

APPENDIX IV

STANDARD FOR DRIED OR DEHYDRATED FRUITS AND BERRIES – LARGE CARDAMOM

(For adoption at Step 5/8)

1. SCOPE

This standard applies to dried or dehydrated fruits and berries- Large cardamom as defined in Section 2.1 below, offered for direct human consumption, or as an ingredient in food processing or for repackaging if required. It excludes the product for industrial processing.

2. DESCRIPTION**2.1 Product definition**

Dried or dehydrated Large cardamom is a product obtained from sufficiently developed fruits of *Amomum subulatum* Roxb. of family Zingiberaceae, as described in Table 1, wherein the capsules/pods are ovoid in form with a distinct ribbed surface.

Table 1: Common, trade and scientific name of dried or dehydrated large cardamom

Common name	Trade name	Scientific name
Large cardamom	Large cardamom Black cardamom	<i>Amomum subulatum</i> Roxb.

2.2 Styles

Dried or dehydrated Large cardamom may be:

- whole unopened capsules/pods: Intact capsules/pods that have not lost seed;
- seeds: seeds obtained after opening of the capsules/pods;
- powdered seeds: powder obtained by grinding cardamom seeds; or
- powdered whole capsules/pods: powder obtained from grinding whole/open capsules/pods with seeds.

Other styles distinctly different from those four are allowed, provided they are labelled accordingly.

2.3 Sizing (optional)

Whole large cardamom may be sized by count per weight, weight per volume, by diameter, or in accordance with pre-existing trade practice.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**3.1 Composition**

Dried or dehydrated large cardamom as described in Section 2 above, shall conform to the requirements contained in Annex I.

3.2 Quality factors

Dried or dehydrated large cardamom shall be safe and suitable for human consumption.

3.2.1 Odour, flavour and colour

Dried or dehydrated large cardamom shall have a characteristic odour, flavour and colour, which can vary depending on geo-climatic factors/conditions, and shall be free from any foreign odour, flavour, and colour especially from rancidity and mustiness. Dried or dehydrated Large cardamom color varies from maroon or light to dark brown in whole, light to dark brown or black in seed and light to dark brown in ground form.

3.2.2 Chemical and physical characteristics

Dried or dehydrated large cardamom shall comply with the chemical and physical characteristics specified in Annex I (Table A1 Chemical characteristics and Table A2 Physical characteristics).

The defects allowed must not affect the general appearance of the product as regards its quality, keeping quality and presentation in the package.

4. **FOOD ADDITIVES**

Anticaking agents listed in Table 3 of the *General standard for food additives* (CXS 192-1995) are acceptable for use in only ground/powdered form of dried or dehydrated large cardamom.

5. **CONTAMINANTS**

The products covered by this standard shall comply with the maximum levels specified in the *General standard for contaminants and toxins in food and feed* (CXS 193-1995), and shall be produced in accordance with the *Code of practice for the prevention and reduction of mycotoxins in spices* (CXC 78- 2017) and other relevant Codex texts.

The products covered by this standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. **HYGIENE**

It is recommended that the products covered by this standard shall be prepared and handled in accordance with the appropriate sections of the *General principles of food hygiene* (CXC 1-1969), the *Code of hygienic practice for low-moisture foods* (CXC 75-2015) Annex III on spices and dried culinary herbs, and other relevant Codex texts.

The products should comply with any microbiological criteria established in accordance with the *Principles and guidelines for the establishment and application of microbiological criteria related to foods* (CXG 21- 1997).

7. **WEIGHTS AND MEASURES**

Containers shall be as full as practicable without impairment of quality and shall be consistent with a proper declaration of contents for the product.

8. **LABELLING**

The products shall be labelled in accordance with the *General standard for the labelling of prepackaged foods* (CXS 1-1985). In addition, the following specific provisions apply:

8.1 **Name of the product**

8.1.1 The name of the product shall be the common name as described in Section 2.1.

8.1.2 The style of the product shall be as described in Section 2.2 (Styles).

8.1.3 The Trade name and/or the scientific name may be indicated.

8.2 **Country of origin and country of harvest**

8.2.1 The Country of origin shall be declared.

8.2.2 Country of harvest (optional).

8.2.3 Region of harvest and year of harvest (optional).

8.3 **Labelling of non-retail containers**

The labelling of non-retail containers should be in accordance with the *General standard for the labelling of non-retail containers of foods* (CXS 346-2021).

9. **METHODS OF ANALYSIS AND SAMPLING**

9.1 **Methods of analysis**

The methods of analysis as described in Annex I, Table 2: Methods of analysis, will be included in CXS 234-1999 after endorsement by CCMAS and the following text will replace the table.

“For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used.”

9.2 **Sampling Plan**

To be developed.

Table 2: Methods of analysis (non-exhaustive list of provisions)

Provision	Method ⁱ	Principle	Type ⁱⁱ
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 10622:1997	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

Notes:

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

ⁱⁱ According to the definition of “types of method of analysis” as per *Codex Procedural Manual* Section 2

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 234-1999) relevant to the provisions in this standard, shall be used

Annex I

CHEMICAL AND PHYSICAL CHARACTERISTICS FOR DRIED OR DEHYDRATED LARGE CARDAMOM**Table A1: Chemical characteristics for dried or dehydrated large cardamom**

Product name	Form/style	Moisture content % w/w (max)	Total ash % w/w (max) on dry basis	Acid insoluble ash % w/w (max) on dry basis	Volatile oils ml/100 g (min) on dry basis
Large cardamom	Whole	12	8	2	1
	Seeds	12	8	2	1
	Powdered seeds	11	8	2	1
	Powdered whole capsules/pods	11	8	2	1

Notes:

For capsules, the determination of moisture content, total ash and acid insoluble ash shall be made on the whole capsules. The determination of volatile oil shall be made on the seeds obtained by separating skin and shall not apply to powdered capsules with seeds.

Annex I

Table A2: Physical characteristics for dried or dehydrated large cardamom

Product Name	Form/style	Empty, malformed and split capsules by count /100 capsules (max) ¹	Immature and shriveled capsules % w/w (max) ²	Light seeds % w/w (max) ³	Insect defiled % w/w (max) ⁴	Extraneous matter % w/w (max) ⁵	Foreign matter % w/w (max) ⁶	Whole dead insects, (by count) /100 g (max) ⁷	Live insects (by count) ⁸	Mammalian Excreta mg/kg (max) ⁹	Other Excreta, mg/kg (max) ¹⁰	Mould visible/Mouldy material % w/w (max)
Large Cardamom	Whole	5	7	N/A	1	5	0.5	4	0	6.6	2.2	1
	Seeds	N/A	N/A	5	N/A	2	0.5	4	0	6.6	2.2	1
	Powdered seeds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A
	Powdered capsules/pods	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A

¹ Capsules which have no seeds or are scantily filled with seeds² Capsules which are not “fully developed”.³ Light seeds include seeds that are brown or red in color, and broken, immature and shriveled seeds⁴ Capsules and seeds exhibiting definite evidence of insect feeding⁵ Vegetative matter associated with the plant from which the product originates but not accepted as part of the final product.⁶ Any visible/detectable objectionable foreign matter or material not usually associated with the natural components of the spice plant, such as sticks, stones, burlap bagging, metal, etc.⁷ If the total number of whole dead insects found in the total number of the sub samples exceeds the specified value in the table.⁸ Live insect present in consignment.⁹ If the average of the total number of sub-samples exceeds the listed milligram per kg and/or lb.¹⁰ Excreta from other animals, such as reptiles and birds

N/A N/A - Not applicable, does not refer to zero. It means that the style of the above product has not been evaluated for this provision, and currently do not have values.