

**ETHIOPIAN
STANDARD**

ES ISO 5562:2025

Second edition
xx-xx-2025

**Turmeric, whole or ground (powdered)-
Specification
(Identical with ISO 5562:1983)**

ICS: 67.220.10

Published by Institute of Ethiopian Standards

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Foreword

This Ethiopian Standard has been prepared under the direction of the Technical Committee for spice and condiments (TC 14) and published by the Institute of Ethiopian Standards (IES).

The standard is identical with ISO 5562:1983, *Turmeric, whole or ground(powdered) - specification*, published by *International Organization for Standardization* (ISO).

The standard cancels and replaces ES ISO 5562:2002, *Turmeric, whole or ground(powdered) - specification*.

For the purpose of this Ethiopian Standard, the adopted text shall be modified as follows:

- The phrase “International Standard” shall be read as “Ethiopian Standard” and
- A full stop (.) shall substitute comma (,) as decimal marker.

In this standard additional definition and labelling requirements are provided in annex A.

Turmeric, whole or ground (powdered)-Specification

1. Scope

This Ethiopian standard specifies the requirements for turmeric (*Curcuma longa* Linnaeus) whole or ground (powdered).

2. Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CES 73: General standard for prepackaged foods--- labeling

OIML R87:2004, Quantity of product in prepackages

ES ISO 16050, Food stuffs — Determination of aflatoxin B1, and the total content of aflatoxin B1, B2, G1 and G2 in cereals, nuts and derived products — High performance liquid chromatographic method

CAC/RCP 1, Recommended international code of practice—General principles of food hygiene

ES ISO 22000, Food safety management systems—Requirements for any organization in the food Chain.

ES ISO 6571:2001, Spices, condiments and herbs— Determination of volatile oil content

ES ISO 948:2001, Spices and condiments—Sampling

ES ISO 2825:2001, Spices and condiments— Preparation of a ground sample for analysis

ES ISO 927:2001, Spices and condiments— Determination of extraneous matter

ES ISO 928:2001, Spices and condiments— Determination of total ash

ES ISO 939:2001, Spices and condiments – Determination of moisture content—Entertainment method

3. Terms and Definitions

For the purpose of this standard the following definitions shall apply.

3.1.

turmeric polished

refers to dried turmeric rhizomes that have undergone a surface cleaning and smoothing process to remove impurities such as soil, outer skin, and microbial residues, resulting in a cleaner, smoother, and more visually appealing product.

3.2.

extraneous matter

any matter contained in an article of food which may be carried from the raw materials, packaging materials or process systems used for its manufacturer or which is added to it, but such matter does not render such article of food unsafe.

3.3.

ground turmeric

also known as powdered turmeric, is a fine powder obtained by cleaning, drying, and grinding the cured rhizomes (both primary and secondary) of the turmeric plant.

4. product description

Polished turmeric is a dried spice product obtained from the cured primary and/or secondary rhizomes of *Curcuma longa* L. (Linnaeus), a plant belonging to the Zingiberaceae family. The rhizomes, commonly referred to in trade as "fingers" (secondary rhizomes) and "bulbs" or "mother rhizomes" (primary rhizomes), are subjected to a polishing process to improve cleanliness and appearance.

5. Requirements

5.1. General requirements

5.1.1. The product shall be free from;

5.1.1.1. unpleasant odor and flavors;

5.1.1.2. any foreign colour;

5.1.1.3. rancidity and mustiness;

5.1.1.4. insect and rodent infestation;

5.1.1.5. living and dead insects;

5.1.1.6. mould growth when examined with naked eyes;

5.1.1.7. extraneous and foreign matters;

5.1.1.8. any adulterants.

5.2. Specific requirements

5.2.1. Odour and flavor

5.2.1.1. Turmeric, whole or ground (powder), shall have the characteristic odour and flavor of the spice.

5.2.1.2. It shall be free from mustiness or other foreign flavours.

5.2.2. Freedom from insects, moulds, etc

Whole turmeric shall be free from living insects and moulds, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision), with such magnification, as may be necessary in any particular case. If the magnification exceeds $\times 10$, this fact shall be stated in the report.

In the case of ground turmeric, filth shall be determined by the method specified in ES ISO 1208

5.3. Extraneous matter

5.3.1. Whole turmeric

Extraneous matter in whole turmeric includes

a) Chaff, dried leaves, stones, particles of soil, dust and mud, etc.

b) All vegetable matter other than the rhizomes

The production of extraneous matter, when determined by the method specified in ES ISO 927, shall not exceed 2% (m/m).

5.3.2. Ground (powdered) turmeric

5.3.2.1. Ground (powdered) turmeric shall be examined by microscope.

5.3.2.2. It shall not contain any morphologically extraneous matter.

5.4. Defective rhizomes

5.4.1.1. Shriveled fingers and/ or bulbs, internally damaged, hollow or porous rhizomes, rhizomes scorched by boiling and other types of damaged rhizomes shall be considered as defective.

5.4.1.2. The proportion of defective rhizomes shall not exceed 5% (m/m)

5.5. Grading

5.5.1. Whole turmeric

Whole turmeric is graded according to its presentation (rhizomes, fingers or bulbs) its origin and its extraneous matter content.

Fingers, when sold separately, shall not contain more than

- a) 7% (m/m) of pieces (rhizomes of length less than 15 mm and screenings or fragments);
- b) 5% (m/m) of bulbs

5.5.2. Ground (powdered) turmeric

Ground (powdered) turmeric is graded according to its particle size in to two types, as follows:

- a) Course powder: 98% of the product shall pass through a sieve of aperture size 500 µm.
- b) Fine powder 98% of the product shall pass through a sieve of aperture size 300 µm

The degree of fineness of grinding shall be determined by the method specified in ES ISO 3588.

5.6. Chemical requirements

Turmeric, whole ground (powdered), shall comply with the requirements given in the Table 1

Table 1. Chemical requirements

S/N	Characteristics	Requirement		Test Methods
		Whole turmeric	Ground (powdered) turmeric	
1.	Moisture, % by mass, Max (m/m)	12	10	ES ISO 939
2.	Total ash, % by mass, Max (m/m)	Not specified	9	ES ISO 928
3.	Acid insoluble ash, % by mass, Max on dry matter basis (m/m)	Not specified	1.5	ES ISO 930
4.	Coloring powder, expressed as curcuminoids content, % (m/m) on dry basis, min.	Not specified	2	ES ISO 5566

In the case of whole turmeric, prepare a ground sample for analysis in accordance with ES ISO 2825.

In case of ground (powdered) turmeric, use the sample as received after through mixing.

6. Contaminants

6.1. Heavy Metals

Turmeric powder shall comply with those maximum limits for heavy metal contaminants specified in codex Stan. 193, and in particular listed in Table 2 below.

Table 2 Heavy metals limits of the product

Characteristics	Limits (mg/kg)	Test Methods
Arsenic (As)	0.5	ES ISO 6634
Lead (Pb)	2.5	ES ISO 6633

6.2. Pesticide residue

The product shall comply with those maximum residue limits established by the Codex Alimentarius Commission for its similar commodity.

6.3. Mycotoxins

The product shall comply with those maximum mycotoxin limits as established by the Codex Alimentarius Commission for food and feed stuffs, in particular total Aflatoxins in this product shall not exceed 10 µg/kg and 5µg/kg for aflatoxin B1 when tested in accordance with ES ISO 16050.

7. Hygiene

7.1. It is recommended that the products covered by the provisions of this Standard shall be produced, prepared and handled in accordance with the appropriate sections of ES 577, ES 929 and ES ISO 22002-1

7.2. The product shall be free from pathogenic microorganisms and shall comply with the microbiological limits indicated in Table 3 below.

Table 3 Microbiological limits for mustard powder

Characteristics	Requirements	Test Methods
Yeasts and molds cfu/g, Max.	10 ³ per g	ES ISO 21527-1 ES ISO 21527-2
Total Coliform cfu/g, Max.	Absent in 1 g	ES ISO 4831
<i>S. aureus</i> cfu/g, Max.	Absent in 1 g	ES ISO 6888-1 ES ISO 6888-2 ES ISO 6888-3
<i>E. coli</i> , cfu/g, Max.	Absent in 1g	ES ISO 7251
<i>Salmonella</i> , cfu per 25g, Max.	Absent	ES ISO 6579-1 ES ISO 6579-2 ES ISO 6579-3

8. Packaging and labeling

8.1. Packaging

8.1.1. The product shall be packed with clean, sound, free from insect and fungal infestation and the packing material shall be of food grade quality and shall be securely sealed.

8.1.2. The product shall be packed in containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the products.

8.1.3. The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odor and flavor to the product.

8.2. labeling

The labeling shall comply with the requirements of CES 73, and shall be legibly and indelibly marked with the following:

- a) Name of the product (**Turmeric Polished**);
- b) Name and address of the manufacturer or packer;
- c) Trade name or brand name, if any;
- d) Batch or Code number;
- e) Net mass when packed;
- f) Producing country;
- g) Date of manufacturing;(dd/mm/yy)
- h) Storage recommendation, and
- i) Best before date. (dd/mm/yy)

9. Sampling

Samples shall be taken in accordance with, ES ISO 948:2001, Spices and condiments–Sampling

Annex

A. Definition

Polished turmeric

refers to turmeric rhizomes (roots) that have been cleaned, dried, and mechanically or manually polished to remove the rough outer skin or surface layer so as to improve the appearance of the turmeric, giving it a smoother, and shinier finish.

B. Labeling

The labeling shall comply with the requirements of CES 73, and shall be legibly and indelibly marked with the following:

- a) name of the product as “ **Polished whole turmeric or Unpolished whole turmeric or Turmeric powder obtained from polished or unpolished turmeric**”
- b) name and address of the manufacturer or packer;
- c) lot or batch number;
- d) net weight in SI unit;
- e) grade
- f) producing country;
- g) date of manufacturing (dd/mm/yy);
- h) best before date (dd/mm/yy);
- i) trade name or brand name, if any;
- j) storage recommendation; and
- k) instruction for use.

Organization and Objectives

The Institute of Ethiopian Standards (IES) is the national standards body of Ethiopia. IES is re-named by the proclamation number 1263/2021, from Ethiopian Standards Agency (ESA) to Institute of Ethiopian standards, with the mandate given by the regulation Number, 193/2010 and proclamation number, 1263/2021.

IES's objectives are:

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and service are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.
- ❖ Conduct standards related research and provide training and technical support.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational and research institutes, governmental organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes.

Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices). A catalogue of Ethiopian Standards is also available freely and can be accessed from our website.

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For More Information?

Contact us at the following address.

The Head Office of IES is at Addis Ababa.

☎011-6460685, 011-6460565

☎011-6460880

✉2310AddisAbaba, Ethiopia

E-mail: info@ethiostandards.org

Website: www.ethiostandards.org



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