



JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

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ENDORSEMENT OF METHODS OF ANALYSIS AND SAMPLING PLANS FOR PROVISIONS IN CODEX STANDARDS

1. This document contains the methods of analysis, method of sampling and example methods in numeric performance criteria (Appendix I) referred to CCMAS by the 48th session of the Codex Alimentarius Commission (CAC48).
2. This document also contains the methods of analysis, numeric performance criteria (NPC) and sampling plans (Appendices II-V) proposed by the following Committees:
 - Codex Committee on Contaminants in Food (CCCF) (REP25/CF18)¹
 - Sampling plans and NPC for total aflatoxins (AFT) and ochratoxin A in certain spices (i.e. nutmeg, dried chilli and paprika)
 - NPC for methods of analysis for AFT utilizing the sum of components concept in relevant sampling plans
 - FAO/WHO Coordinating Committee for Asia (CCASIA) (REP25/ASIA)²
 - Revised sampling plan in the *Regional standard for non-fermented soybean products* (Asia) ([CXS 322R-2015](#))
 - Draft sampling plans in all other commodity regional standards developed by CCASIA ([CXS 298R-2009](#), [301R-2011](#), [313R-2013](#), [323R-2017](#), [354R-2023](#), and [355R-2023](#))
 - Draft sampling plan in the draft regional standard for quick-frozen dumpling (Asia) (to be submitted for adoption at Step 8 by CAC after food additive and food labelling provisions have been endorsed by the Codex Committees on Food Additives (CCFA) and Food Labelling (CCFL) respectively)
 - FAO/WHO Coordinating Committee for Near East (CCNE) (REP25/NE)³
 - Methods of analysis for provisions in the regional standard for maamoul (Near East) (to be submitted for adoption at Step 8 by CAC after food additive and food labelling provisions have been endorsed by CCFA and CCFL respectively)
 - Codex Committee on Spices and Culinary Herbs (CCSCH) (REP25/SCH)⁴
 - Methods of analysis for provisions in different spices and culinary herbs standards: the *Standards for spices derived from dried or dehydrated fruits and berries – small cardamom* ([CXS 357-2024](#)); *dried and dehydrated roots, rhizomes and bulbs – turmeric* ([CXS 359-2024](#)); *dried or dehydrated chilli pepper and paprika* ([CXS 353-2022](#)); *dried floral parts: cloves* ([CXS 344-2021](#))
 - Methods of analysis in the draft standards for spices in the form of dried fruits and berries, requirements for vanilla; spices in the form of dried fruits and berries, requirements for large

¹ REP25/CF18 paragraphs 62, 133(i, iii) and Appendices IV and X

² REP25/ASIA paragraphs 33, 101 and Appendix II

³ REP25/NE paragraph 47 and Appendix IV

⁴ REP25/SCH paragraphs 12-15, 18(v), 61(ii), 74(ii), 104(ii) and Appendices II-V

cardamom; spices in the form of dried seeds, requirements for coriander (to be submitted for adoption at Step 8 and Step 5/8 by CAC after food additive and food labelling provisions have been endorsed by CCFA and CCFL respectively).

CODEX ALIMENTARIUS COMMISSION (CAC48)

Method for salt saturation in salted fish and dried salted fish of the Gadidae family of fishes

3. CAC48 was informed that the method for the determination of salt saturation in salted fish and dried salt fish of the Gadidae family of fishes and Appendix VIII, Part 1 of [CXS 234-1999](#) on the preparation of samples had been erroneously recommended for revocation, consequential to the adoption of numeric performance criteria for the determination of salt content in this commodity.⁵
4. CAC48 agreed to retain this method together with the associated footnote xii on the calculation of % salt saturation, as well as Appendix VIII, Part 1 of [CXS 234-1999](#), and to request CCMAS to consider further the method and the section on the preparation of samples.⁶
5. CCMAS **is invited to consider** whether the method of analysis for salt saturation in salted fish and dried salted fish of the Gadidae family of fishes together with Appendix VIII Part 1 of [CXS 234-1999](#) (Appendix I, Part A), should be retained in [CXS 234-1999](#) or revoked (see also CX/MAS 26/45/2 paragraph 12).

Example methods provided for certain numeric performance criteria for salt and sodium

6. CAC48 noted that the method AOAC 971.27 should be validated for boiled dried salted anchovies, fish sauce, salted Atlantic herring and salted sprat, salted fish and dried salted fish of the Gadidae family of fishes, and sturgeon caviar, since it had been included as an example method for the numeric performance criteria to determine sodium chloride and salt determined as chloride expressed as sodium chloride in these commodities as it had been validated for canned vegetables. It was noted that there might be other example methods which would need reconsideration as to their appropriateness.⁷
7. CCMAS **is invited to consider** whether the example methods provided for certain NPC for salt and sodium (Appendix I, Part B) should be retained in [CXS 234-1999](#), or replaced with more appropriate example methods (see also CX/MAS 26/45/2 paragraph 13).

CODEX COMMITTEE ON CONTAMINANTS IN FOOD (CCCF18)

Sampling plans for total aflatoxins and ochratoxin A in certain spices

8. CCMAS **is invited to endorse** the sampling plans (Appendix II, Part A) and the NPC (Appendix II, Part B) for AFT and ochratoxin A in certain spices (i.e., nutmeg, dried chilli and paprika).

Numeric performance criteria for methods of analysis for total aflatoxins utilizing the sum of components concept in relevant sampling plans

9. CCCF18 noted that there was guidance provided in an information document titled "Approaches which use a 'sum of components'" published on the Codex website on establishing NPC for the sum of components, this guidance, however, stated that NPC should be set on a case-by-case basis. Requesting clarification on the approach from CCMAS would be useful for future development/review of NPC for the sum of components. CCCF further noted that clarification and advice were important because the approach taken could have an impact on data submission, i.e., one of the mandatory fields in the GEMS/Food database is for limits of quantification (LOQs) to be provided. A consistent and clear approach would be needed for data submission, as there would be questions about which LOQ to fill in for AFT.⁸
10. CCMAS **is invited to:**
 - **endorse** the NPC, for methods of analysis for AFT utilizing the sum of components concept in relevant sampling plans, for inclusion in [CXS 234-1999](#) (Appendix II, Part C); and
 - **advise** on the need to establish NPC for AFT or the individual aflatoxins, and, if the NPC should be set for AFT, how to report to results.

FAO/WHO COORDINATING COMMITTEE FOR ASIA (CCASIA23)

11. CCMAS **is invited to endorse:**
 - the revised sampling plan in the *Regional standard for non-fermented soybean products (Asia)* ([CXS 322R-2015](#)) (Appendix III);

⁵ REP25/CAC paragraph 39

⁶ REP25/CAC paragraph 40

⁷ REP25/CAC paragraph 42

⁸ REP25/CF18 paragraphs 129 and 131

- the draft sampling plans in all other commodity regional standards developed by CCASIA (CXS [298R-2009](#), [301R-2011](#), [313R-2013](#), [323R-2017](#), [354R-2023](#), and [355R-2023](#)) (Appendix III); and
- the draft sampling plan in the draft regional standard for quick-frozen dumpling (Asia) (Appendix III).

FAO/WHO COORDINATING COMMITTEE FOR NEAR EAST (CCNE12)

12. CCMAS **is invited to endorse** the methods of analysis for provisions in the regional standard for maamoul (Near East) (Appendix IV).

CODEX COMMITTEE ON SPICES AND CULINARY HERBS (CCSCH8)

Methods of analysis for provisions in different spices and culinary herbs standards

13. CCSCH8 agreed to forward the respective answers to CCMAS to support the endorsement decisions on the various methods in the different spices and culinary herbs standards (Appendix V, Part A).⁹
14. CCMAS **is invited to endorse** the methods of analysis in Appendix V, Part B.1, **and revoke** the method of analysis in Appendix V, Part B.3, based on replies from CCSCH8 (see also CX/MAS 26/45/2 paragraphs 20-23). For the ISO 927 methods in small cardamom and cloves, CCMAS **is also invited to provide the principle** when considering whether to endorse these methods.
15. The Codex Secretariat further notes that a Type IV method exists for determining mould visible (for whole) in cloves in [CXS 234-1999](#). If CCMAS endorses ISO 927 as a Type I method for determining mould visible (for whole) in cloves, it should also **consider** whether the existing Type IV method should be revoked from [CXS 234-1999](#).

Draft standard for spices in the form of dried fruits and berries, requirements for vanilla, draft standard for spices in the form of dried fruits and berries, requirements for large cardamom and draft standard for spices in the form of dried seeds, requirements for coriander

16. CCMAS **is invited to endorse** the methods of analysis in Appendix V, Part B.2 (see also CX/MAS 26/45/2 paragraph 24).

⁹ For background on the discussions in CCMAS43 and referral to CCSCH, refer to REP24/MAS paragraphs 10(iii-vi), 20(v)

APPENDIX I

CODEX ALIMENTARIUS COMMISSION (CAC48)**Part A: Method of analysis and preparation of fish samples for salted fish and dried salted fish of the Gadidae family of fishes**(for consideration whether to retain in [CXS 234-1999](#) or revoke)**A1. Method of analysis for salt saturation in salted fish and dried salted fish of the Gadidae family of fishes**

Fish and fishery products				
Commodity	Provision	Method	Principle	Type
Salted fish and dried salted fish of the Gadidae family of fishes	Salt saturation	See equation in footnote ^{xii}	Calculation	I

^{xii} The % salt saturation is calculated as follows:

1. % salt in water = (% salt content / (% salt content + % moisture)) x 100%

2. % salt saturation = (% salt in water / 26.4 %*) x 100%

* The solubility of sodium chloride in water is 36 g per 100 g water, and the constant is calculated as follows: 36 g sodium chloride / (100 g water + 36 g sodium chloride) x 100% = 26.4%

A2. Preparation of fish samples for salted fish and dried salted fish of the Gadidae family of fishes (Appendix VIII Part 1 of [CXS 234-1999](#))

PART 1: PREPARATION OF FISH SAMPLES	
Salted fish and dried salted fish of the Gadidae family of fishes	
1.	Before preparing of a subsample adhering salt crystals should be removed by brushing from the surface of the sample without using water.
2.	The preparation of fish samples for the determination of salt content, and water content in order to calculate the % salt saturation of the fish should be carried out according to AOAC 937.07. The analysis should be on the edible portion of the fish.
3.	Determination should be performed at least in duplicate.

Part B: Example methods provided for certain numeric performance criteria for salt and sodium(for consideration whether to retain the example methods in [CXS 234-1999](#) or replace with more appropriate example methods)**Table 5. Method performance criteria for sodium chloride and for salt determined as chloride expressed as sodium chloride**

Commodity	Provision	ML (%)	Min. appl. Range (%)	LOD (%)	LOQ (%)	Precision (RSD _R) (%) no more than	Recovery (%)	Examples of applicable methods that meet the criteria	Principle
Boiled dried salted anchovies	Sodium chloride and salt determined as chloride expressed as sodium chloride	15 (NaCl)	13.8–16.2	1.5	3.0	5.3	98–102	NMKL 178	Titrimetry (potentiometric)
		9.1 (Cl ⁻)	8.3–9.9	0.91	1.8	5.7	98–102	AOAC 971.27 AOAC 937.09	Titrimetry (potentiometric) Titrimetry
Fish sauce	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 20	18–22	2.0	4.0	5.1	98–102	NMKL 178	Titrimetry (potentiometric)
		From 12 (Cl ⁻)	11–13	1.2	2.4	5.5	98–102	AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry
Salted Atlantic herring and salted sprat	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 1 to 20 (NaCl)	0.9–22	0.1	0.2	8.0	97–103	NMKL 178	Titrimetry (potentiometric)
		From 0.6 to 12 (Cl ⁻)	0.5–13	0.06	0.12	8.6		AOAC 971.27 AOAC 976.18 AOAC 937.09	Titrimetry (potentiometric) Titrimetry (potentiometric) Titrimetry

Commodity	Provision	ML (%)	Min. appl. Range (%)	LOD (%)	LOQ (%)	Precision (RSD _R) (%) no more than	Recovery (%)	Examples of applicable methods that meet the criteria	Principle
Salted fish and dried salted fish of Gadidae family of fishes	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 12 (NaCl)	11–13	1.2	2.4	5.5	98–102	NMKL 178	Titrimetry (potentiometric)
		From 7.3 (Cl ⁻)	6.8–8.1	0.8	1.5	5.9		AOAC 971.27	Titrimetry (potentiometric)
								AOAC 976.18	Titrimetry (potentiometric)
								AOAC 937.09	Titrimetry
Sturgeon caviar	Sodium chloride and salt determined as chloride expressed as sodium chloride	From 3 to 5 (NaCl)	2.7–55	0.3	0.6	6.8	97–103	NMKL 178	Titrimetry (potentiometric)
		From 1.8 to 3.0 (Cl ⁻)	1.7–3.4	0.2	0.4	7.3		AOAC 971.27	Titrimetry (potentiometric)
								AOAC 976.18	Titrimetry (potentiometric)
								AOAC 937.09	Titrimetry

APPENDIX II

CODEX COMMITTEE ON CONTAMINANTS IN FOOD (CCCF18)**Part A: Sampling plans for total aflatoxins and ochratoxin A
in certain spices (i.e. nutmeg, dried chilli and paprika)**

(for endorsement and inclusion in the
General standard for contaminants and toxins in food and feed, [CXS 193-1995](#))

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

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 in Table 1 by a maximum of 20%.

**Table 1: Subdivision of Spices sublots according to lot weight
– Whole nutmeg, whole dried chilli and whole paprika –**

Lot weight (tonne)	Weight or number of sublots	No incremental samples	Aggregate sample weight (kg)
≥ 500	100 tonnes	100	10
> 125 and < 500	5 sublots	100	10
≥ 25 and ≤ 125	25 tonnes	100	10
< 25	—	10 – 100 (*)	1 - 10
(*) Depending on the lot weight — see Table 2			

Each sub-lot shall be sampled separately. 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 shall 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 according to lot weight
– Whole nutmeg, whole dried chilli and whole paprika –
(for lots < 25 tonnes)**

Lot weight (tonnes)	No of incremental samples	Aggregate sample weight (kg)
≤ 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 – <25.0	100	10

If the test result is ≤ Codex ML, then accept the lot; otherwise, reject the lot.

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 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 in Table 3 by a maximum of 20%.

**Table 3: Subdivision of spices sublots according to lot weight
- crushed/cracked/broken/flakes of nutmeg, dried chilli and paprika -**

Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples	Aggregate sample weight (kg)
≥ 25	25 tonnes	100	10
< 25	—	5 – 100 (*)	0.5 – 10
(*) Depending on the lot weight — see Table 4			

Each subplot shall be sampled separately. The number of incremental samples of 100 g to be taken depends on the lot weight, with a minimum of 5 and a maximum of 100, resulting in an aggregate sample of 0.5 to 10 kg. Table 4 can be used to determine the number of incremental samples to be taken from lots of various sizes.

**Table 4: Number of incremental samples to be taken according to lot weight
- crushed/cracked/broken/flakes of nutmeg, dried chilli and paprika –
(for lots < 25 tonnes)**

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 – < 25.0	100	10

If the test result is ≤ Codex ML, then accept the lot; otherwise, reject the lot.

C) Powdered spices (obtained by grinding nutmeg, dried chilli and paprika)

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 in Table 5 by a maximum of 20%.

**Table 5: Subdivision of spices sublots according to lot weight
- Powdered spices (nutmeg, dried chilli and paprika) -**

Lot weight (tonnes)	Weight or number of sublots	Number of incremental samples	Aggregate sample weight (kg)
≥ 25	25 tonnes	50	4
< 25	—	3 – 50 (*)	0.24 – 4.0
(*) Depending on the lot weight — see Table 6			

Each subplot shall be sampled separately. The number of incremental samples of 80 g to be taken depends on the lot weight, with a minimum of 3 and a maximum of 50 incremental samples. Table 6 can be used to determine the number of incremental samples to be taken from lots of various sizes.

Table 6: Number of incremental samples of powdered spices to be taken depending on the weight of the lot
- (for lots < 25 tonnes) -

Lot weight (tonnes)	Minimum number of incremental samples	Minimum aggregate sample weight (kg)
≤ 0.1	3	0.24
$> 0.1 - \leq 0.5$	10	0.8
$> 0.5 - \leq 5.0$	25	2
$> 5.0 - \leq 10.0$	35	2.8
$> 10.0 - < 25.0$	50	4

If the test result is \leq Codex ML, then accept the lot; otherwise, reject the lot.

Part B. Numeric performance criteria for total aflatoxins and ochratoxin A in certain spices(for endorsement and inclusion in [CXS 234-1999](#))

Commodity	Analyte	ML (µg/kg)	LOD (µg/kg)	LOQ (µg/kg)	Precision (%)	Minimal applicable range (µg/kg)	Recovery (%)
Chilli pepper, nutmeg	AFT 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

Part C: Numeric performance criteria for total aflatoxins in certain food matrices(for endorsement and inclusion in [CXS 234-1999](#))

Commodity	Analyte	ML (µg/kg)	LOD (µg/kg)	LOQ (µg/kg)	Precision (%)	Minimal applicable range (µg/kg)	Recovery (%)
Peanuts intended for further processing	AF B1+B2+G1+G2	15	≤ 3	≤ 6	< 44	8.4 - 21.6	60 - 115
	AFB1	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFB2	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFG1	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFG2	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
Tree nuts destined for further processing: almonds, hazelnuts, pistachios, and shelled Brazil nuts	AF B1+B2+G1+G2	15	≤ 3	≤ 6	< 44	8.4 - 21.6	60 - 115
	AFB1	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFB2	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFG1	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
	AFG2	-	≤ 0.75	≤ 1.5	< 44	2.1 - 5.4	40 - 120
Ready-to-eat tree nuts: almonds, hazelnuts, pistachios and shelled Brazil nuts	AF B1+B2+G1+G2	10	≤ 2	≤ 4	< 44	5.6 - 14.4	60 - 115
	AFB1	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFB2	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFG1	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFG2	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
Dried figs	AF B1+B2+G1+G2	10	≤ 2	≤ 4	< 44	5.6 - 14.4	60 - 115
	AFB1	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFB2	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFG1	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120
	AFG2	-	≤ 0.5	≤ 1.0	< 44	1.4 - 3.6	40 - 120

APPENDIX III

FAO/WHO COORDINATING COMMITTEE FOR ASIA (CCASIA23)**Sampling plans for regional standards (Asia)**

(for information (Table 1), and
endorsement and inclusion in respective commodity regional standards (Tables 2-3))

Table 1 Qualitative and quantitative provisions in the respective regional standards developed by CCASIA

Regional standard	Qualitative provisions	Quantitative provisions
<i>Regional standard for non-fermented soybean products (Asia) (CXS 322R-2015):</i>	Flavor, odour, colour and texture	moisture content, protein content and net weight
<i>Regional standard for fermented soybean paste (Asia) (CXS 298R-2009)</i>	Flavor, odour, colour and texture	total nitrogen, amino nitrogen, moisture content and minimum fill
<i>Regional standard for edible sago flour (Asia) (CXS 301R-2011)</i>	Flavor, odour, filth and colour	moisture content, ash inorganic extraneous matter, acidity, starch content, crude fibre and particle size
<i>Regional standard for tempe (Asia) (CXS 313R-2013)</i>	Texture, colour, flavor, odour, and foreign matters	moisture content, protein content, lipid content and crude fibre
<i>Regional standard for laver products (Asia) (CXS 323R-2017)</i>	Flavor and colour	moisture content, acid value and net contents
<i>Regional standard for soybean products fermented with Bacillus species (Asia) (CXS 354R-2023)</i>	Flavors, odours, colours and texture	net weight, moisture ^a , protein ^a , and lipid content ^b
<i>Regional standard for cooked rice wrapped in plant leaves (Asia) (CXS 355R-2023)</i>	Shape, size, properly wrapped, smell and taste, leakage of filling, foreign taste and foreign matters	peroxide value and net weight
<i>Draft regional standard for quick frozen dumpling (Asia) (For adoption at Step 8)</i>	Wrapped in an appropriate form, foreign matters and leakage of filling	ratio of filling to total and net weight
Sampling plans to be used	Table 2	Table 2 or Table 3 (upon the agreement between both trading parties)

a Natto, Cheonggukjang and Thua Nao only

b Natto and Cheonggukjang only

Table 2 Inspection by attributes plans in accordance with ISO 2859-1 (AQL=6.5%)

Lot size Number of packages, each containing 1 or more units)	Inspection level					
	Reduced		Normal		Tightened	
	Sample size (n)	Acceptance number (c)	Sample size (n)	Acceptance number (c)	Sample size (n)	Acceptance number (c)
2-15	2	0	2	0	3	0
16-50	5	1	8	1	13	1
51-90	5	1	13	2	13	1
91-150	8	2	20	3	20	2
151-280	13	3	32	5	32	3
281-500	20	5	50	7	50	5
501-1200	32	6	80	10	80	8
1201-3200	50	8	125	14	125	12
3201 and over	80	10	200	21	200	18

Note

- If sample size n equals to or exceeds lot size, carry out 100% inspection.

- The number of samples to be analyzed is n. If the number of samples that do not meet criterion is less than or equal to c, the lot should be accepted. Otherwise, the lot should be rejected.

Table 3 Inspection by variable plans in accordance with ISO 3951-1 (AQL=6.5%)

Lot size (number of packages, each containing 1 or more units)	Inspection level					
	Reduced		Normal		Tightened	
	n	k	n	k	n	k
2-15	4	0.586	4	0.735	3	0.950
16-25	4	0.586	6	0.939	6	1.061
26-50	4	0.586	6	0.887	9	1.218
51-90	5	0.550	9	0.869	9	1.190
91-150	7	0.507	14	0.935	14	1.147
151-280	9	0.628	21	0.945	21	1.227
281-500	14	0.601	33	1.036	32	1.225
501-1200	21	0.830	52	1.120	50	1.245
1201-3200	33	0.954	79	1.195	78	1.281
3201 and over	52	1.120	124	1.239	122	1.325

Note

- If sample size n equals to or exceeds lot size, carry out 100 percent inspection.
- In case of minimum limit, if the sample mean is higher than the minimum limit plus k times standard deviation, the lot should be accepted. Otherwise, reject the lot.
- In case of maximum limit, if the sample mean is lower than the maximum limit minus k times standard deviation, the lot should be accepted. Otherwise, reject the lot.

APPENDIX IV

FAO/WHO COORDINATING COMMITTEE FOR NEAR EAST (CCNE12)**Methods of analysis for provisions in the regional standard for maamoul (Near East)**(for endorsement and inclusion in [CXS 234-1999](#))

Commodity	Provision	Method	Principle	Type
Maamoul	Extraneous matter	AOAC 972.32	Physical separation and microscopic examination (flotation method)	I
Maamoul	pH	AOAC 981.12	Potentiometry	IV
Maamoul	pH	ISO 1842	Potentiometry	IV
Maamoul	Water activity	ISO 18787	Electrometry	II
Maamoul	Moisture	ISO 712	Gravimetry	I

APPENDIX V

CODEX COMMITTEE ON SPICES AND CULINARY HERBS (CCSCH8)**Part A: Responses to the matters referred by CCMAS43**

(for information)

Issue raised	Description/Justification	Reply
Test portion for and method for light seeds in small cardamom	Section 2.11 in IS 1907: Indian specification for cardamom (small) describes Light seeds with a reference to the analytical method in IS 1797. Section 4.0 on methods for physical parameters in IS 1797 applies to all types of spices, and the prescribed test portion ranges from 100 g to 200 g, depending on the nature of the material. ISO 927 is also a general method for the determination of extraneous and foreign matter in spices, which also includes a reference to small cardamom. As per this standard, the laboratory sample size is specified as 500 g, and the minimum test portion to be taken for analysis is 100 g.	Since the ISO standards are more widely accepted internationally, we may refer to ISO 927 for the method of analysis of light seeds in Small Cardamom, with a test portion of 100 g (minimum) . It is also to be noted that ISO 882-2 Cardamom: part 2 seeds also refer to ISO 927 for the analytical method for light seeds Hence, it is recommended to correct the method of analysis of light seeds to ISO 927 Type I.
Methods for curcuminoids content, on dry basis (colouring power) and provision name - Turmeric	ISO 5566: Turmeric — Determination of colouring power — Spectrophotometric measures the curcumin content based on the absorption of light at 425 nm, hence, it is more directly related to the measurement of the color of turmeric.	CCSCH8 agreed with the suggestion (option b) given by the CCMAS. Based on that it is proposed to revise the name of the provision given in i) Annex I Table A1- 'Curcuminoids content (colouring power) and ii) Table 4.1 Method of analysis 'Colouring power (curcuminoids content) to iii) "colouring power expressed as curcuminoids"
The method for pungency, Scoville heat units, and appropriate provision name - dried chilli and paprika	ISO 3513 is based on sensory evaluation, whereas ASTA 21.3 is an HPLC method and of a more objective nature. ASTA 21.3 is preferred over ISO 3513 as many spice industries and regulators use it.	CCSCH8 agreed with the suggestion (option b) given by the CCMAS. CCMAS may revoke the ISO 3513 and replace the method with ASTA 21.3 as a Type I method.
The method for mould visible – cloves	Both MPM V-8 and ISO 927 can be used for the analysis of visible mold. Since the ISO standards are more widely accepted internationally, ISO 927 is preferred over MPM V-8 method	CCSCH8 recommends CCMAS to endorse ISO 927 method as a type I method over Method V-8 for mould visible – cloves.

Part B: Methods of analysis in spices and culinary herbs(for endorsement and inclusion in [CXS 234-1999](#) and/or revocation)**B1. Methods of analysis submitted by CCSCH7 and updated based on replies from CCSCH8 for CCMAS' endorsement**

Commodity	Provision	Method	Principle	Type
Small cardamom	Light seeds	ISO 927		I
Turmeric	Colouring power expressed as curcuminoids	ISO 2825 and ISO 5566	Spectrophotometry	I
Dried or dehydrated chilli pepper and paprika	Pungency, Scoville Heat Units	ASTA 21.3	HPLC	I
Cloves	Mould visible (for whole)	ISO 927		I

B2. Methods of analysis in draft spices and culinary herbs standards submitted by CCSCH8 for CCMAS' endorsement

Commodity	Provision	Method	Principles	Type
Vanilla	Moisture content	ISO 5565-2	Distillation	I
Vanilla	Extraneous matter	ISO 927	Visual examination followed by Gravimetry	I
Vanilla	Live Insect	ISO 927	Visual examination (by count)	I
Vanilla	Vanillin content on wet basis	ISO 5565-2	HPLC-UV analysis	II
Large cardamom	Moisture	ISO 939	Distillation	I
Large cardamom	Volatile oil (on dry basis)	ISO 939 and ISO 6571	Calculation from moisture and volatile Oils, Distillation and Distillation	I
Large cardamom	Total ash (On dry basis)	ISO 939 and ISO 928	Calculation from moisture and Ash (at 550°C), Distillation and Gravimetry	I
Large cardamom	Acid insoluble ash (on dry basis)	ISO 939 and ISO 930	Calculation from moisture and Ash (at 550°C), Distillation and Gravimetry	I
Large cardamom	Extraneous matter	ISO 927	Visual examination followed by Gravimetry	I
Large cardamom	Foreign matter	ISO 927	Visual examination followed by Gravimetry	I

Commodity	Provision	Method	Principles	Type
Large cardamom	Whole insect live/dead	ISO 927 (For whole)	Visual examination (counting)	I
Large cardamom	Whole insect live/dead	AOAC 975.49 (For powdered/pieces)	Floatation	I
Large cardamom	Mammalian and/or other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macro analytical Procedure Manual) MPM: V-8. Spices https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-spices-condiments-flavors-and-crude-drugs#v32	Visual examination followed by Gravimetry	IV
Large cardamom	Visible mould / Mouldy Material	ISO 927	Visual examination followed by Gravimetry	I
Large cardamom	Insect defiled	ISO 927	Visual examination followed by Gravimetry	I
Large cardamom	Empty, malformed and split capsules	ISO 10622:1997	Visual examination (counting)	I
Large cardamom	Immature and shriveled capsules/seed	ISO 927	Visual examination followed by Gravimetry	I
Large cardamom	Light seeds	ISO 927	Visual examination followed by Gravimetry	I
Dried or dehydrated coriander	Moisture content**	ISO 939	Distillation	I
Dried or dehydrated coriander	Total Ash on dry basis**	ISO 939 and ISO 928	Calculation from moisture and ash (at 550°C) Distillation and Gravimetry	I
Dried or dehydrated coriander	Acid Insoluble Ash (dry basis)**	ISO 939 and ISO 930	Calculation from moisture and ash (at 550 °C) Distillation and Gravimetry	I
Dried or dehydrated coriander	Volatile oils (dry basis) **	ISO 939 and ISO 6571	Calculation from moisture and volatile oils Distillation and distillation	I
Dried or dehydrated coriander	Extraneous Matter	ISO 927	Visual Examination followed by Gravimetry	I
Dried or dehydrated coriander	Foreign Matter	ISO 927	Visual Examination followed by Gravimetry	I

Commodity	Provision	Method	Principles	Type
Dried or dehydrated coriander	Split fruits, Damaged or discoloured fruits	ISO 927	Visual Examination followed by Gravimetry	I
Dried or dehydrated coriander	Mouldy material / Mould visible	ISO 927	Visual Examination followed by Gravimetry	I
Dried or dehydrated coriander	Insect Defiled	ISO 927	Visual Examination followed by Gravimetry	I
Dried or dehydrated coriander	Live insect	ISO 927	Visual Examination (counting)	I
Dried or dehydrated coriander	Dead insect	ISO 927	Visual Examination (counting)	I
Dried or dehydrated coriander	Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-spices-condiments-flavors-and-crude-drugs#v32	Visual Examination followed by Gravimetry	IV

** For the whole coriander preparation sample, followed by ISO 2825

B3. Method of analysis for revocation from [CXS 234-1999](#) based on replies from CCSCH8

Commodity	Provision	Method	Principle	Type
Dried or dehydrated chilli pepper and paprika	Pungency, Scoville Heat Units	ISO 3513	Sensory evaluation	I