

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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**STANDARD FOR DRIED OR DEHYDRATED ROOTS, RHIZOMES AND BULBS –
TURMERIC
CXS 359-2024**

Adopted in 2024

1. SCOPE

This standard applies to plant products in their dried or dehydrated form as spices defined in Section 2.1 below, offered for direct consumption, 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 turmeric is the product obtained from drying or dehydrating primary (bulbs) or secondary rhizomes (fingers) of plants *Curcuma longa* L. of Zingiberaceae family as described in Table 1.

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

Common name	Trade name	Scientific name
Turmeric	Turmeric	<i>Curcuma longa</i> L. (<i>Curcuma domestica</i> Valetton)

2.2 Styles

Dried or dehydrated turmeric may be:

- whole or fingers of varying sizes, which may be cut at both ends with the flattened circular shape intact;
- pieces comprising various cut, diced, or sliced styles; or
- powdered/ground.

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

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

Dried or dehydrated turmeric as described in Section 2.1 above shall conform to the requirements specified in Annex I.

3.2 Quality factors

3.2.1 Odour, flavour, and colour

The product shall have a characteristic odour, flavour, and colour, which can vary depending on geoclimatic factors/conditions, and shall be free from any foreign odour, flavour, and colour especially from rancidity and mustiness.

3.2.2 Chemical and physical characteristics

Dried or dehydrated turmeric shall comply with the requirements specified in Annex I (Chemical characteristics – Table A1 and Physical characteristics –Table A2). The defects allowed must not affect the general appearance of the product as regard to its quality, keeping quality and presentation in the package.

3.2.3 Classification (optional)

When dried or dehydrated turmeric is traded as classified, the chemical and physical characteristics in Annex I apply as the minimum requirements.

4. FOOD ADDITIVES

Anticaking agents listed in Table 3 of the *General standard for food additives* (CXS 192-1995)¹ are acceptable for use in ground/powdered form of product conforming to this standard.

5. CONTAMINANTS

5.1 The products covered by this standard shall comply with the maximum levels of the *General standard for contaminants and toxins in food and feed* (CXS 193-1995),² the *Code of practice for the prevention and reduction of mycotoxins in spices* (CXC 78-2017),³ and other relevant Codex texts.

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

6. HYGIENE

- 6.1 It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *General principles of food hygiene* (CXC 1-1969)⁴ the *Code of hygienic practice for low moisture foods* (CXC 75-2015),⁵ Annex III on spices and aromatic herbs, and other relevant Codex texts.
- 6.2 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).⁶

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

- 8.1 The products covered by the provisions of this standard shall be labelled in accordance with the *General standard for the labelling of pre-packaged foods* (CXS 1-1985).⁷ In addition, the following specific provisions apply:

8.2 Name of the product

- 8.2.1 The common name of the product shall be as described in Section 2.1.
- 8.2.2 The name of the product may include an indication of the style as described in Section 2.2.
- 8.2.3 Trade name, variety or cultivar may be listed on the label.

8.3 Country of origin and country of harvest

- 8.3.1 Country of origin shall be declared.
- 8.3.2 Country of harvest (optional).
- 8.3.3 Region of harvest and year of harvest (optional).

8.4 Commercial identification

- class/grade, if applicable; or
- size (optional).

8.5 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).⁸

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of analysis

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)⁹ relevant to the provisions in this standard, shall be used.

9.2 SAMPLING PLAN

To be developed.

Table A1. Chemical characteristics for dried or dehydrated turmeric

Product name	Styles	Moisture content % w/w (max)	Total ash on dry basis % w/w (max)	Acid insoluble ash on dry basis % w/w (max)	Curcuminoids content (colouring power) on dry basis % w/w (min)
Turmeric	Whole	12	8	1.5	2
	Pieces – comprising various cut, diced, or sliced styles	12	8	1.5	2
	Powdered /Ground	10	9	1.5	2

Table A2. Physical characteristics for dried or dehydrated turmeric

Product name	Style	Insect defiled % w/w (max)	Mould visible % w/w (max)	Whole insects, dead (count/100 g) (max)	Live insects (count/100 g) (max)	Extraneous matter* % w/w (max)	Foreign matter† % w/w (max)	Mammalian excreta mg/kg (max)	Other excreta‡ mg/kg (max)	Other factors
Turmeric	Whole	1	3	3	0	0.5	0.5	6.6	6.6	Defective rhizome 5% w/w max§
	Pieces – comprising various cut, diced, or sliced styles	1	3	3	0	0.5	0.5	6.6	6.6	N/A
	Powdered/Ground	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A

* Vegetative matter associated with the plant from which the product originates but not accepted as part of the final product.

† 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.

‡ Excreta from other animals, such as reptiles and birds.

§ Defective rhizomes: These include small, shrivelled fingers and/or bulbs, internally damaged, hollow or porous rhizomes, rhizomes scorched due to boiling and other types of damaged rhizome.

N/A: Not applicable, means that this form of the above product has not been evaluated for this provision, and currently there are no values. N/A does not refer to zero.

NOTES

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- ¹ FAO and WHO. 1995. *General standard for food additives*. Codex Alimentarius Standard, No. CXS 192-1995. Codex Alimentarius Commission. Rome.
- ² FAO and WHO. 1995. *General standard for contaminants and toxins in food and feed*. Codex Alimentarius Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome.
- ³ FAO and WHO. 2017. *Code of practice for the prevention and reduction of mycotoxins in spices*. Codex Alimentarius Code of Practice, No. CXC 78-2017. Codex Alimentarius Commission. Rome.
- ⁴ FAO and WHO. 1969. *General principles of food hygiene*. Codex Alimentarius Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome.
- ⁵ FAO and WHO. 2015. *Code of hygienic practice for low moisture foods*. Codex Alimentarius Code of Practice, No. CXC 75-2015. Codex Alimentarius Commission. Rome.
- ⁶ FAO and WHO. 1997. *Principles and guidelines for the establishment and application of microbiological criteria related to foods*. Codex Alimentarius Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome.
- ⁷ FAO and WHO. 1985. *General standard for the labelling of pre-packaged foods*. Codex Alimentarius Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome.
- ⁸ FAO and WHO. 2021. *General standard for the labelling of non-retail containers of foods*. Codex Alimentarius Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome.
- ⁹ FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Alimentarius Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome.