

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

Seventh Session

Kochi, Kerala India

29 January – 2 February 2024

IWG REPORT ON TURMERIC

Agenda item 4

PROPOSED DRAFT STANDARD FOR DRIED ROOTS, RHIZOMES AND BULBS - TURMERIC

(Prepared by the electronic working group chaired by Iran (Islamic Republic of) and co-chaired by India¹)

(At Step 3)

Codex members and Observers wishing to submit comments at Step 3 on the **APPENDIX** of this proposed draft standard should do so as instructed in CL 2023/56/OCS-SCH available on the Codex webpage/Circular Letters: <http://www.fao.org/fao-who-codexalimentarius/circular-letters/en/>

Background

1. The fifth Session of the Codex Committee on Spices and Culinary Herbs (CCSCH5 (2021)), agreed to establish an electronic working group (EWG) chaired by Iran and co-chaired by India, working in English, to elaborate the specific requirements for turmeric based on the concept of group standards i.e., category of “Dried roots, rhizomes and bulbs”.

Terms of references

2. CCSCH6 (2022) held a general discussion which mainly focused on the amended texts highlighted in CCSCH6/CRD19 and agreed to establish an EWG chaired by Iran (Islamic Republic of) and co-Chaired by India, working in English, to redraft the document taking into comments submitted at the session.

Participation and methodology

3. EWG on the proposed draft standard for turmeric was established in January 2023, and worked on the Codex EWG platform. Sixteen (16) Members and One observer registered to participate in the EWG.
4. Three rounds of consultations were undertaken as follows:
 - a. The first draft was uploaded on 8 February 2023 and comments were received from eight (8) Members including: Canada, Egypt, India, Indonesia, Japan, Nigeria, Syria, and IOSTA. These comments were taken into account and a second draft was prepared.
 - b. The second draft, was uploaded in April 2023, and comments were received from Japan and Iran.
 - c. The last draft was uploaded on 19 August 2023 to confirm the proposal.

Analysis of responses

5. There was general consensus by the EWG on both editorial and technical changes to the proposed draft standard in particular to the following sections: the scope; section 2.1 which was revised with addition of the family *Zingiberaceae* along with other editorial corrections; Section 2.2 was aligned to the *Standard for Dried Roots, Rhizomes and Bulbs: Dried or Dehydrated Ginger* (CXS 343-2021) as these products are similar; In Section 2.2, a criteria for grading turmeric based on ISO 5562:1983 was introduced.

6. The EWG could not agree to the proposal to make the name of the product optional (Section 8) and according to scientific documents, it was clear that there is one common name i.e. turmeric

7. In Table 3, new parameters for “Dead whole insects” were added and a number of parameters for which there were no consensus were put in square brackets. Similarly, in Table 4 a number of parameters remain in square brackets for further consideration.

¹ Members of the EWG include Brazil, Chile, Egypt, France, Greece, India, Indonesia, Malaysia, Morocco, Saudi Arabia, Uganda, UK, Syria, Turkey, Mauritius, USA and IOSTA,

In case of Table 3, a proposal to include a method for effective rhizomes basis (ISO 5562) was put forward and this is for further consideration by CCSCH7.

CONCLUSION AND RECOMMENDATION

9. CCSCH7 is invited to consider the proposed draft standard as presented in Appendix to this document with the intent to progress it to further step noting that the values of Table 2 and 3 need further discussion.

**PROPOSED DRAFT STANDARD FOR DRIED AND DEHYDRATED ROOTS, RHIZOMES AND BULBS -
TURMERIC**
(At Step 3)

1. SCOPE

This Standard applies to dried or dehydrated turmeric as 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 of **primary bulbs or secondary rhizomes (fingers)** of the rhizomes of plants *Curcuma longa* L. of Zingiberaceae family as described in Table 1.

EU: "Dried or dehydrated turmeric is the product obtained from drying of the cured rhizomes of plants *Curcuma longa* L. of Zingiberaceae. The curing process is done by soaking the rhizomes in boiling water. Dried rhizomes may be in natural form, or machine polished."

Table 1: Common and scientific name of dried or dehydrated Turmeric.

Common Name	Trade Name	Scientific Name
T5urmeric	Turmeric	<i>Curcuma longa</i> L. (<i>Curcuma domestica</i> Valetton)- Synonym

2.2 Styles

Dried or dehydrated Turmeric may be

- Whole; **single or branched rhizomes (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; and**
- ~~Crushed/Cracked/Broken; and~~ Powdered /ground.
- Slice (Indonesia)

Other styles distinctly different for those three are allowed, provided they are labeled accordingly.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

Dried or dehydrated turmeric as described in Section 2 above shall conform to the requirements specified in Annex I.

3.2 Quality ~~criteria~~ **factors**

3.2.1 Odour, flavour and colour

The product 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.

3.2.2 Chemical and physical characteristics

Dried turmeric shall comply with the requirements specified in Annex I (Chemical Characteristics - Table 2 and Physical Characteristics-Table 3). The defects allowed must not affect the general appearance of the product as regards to its quality, keeping quality and presentation in the package.

Footnote by Jamaica: Volatile oil content may vary with different varieties that are currently in trade

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

4.1 Anticaking agents listed in Table 3 of the *General Standard for Food Additives* (CXS 192-1995) are acceptable for use in the 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) and any other relevant, *Code of Practice for the Prevention and Reduction of Mycotoxins in Spices* (CXC 78-2017) 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) the *Code of Hygienic Practice for Low Moisture Foods* (CXC 75-2015) Annex III 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 for 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

8.1 The products covered by the provisions of this Standard 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:

8.2 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 shall 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
- 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).

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of Analysis²

As described in Annex II, Table 4 1

² The methods of analysis will be included in CXS 234- 1999 after endorsement by CCMAS and the following text shall 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.1 Chemical Characteristics for Dried or Dehydrated Turmeric

Product	Styles	Moisture Content %w/w (max)	Total Ash on dry basis %w/w (max)	Acid Insoluble Ash on dry basis %w/w (max)	Total curcuminoids % [(colouring power)] on dry basis (min)
Turmeric	Whole	12	7 [8] [9]	1.5 [2]	2 [3]
	Crushed/Cracked/ Broken Pieces- comprising various cut, diced, or sliced styles	12	7 [8] [9]	1.5 7 [2]	2 [3]
	Powdered /Ground	[9], 10	7 [8] [9]	1.5 7 [1.5]	2 [3]

ANNEX I

Table 2. Physical Characteristics for Dried or Dehydrated Turmeric

Product	Style	Damaged Insect Damagee Rhizomes [insect defiled rhizome] % w/w (max)]	Mould Damage Visible / Insect defiled / infested. % w/w (max)	Whole insects, dead (by count) /100 g (max)	live insects (By count) /100 g (max)	Extraneous matter ³ %w/w (max)	Foreign matter ⁴ %w/w (max)	Mammalian excreta % mg/kg (max)	Other Excreta ⁵ , % mg/kg, (max)
Turmeric	Whole	[5] [3]	[0] [3]	4 [0]	0	N/A [0.5] [2] [5]	2	2 [11]	[2] [11]
	Crushed/Cracked/Broken Pices-comprising various cut, diced, or sliced styles	[N/A]	N/A	4 [0]	0	N/A	N/A	2	[2]
	Powdered /Ground	[N/A]	N/A	N/A	0	N/A [1]	N/A	N/A	N/A

Egypt: Column 3: Defective Rhizomes: These include immature, small, shriveled fingers and/or bulbs, internally damaged, hollow or porous rhizomes, rhizomes scorched due to boiling and other types of damaged rhizomes.

Ref: Indian Standard

³ Vegetative matter associated with the plant from which the product originates but not accepted as part of the final product.

⁴ 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.

⁵ Excreta from other animals, such as reptiles and birds.

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

Table 4 1. Method of analysis

Parameter	Method ⁶	Principle	Type ⁷
Moisture	ISO 939	Distillation	I
Total Ash on dry basis	ISO 939 and ISO 928	Distillation and Gravimetry	I
Acid Insoluble Ash (on dry basis)	ISO 939 and ISO 930	Distillation and Gravimetry	I
Colouring power (curcuminoids content) on dry basis	ISO 5566	Spectrophotometry**	IV I
Extraneous Matter	ISO 927	Visual Examination followed by Gravimetry	I
Foreign Matter	ISO 927	Visual Examination followed by Gravimetry	I
Insect Damage (USA)-ISO 927-Type I Or Defective Rhizomes - Egypt	ISO 927 Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices	Visual Examination	IV I
Live insect	ISO 927	Visual Examination	I
Mammalian or/and Other excreta	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices ISO 927	Visual Examination	IV I
Mould Damage	Method V-8 Spices, Condiments, Flavors and Crude Drugs (Macroanalytical Procedure Manual) MPM: V-8. Spices ISO 927	Visual Examination	IV I

** For whole Turmeric preparing sample followed by acc

⁶ Latest edition or version of the approved methods should be used

⁷ According to the definition of "types of method of analysis" as per Codex Procedural Manual Section II