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Directorate-General for
Health & Food Safety

EU policy on contaminants in food
Recent developments, outlook and and emerging issues

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Replacement of Reg. (EC) 1881/2006 → by Regulation (EU) 2023/915

- Regulation (EC) 1881/2006 has been already more than 45 times been amended
- Commission Regulation (EU) 2023/915 of 25 April 2023 on maximum levels for certain contaminants in food and repealing Regulation (EC) No 1881/2006 includes all amendments
- Harmonised terminology
- Footnotes in most cases replaced by comments in an additional comment box (similar format as provided for in the Codex General Standard for Contaminants and Toxins in food and Feed CXS 193-1995)

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MYCOTOXINS

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Regulating mycotoxins (in particular *Fusarium* toxins) - feed and food

Regulatory measures have to provide a high level of human health protection (food) and animal health protection (feed) thereby taking into consideration the challenges

Challenges

- Increased prevalence due to climate change / extreme weather conditions
- Year to year variation
- Geographical variation
- Achievability of levels by applying agricultural practices, prevention measures and mitigation tools
- Effective application of available prevention measures, mitigation tools
- EU Green deal – Farm to Fork strategy – Strategy on Biodiversity → consequences for agricultural practices, prevention measures and mitigation tools

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DEOXYNIVALENOL (DON)

Review of the maximum levels for the parent compound only, given that it is considered premature to establish maximum levels based on the sum of the DON and modified forms.

However in accordance with the outcome of the EFSA opinion, it is important to continue gathering information on the presence of modified forms, in view of a possible future setting of maximum levels for the sum of DON and modified forms.

Review of the maximum levels of DON on the basis of the ALARA principle taking into account recent occurrence data.

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Deoxynivalenol –MLs

1.4	Deoxynivalenol	Maximum level (µg/kg)	Remarks
1.4.1	Unprocessed cereal grains except products listed in 1.4.2 and 1.4.3	1 000	Except unprocessed maize grains intended to be processed by wet milling and except rice. The maximum level applies to unprocessed cereal grains placed on the market for first-stage processing (6).
1.4.2	Unprocessed durum wheat grains and unprocessed maize grains	1 500	Except unprocessed maize grains for which it is evident e.g. through labelling or, destination, that they are intended for use in a wet milling process only (starch production). The maximum level applies to unprocessed durum wheat grains and unprocessed maize grains placed on the market for first-stage processing (6).

Deoxynivalenol –MLs

1.4.3	Unprocessed oat grains with inedible husk	1 750	The maximum level applies to unprocessed oat grains with husk placed on the market for first-stage processing ([6]). The maximum level applies to the oat grains with the inedible husk included.
1.4.4	Cereals placed on the market for the final consumer, maize for popping and popcorn	750	Except rice.
1.4.5	Milling products of cereals with the exception of products listed in 1.4.6	600	Except milling products of rice.

Deoxynivalenol –MLs

1.4.6	Milling products of maize		
1.4.6.1	Milling products of maize placed on the market for the final consumer	750	
1.4.6.2	Milling products of maize not placed on the market for the final consumer	1 000	
1.4.6.3	Pre-cooked polenta ready to eat	250	
1.4.7	Bakery wares, cereal snacks and breakfast cereals	400	Except rice products. Including small bakery wares.

Deoxynivalenol –MLs

1.4.8	Pasta	600	Pasta means pasta (dry) with a water content of approximately 12 %.
1.4.9	Baby food and processed cereal-based food for infants and young children ([3])	150	Except rice products. The maximum level applies to the dry matter ([5]) of the product as placed on the market.
1.4.10	Food for special medical purposes intended for infants and young children ([3])	150	Except rice products. The maximum level applies to the dry matter ([5]) of the product as placed on the market.

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T-2 and HT-2 toxin

- Follow-up Recommendation 2013/165/EU on T-2 and HT-2 toxin (lower TDI, exposure > TDI)
- Maximum levels for sum of T-2 and HT-2 toxin (modified forms not under consideration)
- Maximum levels generally lower than indicative levels (but in most cases at P95 or even higher percentile)

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T-2 and HT-2 toxin – MLs

1.9	T-2 and HT-2 toxins	Maximum level (µg/kg)	Remarks
		Sum of T-2 and HT-2 toxins	For the sum of T-2 and HT-2 toxins, maximum levels refer to lower bound concentrations, which are calculated on the assumption that all the values below the limit of quantification are zero.
1.9.1	Unprocessed cereal grains except products listed in 1.9.1.1., 1.9.1.2, 1.9.1.3 and 1.9.1.4	50	Except unprocessed maize grains intended to be processed by wet milling and except rice. The maximum level applies to unprocessed cereal grains placed on the market for first-stage processing ([6]).

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T-2 and HT-2 toxin – MLs

1.9.1.1	Unprocessed malting barley grains	200	The maximum level applies to unprocessed malting barley grains placed on the market for first-stage processing ([6]).
1.9.1.2	Unprocessed barley grains other than malting barley grains	150	The maximum level applies to unprocessed barley grains placed on the market for first-stage processing ([6]).
1.9.1.3	Unprocessed maize grains and durum wheat grains	100	Except unprocessed maize grains for which it is evident, e.g. through labelling or destination, that they are intended for use in a wet milling process only (starch production). The maximum level applies to unprocessed maize grains and durum wheat grains placed on the market for first-stage processing ([6]).

T-2 and HT-2 toxin – MLs

1.9.1.4	Unprocessed oats grains with inedible husk	1 250	The maximum level applies to unprocessed oat grains with husk placed on the market for first-stage processing ([6]). The maximum level applies to the oat grains with the inedible husk included.
1.9.2	Cereals placed on the market for the final consumer except products listed in 1.9.2.1 and 1.9.2.2	20	Except rice.
1.9.2.1	Oats placed on the market for the final consumer	100	
1.9.2.2	Barley, maize and durum wheat placed on the market for the final consumer	50	

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T-2 and HT-2 toxin – MLs

1.9.3	Milling products of cereals except products listed in 1.9.3.1 and 1.9.3.2	20	Except milling products of rice.
1.9.3.1	Milling products of oats (including oat bran)	100	
1.9.3.2	Bran from cereals other than oats and milling products of maize	50	

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T-2 and HT-2 toxin – MLs

1.9.4	Bakery wares except products listed in 1.9.5, pasta, cereal snacks and breakfast cereals except products listed in 1.9.6, 1.9.7 and 1.9.8	20	Except rice products. Including small bakery wares. Pasta means pasta (dry) with a water content of approximately 12 %.
1.9.5	Bakery wares containing at least 90 % milling products of oats	100	Except rice products. Including small bakery wares.
1.9.6	Oat flakes	100	

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T-2 and HT-2 toxin – MLs

1.9.7	Breakfast cereals consisting of at least 50 % of cereal bran, milling products of oatgrains, milling products of maize grains, whole oat grains, barley grains, maize grains or durum wheat grains, and consisting of less than 40 % of milling products of oat grains and whole oat grains	50	
1.9.8	Breakfast cereals consisting of at least 50 % of cereal bran, milling products of oat grains, milling products of maize grains, whole oat grains, barley grains, maize grains or durum wheat grains, and of at least 40 % of milling products of oat grains and whole oat grains	75	

T-2 and HT-2 toxin – MLs

1.9.9	Baby food and processed cereal-based food for infants and young children	10	Except rice products. The maximum level applies to the dry matter ([5]) of the product as placed on the market.
1.9.10	Food for special medical purposes intended for infants and young children	10	Except rice products. The maximum level applies to the dry matter ([5]) of the product as placed on the market.’

T-2 and HT-2 toxin – MLs

- Member States and interested parties shall communicate by 1 January 2028 to the Commission the results of investigations undertaken and progress made with regard to the application of prevention measures to reduce contamination by T-2 and HT-2 toxins in oats and oat products.
- Member States and interested parties shall report on a regular basis to the Authority the occurrence data on T-2 and HT-2 toxins in oats and oat products

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Ergot alkaloids

- Commission Regulation (EU) 2021/1399 of 24 August 2021: maximum levels of **ergot sclerotia and ergot alkaloids**
- By 1 July 2023, Member States and interested parties shall communicate to the Commission the results of investigations undertaken and the progress with regard to the application of prevention measures to avoid contamination by ergot sclerotia and ergot alkaloids in rye and rye milling products and ergot alkaloids in milling products of barley, wheat, spelt and oats grains.
- Member States and interested parties shall report every year to the EFSA the occurrence data on ergot sclerotia and ergot alkaloids in rye and rye milling products and on ergot alkaloids in milling products of barley, wheat, spelt and oats grains."

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Alternaria toxins – food

Following EFSA's "Scientific Opinion on the risks for animal and public health related to the presence of *Alternaria* toxins in feed and food" (2011) and the EFSA report on " Dietary exposure assessment to *Alternaria* toxins in the European population" (2016), the estimated chronic dietary exposure to **alternariol (AOH) and alternariol monomethyl ether (AME) and tenuozonic acid (TeA) exceeded the relevant Threshold of Toxicological Concern (TTC)** value indicating **a need for additional compound-specific toxicity data.** The estimated chronic dietary exposure to tentoxin (TEN) are lower than the relevant TTC value and is therefore considered unlikely to be a human health concern.

Alternaria toxins - food

- Commission Recommendation (EU) 2022/553 of 5 April 2022 on monitoring the presence of Alternaria toxins in food, including setting of indicative levels for alternariol (AOH) alternariol monomethyl ether (AME) and tenuazonic acid (TeA) in certain foods
- Indicative levels established for Alternariol (AOH) , alternariol monomethyl ether (AME) and tenuazonic acid (TeA) in certain foods based on the available data in the EFSA database above which investigations should be performed, certainly in case of repetitive findings on the factors leading to the presence of Alternaria toxins or on the effect of food processing. The indicative levels are not food safety levels.

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Alternaria toxins - indicative levels -food

Food	Alternariol (AOH) (µg/kg)	Alternariol monomethyl ether (AME) (µg/kg)	Tenuazonic acid (TeA) (µg/kg)
Processed tomato products	10	5	500
Paprika powder	-	-	10000
Sesame seeds	30	30	100
Sunflower seeds	30	30	1000
Sunflower oil	10	10	100
Tree nuts	-	-	100
Dried figs	-	-	1000
Cereal based foods for infants and young children	2	2	500

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Commission Recommendation (EU) 2022/1431 of 24 August 2022 on the monitoring of perfluoroalkyl substances in food

- It is recommended to monitor PFAS in food from 2022-2025 in a wide range of foods.
- Commodities: fruits, vegetables, starchy roots and tubers, cereals, nuts, food for infants and young children, food of animal origin, non-alcoholic drinks, wine and beer.
  - Different production types
  - Include hunted or wild caught animals and products
- Analysis of raw and processed products to determine processing factors.

Sampling and analysis mycotoxins and plant toxins Replacement (EC) 2006/401

- Sampling rules: generally unchanged but generalised (also applicable to sample for plant toxins)
- Criteria methods of analysis: significant changes
- Applicability to food business operators

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Sampling mycotoxins Replacement (EC) 2006/401

Methods of sampling for the following categories of food:

A. Cereals, oilseeds other than groundnuts, cereal and oilseed products other than groundnut products

B. Dried fruit and derived/processed products with the exception of dried figs

C. Dried figs and derived/processed products

D. Groundnuts (peanuts), apricot kernels, tree nuts and dried spices with large particle size and derived/processed products

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Sampling mycotoxins Replacement (EC) 2006/401

Methods of sampling for the following categories of food:

E. Dried spices except dried spices with large particle size and powdered spices

F. Milk and milk products, infant formula, follow-on formula, foods for special medical purposes intended for infants and young children and young child formula

G. Coffee, coffee products, cocoa, cocoa products, liquorice and liquorice products

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Sampling mycotoxins Replacement (EC) 2006/401

Methods of sampling for the following categories of food:

H. Beverages

I. Solid processed fruit and vegetable products

J. Baby foods and processed cereal-based food for infants and young children

K. Vegetable oils

L. Food supplements, pollen and pollen products

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Sampling mycotoxins Replacement (EC) 2006/401

Methods of sampling for the following categories of food:

M. Dried herbs, herbal infusions (dried product), teas (dried product) and powdered spices

N. Very large lots or lots stored or transported in a way whereby sampling throughout the lot is not feasible

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Sampling mycotoxins – "cascade" Replacement (EC) 2006/401

Sampling for the control of the levels of mycotoxins in foods shall be carried out in accordance with the methods set out in Annex I.

In case of a food that cannot be classified in a food category for which a sampling procedure has been established in Annex I, the sampling procedure shall be determined having regard to the particle size of that food or the similarity of that food with a product that can be classified in one of the food categories in Annex I.

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Sampling mycotoxins "cascade" Replacement (EC) 2006/401

- In case of a foods that cannot be classified in any food category listed in Annex I and provided that there is evidence that the mycotoxin is homogeneously distributed in such a food, the food shall be sampled using the sample procedure laid down in Part B of the Annex to Regulation (EC) No 333/2007

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Sampling mycotoxins Replacement (EC) 2006/401

A.3. Sampling of commodities with a high volume/weight ratio

With the exception of the food commodities falling under part L and M of part II of this Annex, in the case of sampling food commodities which have a high volume in comparison to their weight (i.e. volume (dm^3)/weight (kg) > 5) the weight requirements can be replaced by equivalent volume requirement (i.e. 1 kg replaced by 1 dm^3).

Ochratoxin A

Commission Regulation (EU) 2022/1370 of 5 August 2022: maximum levels of **ochratoxin A**

- Further information on the presence of ochratoxin A in non-sulphured dried apricots and dried mulberries will be gathered and also on good practices to avoid presence of ochratoxin A in these commodities and, once sufficient information is available, consider the need and appropriateness to review the ML for ochratoxin A in these commodities

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Aflatoxins

- Updates ML – tiger nuts, other commodities?
- Guidance document – sampling and conditions for treatment

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Official Control Regulation (EU) 2017/625 - Aflatoxins

- – Action in the event of non-compliance for goods entering the Union from Third Countries
  - **Article 66 – non compliance - re-dispatch possible**
  - **Article 67 – risk to human, animalor plant health, animal welfare – re-dispatch not possible**
- In both cases special treatment in accordance with Art 71(1) and (2) possible but article 72 (2) (b) provides "be documented and carried out under the control of the competent authorities or, where appropriate under the control of the competent authorities of another Member State by mutual agreement.

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PROCESSING CONTAMINANTS

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3-MCPD esters and glycidyl esters

- Maximum levels for 3_MCPD esters and glycidyl esters to be established for baby foods and processed cereal based foods for infants and young children (however limited occurrence data available/ eventually to be set taking into account typical fat/vegetable oil content).

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Glycidyl esters – 3 MCPD esters in other foods

- Several RASFF notifications indicating very high levels in certain foods such as biscuits
- Regulation of ingredients not protective enough as regards compound foods (?)
- Discussion on the need to regulate the presence of glycidyl esters and 3-MCPD esters in certain foods have been initiated

→ Two options for approaches initially considered

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Glycidyl esters – 3 MCPD esters – Ongoing discussions

- Possible maximum levels are complementary to the maximum levels established by Commission Regulation (EU) 2020/1322 of 23 September 2020
- Possible maximum levels for compound food considered are on a whole weight basis.
- When setting maximum levels, besides occurrence data available in EFSA database, also other considerations to be taken into account (typical vegetable oil content, typical emulsifier content if known). Food categories for which maximum levels are set needs to be well described
- **For foods for which no ML has been set – guidance for application of article 3 of Regulation (EU) 2023/915 to ensure an as much as possible uniform application of article 3 across the EU and to ensure an effective enforcement of legislation**

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Glycidyl esters and 3-MCPD esters Ongoing discussions - outlook

- Targeted stakeholder consultation has taken place been with a stakeholder forum (January/February 2022)
- Continuation technical discussions taking into account
  - the comments received during targeted stakeholder consultation
  - outcome questionnaire Member States
  - the most recent available occurrence data - challenges
- Technical discussions expected to be finalised in second half of 2023/first half of 2024

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Acrylamide – Ongoing discussions

- **The review of existing benchmark levels** established by Commission Regulation (EU) 2017/2158 of 20 November 2017 establishing mitigation measures and benchmark levels for the reduction of the presence of acrylamide in food.
- The **establishment of new benchmark levels**, in particular for certain foods mentioned in Commission Recommendation (EU) 2019/1888 of 7 November 2019 on the monitoring of the presence of acrylamide in certain foods
- The **establishment of maximum levels** in certain foods

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Acrylamide – Ongoing discussions

- Targeted stakeholder consultation has taken place been with a stakeholder forum (January/February 2022)
- Continuation of technical discussions taking into account
  - the comments received during targeted stakeholder consultation
  - outcome questionnaire Member States
  - the most recent available occurrence data
- Challenges/difficulties encountered
- Technical discussions expected to be finalised second half of 2023/ first half of 2024

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Other

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Nickel

- Discussion on MLs ongoing
- Targeted stakeholder consultation Spring 2023
- Discussion with Member States on comments from stakeholders ongoing
- MLs under discussion for cereals and oats
- Timeline

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Challenges and outlook

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New risks related to

- Climate change
- Changing dietary patterns /plant-based diets /meat replacers
  - New foods
  - Increased consumption of certain foods – increased risk.
  - New risks (new/emerging contaminants)
  - Lack of occurrence data /lack of updated food consumption surveys reflecting to the full extend the changing dietary patterns
- Novel foods
- Circular economy
- …

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Outlook food –topics - Not all relevant for CEEREAL-FRUCOM – not in order of priority

- Mineral oil
- N-Nitrosamines
- Nitrates/nitrites
- Enniatins and beauvericin
- Sterigmatocystin
- Phomopsins
- Quinolizidine alkaloids
- Modified forms DON
- Alternaria toxins
- Chlorinated paraffins
- Dioxins and PCBs

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Outlook food –topics - Not all relevant for CEEREAL-FRUCOM – not in order of priority

- Thebaine (opium alkaloid)
- Inorganic arsenic fishery products
- Organic arsenic (methylated arsenic species)
- Phtalates
- Delta-8-THC
- Microplastics
- PBDE and other brominated flame retardants
- Quinolizidine alkaloids
- Grayanotoxins
- Lectins
- …

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Thank you for your attention !

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