47	< LOD – 27,0	28,62	39,69	61,48	85,26	0,75	1,04	**1,62**	2,24
Pulses	12	25	0,14	1,16	< LOD - 1,90	1,68	13,92	3,50	29,00	0,04	0,37	0,09	0,76
Milks	710	1300	0,008	-	< LOD - 0,03	5,68	-	10,40	-	0,15	-	0,27	-
										2,03			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
The Netherlands													
All population													
Red wine	16		0,24	0,55	<LOD –3,10	3,84	8,80			0,06	0,13		
White wine	10		0,16	1,25	<LOD – 2,10	1,60	12,50			0,02	0,19		
Roasted coffee	18,3		0,81	1,54	<LOD – 5,00	14,82	28,18			0,23	0,43		
Wheat	111		0,76	8,7	<LOD – 8,70	84,36	965,70			1,28	14,68		
										1,59			
Consumers only													
Red wine	160		0,24	0,55	<LOD –3,10	38,40	88,00			0,58	1,34		
White wine	146		0,16	1,25	<LOD – 2,10	23,36	182,50			0,36	2,77		
Roasted coffee	26		0,81	1,54	<LOD – 5,00	21,06	40,04			0,32	0,61		
										1,26			
United Kingdom													
Population 16-64 years													
Wine	24,6	132,2	0,13	0,23	<LOD - 1,1	3,20	5,66	17,19	30,41	0,05	0,08	0,25	0,43
Instant coffee	3,3	11	1,00	1,17	<LOD - 8,0	3,30	3,86	11,00	12,87	0,05	0,06	0,16	0,18
Cocoa Powder	3,2	14	1,20	1,20	<LOD - 2,4	3,84	3,84	16,80	16,80	0,05	0,05	0,24	0,24
Wheat	127,3	224,5	0,17	1,90	<LOD - 6,3	21,64	241,87	38,17	426,55	0,31	3,45	**0,54**	6,08
Barley	0	0	0,31	2,30	<LOD - 6,4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Oats	2,9	19,2	0,35	5,90	<LOD - 5,9	1,02	17,11	6,72	113,28	0,01	0,24	0,10	1,62
Rye	0,6	3,3	0,15	1,10	<LOD - 1,1	0,09	0,66	0,50	3,63	0,00	0,01	0,01	0,05
Dried fruits (currants)	0,2	1,3	5,70	5,90	<LOD - 53,6	1,14	1,18	7,41	7,67	0,02	0,02	0,11	0,11
Dried fruits (raisins)	0,5	2,1	2,90	3,10	<LOD - 29,8	1,45	1,55	6,09	6,51	0,02	0,02	0,09	0,09
Dried fruits (sultanas)	0,4	2,6	3,65	4,20	<LOD - 25,1	1,46	1,68	9,49	10,92	0,02	0,02	0,14	0,16
										0,53			
Population 1,5-4,5 years													
Instant coffee	0	0,1	1,00	1,17	<LOD - 8	0,00	0,00	0,10	0,12	0,00	0,00	0,01	0,01
Cocoa Powder	6,7	22,4	1,20	1,20	<LOD - 2,4	8,04	8,04	26,88	26,88	0,55	0,55	**1,85**	1,85
Wheat	47,3	88,2	0,17	1,90	<LOD - 6,3	8,04	89,87	14,99	167,58	0,55	6,20	1,03	11,56
Barley	0	0	0,31	2,30	<LOD - 6,4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Oats	1	6	0,35	5,90	<LOD - 5,9	0,35	5,90	2,10	35,40	0,02	0,41	0,14	2,44
Rye	0	0	0,15	1,10	<LOD - 1,1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Dried fruits (currants)	0,1	0	5,70	5,90	<LOD - 53,6	0,57	0,59	0,00	0,00	0,04	0,04	0,00	0,00
Dried fruits (raisins)	0,9	4,6	2,90	3,10	<LOD - 29,8	2,61	2,79	13,34	14,26	0,18	0,19	0,92	0,98
Dried fruits (sultanas)	0,3	0	3,65	4,20	<LOD - 25,1	1,10	1,26	0,00	0,00	0,08	0,09	0,00	0,00
										1,42			

Table 3
Estimated dietary intake of Ochratoxin A in each Member State.

Food product	Food consumption g/person/day		Mean of Ochratoxin A in food ug/kg			Intake of Ochratoxin A ng/person/day				Intake of Ochratoxin A ng/kg bw/day			
	Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
								Mean 1	Mean 2			Mean 1	Mean 2
United Kingdom (cont'd)													
Consumers 16-64 years													
Wine	74,2	213,9	0,13	0,23	<LOD - 1,1	9,65	17,07	27,81	49,20	0,14	0,24	0,40	0,70
Instant coffee	4,5	13	1,00	1,17	<LOD - 8,0	4,50	5,26	13,70	15,21	0,06	0,08	0,19	0,22
Cocoa Powder	5,3	16,9	1,20	1,20	<LOD - 2,4	6,36	6,36	20,28	20,28	0,09	0,09	0,29	0,29
Cereals together	131,0	230,8	0,17	1,98	<LOD - 6,4	22,9	241,9	40,9	467,8	0,32	3,4	0,58	6,02
Dried fruit together	6,1	19,9	3,29	3,57	<LOD - 53,6	22,4	24,3	69,0	74,0	0,30	0,35	**1,00**	1,05
										0,91			
Consumers 1,5-4,5 years													
Wine	4,4	10,7	0,13	0,23	<LOD - 1,1	0,57	1,01	1,39	2,46	0,04	0,07	0,10	0,17
Instant coffee	0,7	2,3	1,00	1,17	<LOD - 8,0	0,70	0,82	2,30	2,69	0,05	0,06	0,16	0,19
Cocoa Powder	8,1	23,9	1,20	1,20	<LOD - 2,4	9,72	9,72	28,68	28,68	0,67	0,67	1,98	1,98
Cereals together	48,5	89,5	0,19	2,18	<LOD - 6,4	8,5	90,5	15,7	168,0	0,59	6,24	1,08	11,6
Dried fruit together	9,2	35,3	3,50	3,83	<LOD - 53,6	31,2	33,7	108,8	116,3	2,20	2,3	**7,50**	8,00
										3,55			

Table 3.1

Summary of mean body weight for each Member State

Countries	**Mean body weight (kg)**
Denmark	70
Finland	60
France	
All population 2->65 years	57,9
Adult 15->65 years	63,3
Children 2-14 years	30,2
Germany	
Adult >14 years	70,4
Children < 14 years	30,7
Girls 4-6 years	13,5
Greece	70
Italy	70
Norway	
Women	65
Men	78
All population	71
Portugal	65
Spain	60
Sweden	
Adult	70
Children	38
The Netherlands	65,8
United Kingdom	
Population 16-64 years	70,1
Population 1,5-4,5 years	14,5

Table 3A
Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark	Wheat	0,01			0,27	0,46	<LOD - 31,6								
	Rye	0,01			0,70	1,00	<LOD - 33,3								
	Wheat flour	0,01	19,8	44,9	0,36	0,46	<LOD - 16	7,13	9,11	16,16	20,65	0,10	0,13	0,23	0,30
	Rye flour	0,01			0,89	0,99	<LOD - 29,7								
	Wheat bread, white	-	70,5	148,5	0,19	0,32		13,40	22,56	28,22	47,52	0,19	0,32	0,40	0,68
	Wheat bread, coarsely	-	23,7	97,1	0,19	0,32		4,50	7,58	18,45	31,07	0,06	0,11	0,26	0,44
	Rye bread	-	71,7	150,5	0,49	0,70		35,13	50,19	73,75	105,35	0,50	0,72	**1,05**	1,51
												0,86			
Finland	Wheat	0,2 -0,5	93		0,22	1,31	<LOD - 3	20,46	121,83			0,34	2,03		
	Rye	0,2 -0,5	62		0,63	2,80	<LOD - 17	39,06	173,60			0,65	2,89		
	Oat	0,2	25		0,10	-	<LOD	2,50				0,04			
												1,03			
	Barley	0,2-0,5			0,20	0,40	< LOD-0,7								
	Millet	0,2 - 0,5			0,23	-	<LOD								
	Other cereals	0,2 - 0,5			1,86	15,75	<LOD - 41								
France(cons.only) ***All population 2-65 years***	Cereal & cereal products	0,2	204,6	358,7	0,35	1,14	<LOD - 2,00	71,61	233,24	125,55	408,92	**1,24**	4,03	**2,17**	7,06
France ***Adult 15 - 65 years***	Cereal & cereal products	0,2	206,9	360,3	0,35	1,14	<LOD - 2	72,42	235,87	126,11	410,74	**1,14**	3,73	**1,99**	6,49
France ***Children 2 - 14 years***	Cereal & cereal products	0,2	195,4	343,2	0,35	1,14	<LOD - 2	68,39	222,76	120,12	391,25	**2,26**	7,38	**3,98**	12,96
France	Wheat	0,2			0,28	0,90	<LOD - 0,90								
	Corn	0,2			0,30	1,10	<LOD - 1,10								
	Oat	0,2			0,25	-	<LOD								
	Barley	0,2			0,50	2,00	<LOD - 2,00								
	Rice	0,2			0,37	1,20	<LOD - 1,40								
	Breakfast food grains	0,2			0,56	0,80	<LOD - 1,80								

Table 3A - Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Germany ***Adult >14 years***	Bread and rolls	0,01	146,99		0,17	0,19	<LOD-5.54	25,28	27,78			0,36	0,39		
	Pasta	0,1	14,02		0,45	1,04	<LOD-29.77	6,28	14,55			0,09	0,21		
	Manufactured multi-ingredient cereal products	0,01	67,55		0,21	0,32	<LOD - 31,80	13,92	21,28			0,20	0,30		
												0,65			
Germany ***Children <14 years***	Bread and rolls	0,01	102,83		0,17	0,19	<LOD-5,54	17,69	19,43			0,58	0,63		
	Pasta	0,1	17,39		0,45	1,04	<LOD-29,77	7,79	18,05			0,25	0,59		
	Manufactured multi-ingredient cereal products	0,01	62,35		0,21	0,32	<LOD - 31,80	12,84	19,64			0,42	0,64		
												1,25			
Germany ***Girls 4-6 years***	Bread and rolls	0,01	70,60		0,17	0,19	<LOD-5,542	12,14	13,34			0,90	0,99		
	Pasta	0,1	14,93		0,45	1,04	<LOD-29,77	6,69	15,50			0,50	1,15		
	Manufactured multi-ingredient cereal products	0,01	46,07		0,21	0,32	<LOD - 31,80	9,49	14,51			0,70	1,07		
												2,10			
Germany	Wheat	0,01			0,04	0,11	<LOD-0,26								
	Corn	0,01			0,17	0,37	<LOD-3,35								
	Oat	0,01			0,14	0,17	<LOD-0,55								
	Millet	0,01			0,11	0,12	<LOD-0,83								
	Rye	0,01			0,05	0,10	<LOD-0,80								
	Barley	0,01			0,06	0,08	<LOD-0,50								
	Rice	0,1			0,07	0,25	<LOD-0,28								
	Buckwheat	0,01			0,05	0,11	<LOD-0,59								
	German wheat	0,01			0,02	0,03	<LOD-0,18								
	Milled cereal products (early milling stages inl. Rice)	?			0,08	?	< LOD-0,73								
	Bran	0,01			0,09	0,26	<LOD-1,59								
	White wheat flour	0,01			0,14	0,16	< LOD-1,73								
	Corn fraction	0,01			0,14	0,63	< LOD-1,53								
	Rye flour	0,01			0,27	0,31	< LOD-6,4								
	Others	0,01			0,44	0,59	<LOD-12,07								

Table 3A - Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Greece															
Italy *All population*	Barley	0,05 - 0,5	0,22	-	0,52	2,52	<LOD-3,9	0,11	0,56	-	-	0,00	0,01	-	-
	Corn	0,05 - 0,5	0,75	-	0,28	1,49	<LOD-4.9	0,21	1,11	-	-	0,00	0,02	-	-
	Rice	0,5	10,84	37,90	0,25	-	<LOD	2,71	-	9,48	-	0,04	-	**0,14**	-
	Rye	0,1	0,00	-	0,05	-	<LOD	0,00	-	-	-	0,00	-	-	-
	Wheat flour	0,2	5,43	28,60	0,20	0,20	0,2	1,09	1,09	5,72	5,72	0,02	0,02	0,08	0,08
												0,06			
Italy *Consumers*	Barley	0,05 - 0,5	8,23	17,50	0,52	2,52	<LOD-3,9	4,24	20,72	9,01	44,05	0,06	0,30	0,13	0,63
	Corn	0,05 - 0,5	16,98	41,20	0,28	1,49	<LOD-4.9	4,67	25,23	11,33	61,22	0,07	0,36	0,16	0,87
	Rice	0,5	20,26	46,40	0,25	-	<LOD	5,06	-	11,60	-	0,07	-	**0,17**	-
	Rye	0,1	-	-	0,05	-	<LOD	-	-	-	-	-	-	-	-
	Wheat flour	0,2	15,38	46,60	0,20	0,20	0,2	3,08	3,08	9,32	9,32	0,04	0,04	0,13	0,13
												0,24			
Italy	Wheat	0,05			0,025	-	<LOD								
	Malt	0,5			0,25	-	<LOD								
	White wheat flour	0,4			0,2	-	<LOD								
Norway **(cons.only)** **All population**	Wheat	0,01 - 0,30	144	265	0,33	1,12	<LOD-8,2	47,52	161,28	87,45	296,80	0,67	2,27	**1,23**	4,18
	Oat	0,01 - 0,30	7	24	0,15	0,40	<LOD-4,2	1,05	2,80	3,60	9,60	0,01	0,04	0,05	0,14
	Rye	0,25 - 0,30	10	28	0,43	2,50	<LOD-2,5	4,30	25,00	12,04	70,00	0,06	0,35	0,17	0,99
												0,74			
Norway **Men**	Wheat	0,01 - 0,30	173	305	0,33	1,12	<LOD-8,2	57,09	193,76	100,65	341,60	0,73	2,48	**1,29**	4,38
	Oat	0,01 - 0,30	8	28	0,15	0,40	<LOD-4,2	1,20	3,20	4,20	11,20	0,02	0,04	0,05	0,14
	Rye	0,25 - 0,30	10	30	0,43	2,50	<LOD-2,5	4,30	25,00	12,90	75,00	0,06	0,32	0,17	0,96
												0,80			
Norway **Women**	Wheat	0,01 - 0,30	116	196	0,33	1,12	<LOD-8,2	38,28	129,92	64,68	219,52	0,59	2,00	**1,00**	3,38
	Oat	0,01 - 0,30	6	19	0,15	0,40	<LOD-4,2	0,90	2,40	2,85	7,60	0,01	0,04	0,04	0,12
	Rye	0,25 - 0,30	9	29	0,43	2,50	<LOD-2,5	3,87	22,50	12,47	72,50	0,06	0,35	0,19	1,12
												0,66			

Table 3A - Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Portugal	Wheat and white wheat flour	0,2 - 0,5	235,10		0,19	-	<LOD-<Loq	44,67	-			0,69	-		
	Wheat	0,3 - 0,5			0,17		<LOD								
	White wheat flour	0,5			0,25	-	<LOD								
Spain	Rice	0,5	18,49		0,25	-	<LOD	4,62	-			0,08	-		
	Wheat bread	0,005	153,74		0,30	0,30	0,005 - 7,37	46,12	46,12			0,77	0,77		
												0,85			
	Corn	0,5			0,25	2,50	<LOD-2,5								
Sweden **(cons.only)** ***Adults***	Wheat	0,1	78	140	0,34	0,73	<LOD-5.2	26,52	56,94	47,60	102,20	0,38	0,81	0,68	1,46
	Oat	0,1	34	75	0,24	0,76	<LOD-3.6	8,16	25,84	18,00	57,00	0,12	0,37	0,26	0,81
	Rye	0,1	36	77	1,06	1,47	<LOD-27	38,16	52,92	81,62	113,19	0,55	0,76	**1,17**	1,62
												1,04			
Sweden ***Children***	Wheat	0,1	76	120	0,34	0,73	<LOD-5.2	25,84	55,48	40,80	87,60	0,68	1,46	1,07	2,31
	Oat	0,1	28	64	0,24	0,76	<LOD-3.6	6,72	21,28	15,36	48,64	0,18	0,56	0,40	1,28
	Rye	0,1	27	58	1,06	1,47	<LOD-27	28,62	39,69	61,48	85,26	0,75	1,04	**1,62**	2,24
												1,61			

Table 3A - Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
The Netherlands **All population**	Wheat	1	111,00		0,76	8,70	<LOD-8,7	84,36	965,70			1,28	14,68		
The Netherlands **Consumers**	Wheat	1			0,76	8,70	<LOD-8,8								
The Netherlands	White wheat flour	0,25			0,17	1,50	<LOD - 1,50								
	Buckwheat flour	0,25			2,00	2,00	2,00								
	Whole-wheat meal	0,25			0,125	-	< LOD								

Table 3A - Best estimates for OA dietary intake in cereals

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
United Kingdom ***Population 16-64 years***	Wheat	0,1	127,3	224,5	0,17	1,90	<LOD-6,3	21,64	241,87	38,17	426,55	0,31	3,45	**0,54**	6,08
	Barley	0,1 - 0,2	0	0	0,31	2,30	<LOD-6,4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Oats	0,1 - 0,2	2,9	19,2	0,35	5,90	<LOD-5,9	1,02	17,11	6,72	113,28	0,01	0,24	0,10	1,62
	Rye	0,2	0,6	3,3	0,15	1,10	<LOD-1,1	0,09	0,66	0,50	3,63	0,00	0,01	0,01	0,05
												0,32			
United Kingdom ***Population 1,5-4,5 years***	Wheat	0,1	47,3	88,2	0,17	1,90	<LOD-6,3	8,04	89,87	14,99	167,58	0,55	6,20	**1,03**	11,56
	Barley	0,1 - 0,2	0	0	0,31	2,30	<LOD-6,4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
	Oats	0,1 - 0,2	1	6	0,35	5,90	<LOD-5,9	0,35	5,90	2,10	35,40	0,02	0,41	0,14	2,44
	Rye	0,2	0	0	0,15	1,10	<LOD-1,1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
												0,58			
United Kingdom ***Consumers 16-64 years***	Cereals together	0,1 - 0,2	131	230,8	0,17*	1,98	<LOD-6,4	22,90	241,90	40,90	467,80	**0,32**	3,40	**0,58**	6,02
United Kingdom ***Consumers 1,5-4,5 years***	Cereals together	0,1 - 0,2	48,5	89,5	0,19*	2,18	<LOD-6,4	8,50	90,50	15,70	168,00	**0,59**	6,24	**1,08**	11,60
United Kingdom	Corn	0,1			0,09	0,50	<LOD - 1,5								
	White wheat flour	0,1			0,50	0,60	<LOD - 1,7								
	Wholemeal flour	0,1			1,00	1,10	<LOD - 5,3								
	Manufactured multi-ingredient	0,1			0,40	0,40	0,40								
	Biscuits-raw materials	0,1			0,80	1,40	<LOD - 6,4								
	Breakfast cereals-retail	0,1			0,40	0,80	<LOD - 1,70								
	Pasta-dried	0,1			0,70	0,90	<LOD - 1,30								
	Raw material for pasta	0,1			0,50	0,80	<LOD - 1,60								
	Breakfast cereals - raw materials	0,1			0,40	1,00	<LOD - 6,50								

***Weighted mean values based on consumption rates as provided by the Member State**

Table 3B - Best estimates for OA dietary intake in coffee

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark	Roasted coffee	0,1	26,4	64,5	0,51	0,51	0,17 - 3,17	13,464	13,464	32,90	32,90	**0,19**	0,19	**0,47**	0,47
Finland	Roasted coffee	0,2 - 0,5	46		0,51	0,89	<LOD - 3,00	23,46	40,94			0,39	0,68		
	Instant coffee	0,2 - 0,5	1		1,61	1,97	<LOD - 7,00	1,61	1,97			0,03	0,03		
												0,42			
France (cons.only) ***All population 2-65 years***	Coffee	0,3	15,2	38	1,03	2,80	<LOD - 13,10	15,66	42,56	39,14	106,40	**0,27**	0,74	**0,68**	1,84
France ***Adult 15-65 years***	Coffee	0,3	15,5	38,1	1,03	2,80	<LOD - 13,10	15,97	43,40	39,24	106,68	**0,25**	0,69	**0,62**	1,69
France ***Children 2-14 years***	Coffee	0,6	3,3	8,7	1,03	2,80	<LOD - 13,10	3,40	9,24	8,96	24,36	**0,11**	0,31	**0,30**	0,81
France	Roasted coffee	0,3			0,58	1,04	<LOD - 1,60								
	Instant coffee	0,3			1,34	4,30	<LOD - 6,40								
	Green coffee	0,3			6,55	13,58	<LOD - 65,50								
Germany ***Adult >14 years***	Roasted coffee	0,3	16,06		0,54	1,07	<LOD - 6,32	8,62	17,20			0,12	0,24		
	Decaffeinated coffee	0,3	1,97		0,60	1,07	<LOD - 3,34	1,17	2,10			0,02	0,03		
												0,14			
Germany ***Children <14 years***	Roasted coffee	0,3	0,47		0,54	1,07	<LOD - 6,32	0,25	0,50			**0,01**	0,02		
Germany	Instant coffee	0,3			1,74	2,05	<LOD - 9,47								
	Malt coffee	0,3			0,23	0,65	<LOD - 0,96								
Greece ***All population***	Coffee	0,5	4,3	16	1,69	2,58	<LOD - 7,2	7,27	11,09	27,04	41,28	**0,10**	0,16	**0,39**	0,59
Greece ***Urban***	Coffee	0,5	4,1		1,69	2,58	<LOD - 7,2	6,93	10,58			**0,10**	0,15		
Greece ***Semi urban***	Coffee	0,5	4,1		1,69	2,58	<LOD - 7,2	6,93	10,58			**0,10**	0,15		
Greece ***Rural***	Coffee	0,5	4,8		1,69	2,58	<LOD - 7,2	8,11	12,38			**0,12**	0,18		
Greece	Roasted coffee	0,5			1,79	2,72	<LOD - 7,20								
	Instant coffee	0,5			2,10	2,10	1,3-2,6								
	Decaffeinated instant coffee	0,5			0,25	-	<LOD								

Table 3B - Best estimates for OA dietary intake in coffee

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Italy *All population*	Roasted coffee	0,05 - 1	6,94	19,6	0,55	1,80	<LOD - 11,5	3,82	12,49	10,78	35,28	0,05	0,18	0,15	0,50
	Decaffeinated roasted coffee	0,5	0,2	0,6	0,25	-	<LOD	0,05	-	0,15	-	0,00	-	0,00	-
												0,06			
Italy *Consumers*	Roasted coffee	0,05 - 1	9,28	21	0,55	1,80	<LOD - 11,5	5,10	16,70	11,55	37,80	0,07	0,24	0,17	0,54
	Decaffeinated roasted coffee	0,5	5,48	15,8	0,25	-	<LOD	1,37	-	3,95	-	0,02	-	0,06	-
												0,09	0,24	**0,22**	**0,54**
Italy	Instant coffee	0,1 - 0,6			0,40	1,03	<LOD - 1,60								
	Instant decaffeinated coffee	0,1			0,05	-	<LOD								
	Coffee	0,25			0,13	-	<LOD								
Norway **(cons.only)** **All population**	Roasted coffee	0,1	39,27	88,20	0,29	0,41	<LOD - 4,10	11,39	16,10	25,58	36,16	0,16	0,23	0,36	0,51
Norway **Men**	Roasted coffee	0,1	42,63	92,40	0,29	0,41	<LOD - 4,10	12,36	17,48	26,80	37,88	0,16	0,22	0,34	0,49
Norway **Women**	Roasted coffee	0,1	35,91	79,80	0,29	0,41	<LOD - 4,10	10,41	14,72	23,14	32,72	0,16	0,23	0,36	0,50
Portugal	Coffee	0,3	10,1		0,60	1,87	<LOD – 2,7	6,06	18,89			0,09	0,29		
	Roasted coffee	0,3			0,60	1,54	< LOD-2,7								
	Instant coffee	0,3			0,15	-	< LOD								
	Coffee succedaneous	0,3			0,45	-	<Loq (0,9)								
Spain	Roasted coffee	0,11	7,46		1,17	1,17	0,22 - 5,64	8,73	8,73			0,15	0,15		
	Instant coffee	0,11	1,1		0,50	0,50	0,19 - 1,08	0,55	0,55			0,01	0,01		
												0,15			

Table 3B - Best estimates for OA dietary intake in coffee

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Sweden (cons.only) *Adults*	Roasted coffee	0,01	13,1	26,7	0,16	0,17	<LOD-0,49	2,10	2,23	4,27	4,54	**0,03**	0,03	**0,06**	0,06
Sweden *Children*	Roasted coffee	0,01	2,9	8,5	0,16	0,17	<LOD-0,49	0,46	0,49	1,36	1,45	**0,01**	0,01	**0,04**	0,04
Sweden	Instant Coffee	0,01			0,37	0,37	0,07 - 1,2								
The Netherlands *All population*	Roasted coffee	0,13-1	18,3		0,81	1,54	< LOD-5,00	14,82	28,18			**0,23**	0,43		
The Netherlands *Consumers*	Roasted coffee	0,13-1	26		0,81	1,54	< LOD-5,00	21,06	40,04			**0,32**	0,61		
The Netherlands	Instant coffee	0,25-1			1,33	2,77	<LOD-4,50								
	Decaffeinated roasted coffee	0,13-1			0,53	1,00	< LOD-2,30								
United Kingdom *Population 16-64 years*	Instant coffee	0,1	3,3	11	1,00	1,17	<LOD-8.00	3,30	3,86	11,00	12,87	**0,05**	0,06	**0,16**	0,18
United Kingdom *Population 1,5-4,5 years*	Instant coffee	0,1	0	0,1	1,00	1,17	<LOD-8,00	0,00	0,00	0,10	0,12	**0,00**	0,00	**0,01**	0,01
United Kingdom *Consumers 16-64 years*	Instant coffee	0,1	4,5	13	1,00	1,17	<LOD-8.00	4,50	5,27	13,00	15,21	**0,06**	0,08	**0,19**	0,22
United Kingdom *Consumers 1,5-4,5 years*	Instant coffee	0,1	0,7	2,3	1,00	1,17	<LOD-8,00	0,70	0,82	2,30	2,69	**0,05**	0,06	**0,16**	0,19
United Kingdom	Roasted coffee	0,1			0,60	0,70	<LOD - 2,10								
	Decaffeinated coffee	0,1			0,50	1,06	<LOD - 2,50								

Table 3C - Best estimates for OA dietary intake in beer

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark	Beer	0,001	203,8	848,6	0,05	0,05	0,007 - 0,16	9,99	9,99	41,58	41,58	**0,14**	0,14	**0,59**	0,59
Finland	Beer	0,05	230,00		0,03	0,06	<LOD - 0,06	6,90	13,80			**0,12**	0,23		
France															
Germany *Adult >14 years*	Low alcoholic beer	0,005	21,32		0,01	0,02	<LOD - 0,08	0,30	0,38			0,00	0,01		
	Beer	0,005	192,29		0,03	0,03	<LOD - 0,29	5,31	6,15			0,08	0,09		
												0,08			
Germany *Children <14 years*	Low alcoholic beer	0,005	10,65		0,01	0,02	<LOD - 0,08	0,15	0,19			0,00	0,01		
	Beer	0,005	3,48		0,03	0,03	<LOD - 0,29	0,10	0,11			0,00	0,00		
												0,01			
Germany *Girls 4-6 years*	Low alcoholic beer	0,005	6,17		0,01	0,02	<LOD - 0,08	0,09	0,11			0,01	0,01		
	Beer	0,005	9,69		0,03	0,03	<LOD - 0,29	0,27	0,31			0,02	0,02		
												0,03			
Greece															
Italy *Population*	Beer	0,025 - 0,05	23,029	123,2	0,02	0,04	<LOD - 0,14	0,46	0,92	2,46	4,93	**0,01**	0,01	**0,04**	0,07
Italy *Consumers*	Beer	0,025 - 0,05	110,829	384,5	0,02	0,04	<LOD - 0,14	2,22	4,43	7,69	15,38	**0,03**	0,06	**0,11**	0,22
Italy	Beer	0,025			0,013	-	<LOD								
	Domestic beer	0,005			0,01	0,02	<LOD - 0,02								
	Imported beer	0,005			0,02	0,04	<LOD - 0,14								
Norway															
Portugal	Beer	0,0005	177,3		0,002	0,004	<LOD - 0,006	0,35	0,71			0,01	0,01		
Spain	Low alcoholic beer	0,004	16,27		0,02	0,02	0,015-0,024	0,33	0,33			0,01	0,01		
	Beer	0,004	130,72		0,04	0,04	<LOD - 0,075	5,23	5,23			0,09	0,09		
												0,09			
Sweden(cons.only) *Adults*	Beer	0,003	310	950	0,02	0,02	0,01 - 0,03	6,20	6,20	19,00	19,00	**0,09**	0,09	**0,27**	0,27
Sweden *Children*	Beer	0,003	69	143	0,02	0,02	0,01 - 0,03	1,38	1,38	2,86	2,86	**0,04**	0,04	**0,08**	0,08
The Netherlands															
United Kingdom	Beer	0,2			0,1	-	<LOD								

Table 3D - Best estimates for OA dietary intake in wine

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark															
Finland	Red wine	0,01	50,00		0,14	0,20	<LOD - 1,90	7,00	10,00			**0,12**	0,17		
	White wine	0,05			0,14	0,19	<LOD - 0,39								
	Red fruit wine	0,05			0,03		<LOD								
	White fruit wine	0,05			0,03		<LOD								
France (cons.only) ***All population 2-65 years***	Wine together	0,01-0,1	181,3	569,7	0,16	0,43	<LOD - 1,64	29,01	77,96	91,15	244,97	**0,50**	1,35	**1,57**	4,23
France ***Adult 15-65 years***	Wine together	0,01-0,1	187,9	571,4	0,16	0,43	<LOD - 1,64	30,06	80,80	91,42	245,70	**0,47**	1,28	**1,44**	3,88
France ***Children 2-14 years***	Wine together	0,01-0,1	4,9	18,9	0,16	0,43	<LOD - 1,64	0,78	2,11	3,02	8,13	**0,03**	0,07	**0,10**	0,27
France	Domestic wines	0,01-0,1			0,05	0,11	<LOD - 0,36								
	Imported wines	0,01-0,1			0,22	0,29	<LOD - 1,64								
Germany ***Adult>14 years***	Red wine	0,01	4,88		0,23	0,49	<LOD - 7	1,10	2,38			0,02	0,03		
	Rosé wine	0,01	4,88		0,14	0,31	<LOD - 6,32	0,70	1,53			0,01	0,02		
	White wine	0,01	16,55		0,10	0,43	<LOD - 1,36	1,59	7,13			0,02	0,10		
												0,05			
Germany ***Children <14 years***	Red wine														
	Rosé wine														
Germany ***Girls 4-6 years***	Red wine														
	Rosé wine														
Germany	Sweet wine	0,01			1,04	1,04	1,04								

Table 3D - Best estimates for OA dietary intake in wine

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Greece ***All population***	Wine	0,05	22	139	0,17	0,28	<LOD - 2,61	3,74	6,16	23,63	38,92	**0,05**	0,09	**0,34**	0,56
Greece ***Urban***	Wine	0,05	12		0,17	0,28	<LOD - 2,61	2,04	3,36			**0,03**	0,05		
Greece ***Semi urban***	Wine	0,05	25		0,17	0,28	<LOD - 2,61	4,25	7,00			**0,06**	0,10		
Greece ***Rural***	Wine	0,05	46		0,17	0,28	<LOD - 2,61	7,82	12,88			**0,11**	0,18		
Greece	Red wine	0,05			0,16	0,27	<LOD - 2,61								
	Rosé wine	0,05			0,07	0,09	<LOD - 0,13								
	White wine	0,05			0,13	0,23	<LOD - 1,17								
	Sweet wine	0,05			0,54	0,63	<LOD - 1,68								
Italy ***Population***	Red wine	0,005/0,01	46,93	292	1,29	1,49	<LOD - 15,60	60,54	69,93	376,68	435,08	**0,86**	1,00	**5,38**	6,22
	White wine	0,005			0,59	1,70	<LOD - 8,86								
	Rosé wine	0,005			0,13	0,26	<LOD - 0,28								
	Sweet wine	0,005			0,74	1,23	<LOD - 3,86								
Italy ***Consumers***	Red wine	0,005/0,01	159,76	450,4	1,29	1,49	<LOD - 15,60	206,09	238,04	581,02	671,10	**2,94**	3,40	**8,30**	9,59
	White wine	0,005			0,59	1,70	<LOD - 8,86								
	Rosé wine	0,005			0,13	0,26	<LOD - 0,28								
	Sweet wine	0,005			0,74	1,23	<LOD - 3,86								
Norway															
Portugal	Rosé wine	0,02	149,3		0,01	-	<LOD	1,49	-			0,02	-		
	Sweet wine	0,02	1,1		0,01	-	<LOD	0,01	-			0,00	-		
												0,02	**-**		

Table 3D - Best estimates for OA dietary intake in wine

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Spain	Red wine	0,003	51,96		0,04	0,04	<LOD - 0,60	2,08	2,08			0,03	0,03		
	Rosé wine	0,003	17,32		0,03	0,03	<LOD - 0,16	0,52	0,52			0,01	0,01		
	White wine	0,003	19,71		0,03	0,03	<LOD - 0,27	0,59	0,59			0,01	0,01		
	Sparkling wine (champagne, etc)	0,003	4,07		0,01	0,02	<LOD - 0,24	0,04	0,08			0,00	0,00		
	Other wines (incl. sweet wine)	0,003	2,93		0,41	0,67	<LOD - 2,54	1,20	1,96			0,02	0,03		
												0,07			
	Aperitif wine	0,003			0,06	0,07	<LOD - 0,25								
	Sweet wine	0,003			1,09	1,17	<LOD - 2,54								
Sweden (cons.only) ***Adults***	Wine	0,003	61	157	0,21	0,21	<LOD - 2,47	12,81	12,81	32,97	32,97	**0,18**	0,18	**0,47**	0,47
Sweden ***Children***	Wine	0,003	33	57	0,21	0,21	<LOD - 2,48	6,93	6,93	11,97	11,97	**0,18**	0,18	**0,32**	0,32
The Netherlands ***All population***	Red wine	0,05 - 0,1	16		0,24	0,55	<LOD - 3,10	3,84	8,80			0,06	0,13		
	White wine	0,01 - 0,05	10		0,16	1,25	<LOD - 2,10	1,60	12,50			0,02	0,19		
												0,08			
The Netherlands ***consumers***	Red wine	0,05 - 0,1	160		0,24	0,55	<LOD - 3,10	38,40	88,00			0,58	1,34		
	White wine	0,01 - 0,05	146		0,16	1,25	<LOD - 2,10	23,36	182,50			0,36	2,77		
												0,94			
United Kingdom ***Population 16-64 years***	Wine	0,01 - 0,2	24,6	132,2	0,13	0,23	<LOD - 1,1	3,20	5,66	17,19	30,41	**0,05**	0,08	**0,25**	0,43
United Kingdom ***Population 1,5-4,5 years***	Wine	0,01 - 0,2													
United Kingdom ***Consumers 16-64 years***	Wine	0,01 - 0,2	74,2	213,9	0,13	0,23	<LOD - 1,1	9,65	17,07	27,81	49,20	**0,14**	0,24	**0,40**	0,70
United Kingdom ***Consumers 1,5-4,5 years***	Wine	0,01 - 0,2	4,4	10,7	0,13	0,23	<LOD - 1,1	0,57	1,01	1,39	2,46	**0,04**	0,07	**0,10**	0,17
United Kingdom	Red wine	0,01 - 0,2			0,17	0,29	<LOD - 1,1								
	White wine	0,2			0,1	0,1	<LOD								

Table 3E - Best estimates for OA dietary intake in cocoa derived products

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark															
Finland															
France															
Germany *Adult >14 years*	Chocolate + sweets	0,01	51,82		0,10	0,12	<LOD - 3,600	5,18	6,11			**0,07**	0,09		
Germany *Children <14 years*	Chocolate + sweets	0,01	89,81		0,10	0,12	<LOD - 3,60	8,98	10,60			**0,29**	0,35		
Germany *Girls 4-6 years*	Chocolate + sweets	0,01	88,63		0,10	0,12	<LOD - 3,60	8,86	10,46			**0,66**	0,77		
Germany	Cocoa	0,01			0,37	0,38	<LOD - 1,8								
Greece															
Italy															
Norway															
Portugal															
Spain															
Sweden															
The Netherlands	Cocoa (powder)	0,25			0,13	-	<LOD								
	Cocoa mass	0,25			0,13	-	<LOD								
	Cocoa butter	0,25			0,13	-	<LOD								
	Chocolate spread	0,25			0,13	-	<LOD								
United Kingdom *Population 16-64 years*	Cocoa powder	0,2	3,2	14	1,20	1,20	<LOD-2,4	3,84	3,84	16,80	16,80	**0,05**	0,05	**0,24**	0,24
United Kingdom *Population 1,5-4,5 years*	Cocoa powder	0,2	6,7	22,4	1,20	1,20	<LOD-2,4	8,04	8,04	26,88	26,88	**0,55**	0,55	**1,85**	1,85
United Kingdom *Consumers 16-64 years*	Cocoa powder	0,2	5,3	16,9	1,20	1,20	<LOD-2,4	6,36	6,36	20,28	20,28	**0,09**	0,09	**0,29**	0,29
United Kingdom *Consumers 1,5-4,5 years*	Cocoa powder	0,2	8,1	23,9	1,20	1,20	<LOD-2,4	9,72	9,72	28,68	28,68	**0,67**	0,67	**1,98**	1,98
United Kingdom	Chocolate	0,1			0,20	0,38	<LOD - 0,6								

Table 3F - Best estimates for OA dietary intake in dried fruits

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark															
Finland	Raisins	0,20	1,00		1,34	1,85	<LOD - 7	1,34	1,85			0,02	0,03		
France (cons.only) ***All population 2-65 years***	Dried fruits (raisins)	0,20	5,3	10,8	0,66	1,54	<LOD - 4,3	3,50	8,16	7,13	16,63	0,06	0,14	**0,12**	0,29
	Dried fruits (others)	0,20	13,2	39	0,18	1,05	<LOD - 1,6	2,38	13,86	7,02	40,95	0,04	0,24	**0,12**	0,71
												0,10			
France ***Adults 15-65 years***	Dried fruits (raisins)	0,20	5,6	10,7	0,66	1,54	<LOD - 4,3	3,70	8,62	7,06	16,48	0,06	0,14	0,11	0,26
	Dried fruits (others)	0,20	14,5	45,7	0,18	1,05	<LOD- 1,6	2,61	15,23	8,23	47,99	0,04	0,24	**0,13**	0,76
												0,10			
France ***Children 2-14 years***	Dried fruits (raisins)	0,20	3,4	8,7	0,66	1,54	<LOD - 4,3	2,24	5,24	5,74	13,40	0,07	0,17	**0,19**	0,44
	Dried fruits (others)	0,20	6,3	15,1	0,18	1,05	<LOD - 1,6	1,13	6,62	2,72	15,86	0,04	0,22	0,09	0,53
												0,11			
Germany	Sultanas	0,01			1,28	1,35	<LOD - 21,4								
	Other dried fruits	0,01			0,08	0,10	<LOD - 3,95								
Greece ***All population***	Dried vine fruits	0,50	0,03		1,88	3,09	<LOQ - 16,50	0,06	0,09			0,00	0,00		
Greece ***Urban***	Dried vine fruits	0,50	0,03		1,88	3,09	<LOQ - 16,50	0,06	0,09			0,00	0,00		
Greece **Semi-*Urban***	Dried vine fruits	0,50	0,01		1,88	3,09	<LOQ - 16,50	0,02	0,03			0,00	0,00		
Greece ***Rural***	Dried vine fruits	0,50	0,02		1,88	3,09	<LOQ - 16,50	0,04	0,06			0,00	0,00		
Greece	Sultanas	0,50			2,26	3,22	<LOQ - 16,5								
	Currants	0,50			1,69	2,97	<LOQ - 12,38								
Italy															

Table 3F - Best estimates for OA dietary intake in dried fruits

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Norway															
Portugal															
Spain															
Sweden															
The Netherlands															
United Kingdom *Consumers 1,5-4,5 years*	Dried fruit together	0,20	9,20	35,30	3,50*	3,83	<LOD-53,6	31,20	33,70	108,80	116,30	**2,20**	2,30	**7,50**	8,00
United Kingdom *Consumers 16-64 years*	Dried fruit together	0,20	6,10	19,90	3,29*	3,57	<LOD-53.6	22,40	24,30	69,00	74,00	**0,30**	0,35	**1,00**	1,05
United Kingdom *Population 1,5-4,5 years*	Currants	0,20	0,10	0,00	5,70	5,90	<LOD-53,6	0,57	0,59	0,00	0,00	0,04	0,04	0,00	0,00
	Raisins	0,20	0,90	4,60	2,90	3,10	<LOD-29,8	2,61	2,79	13,34	14,26	0,18	0,19	**0,92**	0,98
	Sultanas	0,20	0,30	0,00	3,65	4,20	<LOD-25,1	1,10	1,26	0,00	0,00	0,08	0,09	0,00	0,00
												0,29			
United Kingdom *Population 16-64 years*	Currants	0,20	0,20	1,30	5,70	5,90	<LOD-53.6	1,14	1,18	7,41	7,67	0,02	0,02	0,11	0,11
	Raisins	0,20	0,50	2,10	2,90	3,10	<LOD-29.8	1,45	1,55	6,09	6,51	0,02	0,02	0,09	0,09
	Sultanas	0,20	0,40	2,60	3,65	4,20	<LOD-25.1	1,46	1,68	9,49	10,92	0,02	0,02	**0,14**	0,16
United Kingdom	Apricots	0,20			0,10	-	<LOD								
	Dates	0,20			0,10	0,20	<LOD - 0,2								
	Figs	0,10			0,10	0,55	<LOD - 0,8								
***Weighted mean values based on consumption rates as provided by the Member State**															

Table 3G - Best estimates for OA dietary intake in meat and derived products

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark															
Finland															
France (cons.only) ***All population 2-65 years***	Pork edible offal	0,05	0,03	-	0,14	1,14	<LOD - 6,1	0,00	0,03	-	-	0,00	0,00	-	-
France ***Adults 15-65 years***	Pork edible offal	0,05	0,05	-	0,14	1,14	<LOD - 6,1	0,01	0,06	-	-	0,00	0,00	-	-
France ***Children 2-14 years***	Pork edible offal	0,05	0		0,14	1,14	<LOD - 6,1	0,00	0,00			0,00	0,00		
Germany ***Adult >14 years***	Sausages	0,01	46,86		0,09	0,18	<LOD - 4,56	4,40	8,58			**0,06**	0,12		
Germany ***Children <14 years***	Sausages	0,01	36,3		0,09	0,18	<LOD - 4,56	3,41	6,64			**0,11**	0,22		
Germany ***Girls 4-6 years***	Sausages	0,01	28,59		0,09	0,18	<LOD - 4,56	2,69	5,23			**0,20**	0,39		
Germany	Meat (from mammals other than marine)	0,01			0,01	0,04	<LOD - 0,136								
	Pork Meat	0,01			0,01	0,01	<LOD - 0,136								
	Pork Edible Offal	0,01			0,80	2,57	<LOD - 9,33								
	Poultry Meat (Including Pigeon Meat)	0,01			0,005	-	<LOD								
	Ham	0,01			0,02	0,04	<LOD - 0,175								
	Salami	0,01			0,03	0,07	<LOD - 0,265								
	(Others)	0,01			0,01	0,01	<LOD - 0,19								
Greece															
Italy *(Population)*	Salami	0,50	2,51	14,3	0,25	-	<LOD	0,63	-	3,58	-	**0,01**	-	**0,05**	-
Italy *(Consumers)*	Salami	0,50	10,61	28,6	0,25	-	<LOD	2,65	-	7,15	-	**0,04**	-	**0,1**	-
Norway															
Portugal															
Spain															
Sweden															
The Netherlands															
United Kingdom	Black Pudding	1,00			0,60		<LOQ - 1,80								
	Pig Kidney	1,00			0,80	2,58	<LOQ -9,30								
	Salami (pork)	0,20			0,10	-	<LOQ								
	Other (pork liver sausage/paté)	0,20			0,10	0,20	<LOQ - 0,20								

Table 3H - Best estimates for OA dietary intake in spices

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark															
Finland															
France															
Germany	Herbs				0,08		<LOD - 0,11								
	Nutmeg				3,29		<LOD - 15,23								
	Peppers				0,40		<LOD - 2,04								
	Paprika				1,53		<LOD - 16,43								
	Macis				0,12		<LOD - 0,21								
	Coriander				1,48		<LOD - 3,88								
	Seed				0,15		<LOD - 0,17								
	Spice Sauces	0,10			0,01		<LOD - 3,8								
	Other Spic,				0,49		<LOD - 1,92								
Greece															
Italy ***All population***	Spices	0,4	1,41	5,30	5,74	8,04	<LOD - 23,8	8,09	11,34	30,42	42,61	**0,12**	0,16	**0,43**	0,61
Italy ***Consumers***	Spices	0,4	2,13	6,50	5,74	8,04	<LOD - 23,8	12,23	17,13	37,31	52,26	**0,17**	0,24	**0,53**	0,75
Norway															
Portugal	Nutmeg	0,2			5,50	5,50	<LOD - 8,5								
	Sweet pepper	0,2			1,42	2,50	<LOD - 4,3								
Spain															
Sweden															
The Netherlands	Pepper (Piper nigrum)	0,25			0,24	0,80	<LOD - 0,80								
	Pepper powder (Capsicum frutescens)	0,25			6,47	8,58	<LOD - 14,5								
	Paprika powder (Capsicum annuum)	0,25			1,74	2,24	<LOD - 9,80								
United Kingdom															

Table 3I – Best estimates for OA dietary intake in other food commodities

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Denmark	Pulses	0,10			0,05	-	< LOD								
Finland	Others derived products of plant origin	0,20			0,23	1,00	<LOD – 1								
	Miscellaneous commodities of plant origin	0,20			1,03	4,26	< LOD-7,00								
	Other juice fruit	0,01			0,06	0,08	< LOD –0,14								
France (cons.only) ***All population 2-65 years***	Fruit juice	0,01	106,0	278,6	0,22	3,45	<LOQ-3,45	23,32	365,70	61,29	961,17	**0,40**	6,32	**1,06**	16,60
France ***Adult 15-65 years***	Fruit juice	0,01	100,9	269,1	0,22	3,45	<LOQ-3,46	22,20	348,11	59,20	928,40	**0,35**	5,50	**0,94**	14,67
France ***Children 2-14 years***	Fruit juice	0,01	120,7	300,7	0,22	3,45	<LOQ-3,47	26,55	416,42	66,15	1037,42	**0,88**	13,79	**2,19**	34,35
Germany ***Adult >14 years***	Grape juice	0,01	3,69		0,74	-	<LOD – 5,26	2,74	3,29			**0,04**	0,05		
Germany ***Children <14 years***	Grape juice	0,01	6,21		0,74	-	<LOD – 5,26	4,61	5,53			**0,15**	0,18		
Germany ***Girsl 4-6 years***	Grape juice	0,01	2,99		0,74	-	<LOD – 5,26	2,22	2,66			**0,16**	0,20		

Table 3I – Best estimates for OA dietary intake in other food commodities

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Germany (cont'd)	Vinegar	0,01			0,37	-	<LOD - 4,35								
	Beans	0,10			0,05	-	<LOD								
	Lentils	0,10			0,05	-	<LOD								
	Peas	0,10			0,05	-	<LOD								
	Chick-Pea	0,10			0,16	0,86	<LOD - 0,86								
	Soya	0,01			0,01		<LOD - 0,09								
	Tree nuts	0,01			0,02		<LOD - 0,27								
	Oliseed	0,01			0,05		<LOD - 1,79								
	Teas	0,30			0,28		<LOD - 10,3								
	Vegetable oil, Edible (or Refined)	0,10			0,05	-	<LOD								
	Miscellaneous derived edible product of plant origin	0,01			0,24		<LOD - 29,77								
	Grape juice	0,01			0,74		<LOD - 5,26								
	Other fruit juices	0,01			0,01		<LOD - 0,18								
	Milks	0,005			0,00	-	<LOD								
	Derived milk products	0,01			0,02		<LOD - 0,86								
	Jam	0,10			0,06		<LOD - 0,27								
	Baby food	0,01			0,12		<LOD - 2,13								
Greece															
Italy ***All population***	Olive oil	0,01	7,37	29,40	0,05	0,60	<LOD - 0,60	0,37	4,42	1,47	17,64	**0,01**	0,06	**0,02**	0,25
Italy ***Consumers***	Olive oil	0,01	15,15	36,70	0,05	0,60	<LOD - 0,60	0,76	9,09	1,84	22,02	**0,01**	0,13	**0,03**	0,31

Table 3I – Best estimates for OA dietary intake in other food commodities

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
Norway (cons.only) All population	Other fruit juice	0,0005	27	118	0,01	0,01	0,002 - 0,02	0,27	0,27	1,18	1,18	0,00	0,00	0,02	0,02
	Milk	0,1 - 0,3	463	1113	0,01	-	<LOD - 0,06	4,63	-	11,13	-	0,07	-	**0,16**	-
	Derived milk product	0,01 - 0,03	24	71	0,01	0,02	<LOQ - 0,12	0,24	0,48	0,71	1,42	0,00	0,01	0,01	0,02
												0,07			
Norway Men	Other fruit juice	0,0005	30	120	0,01	0,01	0,002 - 0,02	0,30	0,30	1,20	1,20	0,00	0,00	0,02	0,02
	Milk	0,1 - 0,3	549	1231	0,01	-	<LOD - 0,06	5,49	-	12,31	-	0,07	-	**0,16**	-
	Derived milk product	0,01 - 0,03	26	71	0,01	0,02	<LOQ - 0,12	0,26	0,52	0,71	1,42	0,00	0,01	0,01	0,02
												0,07			
Norway Women	Other fruit juice	0,0005	25	88	0,01	0,01	0,002 - 0,02	0,25	0,25	0,88	0,88	0,00	0,00	0,01	0,01
	Milk	0,1 - 0,3	384	907	0,01	-	<LOD - 0,06	3,84	-	9,07	-	0,06	-	**0,14**	-
	Derived milk product	0,01 - 0,03	22	57	0,01	0,02	<LOQ - 0,12	0,22	0,44	0,57	1,14	0,00	0,01	0,01	0,02
												0,06			
	Fruit juice	0,0005 - 0,001			0,001	0,004	<LOD - 0,006								
	Grape juice	0,0010			0,13	0,14	<LOD - 0,56								
Portugal															
Spain	Grape juice	0,003	3,85		0,04	0,04	0,15 - 0,18	0,15	0,15			0,00	0,00		
Sweden cons.only) ***Adults***	Pulses	0,10	12	27	0,14	1,16	<LOD - 1,90	1,68	13,92	3,78	31,32	0,02	0,20	0,05	0,45
	Milks	0,01	420	960	0,008	-	<LOD - 0,03	3,36	-	7,68	-	0,05	-	**0,11**	-
												0,07			
Sweden ***Children***	Pulses	0,10	12	25	0,14	1,16	<LOD - 1,90	1,68	13,92	3,50	29,00	0,04	0,37	0,09	0,76
	Milks	0,01	710	1300	0,008	0,008	<LOD - 0,03	5,68	5,68	10,40	10,40	0,15	0,15	**0,27**	0,27
												0,19			

Table 3I – Best estimates for OA dietary intake in other food commodities

Member State	Food	LOD	Food Consumption		Mean of Ochratoxin A level in food			Intake of Ochratoxin A				Intake of Ochratoxin A			
			g/person/day		µg/kg			ng/person/day				ng/kg bw/day			
			Mean	95th percentile	Mean 1	Mean 2	Range	Mean 1	Mean 2	95th percentile		Mean 1	Mean 2	95th percentile	
										Mean 1	Mean 2			Mean 1	Mean 2
The Netherlands	Peanut butter	0,25			0,13		<LOD								
	Pistachio	0,25			0,13		<LOD								
United Kingdom	Butter beans	0,1 - 0,2			0,07	13,70	<LOD - 13,7								
	Chick peas	0,20			0,10	-	<LOD								
	Green lentils	0,20			0,10	-	<LOD								
	Red kidney beans	0,1 - 0,2			1,00	15,40	<LOD - 15,40								
	Red lentils	0,20			0,10	-	<LOD								
	Tree nuts	0,20			0,10	-	<LOD								
	Grape juice	0,01			0,50	0,53	<LOD - 2,10								

Table 4
Summary of Ochratoxin A occurrence data in human biological fluids (serum, urine etc) (µg/l)

State	Fluid	Age / Sex	Ref and Year	N° samples	L OD / LOQ	N° of contaminated samples in the range					Max Value	Mean 1	Mean 2	Median	Geographic origin	Random or target	Analytical method	Representative for the Member State
						< LOD / LOQ	LOD / LOQ -0.9	1.0-1.9	2.0-5.0	>5.0								
D	Serum	all/both	1 1995-1998	119	0,06	1	116	1	1		2,03	0,25	0,25	0,21	national	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	83	0,06		83				0,56	0,24	0,24	0,23	national	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	52	0,06	2	49	1			1,00	0,26	0,27	0,24	national	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	31	0,06	1	30				0,50	0,23	0,23	0,20	Jena	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	54	0,06	3	51				0,97	0,33	0,34	0,31	Kiel	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	50	0,06	2	48				0,49	0,19	0,20	0,16	Berlin	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	97	0,06		97				0,55	0,23	0,23	0,22	Detmold	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	211	0,06	1	204	6			1,63	0,31	0,31	0,26	Jena	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	80	0,06		80				0,57	0,23	0,23	0,21	Trier	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	74	0,06		74				0,91	0,19	0,19	0,21	bach	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	50	0,06	2	48				0,50	0,28	0,29	0,27	Erlangen	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	18	0,06		18				0,40	0,17	0,17	0,40	München	R	Fluoresc.	yes
D	Serum	all/both	1 1995-1998	681	0,06	119	558	4			1,60	0,17	0,20	0,14	Adipos.	T	Fluoresc.	yes
D	Serum	total (all/both)		1600	0:06	131	1456	12	1		2,03	0,23	0,23					
D	Serum	all/female	1 1995-1998	62	0,06	1	56	5			1,63	0,43	0,44	0,32	Jena	R	Fluoresc.	yes
D	Serum	pregnant women	1 1995-1998	26	0,06	1	25				0,88	0,31	0,32	0,22	Jena	R	Fluoresc.	yes
D	Serum	women at birth	1 1995-1998	9	0,06	1	8				0,42	0,16	0,18	0,13	Jena	R	Fluoresc.	yes
D	Serum	women in childb.	1 1995-1998	27	0,06	2	25				0,42	0,11	0,11	0,09	Jena	R	Fluoresc.	yes
D	Serum	children 2-14,both sexes	1 1995-1998	8	0,06		8				0,18	0,15	0,15	0,15	Detmold	R	Fluoresc.	yes
D	**Serum**	**Total population**	**1995-1998**	**1732**	**0,06**	**136**	**1578**	**17**	**1**		**2,03**	**0,23**	**0,24**					
D	Serum ucb	all/female	1 1995-1998	79	0,06		79				0,90	0,35	0,35	0,35	Jena	R	Fluoresc.	yes
D	Amniotic fluid	all/female	1 1995-1998	22	0,06	18	4				0,13	0,04	0,11	0,03	Jena	R	Fluoresc.	yes
I	Serum	female	2,3-1999	86	0,1	3	78	5			1,89	0,50	0,53	0,45	Regional	R	HPLC	
I	Serum	male	2,3-1999	51	0,1	1	42	7	1		2,84	0,64	0,66	0,57	Regional	R	HPLC	
I	Serum	total population	2,3-1999	137	0,1	4	120	12	1		2,84	0,51	0,58	0,48				
I	Serum	total	2,3-1999	96	0,1	13	55	15	13		3,6	0,86	0,99	0,55	Regional	R	HPLC	yes
I	Serum	pregnant women healthy	2,3-1998	28	0,1	17	11				0,92	0,25	0,56	0,58	National	T	HPLC	
I	Serum	pregnant women with patologies	2,3-1998	12	0,1	8	4				0,98	0,27	0,72	0,65	National	T	HPLC	
I	**Serum**	**Total population**		**273**		**42**	**190**	**27**	**14**		**3,6**	**0,68**	**0,93**					
I	Serum	workers	1999-2000	6	0,1/0,2		1		5		3,28	2,36	2,36	3,18			HPLC	
I	Funiculum	pregnant women healthy	1-1998	28	0,1	22	4	2			1,21	0,21	0,78	0,78	National	T	HPLC	
I	Funiculum	pregnant women with pathologies	1-1998	12	0,1	9	2			1	9,4	0,93	3,6	0,72	National	T	HPLC	
I	**Funiculum**	**Total population**		**40**		**31**	**6**	**2**		**1**	**9,4**	**0,43**	**1,72**					
I	Placenta	pregnant women healthy	1-1998	28	0,1	21	1		2	4	10,57	1,62	6,33	8,4	National	T	HPLC	
I	Placenta	pregnant women with patologies	1-1998	12	0,1	8	1	1	1	1	9,29	1,19	3,47	2,1	National	T	HPLC	
I	**Placenta**	**total population**		**40**		**29**	**2**	**1**	**3**	**5**	**10,57**	**1,49**	**5,29**					

Table 4
Summary of Ochratoxin A occurrence data in human biological fluids (serum, urine etc) (µg/l)

State	Fluid	Age/Sex	Ref and Year	N° samples	L OD/LOQ	N° of contaminated samples in the range					Max Value	Mean 1	Mean 2	Median	Geographic origin	Random or target	Analytical method	Representative for the Member State
						< LOD/LOQ	LOD/LOQ -0.9	1.0-1.9	2.0-5.0	>5.0								
N	Plasma	38y/F	11 - 1998	98	<0.01		98				0,78	0,2	0,2	0,18	Oslo	Blood donor	HPLC	Yes
N	Plasma	41y/M	11 - 1998	104	<0.01		104				0,51	0,17	0,17	0,15	Oslo	Blood donor	HPLC	Yes
N	**Plasma**	**40y/FM**	**11 - 1998**	**202**	**<0.01**		**202**				**0,78**	**0,18**	**0,18**	**0,16**	**Oslo**	**Blood donor**	**HPLC**	**Yes**
E	Plasma	men	1997	88	0,02		45	29	14		4,7	1,22	1,21	0,92	Madrid	Random	HPLC	Yes
E	Plasma	women	1997	80	0,02		45	21	13	1	5,58	1,17	1,17	0,86	Madrid	Random	HPLC	Yes
E	**Plasma**	**Total**	**1997**	**168**	**0,02**		**90**	**50**	**27**	**1**	**5,58**	**1,19**	**1,19**	**0,89**	**Madrid**	**Random**	**HPLC**	**Yes**
S	Plasma	43y/F	1-1997	58	0,01		58				0,88	0,21	0,21	0,15	Regional	Random	HPLC	Yes
S	Plasma	44y/M	1-1997	133	0,01		131	2			1,23	0,21	0,21	0,18	Regional	Random	HPLC	Yes
S	**Plasma**	**44y/M+F**	**1-1997**	**191**	**0,01**		**189**	**2**			**1,23**	**0,21**	**0,21**	**0,17**	**Regional**	**Random**	**HPLC**	**Yes**
S	*Plasma	M+F	12-1994	200	0.01		200				0.88	0.21	0,21	0.10	Regional	Random	HPLC	Yes
UK	Plasma (Ethnic diet)	M/F 18-55	FSIS 172, 1999	7	0,1/0,2		7				2,15	1,365	1,365	1,09	Regional			
UK	Plasma (Normal diet)	M/F 18-55	FSIS 172, 1999	32	0,1/0,2		32				3,11	1,009	1,009	0,985	Regional			
UK	Plasma (Vegetarian)	M/F 18-55	FSIS 172, 1999	11	0,1/0,2		11				2,46	1,209	1,209	1,09	Regional			
UK	**Plasma**	**Total population**		**50**			**50**				**3,11**	**1,098**	**1,098**					
UK	Urine (Ethnic diet)	M/F 18-55	FSIS 172, 1999	7	0.01/0.01	3	4				0,023	0,015	0,019	0,017	Regional			
UK	Urine (Normal diet)	M/F 18-55	FSIS 172, 1999	32	0.01/0.01	8	24				0,058	0,014	0,018	0,011	Regional			
UK	Urine (Vegetarian)	M/F 18-55	FSIS 172, 1999	11	0.01/0.01	2	9				0,054	0,022	0,025	0,020	Regional			
UK	**Urine**	***Total population**		**50**							**0,054**	**0,0159**	**0,0198**					
All countries	*Serum/ Plasma	Adult (M/F)		2712		149	2419	96	47	1	5,58	0,34	0,35					

Table 4A

Comparison between estimated dietary intake calculated from occurrence and consumption data (Table 3) and mean human blood plasma level (Table 4)

Country	Mean1 OA level in serum/plasma (ug/L) (Age/Sex)	Estimated daily intake calculated from serum/plasma concentration (1.97xCp) (ng/kg bw/day)	Estimated daily intake based on occurrence data and consumption data (ng/kg bw/day)
Germany	0,23 (total-all/both) 0,31 (pregnant) 0,16 (women at birth) 0,11 (women in childb,) 0,15 (children) **0,23 (total population)**	0,45 0,61 0,31 0,22 0,30 **0,45**	1,09 (Adult>14 y) 1,82 (Children<14 y) 3,14 (Girls 4-6 y)
Italy	0,65 (normal population) 0,25 (pregnant healthy) 0,27 (preg, with pathologies) **0,59 (total population)**	1,28 0,49 0,53 **1,16**	1,13 (All population) 3,52 (Consumers)
Norway	0,20 (38 Y/F) 0,17 (41 Y/M) **0,18 (40 Y/M and F)**	0,39 0,33 **0,35**	0,97 (All population-consumers only)* 1,04 (Men- consumers only) 0,88 (Women- consumers only)
Spain	1,21 (men) 1,17 (women) **1,19 (total)**	2,38 2,30 **2,34**	1,18
Sweden	0,21(43 y/F) 0,21 (44 y/M) 0,21 (M+F) **0,21 (total)**	**0,41**	1,44 (Adult- consumers only) 2,03 (Children- consumers only)
United Kingdom	1,009 (normal diet) 1,365 (ethnic diet) 1,209 (vegetarian diet) **1,098 (total population)**	1,988 2,689 2,382 **2,163**	0,53 (Population 16-64 y) 1,42 (Population 1,5-4,5 y) 1,38 (Consumers 16-64 y) 6,64 (Consumers 1,5-4,5 y)
All countries	0,34 (adult M/F) 0,28 (pregnant) 0,15 (children) 0,16 (women at birth) 0,11 (women in childb,) 1,365 (ethnic diet) 1,209 (vegetarian diet) **0,34 (total population)**	0,67 0,55 0,30 0,31 0,22 2,69 2,38 **0,67**	

Table 5
Ochratoxin A occurrence in human milk (µg/l)

State	Type of milk	Sampling	Ref and Year	N° samples	LOD/LOQ	N° of contaminated samples in the range					Max Value	Mean 1	Mean 2	Median	Geographic origin	Random or target	Analytical method	Representative for the Member State
						< LOD/LOQ	LOD/LOQ -0.90	1.0-1.9	2.0-5.0	>5.00								
D	Human milk		1-1995/1998	27	0,06	27					0,03	0,03	0,03	0,03	Jena, Kjel	Random	HPLC-fluor.	Yes
I	Human milk	all sucks	4-2000	67	0,02	17	48	2			2,35	0,24	0,32	0,15	National	Random	HPLC	Yes
I	Human milk	2nd, 3rd suck	4-2000	75	0,02	29	45	1			1,66	0,13	0,22	0,05	National	Random	HPLC	Yes
N	Human milk	individual suck	12-1998	115	0,01	77	38				0,13	0,01	0,03	0,02	Urban and Rural	Target	HPLC-fluor.	Yes
S	Human milk		3-90/91	40	0,01	17	23				0,03	0,02	0,02	0,03	Regional	Random	LC	Yes
Overall weighed mean				324		167	154	3			2,35	0:09	0,18					

Table 5A
Calculated OA intake from human milk

Country	OA Mean1 (ug/L)	Intake* (ng/person/day)	Intake ** (ng/kg bw/day)
Germany	0,03	18,00	3,00
Italy			
All sucks	0,24	144,00	24,00
2nd and 3rd sucks	0,13	25,00	
Norway	0,01	6,00	1,00
Sweden			
Individual suck	0,02	12,00	2,00

*Calculated on the basis of 600 ml as daily portion
**The calculated body weight was 6 Kg.

Table 6
Dietary intakes in each Member State by commodity (ng/kg bw/day)

	Cereals	Coffee	Beer	Wine	Cocoa	Dried fruits	Meat	Spices	Others	Sum of dietary intake	
										Population	Consumers
Denmark (P)	0,86	0,19	0,14							**1,19**	
Finland (P)	1,03	0,42	0,12	0,12		0,02				**1,71**	
France (C: 2->65 y)	1,24	0,27		0,50		0,10	0,00		0,40		**2,51**
France (C:15->65 y)	1,14	0,25		0,47		0,10	0,00		0,35		**2,31**
France (C: 2-14 y)	2,26	0,11		0,03		0,11	0,00		0,88		**3,39**
Germany(P>14 y)	0,65	0,14	0,08	0,05	0,07		0,06		0,04	**1,09**	
Germany(P<14 y)	1,25	0,01	0,01	-	0,29		0,11		0,15	**1,82**	
Germany (girls)	2,10	-	0,03	-	0,66		0,20		0,16	**3,14**	
Greece (P)		0,10		0,05		0,00				**0,15**	
Greece (U)		0,10		0,03		0,00				**0,13**	
Greece (SU)		0,10		0,06		0,00				**0,16**	
Greece (R)		0,12		0,11		0,00				**0,23**	
Italy (P)	0,06	0,06	0,01	0,86			0,01	0,12	0,01	**1,13**	
Italy (C)	0,24	0,09	0,03	2,94			0,04	0,17	0,01		**3,52**
Norway (C)	0,74	0,16							0,07		**0,97**
Norway (M)	0,80	0,16							0,07		**1,04**
Norway (W)	0,66	0,16							0,06		**0,88**
Portugal (P)	0,69	0,09	0,01	0,02						**0,81**	
Spain (P)	0,85	0,15	0,09	0,07					0,00	**1,18**	
Sweden-Adults (C)	1,05	0,03	0,09	0,18					0,07		**1,42**
Sweden-Children (C)	1,61	0,01	0,04	0,18					0,19		**2,03**
The Netherlands (P)	1,28	0,23		0,08						**1,59**	
The Netherlands (C)		0,32		0,94							**1,26**
UK (P>16 y)	0,32	0,05		0,05	0,05	0,06				**0,53**	
UK (P: 1,5-4,5 y)	0,58	-		-	0,55	0,30				**1,42**	
UK (C >16y)	*0,32*	0,06		0,14	0,09	*0,30*					***0,91***
U K (C: 1,5-4,5 y)	*0,59*	0,05		0,04	0,67	*2,20*					***3,55***

P= All population
C= Consumer
M= Men
U= Urban
SU= Semi urban
R= Rural
W= Women

Table 6bis

Dietary intakes in each Member State by commodity (ng/kg bw/day) including surrogate intake values

	Cereals	Coffee	Beer	Wine	Cocoa	Dried fruits	Meat	Spices	Others	Sum of dietary intake			
										Without surrogate values		With surrogate values	
										P	C	P	C
Denmark (P)	0,86	0,19	0,14	0,11	0,09	0,18	0,07	0,02	0,11	**1,19**		**1,77**	
Finland (P)	1,03	0,42	0,12	0,12	0,11	0,02	0,08	0,02	1,74	**1,71**		**3,66**	
France (C: 2->65 y)	1,24	0,27	0,21	0,50	0,11	0,10	0,00	0,02	0,40		**2,51**		**2,85**
France (C:15->65 y)	1,14	0,25	*0,21*	0,47	*0,11*	0,10	0,00	*0,02*	0,35		**2,31**		***2,65***
France (C: 2-14 y)	2,26	0,11	*0,21*	0,03	*0,11*	0,11	0,00	*0,02*	0,88		**3,39**		***3,37***
Germany(P>14 y)	0,65	0,14	0,08	0,05	0,07	0,05	0,06	0,02	0,04	**1,09**		**1,16**	
Germany(P<14 y)	1,25	0,01	0,01	-	0,29	*0,05*	0,11	*0,02*	0,15	**1,82**		***1,89***	
Germany (girls)	2,10	-	0,03	-	0,66	*0,05*	0,20	*0,02*	0,16	**3,14**		***3,21***	
Greece (P)	0,95	0,10	0,03	0,05	0,09	0,00	0,01	0,09	0,00	**0,15**		**1,32**	
Greece (U)	*0,95*	0,10	*0,03*	0,03	*0,09*	0,00	*0,01*	*0,09*	*0,00*	**0,13**		***1,30***	
Greece (SU)	*0,95*	0,10	*0,03*	0,06	*0,09*	0,00	*0,01*	*0,09*	*0,00*	**0,16**		***1,33***	
Greece (R)	*0,95*	0,12	*0,03*	0,11	*0,09*	0,00	*0,01*	*0,09*	*0,00*	**0,23**		***1,40***	
Italy (P)	0,06	0,06	0,01	0,86	0,09	0,00	0,01	0,12	0,01	**1,13**		**1,22**	
Italy (C)	0,24	0,09	0,03	2,94	*0,09*	*0,00*	0,04	0,17	0,01		**3,52**		**3,61**
Norway (C)	0,74	0,16	0,17	0,11	0,09	0,18	0,07	0,02	0,07		**0,97**		**1,61**
Norway (M)	0,80	0,16	*0,17*	*0,11*	*0,09*	*0,18*	*0,07*	*0,02*	0,07		**1,04**		***1,68***
Norway (W)	0,66	0,16	*0,17*	*0,11*	*0,09*	*0,18*	*0,07*	*0,02*	0,06		**0,88**		***1,52***
Portugal (P)	0,69	0,09	0,01	0,02	0,10	0,18	0,01	0,06	0,00	**0,81**		**1,16**	
Spain (P)	0,85	0,15	0,09	0,07	0,11	0,00	0,01	0,11	0,00	**1,18**		**1,39**	
Sweden-Adults (C)	1,05	0,03	0,09	0,18	0,09	0,00	0,07	0,02	0,07		**1,42**		**1,60**
Sweden-Children (C)	1,61	0,01	0,04	0,18	*0,09*	*0,00*	*0,07*	*0,02*	0,19		**2,03**		***2,21***
The Netherlands (P)	1,28	0,23	0,18	0,08	0,05	0,18	0.07	0,07	0,28	**1,59**		**2,42**	
The Netherlands (C)	*1,28*	0,32	*0,18*	0,94	*0,05*	*0,18*	*0,07*	*0,07*	*0,28*		**1,26**		**3,30**
UK (P>16 y)	0,32	0,05	0,35	0,05	0,05	0,06	0,23	0,02	0,64	**0,53**		**1,87**	
UK (P: 1,5-4,5 y)	0,58	-	*0,35*	-	0,55	0,30	*0,23*	*0,02*	*0,64*	**1,42**		***2,76***	
UK (C >16 y)	0,32	0,06	*0,35*	0,14	0,09	0,30	*0,23*	*0,02*	*0,64*		**0,91**		***2,15***
UK (C: 1,5-4,5 y)	0,59	0,05	*0,35*	0,04	0,67	2,20	*0,23*	*0,02*	*0,64*		**3,55**		***4,79***

P= All population
C= Consumer
M= Men

U= Urban
SU= Semi urban
R= Rural

W= Women

Figure 1

TOTAL NUMBER OF SAMPLES IN EACH MEMBER STATE

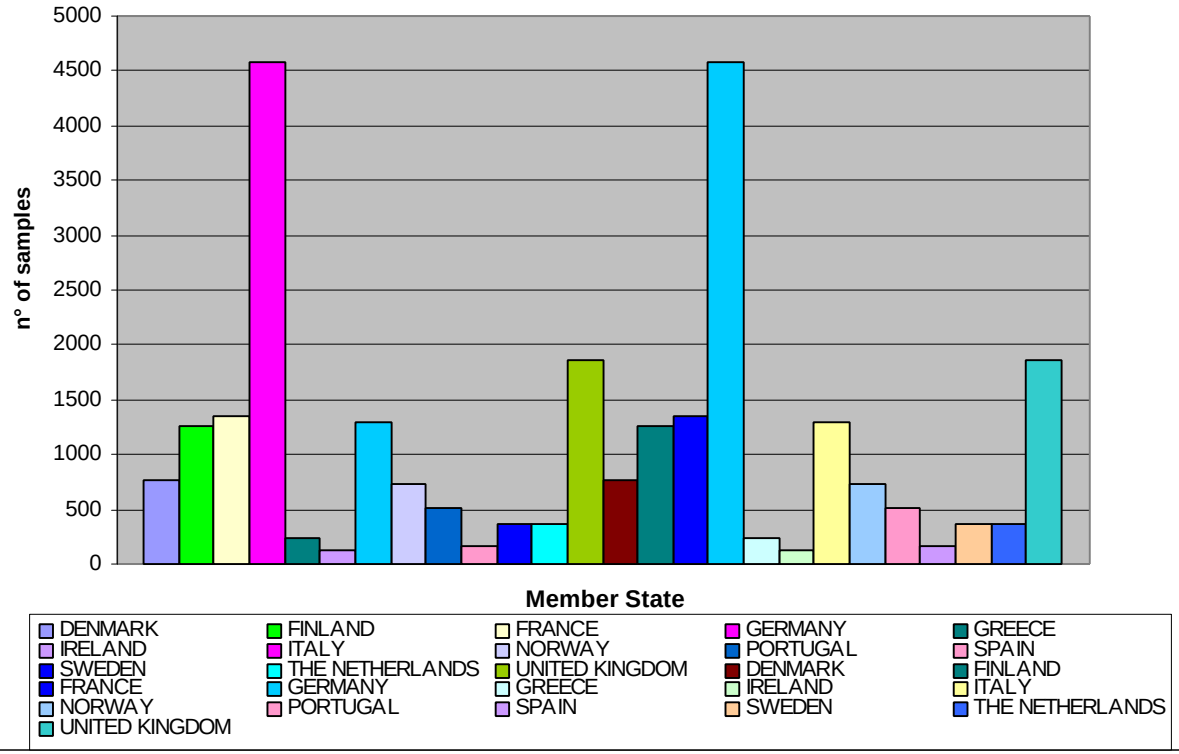
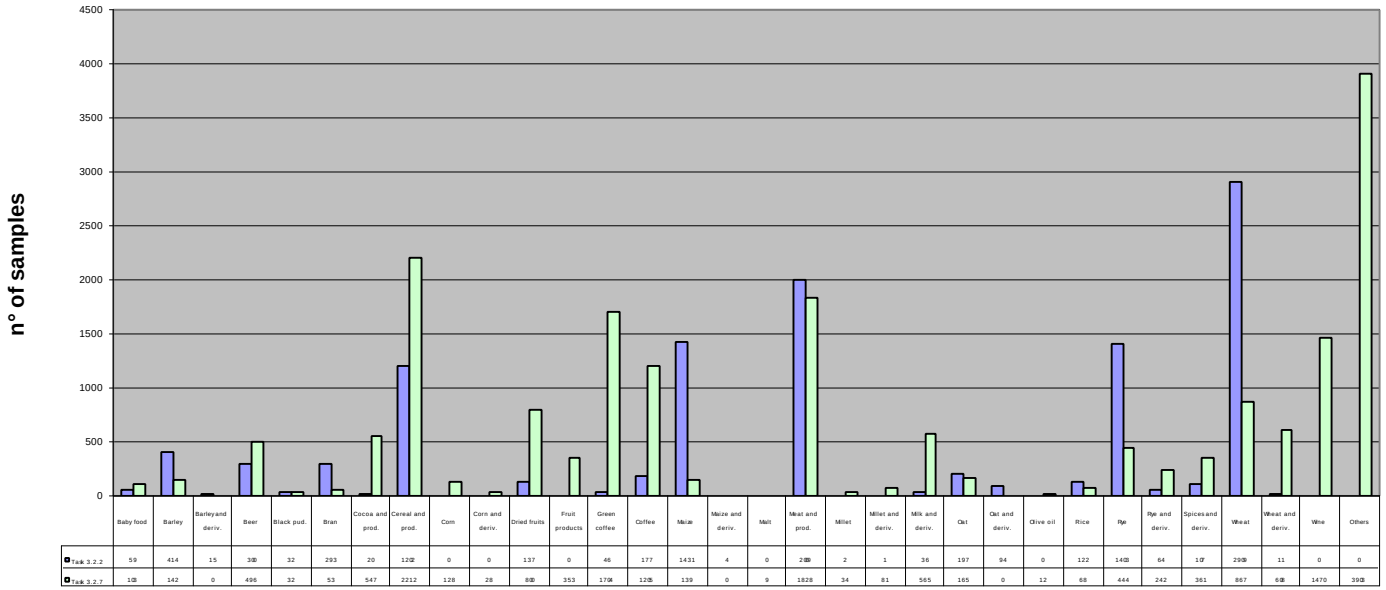


Figure 1bis

Summary of total data on OA occurrence in foodstuffs in Task 3.2.2 and Task 3.2.7*

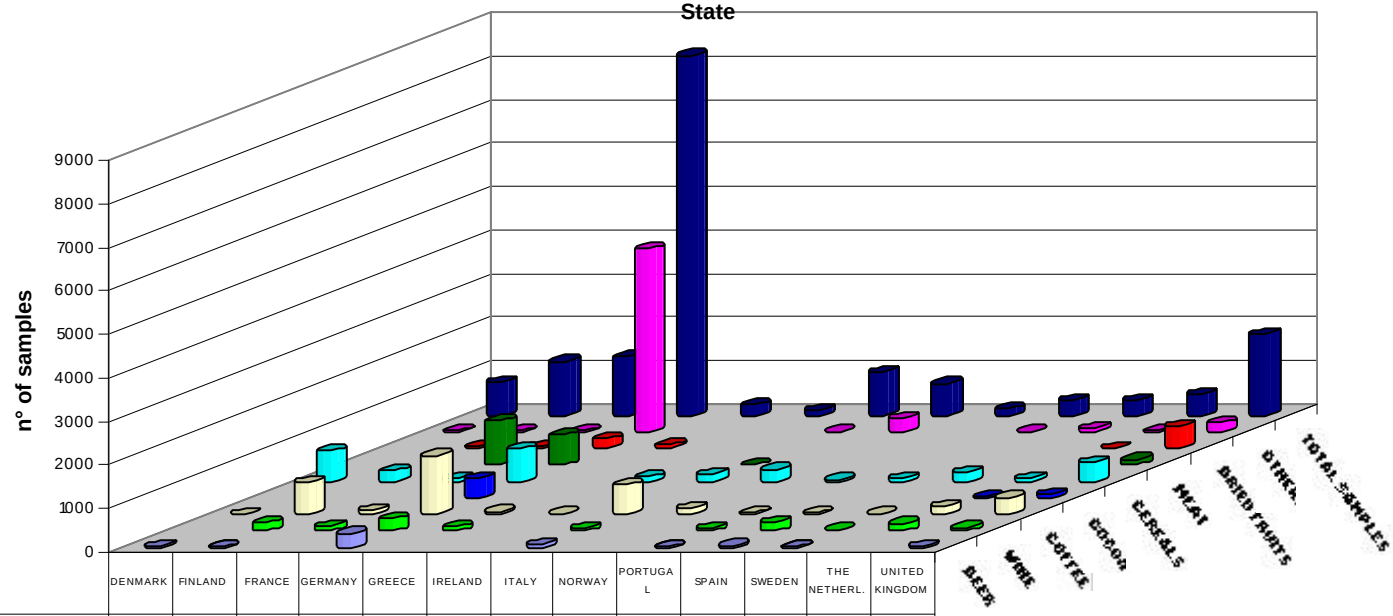
Food product classified as "Others" were slightly different in the two Tasks



	Baby food	Barley	Barley and deriv.	Beer	Black pud.	Bran	Cocoa and prod.	Cereal and prod.	Corn	Corn and deriv.	Dried fruits	Fruit products	Green coffee	Coffee	Maize	Maize and deriv.	Malt	Meat and prod.	Millet	Millet and deriv.	Milk and deriv.	Oat	Oat and deriv.	Olive oil	Rice	Rye	Rye and deriv.	Spices and deriv.	Wheat	Wheat and deriv.	Wine	Others
Task 3.2.2	59	414	15	308	32	293	20	1202	0	0	137	0	46	177	1431	4	0	2000	2	1	36	197	94	0	122	1420	64	107	2905	11	0	0
Task 3.2.7	108	142	0	496	32	53	547	2212	128	28	800	353	1704	1205	139	0	9	1828	34	81	565	165	0	12	68	444	242	361	867	618	1470	3902

Figure 2

Number of data on OA occurrence for each food commodity and total number of data for each Member State



	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	IRELAND	ITALY	NORWAY	PORTUGAL	SPAIN	SWEDEN	THE NETHERL.	UNITED KINGDOM
BEER	21	13		317			75		7	38	5		20
WINE		179	104	280	88		60		61	194	32	170	70
COFFEE	11	741	89	1353	72	21	682	148	38	38	25	188	391
COCOA				448								19	90
CEREALS	707	250	75	752		108	159	273	42	79	212	82	448
MEAT			1011	686			8						123
DRIED FRUITS		31	46	220	82							15	519
OTHERS	22	30	19	4211			12	316		8	86	19	204
TOTAL SAMPLES	761	1244	1344	8267	242	129	996	737	148	357	360	493	1865

Figure 3

Number of total and OA positive samples for cereal grain in each Member State

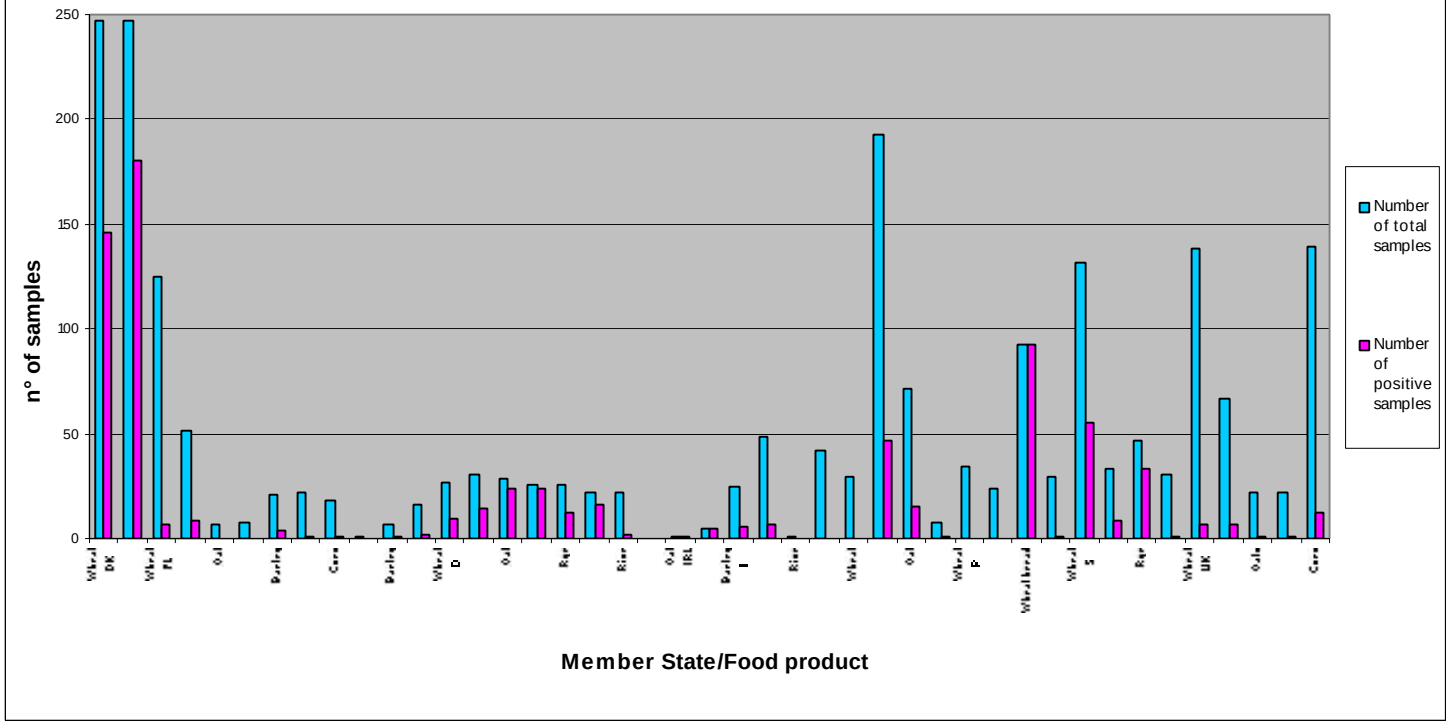


Figure 4
Number of total and OA positive samples for cereal derived products in each Member State

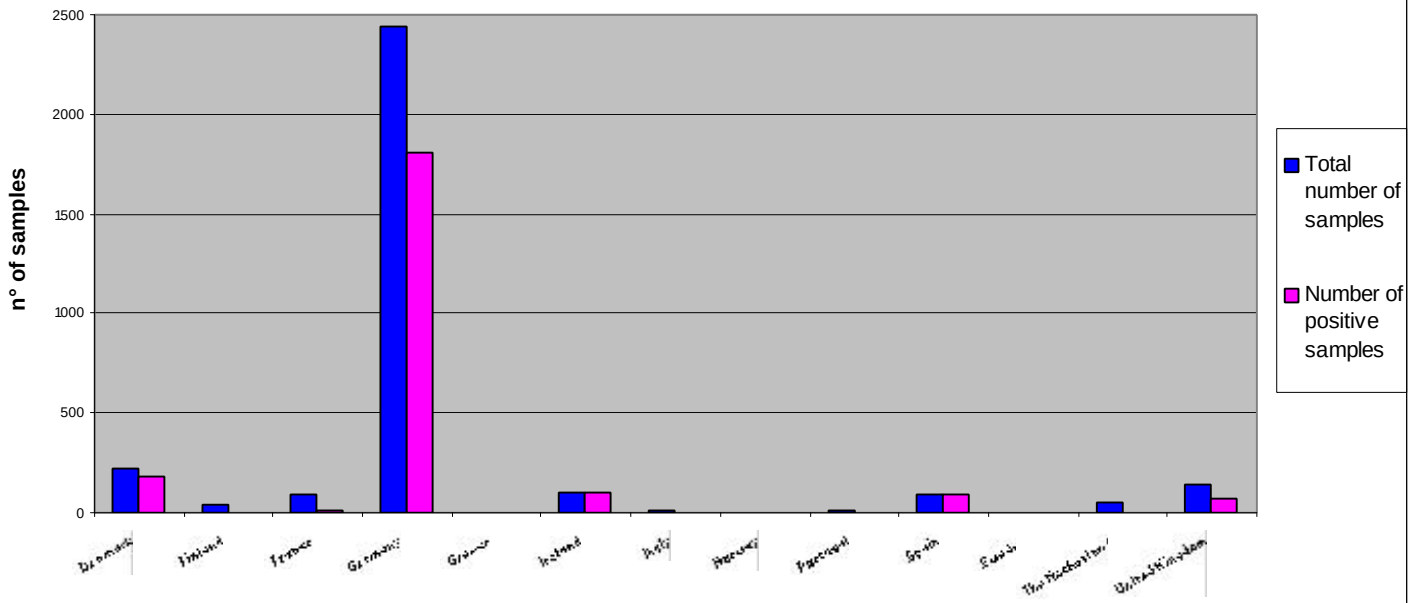


Figure 5

Number of total and OA positive samples in wheat for each Member State

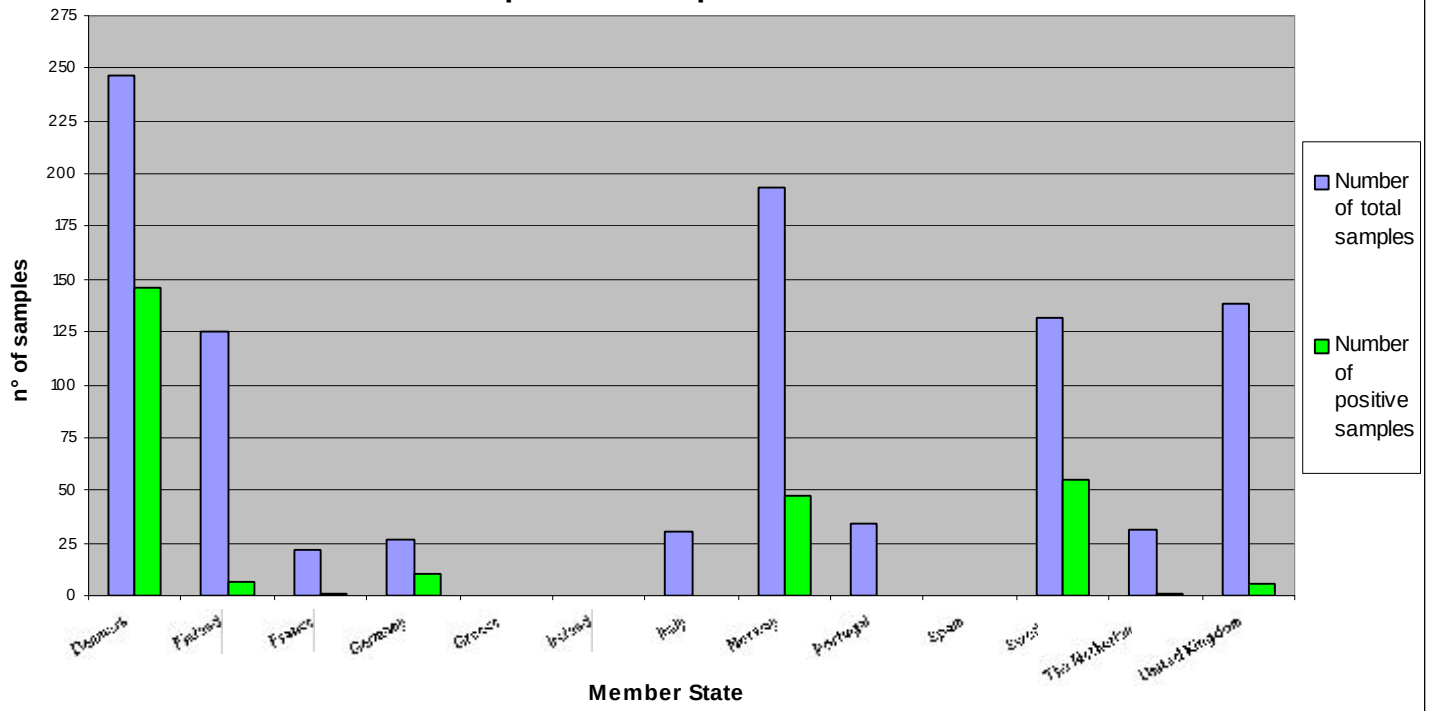


Figure 6
Number of total and OA positive samples in corn for each Member State

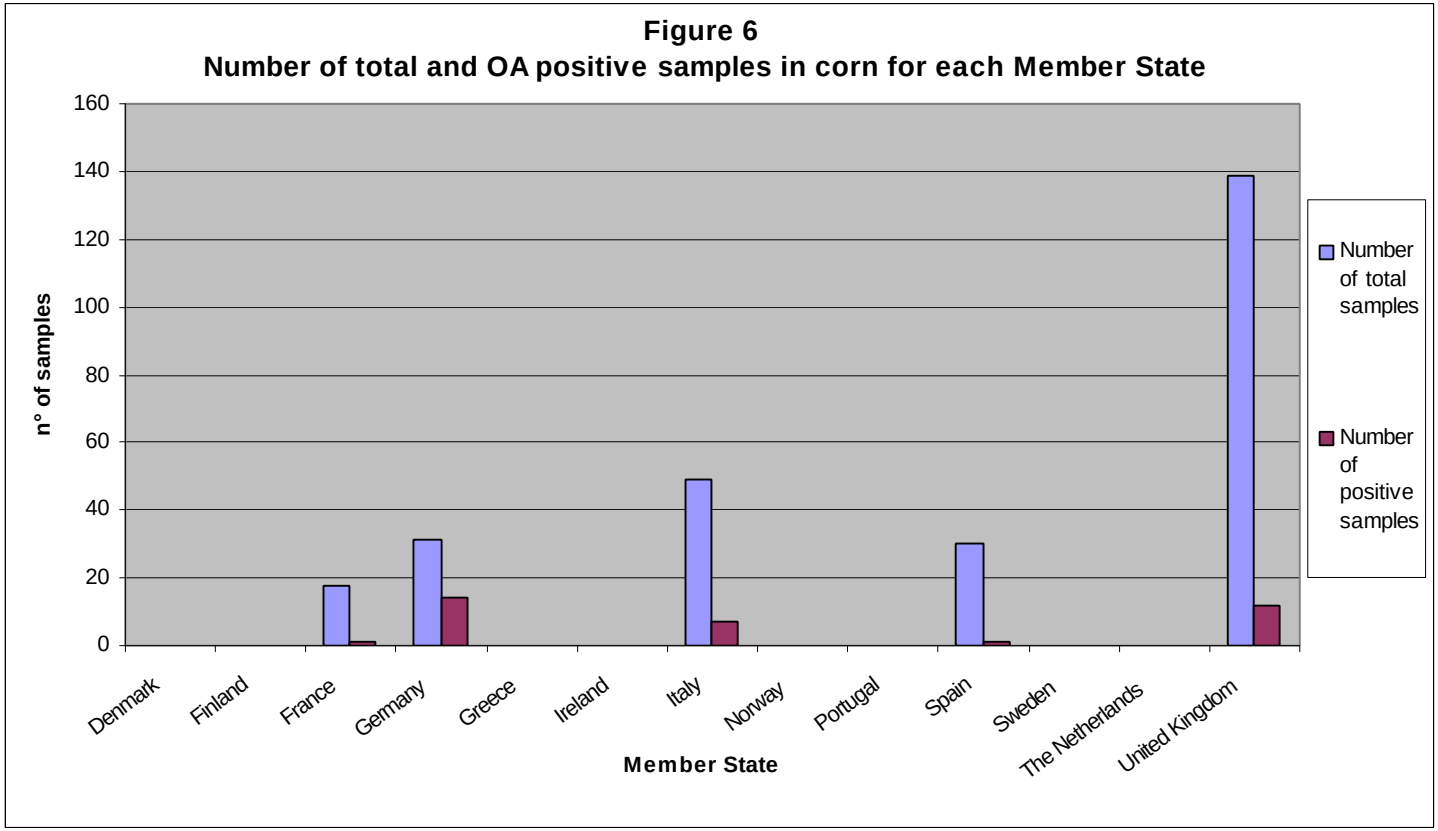


Figure 7
Number of total and OA positive samples in oat for each Member State

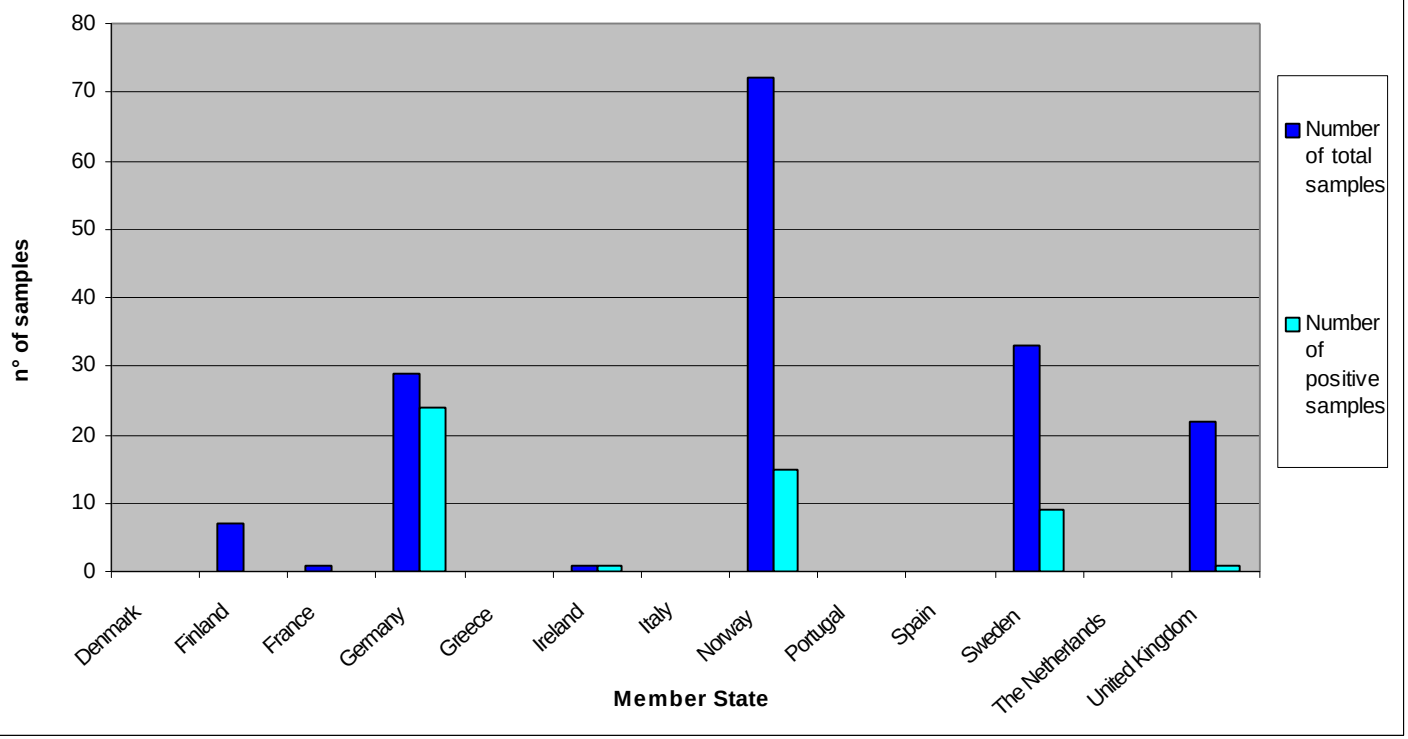


Figure 8
Number of total and OA positive samples in millet for each Member State

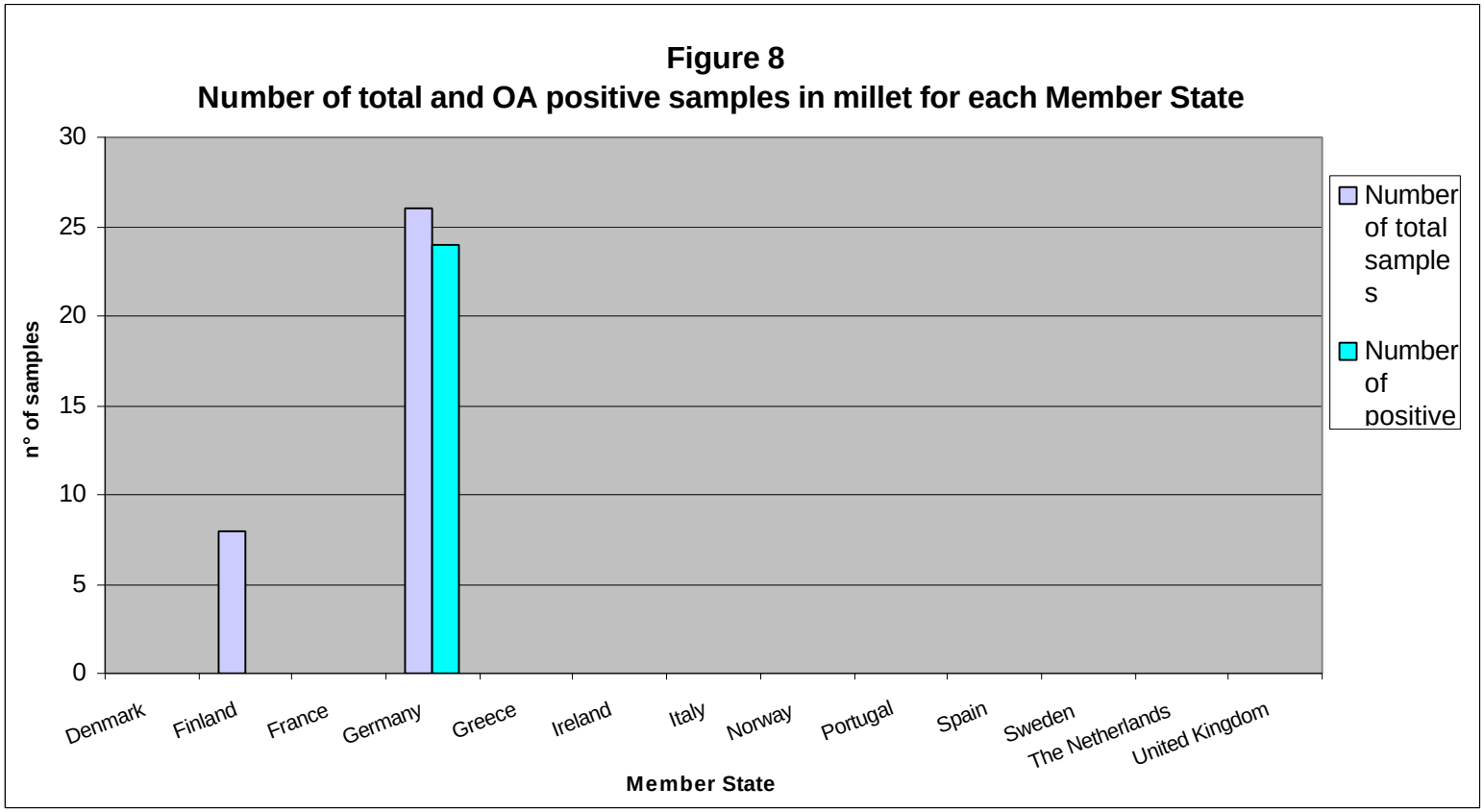


Figure 9
Number of total and OA positive samples in rye for each Member State

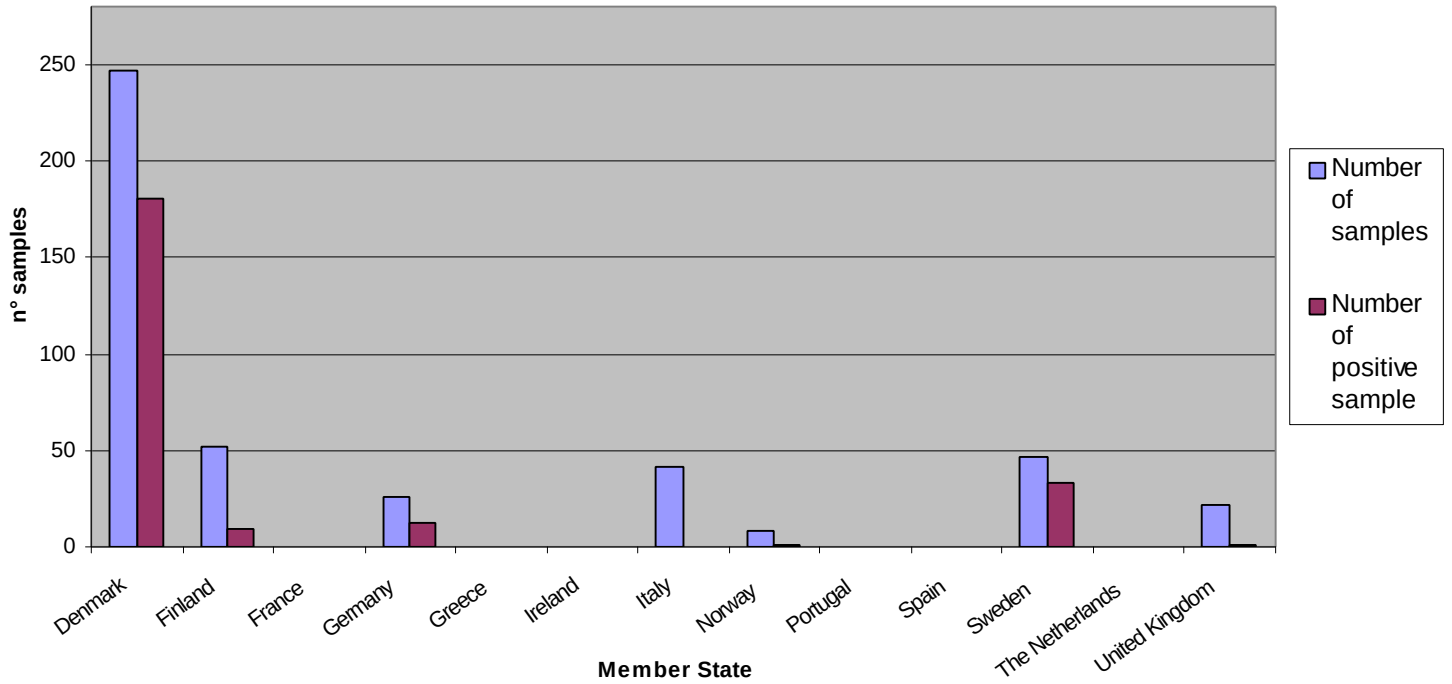


Figure 10
Number of total and OA positive samples in barley for each Member State

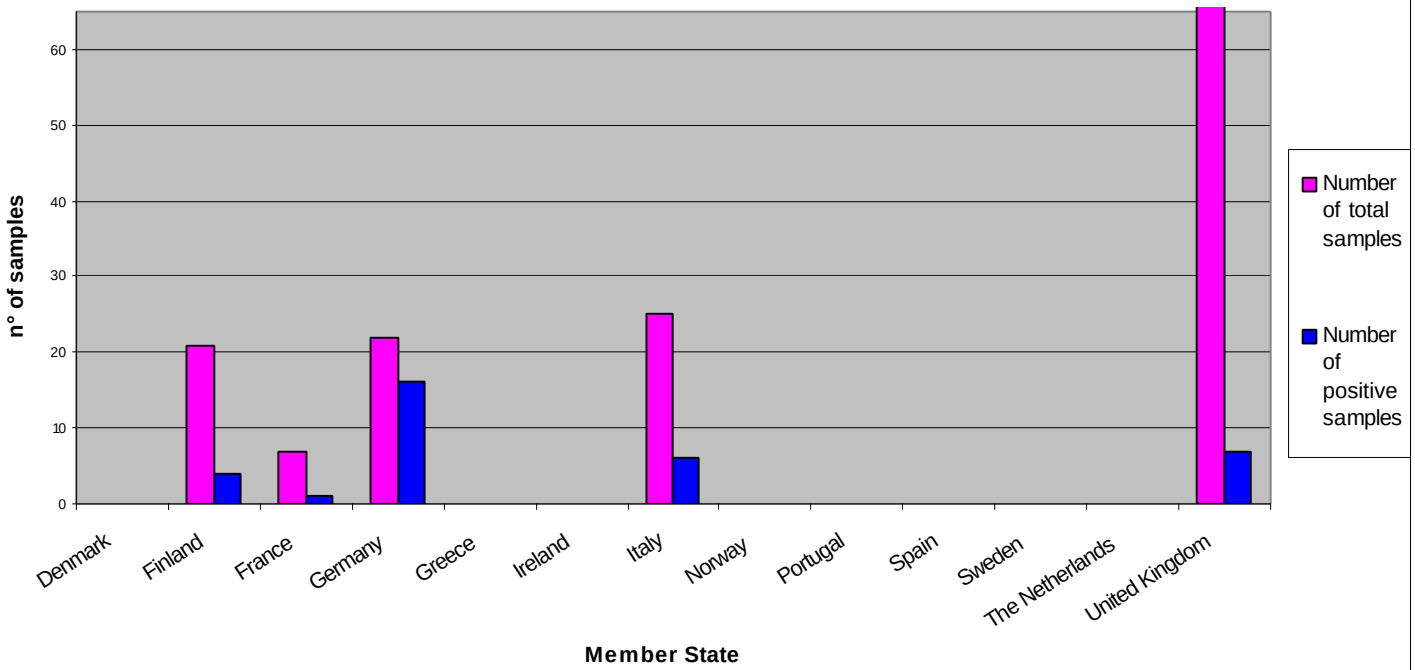


Figure 11
Number of total and OA positive samples in rice for each Member State

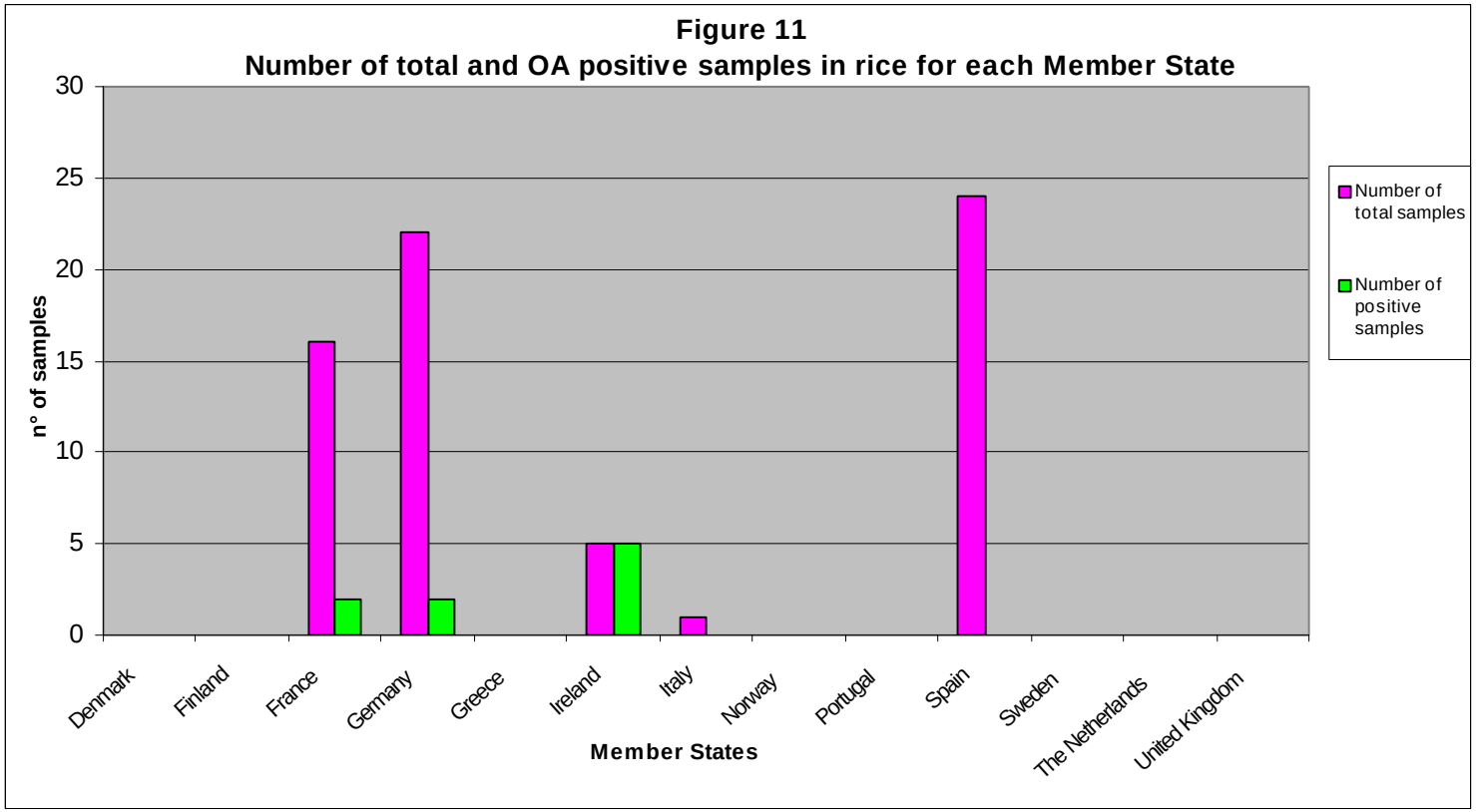


Figure 12
Number of total and OA positive samples in green coffee for each Member State

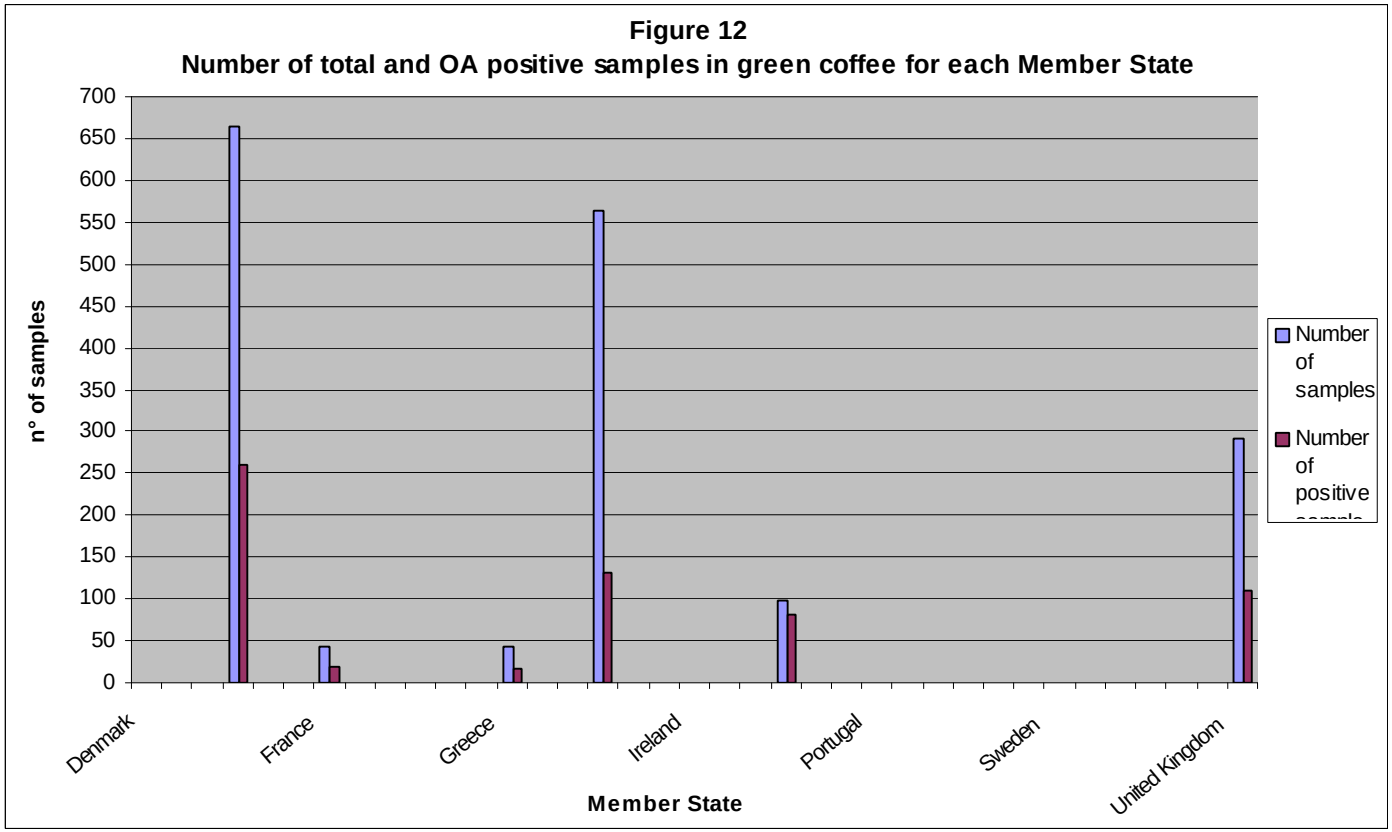


Figure 13
Number of total and OA positive samples in roasted coffee for each Member State

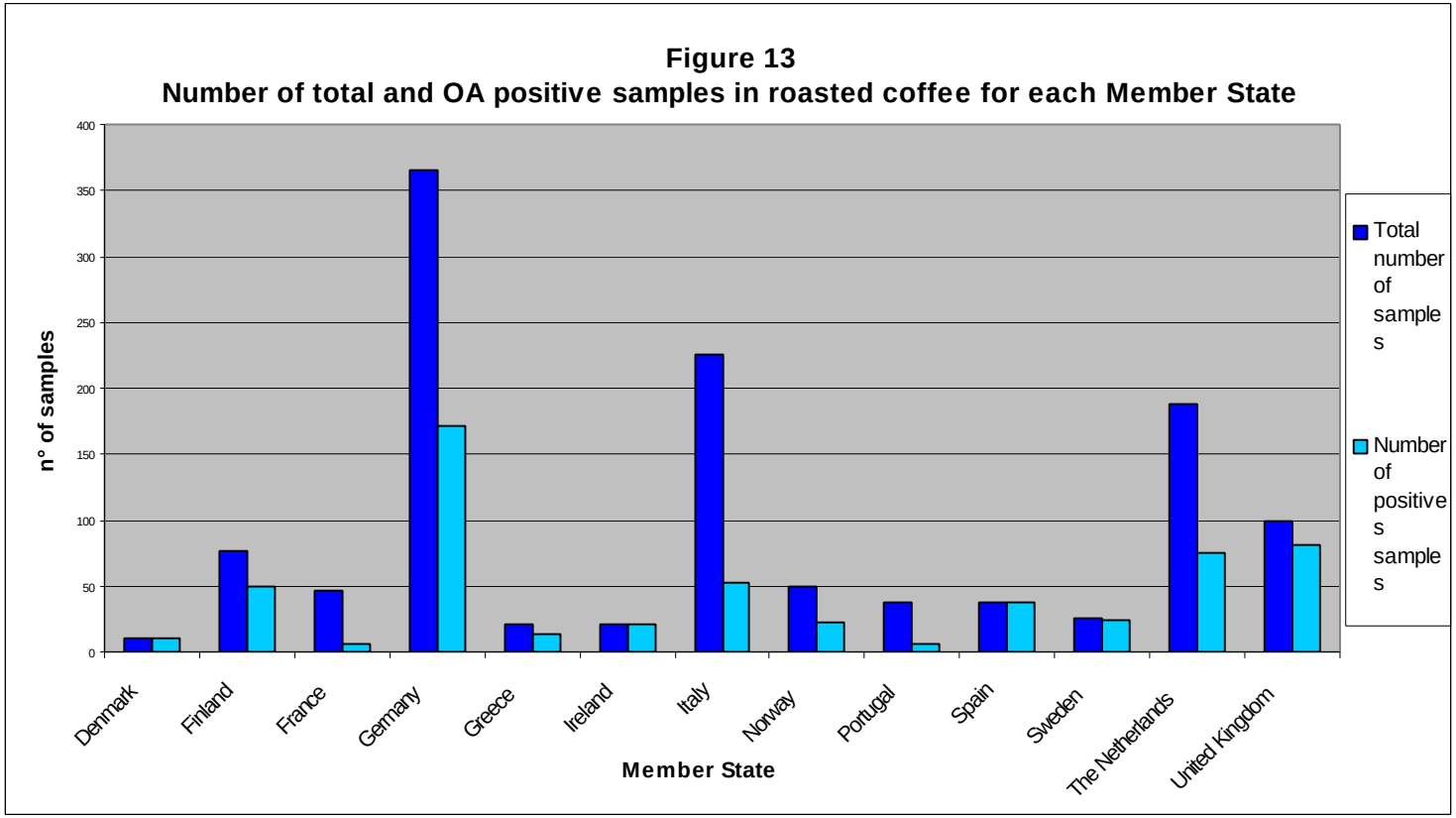


Figure 14
Number of total and OA positive samples in beer for each Member State

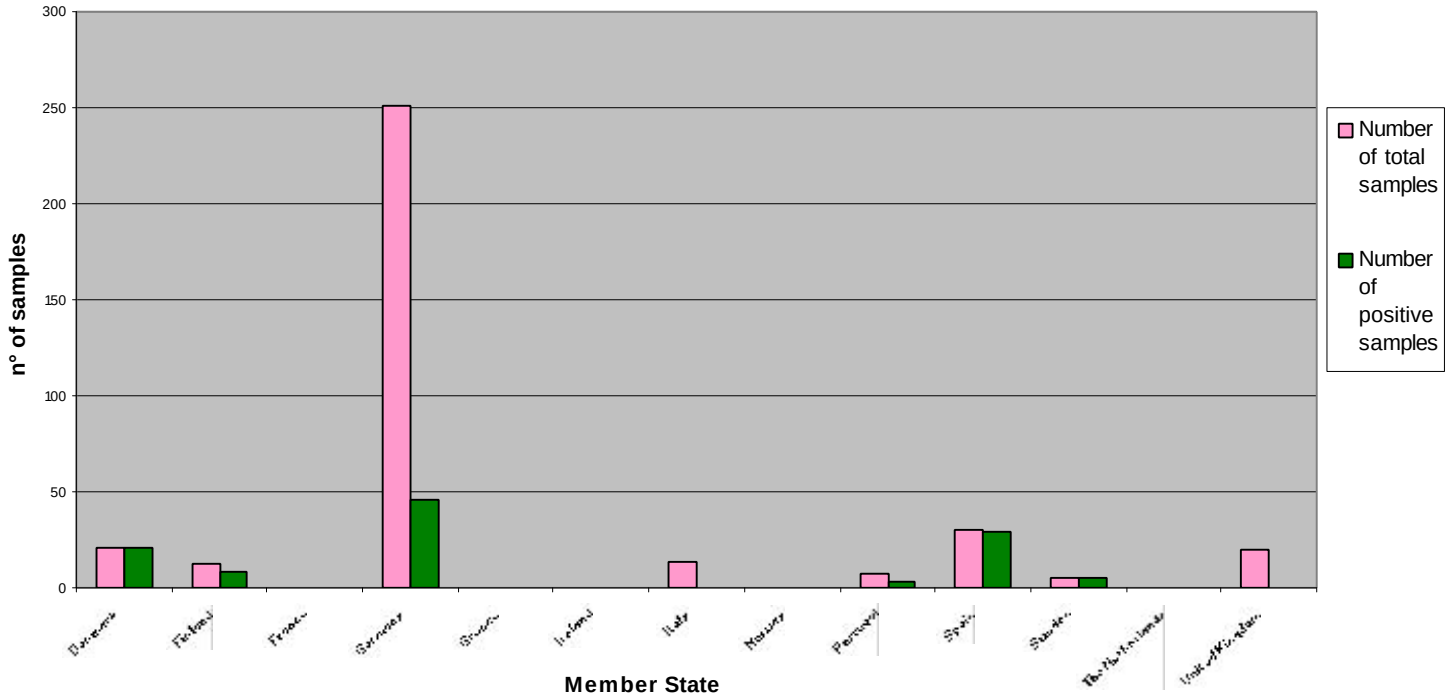


Figure 15
Number of total and OA positive samples in red wine for each Member State

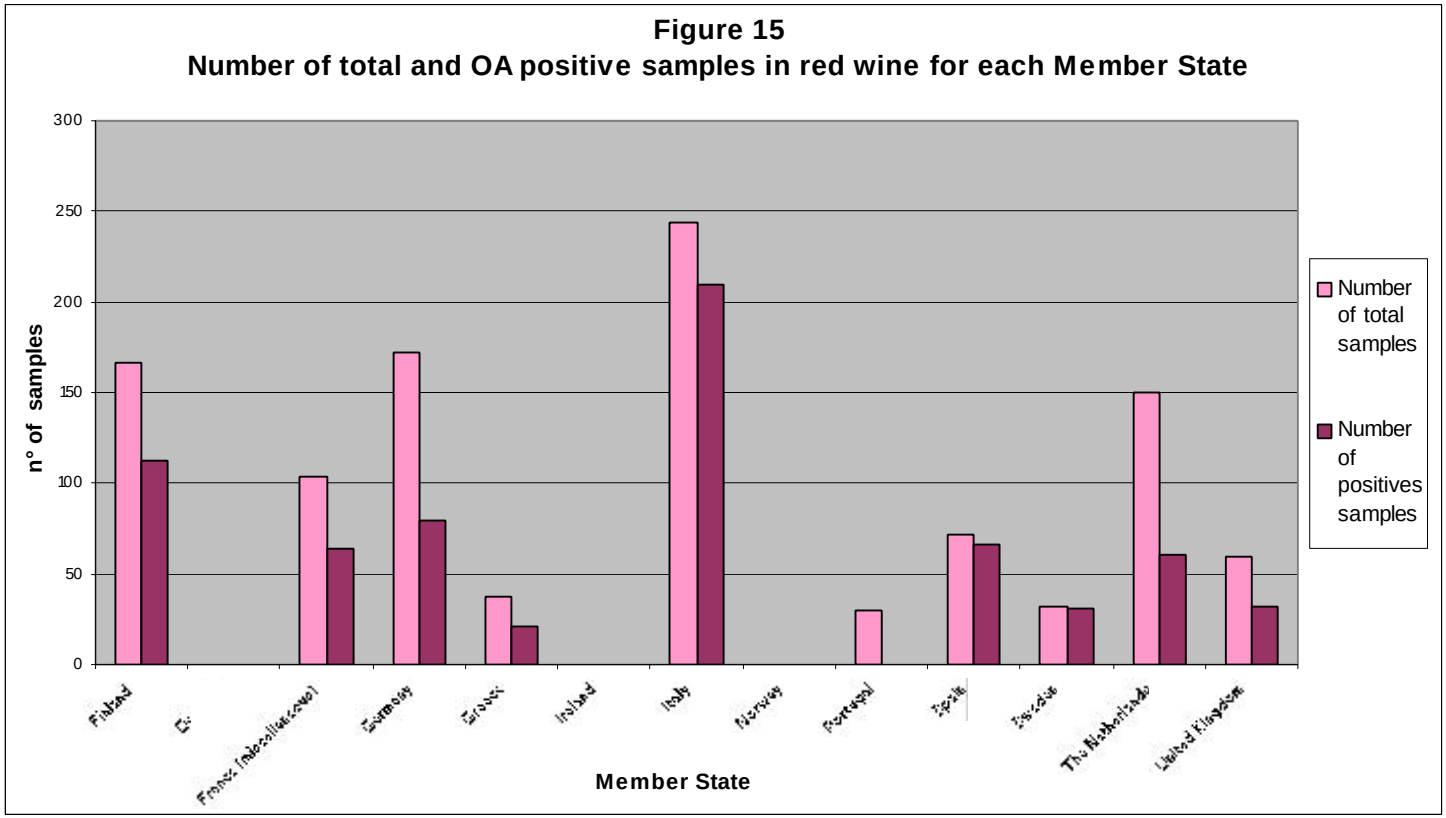


Figure 16

Number of total and OA positive samples in white wine for each Member State

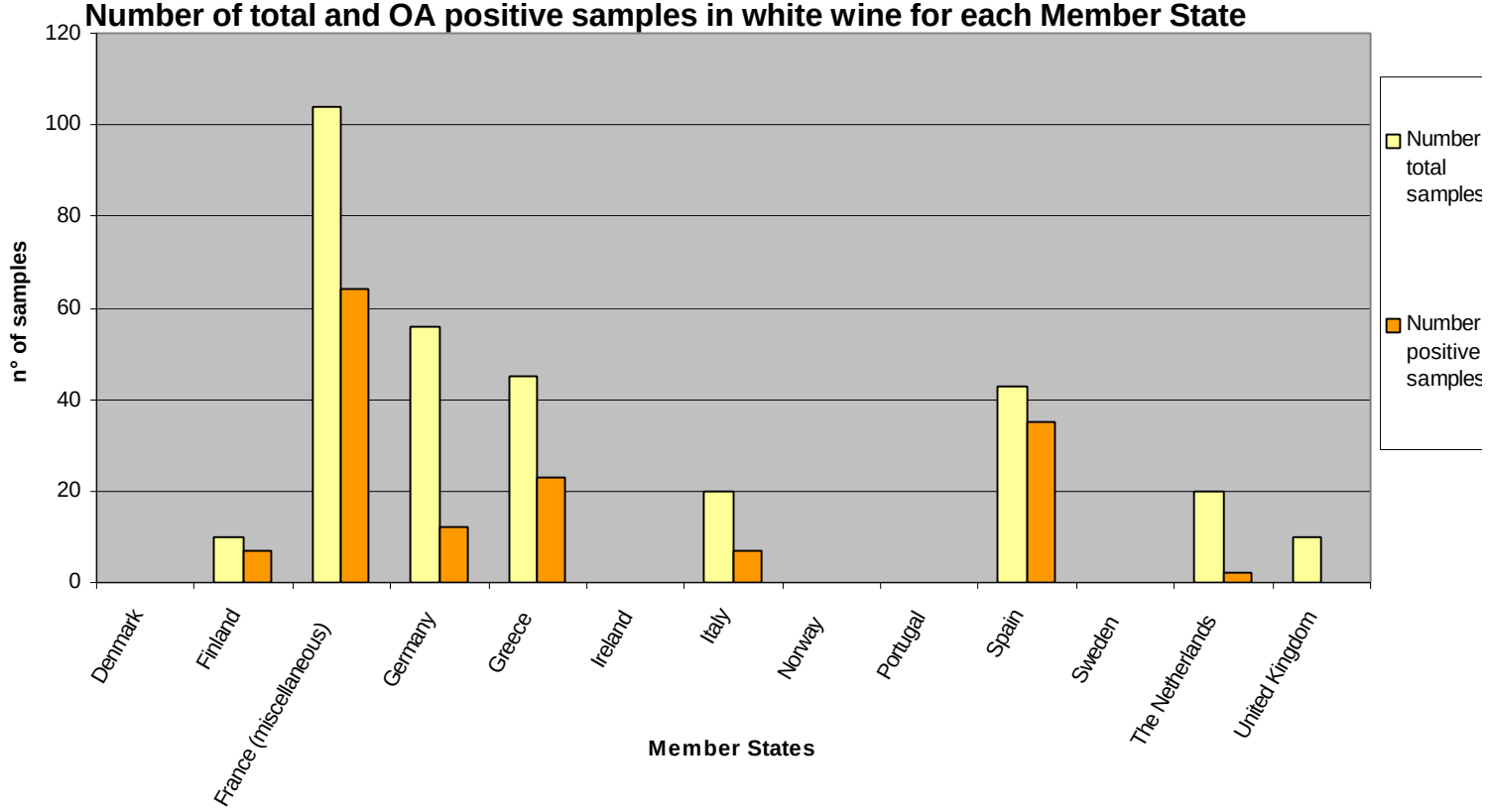


Figure 17
Number of total and OA positive samples in cocoa and cocoa derived products for each Member State

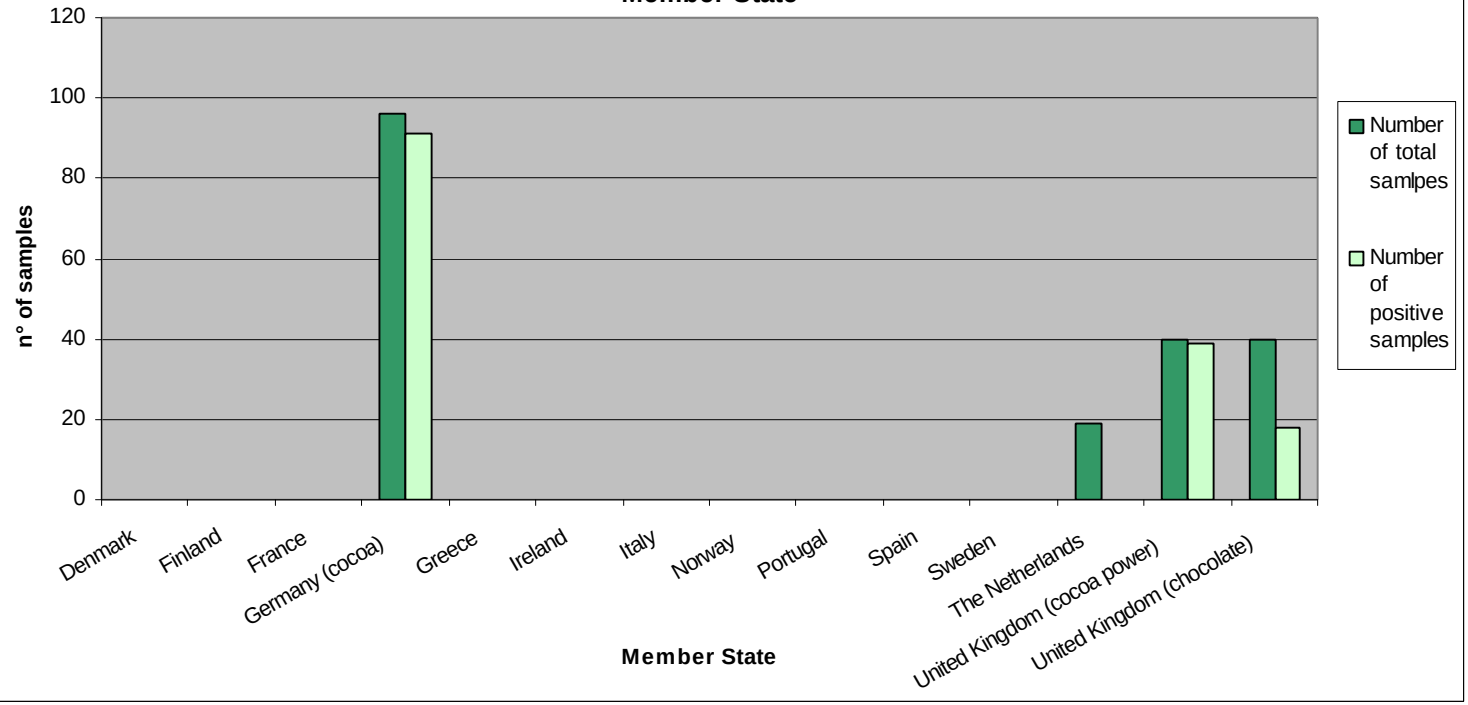


Figure 18

Contribution of each food commodity to the mean European total dietary intake of OA*

Consumption data related to consumers only were employed for France Norway and Sweden

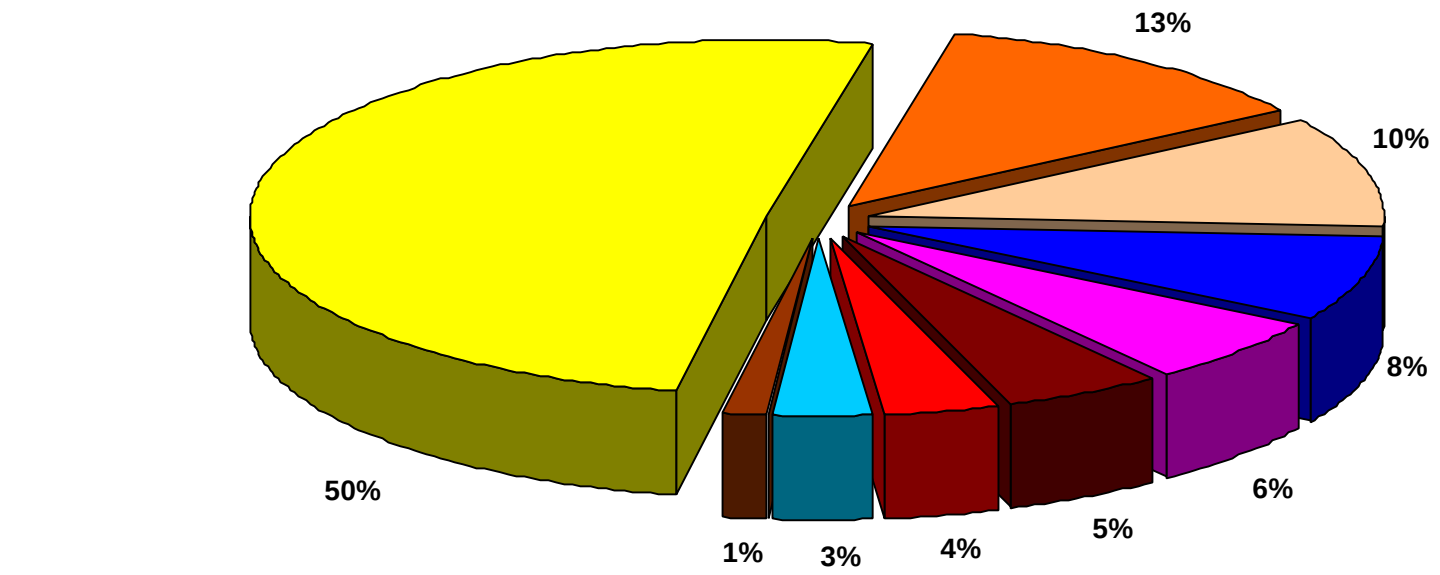


Figure 19
Contribution of each food commodity to the mean European total dietary intake of OA*
(Surrogate values)
Consumption data related to consumers only were employed for France Norway and Sweden