



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

**Twelfth Session
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**PROPOSED DRAFT MAXIMUM LEVELS FOR TOTAL AFLATOXINS AND OCHRATOXIN A IN NUTMEG,
CHILI AND PAPRIKA, GINGER, PEPPER AND TURMERIC AND ASSOCIATED SAMPLING PLANS**

(Prepared by the electronic working group led by India)

Codex members and Observers wishing to submit comments at Step 3 on this draft should do so as instructed in CL 2018/7-CF available on the Codex webpage/Circular Letters:
<http://www.fao.org/fao-who-codexalimentarius/resources/circular-letters/en/>.

BACKGROUND

1. During the 11th Session (April 2017) of the Committee on Contaminants in Foods (CCCF), India submitted a new work proposal for the establishment of individual maximum levels (MLs) for total aflatoxins (AFT) and ochratoxin A (OTA) for five spices: nutmeg, chilli and paprika, ginger, pepper and turmeric. Based on this, the Committee agreed to start new work on MLs for AFT and OTA in nutmeg, chilli and paprika, ginger, pepper and turmeric through an EWG chaired by India¹. The 40th Session of the Codex Alimentarius Commission approved the new work².

2. Accordingly, Codex members and observers were invited to participate in the EWG. The list of participants is attached as Appendix III.

3. The draft was circulated twice for comments to the EWG participants. In the first draft, the GEMS/Food Contaminants Database for AFT and OTA for all spices was used for establishing MLs. The following MLs for all spices were proposed in the first draft:

Total Aflatoxin: 30 µg/kg

Ochratoxin A: 20 µg/kg

4. In the first draft, some of the countries commented that consumption and occurrence data in spices are limited. Therefore, data provided in the first draft cannot represent the global situation.

5. In the second draft, the EWG used the data provided by members on global occurrence and rejection of spices due to various mycotoxins which was collected during the preparation of the first discussion paper on development of MLs for mycotoxin contamination in spices.

6. The following MLs were proposed in the second draft based on MLs at which trade rejection is near to 5% or maximum specified levels in any national regulations (in case where higher trade rejection is observed):

For AFT:

Nutmeg and Dried Chilli – [20] [30] µg/kg

Ginger, Paprika and Pepper – [15] [20] µg/kg

Turmeric – [10] [15] µg/kg

For OTA:

Nutmeg, Ginger, Dried Chilli and Paprika – [20] [30] µg/kg

Pepper, And Turmeric – [10] [15] µg/kg

¹ REP17/CF, paras 122-124, Appendix VII

² REP40/CAC, Appendix VI

5. Comments on the draft were received from seven EWG members, viz. Japan, Brazil, United States of America (USA), Canada, Argentina, Chile and Sweden. Japan, USA and Chile were of the view that MLs for AFT should be established based on ALARA principles considering the high health risk and USA supported an ML of 20 µg/kg for AFT in all spices, while Chile supported an ML of 10 µg/kg for AFT in turmeric. Sweden proposed 10 µg/kg of AFT in all spices. Argentina suggested that there was no need to fix any levels as the consumption of these spices is very low and Canada was of the opinion that an impact assessment was likely to be unnecessary considering the low consumption rate of most spices and negligible dietary exposure of mycotoxins due to spices.

6. As occurrence and consumption data are so limited, some countries have also supported the recommendation of collecting data through the GEMS/Food database for the individual spices viz. nutmeg, chilli and paprika, ginger, pepper and turmeric for AFT and OTA.

CONCLUSION

7. From the comments received from the members, no general consensus was achieved on any ML and with regards to the availability of limited data, there is a need for collection of more data to make the standard more representative.

RECOMMENDATIONS

8. Although there is a lack of consensus in the EWG on any MLs for AFT and OTA in the spices, the Committee may consider, based on the low consumption of spices, fixing MLs of [30][20] µg/kg for AFT and 20 µg/kg for OTA in all the spices (Nutmeg, Chili and Paprika, Ginger, Pepper, and Turmeric), which are largely reflective of the MLs specified by most of the spice producing and exporting countries, in order to address immediate trade concerns without compromising food safety aspects. These proposals are presented in Appendix I for comments and consideration by CCCF.

9. Further, since high occurrence levels of AFT and OTA in spices are observed in the data presented in this document, there is a need to reduce mycotoxin levels in spices by implementing the *Code of practice for the prevention and reduction of mycotoxins in spices* (CXC 78-2017), which was adopted by CAC40. After three years of implementation of the COP, the above MLs could be revised and MLs for specific spices could also be established, based on fresh occurrence data made available after implementation of the COP and its evaluation by JECFA.

10. The discussion paper providing data and information in support of the recommendations is contained in Appendix II.

APPENDIX I**PROPOSED DRAFT MAXIMUM LEVELS FOR TOTAL AFLATOXINS AND OCHRATOXIN A IN NUTMEG, DRIED CHILLI AND PAPRIKA, GINGER, PEPPER AND TURMERIC****AFLATOXINS, TOTAL (AFT)**

Commodity / Product Name	Maximum Level (ML) $\mu\text{g}/\text{kg}$	Portion of the Commodity / Product to which the ML applies	Notes / Remarks
Nutmeg, Chili and Paprika, Ginger, Pepper and Turmeric	[30] [20]		

OCHRATOXIN A (OTA)

Commodity / Product Name	Maximum Level (ML) $\mu\text{g}/\text{kg}$	Portion of the Commodity / Product to which the ML applies	Notes / Remarks
Nutmeg, Chili and Paprika, Ginger, Pepper and Turmeric	20		

APPENDIX II**PROPOSED DRAFT MAXIMUM LEVELS FOR TOTAL AFLATOXINS AND OCHRATOXIN A IN NUTMEG, CHILI AND PAPRIKA, GINGER, PEPPER AND TURMERIC AND ASSOCIATED SAMPLING PLANS****I. BACKGROUND**

1. During the 8th Session (March 2014) of the Committee on Contaminants in Foods (CCCF), India and Indonesia submitted new work proposals for the establishment of maximum levels (MLs) for aflatoxins (AFs) in spices and nutmeg respectively. After a general discussion, the Committee agreed to establish an Electronic Working Group (EWG), chaired by India and co-chaired by Indonesia and the European Union (EU), that will review mycotoxins in spices to assist the Committee with the understanding which mycotoxins to address and in which spices for consideration at its next session.³

2. During CCCF09 (March 2015), India introduced the discussion paper and provided a summary of the work and the approach taken to understand which mycotoxins should be addressed and for which spices, to aid in the development of a priority list of spices. The Delegation indicated that MLs should be set for total aflatoxins, aflatoxin B₁ and Ochratoxin A (OTA) based on the priority list of spices in the paper. In light of the interest to continue work on MLs in spices, and the need for further clarity on the mycotoxin/spice(s) combinations for which to establish MLs for and the rationale for this, as well as the need for further prioritization of the work, the Committee agreed to re-establish the EWG, led by India and co-chaired by Indonesia and the EU.

3. The EWG was tasked with preparing a new discussion paper on mycotoxin contamination in spices and a project document for the establishment of MLs for mycotoxins in spices. The discussion paper was also to include proposals for possible MLs to assist the next session of the Committee with making decisions on new work.⁴

4. During CCCF10 (April 2016), the discussion paper on development of MLs for mycotoxins in spices was deliberated. The delegations generally agreed with the principle and approach of the EWG and the need to establish MLs for the spices identified, but that clarification was needed on whether the MLs would be set for each of the spices in the priority group or for the priority group as a whole. They were also of the view that it was not necessary to establish MLs for both total aflatoxins (AFT) and aflatoxin B₁ (AFB₁), as AFB₁ was included in total aflatoxins (AFT) and that a similar approach should be taken as for peanuts and tree nuts, while a view was also expressed that the ML should be for aflatoxin B₁ as it was the most toxic and most widely distributed.

5. The Committee agreed⁵ that further work was needed to expand on the MLs through an EWG chaired by India and co-chaired by the EU with the following terms of reference:

- provide a rationale for selection of spices (chilli, paprika, ginger, nutmeg, pepper, turmeric)
- provide rationale for selection of AFT and OTA
- take into account the outcome of evaluation of AFs from the 83rd Meeting of JECFA in 2016 (JECFA83)
- consider trade aspects of existing national standards
- prepare a project document for new work with proposals for MLs for spices.

6. During CCCF11 (April 2017), the discussion paper on development of MLs for mycotoxins in spices was again deliberated and a new work proposal was submitted for the establishment of individual MLs for AFT and OTA for 5 spices: nutmeg, chilli and paprika, ginger, pepper and turmeric. There was a general support for the proposal and agreed to set MLs for AFT only.

7. The Committee agreed to start new work on MLs for AFT and OTA in nutmeg, chilli and paprika, ginger, pepper and turmeric through an EWG chaired by India.⁶

II. Objective

8. The main objective of the work is to facilitate fair practices in international food trade and to protect public health by harmonizing the MLs of mycotoxins, specifically AFs and OTA, in dried/dehydrated forms of nutmeg, chili and paprika, ginger, pepper, and turmeric. The MLs for various mycotoxins in spices vary widely across the world (Table 1) and the lack of harmonization affects global trade of spices. Some countries have regulations for mycotoxins specifying different tolerated levels for individual foods, while others have set only one tolerated level for instance for "all foods" which also include spices.

³ REP14/CF, paras. 131 - 137

⁴ REP15/CF, paras. 135 - 139

⁵ REP16/CF, paras. 143 - 148

⁶ REP17/CF, paras. 118 – 124, Appendix VII

Table 1: Maximum levels of mycotoxins fixed by some countries for spices/all food products				
Sl. No.	Country/ Organization	Product	Aflatoxin Total (µg/kg)	Ochratoxin A (µg/kg)
1)	Armenia	All foods		10
2)	Barbados	All foods	20	
3)	Brazil	Spices	20	30
4)	Bulgaria ***	Spices	5	
5)	Chile	Spices	10	
6)	Colombia	All foods	10	
7)	Croatia	Spices		
8)	Cuba	All foods	5	
9)	Czech Republic ***	Spices		
10)	European Union	Spices*	10	15 ^a
				20 ^b
11)	Finland***	All Spices	10	
12)	Honduras	All foodstuffs	1	
13)	Hong Kong	All foodstuffs	15	
14)	Iceland	Spices	10	15
15)	India	All Spices	30	
16)	Indonesia	Spices powder	20	
17)	Iran (Islamic Republic of)	Spices	10	
18)	Jamaica	Foods and Grains	20	
19)	Japan	All foods	10	
20)	Latvia***	Food products of plant & animal origin		
21)	Liechtenstein	Spices	10	
22)	Malaysia	Other foods not specified, including spices	5	
23)	Mauritius	All foods	10	
24)	Morocco	All foods		
25)	Nigeria	All foods		
26)	Norway	Spices	10	

Table 1: Maximum levels of mycotoxins fixed by some countries for spices/all food products				
Sl. No.	Country/ Organization	Product	Aflatoxin Total (µg/kg)	Ochratoxin A (µg/kg)
27)	Oman	Complete food stuffs		
28)	Pakistan	Chilli	30	
29)	Salvador	All Foods	20	
30)	Serbia and Montenegro	Spices		
31)	Singapore	All foods except food for infants or young children	5	
		Food for infants or young children	NA	
32)	South Africa	All food stuffs	10	
33)	Sri Lanka	All foods	30	
34)	Switzerland	Spices excluding Nutmeg	10	20
		Nutmeg	20	
35)	Thailand	All foods	20	
36)	Tunisia	All foods		
37)	Turkey	Spices	10	
38)	USA	All food except milk***	20	
39)	Uruguay	All foods and spices	20	
40)	Vietnam	All Foods	10	
41)	Zimbabwe	All Foods		

Spices*: *Capsicum spp.* (dried fruits thereof, whole or ground, including chillies, chilli powder, cayenne and paprika); *Piper spp.* (fruits thereof, including white and black pepper); *Myristica fragrans* (nutmeg); *Zingiber officinale* (ginger); *Curcuma longa*, based on Commission Regulation (EC) No 2174/2003.

a - Spices mentioned in footnote*, except from *Capsicum spp.* (Ref: Commission Regulation (EC) No 2015/1137)

b - Spices mentioned in footnote* from dried fruits of *Capsicum spp.* (Ref: Commission Regulation (EC) No 2015/1137)

** - Countries which comes under EU with MLs for mycotoxins

*** - The action level for aflatoxin M₁ in milk in the U.S. is 0.5 µg/kg.

Source: Worldwide regulations for mycotoxins in food and feed in 2003 (FAO); Pakistan Standard and Quality Control Authority (PSQCA) standard # PS: 1742- 2010; Agri-Food and Veterinary Authority of Singapore; Commission Regulation (EU) No 105/2010 of 5 February 2010 amending Regulation (EC) No 1881/2006 setting maximum levels for certain contaminants in foodstuffs as regards Ochratoxin A: www.ava.gov.sg; The National Agency on Drugs and Food Control, Republic of Indonesia: # HK. 00.06.1.52.4011-2009. Chilean Sanitary Food Regulation [http://web.minsal.cl/sites/default/files/files/DECRETO_977_96%20actualizado%20a%20Enero%202015\(1\).pdf](http://web.minsal.cl/sites/default/files/files/DECRETO_977_96%20actualizado%20a%20Enero%202015(1).pdf)

III. Relevance

9. Nutmeg (*Myristica fragrans.*), chilli and paprika (*Capsicum annuum L.*), ginger (*Zingiber officinale L.*), pepper (*Piper nigrum L.*), and turmeric (*Curcuma longa L.*) in dried or dehydrated forms are spices prominently produced and traded globally in both whole and ground forms. These spices are reported to have higher susceptibility towards mycotoxin contamination compared to other spices.

10. AFs were evaluated by JECFA at its thirty-first, forty-sixth, forty-ninth, fifty-sixth and sixty eighth meetings. Recently at its eighty third meeting in 2016 JECFA reaffirmed the conclusions of the forty-ninth meeting of JECFA that AFs are among the most potent mutagenic and carcinogenic substances known, based on studies in test species and human epidemiological studies, Ochratoxin A (OTA) was evaluated by the JECFA at its thirty-seventh, forty-fourth and fifty-sixth meetings.

11. The hazardous nature of mycotoxins to humans and animals has necessitated the need for establishment of control measures and tolerance levels by national and international authorities. Many countries in the world have MLs for AFT and OTA in spices. But different regulations (MLs) for AFs in various countries are a potential impediment to the international trade.

IV. Codex MLs for AFs and OTA in spices

12. There are no Codex MLs for mycotoxins in spices set by the Codex Alimentarius Commission (CAC).

V. JECFA “summary and conclusions”

13. In the JECFA83 report, it is mentioned that the high consumption of rice and wheat in some countries means that these cereals may account for up to 80% of dietary aflatoxin exposure for those GEMS/Food cluster diets. In the report, there is no mention about mycotoxins in spices.

VI. Occurrence and Consumption Data

14. In the first draft, calculations on the basis of GEMS data provided on the GEMS website for all spices was done as given in Annex III. It may be noted that GEMS data can not be used as a representative data as most of the data for AF as well as OTA corresponds to a particular region.

15. In the first draft circulation for comments, few countries also have commented that consumption and occurrence data in all are limited, especially food intake data for average and most exposed/high consumer groups, as well as intake of vulnerable groups. There is even less information of individual spices.

16. Thus EWG have evaluated the data, provided by eight members (Austria, Canada, India, Indonesia, EU, Singapore, UK, USA), on global occurrence and rejection of spices due to various mycotoxins which was collected during the preparation of first discussion paper on development of MLs for mycotoxin contamination in spices. The summary of occurrence and rejections data provided by EWG members is shown in Annex I. For determining dietary exposure of AF and OTA consumption data was required. In the Annex II, the per capita daily availability data of individual spices submitted by USA are listed. As the collected availability data were only from one country, the data presented is solely based on occurrence of mycotoxins present in spices.

VII. Observation

17. From Table 2, it is observed that contamination level of AFT in dried chilli and nutmeg is exceeding 1000 µg/kg followed by ginger, turmeric and paprika with a contamination level ranging up to 350 µg/kg. Pepper is having the lowest AFT contamination level ranging up to 40 µg/kg.

18. Similarly from Table 3, it is observed that contamination level of OTA in dried chilli and paprika is high while in turmeric, ginger and pepper OTA contamination level is comparatively low.

19. Based on the different existing national MLs, percentage of samples exceeding these limits were found and present in Table 4 and Table 5. It has been observed from Table 4 that there is higher level of rejection in nutmeg for AFT followed by chilli and then by paprika and ginger. Least rejection is noted in turmeric as compared to other spices. Similarly, from table 5, it has been observed that there is higher level of rejection for OTA in paprika, nutmeg, chilli and ginger as compared to pepper and turmeric.

20. Consumption of individual spices will be negligible as the consumption of total spices is very low compared with other food commodities. So, there will be little impact on dietary exposure to AF due to spice consumption.

VIII. Recommendation

21. Based on the above observations, MLs which are near to the 5% rejection rate (practice being followed for establishing Codex MLs for other contaminants like Lead) or maximum specified levels in any national regulations (in case where higher trade rejection is observed) are considered. Accordingly, EWG members are invited to consider the following proposed MLs for nutmeg, chilli and paprika, ginger, pepper, and turmeric:

For AFT:

Nutmeg and Dried Chilli – [20] [30] µg/kg

Ginger, Paprika and Pepper – [15] [20] µg/kg

Turmeric – [10] [15] µg/kg

For OTA:

Nutmeg, Ginger, Dried Chilli and Paprika – [20] [30] µg/kg

Pepper, And Turmeric – [10] [15] µg/kg

22. For making the standard more acceptable, if relevant, EWG members may consider to submit data to GEMS/Food database after which JECFA can be requested for the impact assessment of different MLs of AF and OTA in spices (nutmeg, chili and paprika, ginger, pepper, and turmeric).

ANNEX I

Spice	Range of the Total Aflatoxin present (min to max) µg/kg	Total number of samples analyzed
Dried chilli (whole & ground)	0.0169–1489.9	20081
Turmeric (whole & ground)	0.02 - 336.6	855
Dried ginger	0.029–362.9	256
Nutmeg	0.0241-1200	385
Pepper	0.02 – 40.1	71
Dried paprika (whole & ground)	0.055 - 358.6	107

Source: Austria, Canada, India, Indonesia, European Union, Singapore, UK, USA

Spice	Range of the toxin present (min to max) µg/kg	Total number of samples analyzed
Dried chilli (whole & ground)	0.05 – 724	439
Turmeric (whole & ground)	0.01 – 15.41	169
Dried ginger	0.01 – 44.4	85
Nutmeg	0.116 – 355	56
Pepper	0.044 – 24.2	87
Dried paprika (whole & ground)	0.2 – 2150	132

Source: Austria, Canada, India, Indonesia, European Union, Singapore, UK, USA

Spice	Total number of samples analyzed	Percentage (%) of samples exceeding the concentration of (No. Of Rejected samples given in bracket)			
		> 10 µg/kg	> 15 µg/kg	> 20 µg/kg	> 30 µg/kg
Nutmeg	385	66.49 (256)	53.25 (205)	45.71 (176)	33.77 (130)
Paprika	107	13.08 (14)	8.41 (9)	7.48 (8)	7.48 (8)
Chilli	20081	25.11 (5042)	17.9 (3594)	13.88 (2787)	8.6 (1727)
Ginger	256	10.55 (27)	7.81 (20)	3.51 (9)	1.56 (4)
Pepper (Piper spp.)	71	5.63 (4)	5.63 (4)	4.22 (3)	1.41 (1)
Turmeric	855	4.91 (42)	2.57 (22)	2.22 (19)	1.63 (14)

Graph 1

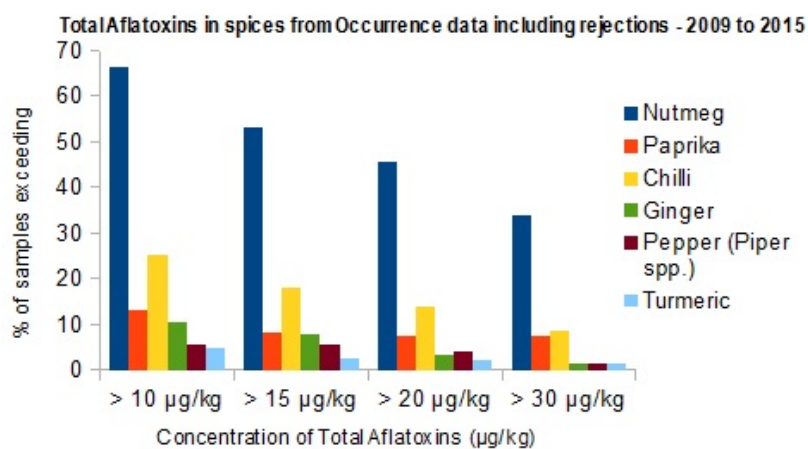
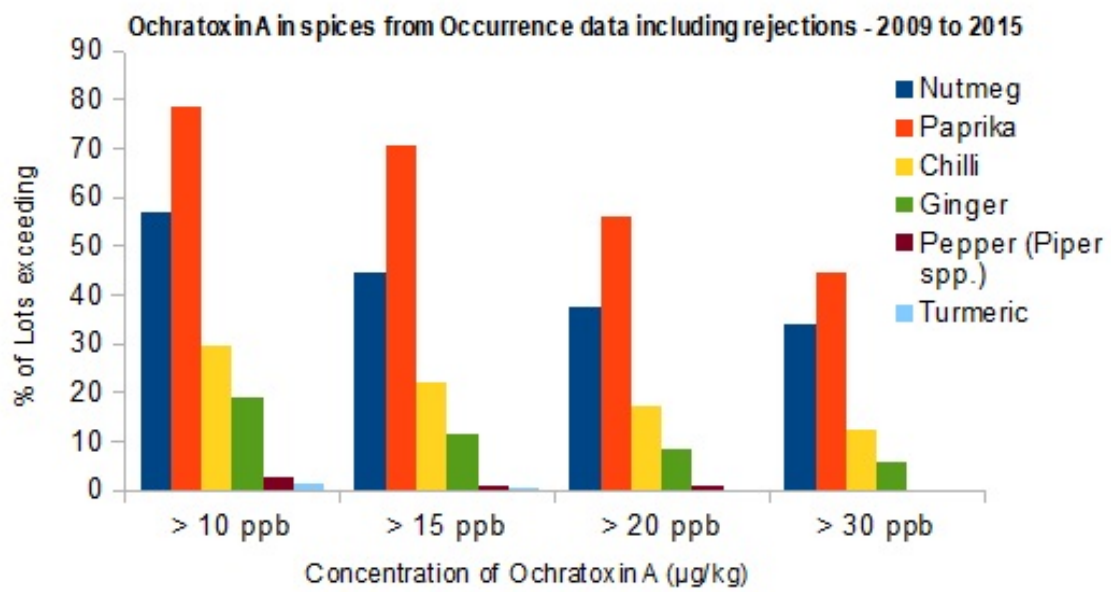


Table 5: Ochratoxin A in spices in occurrence data including rejections (2009 to 2015)

Spice	Total number of samples analyzed	Percentage (%) of samples exceeding the concentration of (No. Of Rejected samples given in bracket)			
		> 10 µg/kg	> 15 µg/kg	> 20 µg/kg	> 30 µg/kg
Nutmeg	56	57.14 (32)	44.64 (25)	37.5 (21)	33.92 (19)
Paprika	132	78.78 (104)	70.45 (93)	56.06 (74)	44.69 (59)
Chilli	439	29.61 (130)	22.09 (97)	17.31 (76)	12.52 (55)
Ginger	85	18.82 (16)	11.76 (10)	8.23 (1)	5.88 (5)
Pepper	87	2.298 (2)	1.149 (1)	1.149 (1)	0
Turmeric	169	1.18 (2)	0.59 (1)	0	0

Graph 2



ANNEX II**Table 6: Estimated per capita daily consumption of spices and herbs, using data on daily amounts of spices and herbs available per resident, as a proxy^{a, b}**

Spice/ Herb	Imports (In Tonnes)*	Production (In Tonnes)*	Total (In Tonnes)*	Availability ^b (gram per capita/day)
Ginger root	56068.26	0	56068.26	0.49
Nutmeg	2101.44	0	2101.44	0.02
Paprika	28861.98	0	28861.98	0.25
Pepper, black and white	62445.51	0	62445.51	0.54
Pepper, capsicum, dried	89987.67	0	89987.67	0.79
Pepper, chili, dried	0	36616.05	36616.05	0.32
Turmeric	4035.14	0	4035.14	0.04

* The source data obtained in 1000 pounds was converted to tonnes with the conversion factor of 0.453592.

^a **Source:** USDA, Economic Research Service. Spices: Supply and Disappearance. Downloaded from [http://ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system.aspx#2794](http://ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx#2794); per capita daily availability calculations are based on a 2012 U.S. population of 314,267,867, as provided in ERS documentation.

^b Availability data may be over-estimates, since they are not corrected for small amounts exported to Puerto Rico and to other countries.

ANNEX III

Occurrence data for AFT and Ochratoxin A for all spices were collected from the GEMS/Food Contaminants Database. Various MLs were selected for consideration based on the existing national MLs of various countries, namely 5 µg/kg, 10 µg/kg, 15 µg/kg, 20 µg/kg and 30 µg/kg for AFT and 10 µg/kg, 15 µg/kg, 20 µg/kg and 30 µg/kg for ochratoxin A. The relative reduction in estimated intake of AFT and the percentage of samples exceeding these limits were determined and is presented in Tables 7 and Table 8 and statistical analysis of the data is given in Table 9 and 10.

Table 7: Impact of ML proposal on intake of total aflatoxins for all spices and percentage of sample rejection on fixing different MLs for Total Aflatoxin

Maximum level	Average total aflatoxin concentration (µg/kg)	No. of samples below the ML	Average consumption of spices g/kg bw/d	Intake of total aflatoxins ng/kg bw/d	Percent relative reduction in Intake of total aflatoxins	Rejection (Number of samples)	% rejection
No ML	1.487	1233	0.044	0.065	-	-	-
30	0.889	1223	0.044	0.039	40.203	10	0.811
20	0.858	1221	0.044	0.038	42.297	12	0.973
15	0.803	1217	0.044	0.035	45.989	16	1.298
10	0.763	1213	0.044	0.034	48.679	20	1.622
5	0.658	1193	0.044	0.029	55.750	40	3.244

Table 8: Impact of ML proposal on intake of OTA for all spices and percentage of sample rejection on fixing different MLs for OTA

Maximum level	Average contamination OTA µg/kg	No. of samples below the ML	Average consumption of spices g/kg bw/d	Intake of OTA ng/kg bw/d	Percent relative reduction in intake of OTA	Rejection (Number of samples)	% rejection
No ML	45.397	3011	0.044	1.998	-	-	-
30	4.674	2880	0.044	0.206	89.704	131	4.350
20	3.920	2772	0.044	0.173	91.365	239	7.940
15	3.210	2632	0.044	0.141	92.928	379	12.590
10	2.228	2371	0.044	0.098	95.092	640	21.250

Table 9: Statistical analysis of the GEMS occurrence data for AFT in all spices (given in µg/kg)

Range	0-150.9
Mean	1.487
25th Percentile	0
50th Percentile	0
75th Percentile	1.23
95th Percentile	3.691
99th Percentile	19.184

Table 10: Statistical analysis of the GEMS occurrence data for OTA in all spices (given in µg/kg)	
Range	0-18000
Mean	45.397
25th Percentile	0
50th Percentile	2.09
75th Percentile	8.4
95th Percentile	27.265
99th Percentile	104.021

Source: GEMS/Food consumption database/ cluster diets-summary statistics by country – 2012

GEMS/Food contaminants database/Quick access to the data

APPENDIX III**List of Participants**

<p>Chair: Dr Dinesh Singh Bisht Scientist Quality Evaluation Laboratory, Spices Board (Ministry of Commerce & Industry, Govt. of India), Mumbai, India. E-mail: ccsch.bisht@gmail.com</p>

	COUNTRY	MEMBER'S DETAILS
1	Argentina	<p>Lic. Silvana Ruarte Jefe de Servicio Analítica de Alimentos a/c Departamento Control y Desarrollo Dirección de Fiscalización, Vigilancia y Gestión de Riesgo Instituto Nacional de Alimentos Email: sruarte@anmat.gov.ar Argentina's Codex Contact Point: codex@magyp.gov.ar GABRIELA CATALANI Codex Contact Point Agroindustry Ministry</p>
2	Australia	<p>Glenn Paul Stanley Food Standards Australia New Zealand</p>
3	Bulgaria	<p>Dr. Svetlana Tcherkezova Chief expert Risk Assessment Center on Food Chain Ministry of Agriculture, Food and Forestry 136 Tzar Boris III, bulv. 1618 Sofia, Bulgaria E-mail: STcherkezova@mzh.government.bg Tel.: 359 882 417 543</p>
4	Brazil	<p>Carolina Araújo Vieira Brazilian Health Regulatory Agency Larissa Bertollo Gomes Porto ANVISA</p> <p>Ligia Lindner Schreiner</p>
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6	Chile	<p>Mrs Lorena Delgado Coordinator national Committee CCCF E-mail: ldelgado@ispch.cl</p>

	COUNTRY	MEMBER'S DETAILS
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