



DEAS 918: 2025

ICS 67.220.10

DRAFT EAST AFRICAN STANDARD

Cloves, whole and ground (powdered) — Specification

EAST AFRICAN COMMUNITY

Draft for Comments Only

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 006, *Spices, condiments and culinary herbs*

This second edition cancels and replaces the first edition (EAS 918:2019), which has been technically revised.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Cloves, whole and ground (powdered) — Specification

1 Scope

This East African Standard specifies the requirements, sampling and test methods for whole and ground (powdered) cloves [*Syzygium aromaticum* (L.) Merril & Perry].

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

CXS 193, *General standard for contaminants and toxins in food and feed*

EAS 38, *Labelling of pre-packaged foods — Specification*

EAS 39, *Hygiene in the food and drink industry — Code of practice*

EAS 803, *Nutrition labelling — Requirements*

EAS 804, *Claims on foods — General requirements*

ISO 928, *Spices and condiments — Determination of total ash*

ISO 930, *Spices and condiments — Determination of acid-insoluble ash*

ISO 939, *Spices and condiments — Determination of moisture content Entrainment method*

ISO 948, *Spices and condiments — Sampling*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of micro-organisms — Part 1: Colony-count at 30 °C — Pour plate technique*

ISO 5498, *Agricultural food products — Determination of crude fibre content — General method*

ISO 6571, *Spices and condiments — Determination of volatile oil content (Hydrodistillation method)*

ISO 6579, *Microbiology of food and animal feeding stuffs — Part 6: Horizontal method for the detection of Salmonella spp.*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 16050, *Foodstuffs — Determination of aflatoxin B₁, and the total content of aflatoxins B₁, B₂, G₁ and G₂ in cereals, nuts and derived products*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

whole clove

floral bud, harvested before blooming, and dried of *Syzygium aromaticum* (L.) Merril & Perry.

NOTE TO ENTRY:

It comprises of a receptacle containing, in its upper part, two loculi containing numerous ovules, and crowned by four acute divergent sepals surrounding a dome-shaped head consisting of four paler unexpanded membranous imbricate petals enclosing numerous incurved stamens and single stiff erect style

3.2

headless clove

clove consisting of only the receptacles and sepals and which has lost the dome-shaped head

3.3

mother clove

fruit of the clove tree (*Syzygium aromaticum*), which is in the form of an ovoid brown berry surmounted by four incurved sepals

3.4

khoker clove

clove which has undergone fermentation as a result of incomplete drying, as evidenced by its pale brown colour, whitish mealy appearance and, often, wrinkled surface

3.5

clove stem

dry fragment of stalk of the clove

3.6

extraneous matter

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

3.7

foreign matter

any visible/detectable objectionable foreign matter or material not usually associated with the natural component of the spice plant such as sticks, stones, burlap bagging, metal, etc.

4. Grades of whole cloves

Whole cloves shall be graded according to the criteria given in Table 1.

Table 1 — Requirements for grades of whole cloves

S/No.	Grade	Headless cloves, % m/m, max.	Tendrils, mother cloves, % m/m, max.	Khoker cloves %, m/m, max.	Extraneous matter, %, m/m, max.
i.	1 - Special hand picked	2	0.5	0.5	0.5
ii.	2	5	4	3	1
iii.	3	Not specified	6	5	1

5. Requirements

5.1 General requirement

- i. The whole clove shall be of reddish brown to blackish brown colour;
- ii. Ground cloves shall be of brown colour with violet tinge;
- iii. Whole or ground (powdered) cloves shall have a strong aromatic, spicy odour and characteristic flavour;
- iv. Whole or ground (powdered) cloves shall be free from off-flavours, including mustiness;
- v. The cloves, whole or ground (powdered), shall be free from moulds, and shall be practically free from insects, insect fragments and rodent contamination; and
- vi. Whole or ground (powdered) cloves shall free from foreign matter.

5.2 Specific requirements

5.2.1 Whole cloves

The whole cloves shall comply with the requirements specified in Table 2 when tested in accordance with the methods specified therein.

Table 2 — Specific requirements for whole cloves

S/No.	Characteristic	Requirement	Test method
i.	Moisture, % m/m, max.	12	ISO 939
ii.	Volatile oil for grade 1 and 2 % ml/100 g, min.	17	ISO 6571
iii.	Volatile oil for grade 3 on dry basis, % ml/100g, min.	15	ISO 6571

5.2.2 Ground (powdered) cloves

The ground (powdered) cloves shall comply with the requirements in Table 3 when tested in accordance with the test methods specified therein.

Table 3 — Specific requirements for ground (powdered) cloves

S/No	Characteristics	Requirements			Test method
		Grade 1	Grade 2	Grade 3	
i.	Moisture, (mass fraction), max.	10	10	10	ISO 939
ii.	Total ash, (mass fraction) on dry basis, max.	7	7	7	ISO 928
iii.	Acid-insoluble ash, (mass fraction) on dry basis, max.	0,5	0,5	0,5	ISO 930
iv.	Volatile oil, (mass fraction) on dry basis, min.	16	16	14	ISO 6571
v.	Crude fibre, (mass fraction), max	. 13	13	13	ISO 5498

6. Food additives

6.1 Whole cloves shall be free from added food additives and flavourings

6.2 Anticaking agents listed in Table 3 of the General Standard for Food Additives CXS 192 are acceptable for use in powdered cloves.

7. Contaminants

7.1 Pesticide residues

Pesticide residues in cloves shall not exceed maximum residue limit as established by the Codex Online Guideline for pesticide residue in food.

7.2 Heavy metals

Heavy metals in cloves shall not exceed maximum residue limits as stipulated in CXS 193.

7.3 Aflatoxin limits

Total aflatoxin shall not exceed 10 µg/kg and aflatoxin B₁ shall not exceed 5 µg/kg when tested in accordance with ISO 16050.

8. Hygiene

Cloves (whole and ground (powdered)) shall be prepared and handled in a hygienic manner in accordance with EAS 39 and shall comply with the microbiological limits stipulated in Table 4 when tested in accordance with the methods specified therein.

Table 4 — Microbiological limits for cloves (whole and ground (powdered))

S/No.	Microorganism	Limit	Test method
i.	Total plate count, cfu/ml, max.	10 ⁴	ISO 4833-1
ii.	Yeast and moulds cfu/g, max.	10 ²	ISO 21527-2
iii.	<i>Salmonella spp</i> per 25 g, max.	Absent	ISO 6579
iv.	<i>Escherichia coli</i> , MPN/g, max.	Absent	ISO 7251

9. Packaging

The cloves (whole and ground (powdered)) shall be packaged in food grade packaging material that secures the integrity and the safety of the product.

10. Labelling

In addition to the requirements of EAS 38, EAS 803 and EAS 804 each container shall be legibly and indelibly labelled with the following information:

- common name of the product; Clove;
- form of presentation “ground (powdered) or whole;
- brand name or trade name if any;
- name, physical location and address of manufacturer/packer;
- grade of the product;

- vi. net weight in metric units;
- vii. date of manufacture/packing;
- viii. year of harvest, if applicable;
- ix. batch identification number/code;
- x. best before date;
- xi. country of origin; and
- xii. storage conditions.

11. Sampling

Sampling of cloves shall be done in accordance with ISO 948.

Annex A
(informative)

Pictorial presentation of cloves parts



Figure A.1 — Whole clove



Figure A.2 — Headless clove



Figure A.3 — Mother clove

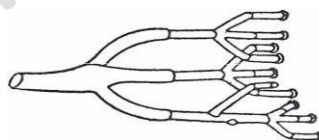


Figure A.4 — Clove stems

Bibliography

- [1] *ISO 2254, Cloves, whole and ground (powdered) — Specification*

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