SAMPLING PLAN FOR TOTAL AFLATOXINS AND OCHRATOXIN A IN NUTMEG, DRIED CHILLI AND PAPRIKA

(For adoption at Step 5)

A)   Spices with large particle size (Whole nutmeg, whole dried chilli and whole paprika)

In case of large lots and on condition that the sublot 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 sublot 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 (tonnes)	Weight or number of sublots	No incremental samples	Aggregate sample weight (kg)
Spices with large particle size	≥ 500	100 tonnes	100	10
	> 125 and < 500	5 sublots	100	10
	≥ 15 and ≤ 125	25 tonnes	100	10
	< 15	—	10-100 (*)	10
(*) Depending on the lot weight — see Table 2.				

Each sub-lot shall be sampled separately

Number of incremental samples: 100

(*) 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	1	1
> 0.1 – ≤ 0.2	15	1.5	1
> 0.2 – ≤ 0.5	20	2	1
> 0.5 – ≤ 1.0	30	3	1
> 1.0 – ≤ 2.0	40	4	1
> 2.0 – ≤ 5.0	60	6	1
> 5.0 – ≤ 10.0	80	8	1
> 10.0 – ≤ 15.0	100	10	1

The accept/reject level is a level usually equal to the Codex maximum level.

B)   Spices with small particle size (crushed/cracked/broken/flakes of nutmeg, dried chilli and paprika)

In the case of large lots and on condition that the sublot 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 sublot may exceed the mentioned weight by a maximum of 20 %.

The accept/reject level is a level usually equal to the Codex maximum level.

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 sublot shall be sampled separately.

Number of incremental samples: 100, incremental sample size = 100g, 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 (Obtained by grinding nutmeg, dried chilli and paprika)

In the case of large lots and on condition that the sublot 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 sublot may exceed the mentioned weight by a maximum of 20 %.

The accept/reject level is a level usually equal to the Codex maximum level.

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. Incremental sample size: [40 g] [80 g]. 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] [0.24 kg to 4 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 [0.24]
> 0.1 - ≤ 0.5	10	0.4 [0.8]
> 0.5 - ≤ 5.0	25	1.0 [2]
> 5.0 - ≤ 10.0	35	1.4 [2.8]
> 10.0 - ≤ 15.0	50	2.0 [4]

Method performance criteria

Table 7: Method performance criteria for the analysis of total aflatoxins and ochratoxins A in spices

Commodity	Analyte	ML (µg/kg)	LoD (µg/kg)	LoQ (µg/kg)	Precision (%)	Minimal applicable range (µg/kg)	Recovery (%)
Chilli pepper, Nutmeg	AF B1+B2+G1+G2	20	≤4	≤8	≤44	11.2-28.8	60-115
	AFB1	-	≤1	≤2	≤44	2.8-7.2	40-120
	AFB2	-	≤1	≤2	≤44	2.8-7.2	40-120
	AFG1	-	≤1	≤2	≤44	2.8-7.2	40-120
	AFG2	-	≤1	≤2	≤44	2.8-7.2	40-120
Chilli pepper, Paprika, nutmeg	OTA	20	≤4	≤8	≤44	11.2-28.8	60-115