

# COMPILATION OF AGREED MONITORING RECOMMENDATIONS AS REGARDS THE PRESENCE OF MYCOTOXINS AND PLANT TOXINS IN FOOD

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**SUMMARY REPORT OF THE  
STANDING COMMITTEE ON PLANTS, ANIMALS, FOOD AND FEED  
HELD IN BRUSSELS ON 1 JULY 2014  
(Section Toxicological Safety of the Food chain)**

## **Tropane alkaloids in food.**

Following the conclusions and the recommendation of the EFSA opinion on tropane alkaloids<sup>1</sup> the Committee endorsed following recommendation on the monitoring of tropane alkaloids in food

- Method of choice: preferably HPLC-MS/(MS) or, if HPLC-MS/(MS) not possible, GC-MS
- LOQ should not be higher than of 10 µg/kg for hyoscyamine/atropine and scopolamine and preferably below 5 µg/kg
- Foods to be targeted for monitoring
  - Cereals and cereal derived products in particular (in order of priority)
    - Buckwheat, millet and buckwheat and millet flour
    - Cereal based food for infants and young children
    - Breakfast cereals
    - Grain milling products
    - Grains for human consumption
  - Gluten free products
  - Food supplements and herbal teas
  - Legumes, beans (lupins) and oilseeds and derived products

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<sup>1</sup> EFSA CONTAM Panel (EFSA Panel on Contaminants in the Food Chain), 2013. Scientific Opinion on Tropane alkaloids in food and feed. EFSA Journal 2013;11(10):3386, 113 pp. doi:10.2903/j.efsa.2013.3386 Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

**SUMMARY REPORT OF THE  
STANDING COMMITTEE ON THE FOOD CHAIN AND ANIMAL HEALTH  
HELD IN BRUSSELS ON 21 OCTOBER 2013  
(Section Toxicological Safety of the Food chain)**

### **Sterigmatocystin**

Taking into account the outcome of the EFSA Scientific opinion on the risk for public and animal health related to the presence of sterigmatocystin (STC) in food and feed, the Committee agreed with the recommendation to monitor the presence of sterigmatocystin in food (when monitoring also for other mycotoxins) and to report the data to EFSA. The LOQ of 1,5 µg/kg is achievable with LC-MS multi mycotoxin method

### **Deoxynivalenol**

The Committee was informed on the scientific report of EFSA on the occurrence and exposure of deoxynivalenol (DON) in food and feed. The Committee agreed with the recommendation that further data should be collected on DON-3-Glucoside, 3-Acetyl-DON and 15-Acetyl-DON in order to better characterise their potential contribution to the total exposure to DON and to report the data to EFSA.

**SUMMARY REPORT OF THE  
STANDING COMMITTEE ON THE FOOD CHAIN AND ANIMAL HEALTH  
HELD IN BRUSSELS ON 17 APRIL 2013  
(Section Toxicological Safety of the Food chain)**

### **Ergot alkaloids**

The Committee agreed that, based on the conclusions and the information contained in the EFSA opinion, the Commission Recommendation 2012/154/EU of 15 March 2012 on the monitoring of the presence of ergot alkaloids in feed and food [2] provides an adequate follow-up to the recommendation in the EFSA opinion that "collection of analytical data on occurrence of EAs in relevant food and feed commodities should continue. Special attention should be paid to processed foods and to speciality foods consumed by specific groups. The EAs monitored should include at least the compounds identified in this opinion".

In response to the recommendation in the EFSA opinion that "harmonised performance criteria for the analysis of EAs in feed and food should be established" the Committee agreed that the method of analysis used for the monitoring of ergot alkaloids should have a limit of quantification (LOQ) of 20 µg/kg per ergot alkaloid compound as a minimum acceptable criterion, but preferably 10 µg/kg or lower.

Based on the monitoring data collected, further risk management measures as regards the presence of ergot alkaloids in feed and food will be considered in the future.

[1] EFSA Panel on Contaminants in the Food Chain (CONTAM); Scientific Opinion on Ergot alkaloids in food and feed. EFSA Journal 2012;10(7):2798. [158 p p . ] doi:10.2903/j.efsa.2012.2798. Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

[2] OJ L 77, 16.3.2012 p. 20

**SUMMARY REPORT OF THE  
STANDING COMMITTEE ON THE FOOD CHAIN AND ANIMAL HEALTH  
HELD IN BRUSSELS ON 11 JULY 2012  
(Section Toxicological Safety of the Food chain)**

## **Phomopsins**

On 2 February 2012, the EFSA Panel on Contaminants in the Food Chain (CONTAM) adopted the Scientific Opinion on the risks for animal and public health related to the presence of phomopsins in feed and food available at: (<http://www.efsa.europa.eu/en/efsajournal/doc/2567.pdf>).

The Committee endorsed the follow-up to be given to the conclusions and recommendations of the scientific opinion:

- Development of a validated analytical method for the identification and quantification of the major toxic phomopsin congeners (A,B,C,D and E) in food and feed. Viable strategies include either detection by HPLC-MS/MS after adequate sample clean-up procedures or an ELISA-based testing program.
- Monitoring on the presence of phomopsins in lupin-based food and feed on the EU market.

## **Citrinin**

On 2 March 2012, the EFSA Panel on Contaminants in the Food Chain (CONTAM) adopted the Scientific Opinion on the risks for animal and public health related to the presence of citrinin in feed and food available at: <http://www.efsa.europa.eu/en/efsajournal/doc/2605.pdf>

The Committee endorsed the follow-up to be given to the conclusions and recommendations of the scientific opinion:

- Development of performance criteria for the analysis of citrinin in food and feed
- Development of a CEN standard for the analysis of citrinin in feed and food
- Monitoring on the presence of citrinin in food and feed.

## **Pyrrolizidine alkaloids (PAs)**

On 5 October 2012, the EFSA Panel on Contaminants in the Food Chain (CONTAM) adopted the Scientific Opinion on Pyrrolizidine alkaloids in feed and food available at:

(<http://www.efsa.europa.eu/en/efsajournal/doc/2406.pdf>)

The Committee endorsed the follow-up to be given to the conclusions and recommendations of the scientific opinion:

- Active co-operation on the development of a Code of Practice for weed control to prevent and reduce pyrrolizidine alkaloid contamination in food and feed. (Code of Practice is developed under the lead of The Netherlands in the Codex Committee on Contaminants in Feed and Food (CCCF) within Codex Alimentarius)

- The CONTAM Panel identified the following PAs (including the tertiary amine as well as the corresponding *N*-oxide forms) of particular importance as regards the monitoring of their presence in food and feed:

- o **Senecionine-type PAs:** acetylerucifoline, erucifoline, integerrimine, jacobine, jacoline, jaconine, jacozone, retrorsine, senecionine, seneciphylline. These PAs occur particularly in the *Senecioneae* (Asteraceae family), but are also found in *Crotalaria* spp. (Fabaceae family).

- o **Lycopsamine-type PAs:** acetylechimidine and isomers, echimidine and isomers, echivulgarine, lycopsamine and isomers, vulgarine. These PAs occur in the Boraginaceae family and in the *Eupatorieae* (Asteraceae family).

- o **Heliotrine-type PAs:** europine, heliotrine, lasiocarpine. These PAs occur in *Heliotropium* spp. (Boraginaceae family).

- o **Monocrotaline-type PAs:** fulvine, monocrotaline, retusamine, trichodesmine. These PAs occur in *Crotalaria* spp. (Fabaceae family).

The Committee agreed with this recommendation from the CONTAM Panel in EFSA and was informed that:

- LC-MS/MS is the method of choice

- the relevant Limits of Quantification (LOQ) to be achieved for the individual pyrrolizidine alkaloids is

- 1 ng/g for honey

- 0.01 ng/g for milk and milk products

- 0.1 ng/g or µg/kg for other food and feed

- analytical standards are only available for retrorsine, seneciphylline, senecionine, echimidine and isomers, lycopsamine and isomers, heliotrine, lasiocarpine, monocrotaline, trichodesmine, (integerrimine)

- a smart choice of MRM (Multiple Reaction Monitoring) transitions enables to obtain semi-quantitative results for those PAs for which no analytical standard is available (only for experienced laboratories).

**SUMMARY REPORT OF THE  
STANDING COMMITTEE ON THE FOOD CHAIN AND ANIMAL HEALTH  
HELD IN BRUSSELS ON 29 MAY 2012  
(Section Toxicological Safety of the Food chain)**

## **Alternaria toxins**

The Committee was informed that On 6 October 2011, the European Food Safety Authority (EFSA) Panel on Contaminants in the Food Chain (CONTAM) adopted the Scientific Opinion on the risks for animal and public health related to the presence of *Alternaria* toxins in feed and food (available at <http://www.efsa.europa.eu/en/efsajournal/doc/2407.pdf>).

One of the recommendations is that representative occurrence data on *Alternaria* toxins in food and feed across the European countries are required.

Following the conclusions of the scientific opinion the following *Alternaria* toxins have been identified to be of relevance and recommended for monitoring

### **Alternaria-toxins of possible toxicological relevance which should be analysed**

- Alternariol (AOH)
- Alternariol monomethyl ether (AME)

### **Alternaria-toxins of which the occurrence in feed and/or food is of relevance and for which the analysis is appropriate**

- Tenuazonic acid (TeA)
- Tentoxin (TEN)
- Altenuene (ALT)

**Other Alternaria toxins** (such as Altertoxins (ATX), *Alternaria alternate* f sp *lycopersici* toxins (AAL toxin)) can also be analysed but are, based on the currently available information, of less relevance.

As regards the methods of analysis to be used, following exchange of views in the Expert Committee, LC methods of analysis with SPE clean-up is the most appropriate method of analysis for the determination of *Alternaria* toxins in a wide range of matrices.

Within LC methods, LC-MS methods are to be preferred as the widest range of *Alternaria* toxins (all recommended Toxins –see above) can be reliably analysed.

LC-UV (-DAD) or LC-FL can also be used but the range of analysed *Alternaria* toxins is more limited but includes at least the toxins which are of possible toxicological relevance and should be analysed.

The Committee endorsed this recommendation.