

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
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Agenda Item 8

CX/CF 24/17/8

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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON CONTAMINANTS IN FOODS

17<sup>th</sup> Session

15-19 April 2024

Panama City, Panama

#### SAMPLING PLANS FOR TOTAL AFLATOXINS AND OCHRATOXIN A IN CERTAIN SPICES

*(Prepared by Electronic Working Group chaired by India)*

Due to late receipt of the document, no Circular Letter will be issued at this stage.

#### INTRODUCTION

1. The 16th Session of the Codex Committee on Contaminants in Foods (CCCF16, 2023) noted that further work was needed on the sampling plans for total aflatoxins and ochratoxin a in certain spices and agreed that further work could be undertaken in the EWG for presentation to CCCF17. The Committee noted the offer of the European Union (EU) to provide clarification on aspects of the sampling plan (e.g., particle size) as the starting point for discussion was the EU sampling plan.

#### TERMS OF REFERENCE

2. CCCF16 agreed to re-convene the EWG, chaired by India, working in English, to develop sampling plans for the agreed MLs taking into account all written comments submitted to CCCF16, and send the revised text for comments and consideration by CCCF17.

#### PARTICIPATION AND METHODOLOGY

3. The EWG worked through Codex Forum Platform. The draft was circulated only once, comments in reply to CL 2022/45-CF were also circulated for consideration. The list of participants is attached as Appendix II.

4. Comments were received from four countries.

#### SUMMARY OF DISCUSSION

5. The EWG discussed the following:

- a. Clarification on the particle size Viz. Small and Large particle size.
- b. Assess if the number and size of the increments as well as the subplot provisions of this sampling plan are practical to be implemented by the exporters,
- c. Sample weights are particle or not,
- d. Considering the high value of the spices, suggestions for appropriate sample weights,
- e. Comment on the "Decision rule: If the aflatoxin test result is less than or equal to the ML in both test samples, then accept the lot. Otherwise reject the lot".

6. There was general agreement for the development of the sampling plan. However, the following points require further clarification and discussion: the definitions of large and small particle sizes required, the number and size of the increments as well as the sub-lot provisions, and the sampling cost.

7. The "Decision rule: If the aflatoxin test result is less than or equal to the ML in both the test samples, then accept the lot. Otherwise reject the lot", suggestion was received to amend the decision rule. It is suggested to have a single laboratory sample.

#### CONCLUSIONS

8. Further discussion is required for the development of the Sampling plans for total aflatoxins and ochratoxin A in certain spices.

**RECOMMENDATIONS**

9. CCCF is invited to:

- a. have further discussion on the sampling plan (Appendix I) taking into account the further points of discussion in paras 5 - 7; and.
- b. consider consultation with other expert body consultation and suggestions from CCMAS.

**APPENDIX I****Sampling Plan****Maximum levels for total aflatoxins and ochratoxin A in nutmeg, dried chili and paprika, ginger, pepper, and turmeric and associated sampling plans****A) Spices with large particle size**

In case of large lots and on condition that the subplot can be separated physically, each lot shall be subdivided into sublots following table 1. Taking into account that the weight of the lot is not always an exact multiple of the weight of the sublots, the weight of the subplot may exceed the mentioned weight by a maximum of 20 %.

**Table 1****Subdivision of lots into sublots depending on product and lot weight**

Commodity	Lot weight (tonne)	Weight or number of sublots	No incremental samples	Aggregate sample weight (kg)
spices with large particle size	≥ 500	100 tonnes	100	[20] [10]
	> 125 and < 500	5 sublots	100	[20] [10]
	≥ 15 and ≤ 125	25 tonnes	100	[20] [10]
	< 15	—	10-100 (*)	[20] [10]
(*) Depending on the lot weight — see table 2.				

Each sub-lot shall be sampled separately

Number of incremental samples: 100

Weight of the aggregate sample = 20 kg which shall be mixed and to be divided into two equal laboratory samples of 10 kg before grinding.

Each laboratory sample of 10 kg shall be separately ground finely and mixed thoroughly to achieve complete homogenisation

(\*) The number of incremental samples of 100 g to be taken depends on the weight of the lot, with a minimum of 10 and a maximum of 100.

The figures in the following table 2 may be used to determine the number of incremental samples to be taken and the subsequent division of the aggregate sample.

Table 2

Number of incremental samples to be taken depending on the weight of the lot and number of subdivisions of the aggregate sample

Lot weight (tonnes)	No of incremental samples	Aggregate sample Weight (kg)	No of laboratory samples from aggregate sample
≤ 0.1	10	[2] [1]	1 (no division)
> 0.1 – ≤ 0.2	15	3 [1]	1 (no division)
> 0.2 – ≤ 0.5	20	4 [1]	1 (no division)
> 0.5 – ≤ 1.0	30	6 [1]	1 (no division)
> 1.0 – ≤ 2.0	40	8 (- < 12 kg) [1]	1 (no division)
> 2.0 – ≤ 5.0	60	12	2
> 5.0 – ≤ 10.0	80	16	2
> 10.0 – ≤ 15.0	100	20	2

No of incremental samples

Weight of the aggregate sample = 20 kg which shall be mixed and if necessary divided into two equal laboratory samples of 10 kg before grinding

In cases where the aggregate sample weights are less than 20 kg, the aggregate sample shall be divided into laboratory samples according to following guidance:

< 12 kg: no division into laboratory samples;

> 12 kg division into two laboratory samples.

Each laboratory sample shall be separately ground finely and mixed thoroughly to achieve complete homogenisation

Decision rule: If the aflatoxin test result is less than or equal to the ML in both test samples, then accept the lot.

Otherwise reject the lot.

#### B) Spices with small particle size

In the case of large lots and on condition that the subplot can be separated physically, each lot shall be subdivided into sublots following Table 3. Taking into account that the weight of the lot is not always an exact multiple of the weight of the sublots, the weight of the subplot may exceed the mentioned weight by a maximum of 20 %.

**Table 3**

In case of large lots , subdivision of lots into sublots depending on product and lot weight

Commodity	Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples	Aggregate sample Weight (kg)
Spices	≥ 15	25 tonnes	100	10
	< 15	—	5-100 (*)	0,5-10
(*) Depending on the lot weight — see Table 4				

Each subplot shall be sampled separately.

Number of incremental samples: 100. Weight of the aggregate sample = 10 kg.

(\*) For lots of spices less than 15 tonnes the sampling plan shall be used with 5 to 100 incremental samples, depending on the lot weight, resulting in an aggregate sample of 0,5 to 10 kg.

The figures in the following Table 4 can be used to determine the number of incremental samples to be taken.

**Table 4**

Number of incremental samples to be taken depending on the weight of the lot of spices

Lot weight (tonnes)	Number of incremental samples	Aggregate sample weight (kg)
≤ 0.01	5	0.5
> 0.01-≤ 0.1	10	1
> 0.1-≤ 0.2	15	1.5
> 0.2-≤ 0,5	20	2
> 0,5-≤ 1.0	30	3
> 1.0-≤ 2.0	40	4
> 2.0-≤ 5.0	60	6
> 5.0-≤ 10.0	80	8
> 10.0-≤ 15.0	100	10

### C) Powdered spices

In the case of large lots and on condition that the subplot can be separated physically, each lot shall be subdivided into sublots following Table 5. Taking into account that the weight of the lot is not always an exact multiple of the weight of the sublots, the weight of the subplot may exceed the mentioned weight by a maximum of 20 %.

Table 5

## Subdivision of lots into sublots depending on lot weight

Commodity	Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples	Aggregate sample Weight (kg)
Powdered spices	≥ 15	25 tonnes	50	2
	< 15	—	3 – 50 (*)	0.1 – 2.0
(*) Depending on the lot weight — see Table 6				

- each sublot shall be sampled separately

- number of incremental samples: 50. Weight of the aggregate sample: 2 kg

(\*) For lots of powdered spices less than 15 tonnes the sampling plan shall be used with 3 to 50 incremental samples, depending on the lot weight, resulting in an aggregate sample of 0,1 to 2.0 kg.

The figures in the following Table 6 can be used to determine the number of incremental samples to be taken.

Table 6

## Minimum number of incremental samples to be taken depending on the weight of the lot of powdered spices

Lot weight (tonnes)	Minimum number of incremental samples	Minimum aggregate sample weight (kg)
≤ 0.1	3	0.1
> 0.1 - ≤ 0.5	10	0.4
> 0.5 - ≤ 5.0	25	1.0
> 5.0 - ≤ 10.0	35	1.4
> 10.0 - ≤ 15.0	50	2.0

**APPENDIX II****List of Participants****Chair**

Dr. Dinesh Singh Bisht

Scientist-C, Quality Evaluation Laboratory, Spices Board, India

**Belgium**

Frans Verstraete  
European Commission

**Canada**

Elizabeth Elliott  
Ian Richard  
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**China**

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**India**

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CSIR-Indian Institute of Toxicology Research,  
India

Vakdevi Validandi  
ICMR-National Institute of Nutrition  
Wasi Asghar  
Export Inspection Council  
GANESH  
NCML

Varsha Yadav  
Ritika  
FICCI

**IRAN**

Mansooreh Mazaheri  
ISIRI-Standard Research Institute

**Japan**

Codex Japan  
Ministry of Health, Labour and Welfare

Tomoaki MIURA  
Ministry of Agriculture, Forestry and Fisheries

**Malaysia**

Nor Azmina Mamat  
Ministry of Health Malaysia

**México**

Tania Daniela fosado Soriano  
Secretaría de Economía

**Netherlands**

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**New Zealand**

Jeane Nicolas  
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Ministry for Primary Industries, New Zealand Food

**Republic of Korea**

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Ministry of Agriculture, Food and Rural Affairs  
Yeon Ju Kim  
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**Singapore**

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