

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON SPICES AND CULINARY HERBS

Fifth Session

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Typing of Methods of Analysis as per the Codex Procedural Manual, Section II

(Submitted by India and USA)

As per the *Principles for the establishment of Codex methods of analysis*¹ and *Methods of analysis and sampling, normal practice*², the typing of analytical methods referred in the proposed draft standards is prepared.

Methods of Analysis for Spices and Culinary Herbs

Methods are for the proposed draft standards CX/SCH 21/5/3, CX/SCH 21/5/4, CX/SCH 21/5/5, CX/SCH 21/5/6, CX/SCH 21/5/7, CX/ SCH 21/5/8, CX/ SCH 21/5/9

Sl. No	Spices	Provision	Method	Principles	Type	Unit
1	(a) Dried oregano	Moisture	ISO 939	Distillation followed by volumetry	I	%(w/w)
	(b) Dried ginger					
	(c) Dried chilli peppers and paprika	Total ash on dry basis ¹	ISO 939 and ISO 928	ISO 939: Distillation followed by volumetry. ISO 928: gravimetry.	I	%(w/w)
	(d) Dried nutmeg	Acid- insoluble ash on dry basis ¹	ISO 939 and ISO 930	ISO 939: Distillation followed by volumetry. ISO 930: gravimetry.	I	%(w/w)
	(e) Dried cloves					
	(f) Dried basil					
		Volatile oils on dry basis ¹	ISO 939 and ISO 6571	ISO 939: Distillation followed by volumetry. ISO 6571: Distillation followed by volumetry.	I	%(v/w)
		Extraneous matter	ISO 927	Visual examination followed by gravimetry	I	%(w/w)
	Foreign matter	ISO 927	Visual examination followed by gravimetry	I	%(w/w)	
	Mould visible	ISO 927	Visual examination followed by gravimetry	I	%(w/w)	

		Mammalian excreta	MPM V-8 Spices, Condiments, Flavors and Crude Drugs A. General methods for spices herbs and botanicals (V 32) <i>https://www.fda.gov/food/laboratory-methods-food/mpm-v-8-spices-condiments-flavors-and-crude-drugs</i>	Visual examination followed by gravimetry	I	mg/Kg (w/w)
		Whole dead insect	ISO 927	Visual examination	I	Count
			AOAC 969.44 ²	Flotation method	IV	Count
		Insect fragments	ISO 927	Visual examination counting	I	Count
			AOAC 975.49 ³	Flotation method	IV	Count
		Insect damage	MPM V-8 Spices, Condiments, Flavours and Crude Drugs A. General methods for spices herbs and botanicals (V 32)	Visual examination followed by gravimetry or counting	I	%(w/w) or count
		Mould damage	MPM V-8 Spices, Condiments, Flavours and Crude Drugs A. General methods for spices herbs and botanicals (V	Visual examination followed by gravimetry or counting	I	%(w/w) or count

			32)			
2	Dried ginger	Sulfur dioxide	AOAC 963.20	Colorimetry	II	mg/Kg
3	Dried chilli peppers and paprika	Colour value (Extractable colour)	ISO 7541	Extraction followed by spectrophotometry	IV	ASTA color unit
		Pungency (Capsaicin content)	ISO 3513	Sensory evaluation (Taste)	I	Scoville Heat Unit
			AOAC 995.03	Extraction followed by chromatography	IV	Scoville Heat Unit or mg/Kg (w/w)
		Howard mold count (for ground only)	AOAC 945.94	Microscopic examination	I	Count
4	Nutmeg	Water Insoluble ash	ISO 929	Extraction followed by gravimetry	I	%(w/w)
		Calcium content expressed as CaO	ISO 1003	Chemical reaction followed by gravimetry	IV	%(w/w)
		Non -Volatile ether extract	ISO 1108	Extraction followed by gravimetry	I	%(w/w)
		Rodent filth	AOAC 979.26	Visual examination followed by count	I	Count/10g
		Live insect	ISO 927	Visual examination followed by counting	I	Count
5	Saffron	Moisture and volatile matter content	ISO 3632-2	Gravimetry	I	%(w/w)
		Total ash on dry basis	ISO 3632-2	Gravimetry	I	%(w/w)
		Acid- insoluble on dry basis ash ²	ISO 3632-2	Gravimetry	I	%(w/w)
		Soluble extract in cold water	ISO 3632-2	Extraction followed by gravimetry	I	%(w/w)
		Taste strength as (expressed as picrocrocine)	ISO 3632-2	Extraction followed by spectrophotometry	IV	A1% 1 cm 257 nm
		Aroma strength (expressed as safranal)	ISO 3632-2	Extraction followed by spectrophotometry	IV	A1% 1 cm 330 nm
		Coloring strength (expressed as crocin)	ISO 3632-2	Extraction followed by spectrophotometry	IV	A1% 1 cm 440

					nm	
		Artificial colorants	ISO 3632-2	Extraction followed by chromatography	IV	mg/kg
		Extraneous matter	ISO 3632-2	Visual examination followed by gravimetry	I	% (w/w)
		Foreign matter	ISO 3632-2	Visual examination followed by gravimetry	I	% (w/w)

Notes:

1. The value is to be expressed on dry weight basis; hence the method of moisture determination (ISO 939) is also included.
2. Method for ground spices.
3. AOAC 969.44, light filth in oregano (unground)
4. AOAC 975.49, light filth in spices and condiments

References

1. Principles for the Establishment of Codex Methods of Analysis, CODEX Alimentarius Commission Procedural Manual, 27th Edition.
2. Elaboration of Codex Texts, Methods of Analysis and Sampling, Normal Practice, Section 2, Page 53, CODEX Alimentarius Commission Procedural Manual, 26th Edition.
3. ISO 927- Spices and condiments – Determination of extraneous matter and foreign matter
4. ISO 928 - Spices and condiments – Determination of total ash
5. ISO 929 - 1980 Spices and condiments – Determination of water insoluble ash
6. ISO 930 - Spices and condiments – Determination of acid insoluble ash
7. ISO 939 - Spices and condiments – Determination of moisture content/ Entertainment method
8. ISO 941 - Spices and condiments – Determination of cold water extracts
9. ISO 1003 - Ginger (*Zingiber officianale*) - specification
10. ISO 1108 - Spices and condiments – Determination of nonvolatile ether extracts
11. ISO 3513 - Chillies – Determination of Scoville Index
12. ISO 3632-2 - Spices – Saffron (*Crocus sativus L*) – Part 2 Test methods
13. ISO 6571 - Spices and condiments and herbs – Determination of volatile oil content
14. ISO 7541 - Ground (powdered) paprika – Determination of total natural coloring matter content
15. MPM V-8 Spices, Condiments, Flavours and Crude Drugs, Macroanalytical procedure manual, A. General methods for spices herbs and botanicals (V 32), FDA Technical Bulletin Number 5 (for whole).