

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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Agenda Item 15

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON CONTAMINANTS IN FOODS

12th Session
Utrecht, The Netherlands, 12 - 16 March 2018

DISCUSSION PAPER ON AFLATOXINS AND STERIGMATOCYSTIN CONTAMINATION IN CEREALS

Comment submitted by EU, Kenya, Republic of Korea, Uganda, USA and AU

EUROPEAN UNION (EU)

The European Union (EU) welcomes and appreciates the work done by the electronic working group chaired by Brazil to elaborate the discussion paper on aflatoxins and sterigmatocystin contamination in cereals.

The EU wishes to make the following comments:

- The General Standard for Contaminants and Toxins in Food and Feed (CXS 193-195) establishes maximum levels for Aflatoxins, Total (and Aflatoxin M1). The recommendation provided in the first bullet point of §13 and the project document in Appendix I needs therefore to specify that the new work to set a Codex ML for aflatoxins is for Aflatoxins, Total as the discussion document does not provide evidence on the appropriateness to set Codex MLs for aflatoxins other than Aflatoxins, Total.
- The recommendation provided in the first bullet point of §13 mentions to start new work to set a ML for aflatoxins in cereals and cereal-based products and in food for infants and small children while the project in Appendix I refers only to cereals and cereal-based products. This needs to be aligned.
- The EU understands that the reference to the category "cereals and cereal products" in the first bullet of §13 refers to the definition of the commodity or product provided in the *Classification of Food and Feed* (CAC/MISC 4) and not to the food category "cereals and cereal based products" used elsewhere in the discussion document (see clarification in §6 first bullet as regards the use in the discussion document of the category "cereals and cereal products").
- As regards the recommendation in the first bullet point of §13 that "specific levels should be set for other cereal food groups if data available at the time show it is essential to do so" is not clear what cereal food groups other than "cereals and cereal products" are meant by this.
- As regards the recommendation in the second bullet point of §13, the EU notes that there are validated methods of analysis for the analysis of sterigmatocystin available. The EU proposes to align this recommendation with the conclusion in §11 mentioning that there is a need for **internationally** validated analytical methods and **certified reference materials**.
- As regards the recommendation in the third bullet point of §13, the EU notes that the discussion paper does not contain information as regards prevention and reduction of sterigmatocystin contamination in cereals.

KENYA

GENERAL COMMENT: *We appreciate the work of the EWG led by Brazil and we have no objection for the work to proceed on.*

Comment: We support further discussion on aflatoxin and STC contamination and exposure in order to fully understand appropriate measures to be taken. We support establishment of a validated method for determination of sterigmatocystin in food.

REPUBLIC OF KOREA

The Republic of Korea would like to submit following comments regarding the recommendations of the EWG.

- We support the new work to establish a ML for AFs in cereal and cereal-based products and in food for infants and small children.
- We agree that CCCF should encourage standards development organizations to provide validated methods of analysis for STC
- It would be helpful to identify specific management practices for STC in cereals and to include it as an annex in the revised COP for the prevention and reduction of mycotoxin contamination in cereals.

UGANDA

Uganda supports the work to establish MLs for aflatoxins and sterigmatocystin in cereal and cereal-based products, food for infants and small children, and for other cereal food groups, the related methods of analysis for sterigmatocystin and the inclusion of specific management practices for sterigmatocystin in the Code of practice for the prevention and reduction of mycotoxin contamination in cereals.

UNITED STATES OF AMERICA (USA)

- For the first recommendation, if CCCF agrees to start new work, the U.S. suggests focusing on maize, rice, sorghum, and wheat grains for human consumption, rather than cereal grains combined with cereal products. The U.S. also recommends clarification on whether Brazil is proposing one ML for all cereal and cereal-based products or multiple MLs, i.e., an ML for each cereal grain (e.g., maize, rice, sorghum, wheat) and cereal products.
- However, it may be premature to start new work to set MLs at this stage. Another discussion paper focused on these grains (separate from products) would be helpful, especially if it included consideration of the impact of proposed MLs on grain availability in different geographic regions.
- The U.S. agrees with the second and third recommendations.

AFRICAN UNION (AU)

Position 1. African Union supports further discussion on aflatoxin and STC contamination and exposure in order to fully understand appropriate measures to be taken.

Issue and rationale: At the 23rd Session of the Committee on Food Additives and Contaminants (CCFAC23) (1991), failed to reach consensus about ML for aflatoxins in all foods and decided to discuss the issue on a commodity-by-commodity basis. The dietary exposure assessment conducted to illustrate the current scenario showed that cereal and cereal-based products, maize and maize-based products, rice, sorghum and sorghum-based products and wheat and wheat-based products contributed the most to total AFs exposure, mainly due to high patterns of consumption of these foods in all cluster diets. The food category named as cereal and cereal-based products includes products such as: cereal grains and cereal based products (cereals not specified), bran, bread and other cooked cereal products, buckwheat and snack food. A dietary exposure to AFs through the consumption of cereals and cereal products was conducted using the GEMS/Food occurrence data (Table 1) and mean consumption data obtained from the 17 Cluster Diets (Annex 2). The highest exposures were found to be from clusters C13 (Africa, 13 ng/kg bw per day) and C09 (South Asia and Africa, 9.6 ng/kg bw per day), high consumers of sorghum and sorghum-based products and rice, respectively. The lowest was found in Europe (C11, 2.5ng/kg bw/day; C07, 3.3 ng/kg bw/day) Consumption of cereal and cereal-based products contributed the most to the total intake in 10 Clusters (C01, C02, C04, C06, C07, C08, C10, C11, C15 and C17), maize and maize products in 3 Clusters (C03 (Africa), C12 and C16), rice also in 3 Clusters (C05, C09, C14) and sorghum and sorghum-based products in 1 Cluster only (C13)., maize and maize-based products in 3 Clusters (C03, C12 and C16), rice also in 3 Clusters (C05, C09, C14) and sorghum and sorghum-based products in 1 Cluster only (C13).

Position 2: African Union recommends the establishment of a validated method for determination of sterigmatocystin in food.

Issue and rationale: Sterigmatocystin is a toxic fungal secondary metabolite (mycotoxin) that has been reliably reported to be produced by many fungal genera, including more than two dozen species each of *Aspergillus* and *Emmerella* and one or more species of *Bipolaris*, *Botryotrichum*, *Chaetomium* (*Botryotrichum*, *Humicola*), *Moelleriella*, *Monocillium*, *Moelleriella* (*Aschersonia*), *Podospora* and a unique species of *Penicillium*, *P. inflatum*, closely related to *A. tardus*. The anamorphic names in parentheses are no longer in use.

The Committee evaluated sterigmatocystin at the 83rd session at the request of CCCF following availability of data on its occurrence in sorghum from Sudan, Mali, Ethiopia and Bukina Faso. Based on the available data the committee found highest exposure was estimated for the African Region (C13), with a mean exposure of 16 ng/kg bw per day. Thus, there was representative data for this food commodity for the region with higher consumption of sorghum-based products. The effect of establishing a hypothetical ML for sorghum flour was evaluated for cluster C13. The implementation of the highest ML proposed (30 µg/kg), would reduce STC intake in that cluster by 87%, with 4.4% of samples being withdrawn from the market. Given the importance of sorghum as staple food in Africa it is advisable to take deliberate efforts to prevent and reduce sterigmatocystin contamination in sorghum, through a code of practice and development of a validated method for determination of STC in foods. Although analytical methods for STC based on chromatographic techniques are available there is no internationally validated analytical method nor certified reference materials available for STC in cereals.

Position 3: African Union supports generation of STC data to evaluate impact of MLs

Issues and rationale: JECFA evaluated sterigmatocystin at its 83rd session at the request of CCCF following availability of data on its occurrence in sorghum from African countries only: Sudan, Mali, Ethiopia and Bukina Faso. Based on the available data, the committee found highest exposure was estimated for the African Region (C13), with a mean exposure of 16 ng/kg bw per day. However, for international standard setting, data with a representative geographical distribution is needed.