

APPENDIX II

PART I:

**RESPONSES TO THE MATTERS REFERRED BY
THE CODEX COMMITTEE ON METHOD OF SAMPLING AND ANALYSIS (CCMAS43)**

Issue raised	Description/Justification	Reply
Test portion for and method for light seeds in small cardamom	<p>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.</p> <p>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.</p>	<p>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 100g (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</p> <p><i>Hence, it is recommended to correct the method of analysis of light seeds to ISO 927 Type I.</i></p>
Methods for curcuminoids content, on dry basis (colouring power) and provision name - Turmeric	<p>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.</p>	<p>CCSCH8 agreed with the suggestion (option b) given by the CCMAS.</p> <p>Based on that it is proposed to revise the name of the provision given in</p> <p>i). Annex I Table A1- 'Curcuminoids content (colouring power) and</p> <p>ii) Table 4.1 Method of analysis 'Colouring power (curcuminoids content) to</p> <p>"colouring power expressed as curcuminoids"</p>
The method for pungency, Scoville heat units, and appropriate provision name - dried chilli and paprika.	<p>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.</p>	<p>CCSCH8 agreed with the suggestion (option b) given by the CCMAS.</p> <p>CCMAS may revoke the ISO 3513 and replace the method with ASTA 21.3 as a Type I method.</p>
The method for mould visible – cloves	<p>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</p>	<p>CCSCH8 recommends CCMAS to endorse ISO 927 method as a type I method over Method V-8 for mould visible – cloves.</p>

PART II: LIST OF METHODS OF ANALYSIS**A. Methods of analysis for dried vanilla**

Provision	Method	Principles	Type
Moisture content	ISO 5565-2	Distillation	I
Extraneous matter	ISO 927	Visual examination followed by Gravimetry	I
Live insect	ISO 927	Visual examination (by count)	I
Vanillin content on wet basis	ISO 5565-2	HPLC-UV analysis	II

Notes: Latest edition or version of the approved method should be used.

B. Methods of analysis for dried or dehydrated large cardamom

Provision	Method	Principle	Type
Moisture	ISO 939	Distillation	I
Volatile oil (on dry basis)	ISO 939 and ISO 6571	Calculation from moisture and volatile Oils, Distillation and Distillation	I
Total ash (On dry basis)	ISO 939 and ISO 928	Calculation from moisture and Ash (at 550°C), Distillation and Gravimetry	I
Acid insoluble ash (on dry basis)	ISO 939 and ISO 930	Calculation from moisture and Ash (at 550°C), Distillation and Gravimetry	I
Extraneous matter	ISO 927	Visual examination followed by Gravimetry	I
Foreign matter	ISO 927	Visual examination followed by Gravimetry	I
Whole insect live/dead	ISO 927 (For whole)	Visual examination (counting)	I
	AOAC 975.49 (For powdered/pieces)	Floatation	I
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
Visible mould / Mouldy Material	ISO 927	Visual examination followed by Gravimetry	I
Insect defiled	ISO 927	Visual examination followed by Gravimetry	I
Empty, malformed and split capsules	ISO 10622	Visual examination (counting)	I
Immature and shriveled capsules/seed	ISO 927	Visual examination followed by Gravimetry	I
Light seeds	ISO 927	Visual examination followed by Gravimetry	I

C. Methods of analysis of dried or dehydrated coriander

Parameter	Method*	Principle	Type
Moisture content**	ISO 939	Distillation	I
Total Ash on dry basis**	ISO 939 and ISO 928	Calculation from moisture and ash (at 550°C) Distillation and Gravimetry	I
Acid Insoluble Ash (dry basis)**	ISO 939 and ISO 930	Calculation from moisture and ash (at 550 °C) Distillation and Gravimetry	I
Volatile oils (dry basis) **	ISO 939 and ISO 6571	Calculation from moisture and volatile oils Distillation and distillation	I
Extraneous Matter	ISO 927	Visual examination followed by Gravimetry	I
Foreign Matter	ISO 927	Visual examination followed by Gravimetry	I
Split fruits, Damaged or discoloured fruits	ISO 927	Visual examination followed by Gravimetry	
Mouldy material / Mould visible	ISO 927	Visual examination followed by Gravimetry	I
Insect Defiled	ISO 927	Visual examination followed by Gravimetry	I
Live insect	ISO 927	Visual examination (counting)	I
Dead insect	ISO 927	Visual examination (counting)	I
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

Notes:

*The latest edition or version of the approved methods should be used

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