

**ETHIOPIAN
STANDARD**

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Mustard powder — specification

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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 has been developed to address observed needs and to support the local industry in order to make progress through uprisings competitiveness and maintain comparative market advantage both domestically and internationally.

In preparing this standard reference has been made to the following documents:

IS 2323:2011, spices and condiments—mustard, whole and ground—specification

FSSAI (Food Safety and Standards Authority of India).

DRAFT

Mustard powder — specification

1. Scope

This Ethiopian standard specifies the requirements and methods of test for mustard powder which is belonging to the Brassicaceae family intended for human consumption.

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/RCP1, 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.

mustard seeds

the small round seeds from the mustard plant (genus *Brassica nigra* or *Brassica juncea* or *Sinapis alba*) which can be used as a whole or ground (powder).

3.2.

mustard powder

a powder made by grinding dry mustard seeds (typically white/yellow, brown, or black seeds).

3.3.

volatile oil

natural essential oils present in mustard seeds that contribute to the sharp, spicy aroma and taste. These are activated when the powder is mixed with water.

3.4.

myrosinase

an enzyme in mustard seeds that reacts with water produce allylisoithiocyanate, the compound responsible for mustard's heat and pungency.

4. Requirements

4.1. General requirement

- 4.1.1. The product shall be free from;
- 4.1.1.1. unpleasant odor and flavors;
 - 4.1.1.2. any foreign colour;
 - 4.1.1.3. *Argemone maxicana*. L
 - 4.1.1.4. rancidity and mustiness;
 - 4.1.1.5. insect and rodent infestation;
 - 4.1.1.6. living and dead insects;
 - 4.1.1.7. mould growth when examined with naked eyes;
 - 4.1.1.8. extraneous and foreign matters;
 - 4.1.1.9. any adulterants.

4.2. Specific requirement

The mustard powder shall comply with the physico-chemical requirements given in Table 1 below.

Table 1 Physico-chemical requirements for mustard powder

S/N	Characteristics	Requirements	Test Methods
1.	Moisture, % by mass, Max	7.0	ES ISO 939
2.	Non-volatile ether extract, % by mass, Min	28.0	
3.	Total ash, % by mass, Max	6.5	ES ISO 928
4.	Acid insoluble ash, % by mass, Max	1.0	ES ISO 930
5.	Volatile oil content on dry basis, % by mass, max	0.3	
6.	Particle size	100% shall pass through 600-micron	

5. Contaminants

5.1. Heavy Metals

Mustard 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 (ppm Max.)	Test Methods
Cadmium (Cd)	1.5	
Lead (Pb)	0.9	

5.2. Pesticide residue

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

5.3. 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.

6. Hygiene

- 6.1.** 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.
- 6.2.** 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
Total plate count, cfu/g, Max.	10^5	ES ISO 4833-1 ES ISO 4833-2
Yeasts and molds cfu/g, Max.	10^3	ES ISO 21527-1 ES ISO 21527-2
Total Coli form cfu/g, Max.	10	ES ISO 4831
<i>S. aureus</i> cfu/g, Max.	Absent	ES ISO 6888-1 ES ISO 6888-2 ES ISO 6888-3
<i>E. coli</i> , cfu/g, Max.	Absent	ES ISO 7251
<i>Salmonella</i> , cfu/25g, Max.	Absent	ES ISO 6579-1 ES ISO 6579-2 ES ISO 6579-3

7. Packaging and labeling

7.1. Packaging

- 7.1.1.** 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.
- 7.1.2.** The product shall be packed in containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the products.
- 7.1.3.** 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 or flavor to the product.

7.2. Labelling

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

- name of the product as "**Mustard powder**";
- name and address of the manufacturer or packer;
- lot or batch number;
- net weight in SI unit;
- producing country;
- date of manufacturing (dd/mm/yy);
- best before date (dd/mm/yy);
- trade name or brand name, if any;
- storage recommendation; and
- instruction for use.

8. Sampling

Samples shall be taken in accordance with ES ISO 948.

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.

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