

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON CONTAMINANTS IN FOODS

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REPORT OF THE VIRTUAL WORKING GROUP ON THE REVIEW OF METHODS OF ANALYSIS FOR CONTAMINANTS

(Prepared by Brazil as Chair of the WG)

The virtual working group (VWG) was held on May 5th of 2022 to consider issues related to the methods of analyses for contaminants covered by the Standard for General Methods of Analysis for Contaminants (CXS 228-2001) and performance criteria and sampling plan for aflatoxins, under agenda items 16 and 9, respectively. Brazil, as chair of the VWG, thanked the United States of America (USA) and Japan delegations on their close collaboration in discussing this agenda item.

1. REVIEW OF CODEX STANDARDS FOR CONTAMINANTS

The chair of the EWG provided an overview of the document Review of methods of analysis for contaminants (CX/CF 22/15/15), comments in reply to CL 2022/22 (CX/CF 22/15/15-Add 1) and CRD 05. The VWG was invited to deliberate the following:

- a. To consider the performance criteria listed on Annex I for lead and cadmium and to decide if the table should be submitted to CCMAS for consideration of inclusion in the General Standard for Recommended Methods of Analysis and Sampling (CXS 234-1999).
- b. To consider recommending to CCMAS the revocation of the Standard for General Methods of Analysis for Contaminants (CXS 228-2001), including the methods for copper, iron and zinc, because analytical methods for these metals in foods are already listed in CXS 234.
- c. To consider whether to request CCMAS to:
 1. remove analytical methods listed in Annex II for lead from CXS 234; and
 2. transfer these methods to the column of "example of applicable methods that meet the criteria" in Annex I, if they met the performance criteria established, and
 3. identify for which commodities the methods AOAC, 2015.01 (heavy metals in food by ICPMS) and EN 15763:2009 are applicable considering the performance criteria and include them in the column of "example of applicable methods that meet the criteria" in Annex I
- d. To request CCMAS to identify and suggest other examples of applicable analytical methods meeting performance criteria in Annex I
- e. To request CCMAS to evaluate the appropriateness of replacing the existing performance criteria in CXS 234 for lead and cadmium in natural mineral waters according to Appendix I.

The working group did not present any comments on recommendations a) and b), and so these recommendations were considered as agreed by the WG.

Regarding recommendation c), was expressed the view that it is sufficient to establish only performance criteria for each method. In this sense, examples of methods that meet the criteria would not be necessary.

The Codex Secretariat clarified that any method that meets the performance criteria could be used. Examples of methods are not mandatory and so CCCF could suggest CCMAS to remove this column. Nevertheless, the Codex Secretariat mentioned that this is an information usually presented on CCMAS standards and that is a common request by member countries to identify methods that meet the criteria established.

One Member expressed that the examples could help countries on the identification of methods that meet the criteria, which was supported by Other Member.

Considering the discussions held, Brazil, as chair of the WG proposed to maintain the table of performance criteria on Annex I of CRD05 without amendment and the recommendation c) as stated in CRD05. Besides the methods that could be identified on the future and listed on the table as examples, other methods could also be used if they meet the criteria established. In this sense, recommendation c) was agreed by the VWG as it was presented in CRD 05.

Regarding recommendation d), One Member requested that Standard Development Organizations (SDO) should also identify and suggest other examples of applicable analytical methods meeting performance criteria. The Codex Secretariat clarified that consultation to SDOs is a procedure already adopted by CCMAS and so there is no need to add SDOs on this recommendation.

There was no consideration on recommendation e), so it was considered as agreed by the VWG.

CONCLUSIONS OF THE VIRTUAL WORKING GROUP

The WG agreed the recommendations as stated in CRD 05, without amendments.

RECOMMENDATIONS FOR THE CCCF15

CCCF15 is invited to endorse the VWG conclusions and agree on recommendations as presented in CRD05.

2. METHODS OF ANALYSIS AND SAMPLING PLAN FOR AFLATOXINS

In the second part of the VWG discussions, Brazil as chair of the electronic working group (eWG) on agenda item 9 to establish Maximum Levels (MLs) for total aflatoxins in cereals, including cereal-based products for infants and young children and the associated sampling plans, raised some concerns and points for discussions related to methods of analysis and sampling plan for aflatoxins considering two main points. The first point for discussion was how to design the method performance criteria when the ML refer to a sum of components. The second point was how to consider sampling plans for contaminants that are inhomogeneous distributed within lots.

In relation to the establishment of Method Performance Criteria for Total Aflatoxins, which is a sum of components, it was clarified that the Procedural Manual states that the approaches described may not be suitable for provisions involving sum of components and the method performance criteria should be undertaken on a case-by-case basis.

It was pointed out that when the components are unequally weighted is important to known natural-abundance of the components rate to set the method performance criteria for each component.

The chair of VWG suggested to issue a call for data to gather information regarding the typical ratio of the 4 aflatoxins in naturally contaminated samples. It was also asked if CCMAS should be consulted to provide advice on this matter.

The VWG was invited to provide recommendation on the best way to address this issue.

There was a view that it was possible to apply the same criteria to total aflatoxins also to individual components because methods like mass spectrometry do not depend on the contaminant concentration. It was also highlighted that the ratio between individual aflatoxins components depends on many variables such as cereal growing region, weather variation year-by-year, climate, cereal under consideration and *Aspergillus* species present. In their view, there was no need to refer the matter to CCMAS.

Other Member suggested that the matter be referred to CCMAS. In response to this intervention, One Member clarified that there is no opposition to ask CCMAS for advice but highlighted the difficult of establishing ratios in terms of different variables and that the applicable methods do not depend much on the concentration of the contaminant.

Brazil, as chair of the VWG, mentioned that the next meeting of CCMAS is scheduled to take place after CCCF16 and concluded that it would be appropriate to conduct a call for data on the aflatoxin ratio. Based on the information received, CCCF would have more information to decide if CCMAS advice is needed.

Regarding the second matter addressed by the VWG, it was discussed the better approach to deal with contaminant heterogenous distribution in developing sampling plans. Three main approaches were foreseen, being the first one to establish the sampling plans for aflatoxins after the revision of General Guidelines on Sampling (CXG 50-2004) is finalized by CCMAS. The second was to apply the same sampling plan currently defined in the General Standard for Contaminants in Food and Feed (CXS 193-1995) for DON and fumonisins in cereals. The last one was to issue a call for data so countries could submit information of variation in sampling, sampling preparaion and analysis for husked rice, polished rice and sorghum grain

A Member expressed that was in favour to harmonize sampling plans with the ones already established in CXS 193-1995 and believed that there is no contradiction between CXG 50-2004 and CXS 193-1995. Besides, CCMAS always analyse the sampling plans proposed by CCCF before endorsing. This member country expressed that the sampling plans for fumonisins and DON established in CXS 193-1995 could also be applied for husked rice, polished rice and sorghum. Additionally, observed that the sampling plans for fumonisins and DON also applies to wheat and barley, which have particle sizes similar to that of rice and sorghum, and so believes that the sampling plans established in CXS 193-1995 could also be applied for husked rice, polished rice and sorghum.

Other Member expressed that it was not possible to apply the same sampling plans for DON and fumonisins in cereals to rice, as the particles dimensions are different. In this sense, supports the issue of a call for data.

Other Member questioned if the VWG chair proposal was to harmonize with the existing sampling plans or also to modify DON and fumonisins sampling plans. Brazil, as chair of the VWG, explained that the modifications on DON and fumonisins sampling plans are outside the scope of this work.

The WG agreed that the appropriate way forward was to issue a circular letter to request information on sampling plans and in the future decide if any advice from CCMAS is needed.

RECOMMENDATIONS OF THE VIRTUAL WORKING GROUP FOR THE CCCF15

1. Harmonize the sampling plans for maize grain and flour, meal, semolina and flakes with the sampling plan for DON and Fumonisin and the sampling plan for Cereal-based Food for infants and young children with the sampling plan for DON.
2. To issue a call for data on:
 - the typical ratio of the 4 aflatoxins in naturally contaminated samples of the cereals that ML was proposed.
 - the variation in sampling, sampling preparation and analysis for husked rice, polished rice and sorghum grain.
3. The Committee will decide after analysing information provided on the call for data the best way forward for these issues.