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Agenda Item 8

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEx COMMITTEE ON CONTAMINANTS IN FOODS

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MAXIMUM LEVEL AND ASSOCIATED SAMPLING PLAN FOR TOTAL AFLATOXINS IN READY-TO-EAT PEANUTS (AT STEP 4)

(Prepared by the Electronic Working Group chaired by India and co-chaired by the United States of America)

BACKGROUND

1. During the 17th Session of the Committee on Contaminants in Foods (CCCF17) held in April 2024, India presented the agenda recalling the decision of CCCF16 to work over 2 years to first develop a definition for ready to eat (RTE) peanuts, followed by data compilation and analysis for the development of the Maximum Levels (MLs) for total Aflatoxin (AFT) for this category of peanuts.
2. The proposed definition for RTE Peanuts was presented for deliberation with a request to call for occurrence data from producers and importing countries in RTE peanuts in line with the definition to be concluded for RTE peanuts. Regarding the definition, it has been noted that since there is no specified type of peanuts which could be considered under RTE category and also that raw peanuts may fall under RTE or For Further Processing (FFP) category, it has been suggested to consider the definition for RTE Treenut.
3. Further deliberations indicated that the issue of data sorting would have to be addressed as the analysis carried out by GEMS database Administrator in 2022 demonstrated difficulties in discriminating between RTE peanuts and FFP peanuts. It was further noted that more than 80% of the supplied data could not be categorized (Unknown), in particular the data supplied as raw peanuts.
4. It was also discussed that for the new call for data, the call would include guidance that for raw peanuts (shelled or in-shell) it has to be specified whether raw peanuts were FFP or RTE. However, for the current data set already in GEMS/Food, it was proposed to request the GEMS/Food administrator to go back to submitters of the data to clarify whether the products sampled and currently identified as unknown were RTE or FFP. This would be down to a tight schedule to have the data available by September 2024. If clarification on certain the data cannot be provided in this timeframe, these would not be used for the establishment of the ML.
5. The Committee (CCCF16) agreed the following after deliberations:
 - i. apply the existing definition for RTE treenuts in CXS 193 to RTE peanuts;
 - ii. establish an EWG chaired by India and co-chaired by USA, working in English, to develop the ML for AFT in RTE peanuts and the associated sampling plan for comments and consideration by CCCF18;
 - iii. request JECFA Secretariat to issue a call for data, with a guidance to specify the raw peanuts as RTE or FFP; and
 - iv. request the GEMS/Food database administrator to clarify with the submitters whether the data currently identified as unknown were RTE or for further processing.¹

WORK PROCESS

6. The EWG was reconstituted inviting member countries and accordingly, 32 members from 17 countries conveyed their willingness to be part of EWG.
7. The definition agreed during the 17th Session of CCCF was taken up as base for taking up the data analysis. The definition is as under:

¹ REP24/CF17, paras. 70-80

Ready to Eat Treenuts, which are not intended to undergo an additional processing/treatment that has proven to reduce levels of aflatoxins.

8. As the data for analysis had to be retrieved from the GEMS database, request has been sent for country wise data. The data so obtained from GEMS Database Administrator have been segregated based on the variant along with the upper and lower level of occurrence of Total Aflatoxin.
9. Further, the data have been segregated based on product origin as domestic or imported. The data on imported Peanuts have been discarded as they could be monitored data.
10. The retrieved data have been segregated region wise also to assess the geographical representation of producer countries to ensure that the data taken up for analysis truly represents the occurrence data.
11. To exclude variants which could not be considered as RTE, the data have been further sorted out and analysis has been carried out. The observations of the analysis and the recommendations have been circulated among the EWG members.
12. It was decided in CCCF17 to apply the existing definition for RTE Treenuts in CXS 193 to RTE Peanuts. Accordingly, **Ready-to-eat Peanuts are the Nuts, which are not intended to undergo an additional processing/treatment that has proven to reduce levels of Aflatoxins.**

KEY POINT OF DISCUSSION

Occurrence and Consumption Data

13. Data available in the GEMS/Food database.

Observations

14. Based on Total Aflatoxins data available in GEMS/Food database:
 - (a) The data for only Total Aflatoxins in Peanut products have been considered.
 - (b) Data with Values '0' and 'ND' were summed together, since various limits of detection (LODs) were reported, and it is not possible to assign any value.
 - (c) It is observed that a total of 31541 data points were available in GEMS/Food database for Peanut Products.
 - (d) The range of Total Aflatoxins reported in Peanut Products are at **Table 1**.

Table 1: Range of Total Aflatoxin in variants of peanuts (µg/kg)

Variants of Peanuts	Lower level	Upper level
Peanut shelled	0.6	150.9
Peanut in shell	0.8	21.56
Peanut, flour coated	12.4	167
Peanut, Chopped	4	4
Peanut, Candy Coated	8.69	50.3
Namarakkasei (Peanut)	0	0
Irirakkasei (Peanut)	0	0
Peanut (Roasted/Tandy)	0.11	1.24
Peanut bar	4.83	13.45
Peanut (Roasted/salted/blanched/)	0.21	267
Peanut Butter	0.06	410
Peanut unprocessed	0.21	220.9

- (e) Out of the total 31540 data points available in the database, it has been noted that the data for 7071 data points pertain to imported Peanuts.
- (f) The data were analyzed for total data on variant wise Peanuts.

(g) The following regions and countries submitted the data for Total Aflatoxins:

Region of the Americas (United States of America and Brazil), European Region, South-East Asia Region (Thailand, Singapore, India), Western Pacific Region (Japan).

Table 2: Region wise Yearly Data of Total Aflatoxins

Region	2014	2015	2016	TOTAL
SEARO	75	62	3726	3863
WPRO	87	22	0	109
PAHO	5975	10008	3870	19853
EURO	2833	1059	3823	7715
TOTAL	8970	11151	11419	31540

SEAR: South-East Asia region; WPR: Western Pacific region; PAHO- Region of the Americas; EUR: Europe

- (h) Out of the total data points of 19853 available for PAHO, 168 data have been related to imported Peanuts for which the data has been excluded from the analysis. Similarly, 11 imported data for SEARO and 6892 for EURO have been excluded from the analysis.
- (i) The analysis of the datapoints of PAHO indicates that the variants such as Peanut shelled, Peanut in shell, Peanut flour coated, Peanut chopped and Peanut candy coated have been covered in the data which falls under RTE category. Excluding the imported data for Peanut shelled, the mean is varying between 8.33 to 44.27 µg/kg as given in the Table 3.

Table 3: Mean of the data points of PAHO

Country	Mean
USA	8.33
Brazil	44.27

- (j) The analysis of SEARO indicates the data for variants such as Peanut with butter, Peanut bar, Flavour coated Peanut, Ground Peanut, Peanut brittle, Raw Peanut (RTE), Roasted Peanut, Salted Peanut, Creamy Peanut butter, Crunchy Peanut butter, Peanut butter, Peanut (RTE), Roasted Salted Peanut, Tandy Roasted Salted Peanut, Tandy Salted Peanut. The data on ground Peanut, Peanut with butter and Peanut paste have been excluded as it does not fall under RTE and the mean of remaining Peanut variants is between 6.06 to 14.19 µg/kg as given in Table 4.

Table 4: Mean of the data points of SEARO

Country	Mean
Thailand	6.06
India	14.1

- (k) Out of the top ten Peanut producing countries as per FAO data during 2023, only three countries have submitted occurrence data in GEMS/Food database. Two more countries which have submitted the occurrence data are also producing countries, however, they are producing in small quantities only.
- (l) As the work need to be concluded by the EWG, the occurrence data of Total Aflatoxin in RTE Peanuts submitted by these producing countries have been taken up for setting up the Maximum Level, though there is not adequate geographic representation of data on the occurrence of Total Aflatoxin in Peanuts.

15. JECFA83 performed an assessment of hypothetical MLs 4, 8, 10 and 15µg/kg of AFT in RTE Peanuts and concluded that enforcing an ML of 10, 8 or 4µg/kg in RTE Peanuts would have little further impact on reducing dietary exposure to Aflatoxins for the general population, compared with setting an ML of 15µg/kg. At an ML of 4µg/kg, the proportion of the world market of RTE Peanuts rejected would be approximately double the proportion rejected at an ML of 15µg/kg (about 20% versus 10%).

16. The producing countries were suggested to implement COP (CXC 55-2004) and submit occurrence data of Total Aflatoxin in RTE Peanuts to GEMS/Food to enable the EWG to analyze and recommend ML of AFT in RTE Peanuts to address the current impediments being faced specifically by the developing countries to enable CCCF to adopt the EWG recommendations.
17. Codex has already adopted 15µg/kg of AFT in Peanuts meant for further processing, therefore, the RTE Peanuts should have lower ML of AFT. The existing Codex methods of sampling (CXS 193-1995) would suffice till its revision and adoption for this category as well taking into account the occurrence data submitted by the members applying the same method of sampling.

Conclusions

18. After exclusion of RTE Peanut import data, ground Peanut, Peanut butter and Peanut with butter (taking into consideration that these are heterogenous products), the data analysis, ranges between mean 6.06 to max. 44.275 µg/kg. As the range is diverse, CCCF may adopt Maximum Levels of Total Aflatoxins for RTE Peanuts at par with Treenuts at 10 µg/kg.
19. After inclusion of ground Peanut, Peanut butter and Peanut with butter (taking into consideration that these are homogenous products), the data analysis, ranges between mean 8.33 to max 44.275 µg/kg. In this case also the range is diverse, CCCF may adopt AFT ML for RTE Peanuts at par with Treenuts i.e. at 10 µg/kg.

Recommendation

20. CCCF is invited to:
 - (i) forward the maximum limit of 10 µg/kg total aflatoxins for ready-to-eat peanuts to CAC48 for adoption; and
 - (ii) consider revisiting this ML five years after its adoption, after producing countries have fully implemented the CoP and submitted occurrence data of AFT for RTE Peanuts to GEMS/Food for further analysis.

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