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DRAFT EAST AFRICAN STANDARD

Fresh bitter cassava roots — Specification

EAST AFRICAN COMMUNITY

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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. XXXXXX.

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 016, *Fresh fruits, vegetables, tubers and flowers*.

This second edition cancels and replaces the first edition (EAS 778:2012), 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.

Fresh bitter cassava root — Specification

1 Scope

This Draft East African Standard specifies the requirements, sampling and test methods for fresh roots of varieties of bitter cassava, *Manihot esculenta* Crantz for preparation before human consumption.

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.

EAS 38, *General standard for labeling of prepackaged foods*

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

EAS 103, *Schedule for permitted food additives*

CAC/RCP 44, *Code of practice for packaging and transport of fresh fruit and vegetables*

CAC/RCP 53, *Code of hygienic practice for fresh fruits and vegetables*

CODEX STAN 192, *General Standard for Food Additives*

CODEX STAN 193, *Codex general standard for contaminants and toxins in food and feed*

EAS 744, *Cassava and cassava products — Determination of total cyanogens — Enzymatic assay method*

ISO 874, *Fresh fruits and vegetables – Sampling*

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

fresh cassava roots

roots grown from a plant of the species *Manihot esculenta* Crantz having desirable characteristics of colour, texture and firmness typical of just harvested cassava at the time of sale

3.2

bitter cassava

cassava having high levels of hydrogen cyanide (fresh weight basis) and not suitable for direct human consumption

- 3.3**
firm
resistant to externally applied pressure under ordinary circumstances
- 3.4**
whole
fresh bitter cassava which has not been subjected to any cutting or peeling of its initial harvested mass with the exemption of trimming
- 3.5**
sound/wholesome
free from disease and physiological deterioration (such as but not limited to decay, breakdown, freezing damage vascular streaking, or softness) or adulteration/contamination, that appreciably affects their appearance, edibility, the keeping quality of the produce or market value
- 3.6**
practically free
produce without defects in excess of those that can be expected to result from, and be consistent with good cultural and handling practices employed in the production and marketing of the fresh bitter cassava
- 3.7**
clean
practically free from dirt, staining, foreign matter or extraneous matter
- 3.8**
food grade material
material which will safeguard the hygienic, safety, nutritional, technological and organoleptic qualities of the product
- 3.9**
extraneous matter
organic matter of plant origin other than fresh bitter cassava
- 3.10**
foreign matter
organic and inorganic materials (such as sand, soil, glass) other than extraneous matter in the bitter cassava

4 Requirements

4.1 General requirements

Fresh bitter cassava roots should be carefully harvested after reaching an appropriate degree of physiological development taking into account the characteristics of the variety and the area in which they are grown. The fresh bitter cassava roots shall have been carefully harvested.

The development and condition of the fresh bitter cassava roots shall be such as to enable it to

- a) withstand recommended transportation and handling conditions, and
- b) arrive in a satisfactory condition at the place of destination.

4.2 Minimum requirements

Fresh bitter cassava roots supplied to the market shall be:

- a) firm/hard/not spongy;

- b) fresh;
- c) sound/wholesome;
- d) not affected by rot, mould or deterioration as to make it unfit for consumption;
- e) clean, and practically free of any visible foreign matter, except permitted substances used to prolong its shelf life;
- f) of colour, taste and texture characteristic of variety;
- g) practically free of pests and damage caused by pests;
- h) free of excess external moisture, adequately surface dried if they have been washed;
- i) free of any foreign smell and/or taste with exception of preservation agents allowed under clause 5; and
- j) practically free of mechanical damage and bruising.

The cut at the distal (narrow) end of the fresh bitter cassava roots should not exceed 2 cm in diameter.

The stalk end of the root should have a clean cut between 1 cm and 2.5 cm in length in case of varieties that have distinct stalk

Tolerances for the quality requirements shall be such that:

- a) a total of not more than 10 % by weight or number of the fresh bitter cassava roots in the lot may fail the requirements;
- b) not more than 3 % by weight or number of the fresh bitter cassava roots may be affected by rot, mould or deterioration as to make it unfit for consumption;
- c) not more than 3 % by weight or number of the fresh bitter cassava roots may be affected by damage caused by pests; and
- d) not more than 3 % by weight or number of the fresh bitter cassava roots may be affected by rot, mould or deterioration; and damage caused by pests in combination.

4.3 Total cyanogen content

When tested in accordance to EAS 744, fresh bitter cassava roots shall have more than 50 mg/kg of hydrogen cyanide (fresh weight basis).

5 Food additives

Fresh bitter cassava roots may be preserved by use of food additives such as wax, in accordance with Codex Stan 192.

6 Classification

6.1 Types of classes

Fresh bitter cassava roots may be classified before marketing.

Where classification is done the following grades shall be used in accordance with the requirements of each class and the quality tolerances in Clause 6:

- extra class;
- class I; and
- class II.

6.2 Class requirements

6.2.1 Extra class

Fresh bitter cassava roots shall meet the minimum requirement in Clause 4.2 and shall be:

- a) of superior quality in terms of texture, and appearance; and
- b) characteristic of the variety and uniform in shape and size.

Fresh bitter cassava roots shall be free from defects, with the exception of defects on the surface affecting not more than 2 % of the bitter cassava.

6.2.2 Class I

Fresh bitter cassava roots shall meet the minimum requirement in Clause 4.2 and shall be:

- a) of good quality; and
- b) characteristic of the variety.

The following slight defects may be allowed, provided these do not affect the general appearance, the quality, the keeping quality and presentation of fresh bitter cassava roots:

- a) defects in shape not exceeding 5% of the roots;
- b) abrasion, not exceeding 10 % of the surface area of the roots;
- c) scraped areas, not exceeding 20 % of the surface area of the roots; and
- d) scarred and healed damage, not exceeding 5% of the surface area of the roots.

6.2.3 Class II

Fresh bitter cassava roots shall meet the minimum requirements in Clause 4.2 but may not qualify for inclusion in extra class and class I (the higher classes).

The following defects may be allowed:

- a) defects in shape not exceeding 10 % of the roots;
- b) abrasion, not exceeding 20 % of the surface area of roots;
- c) scraped areas, not exceeding 30 % of the surface area of roots; and
- d) scarred and healed damage, not exceeding 10% of the surface area of the roots.

7 Tolerances

7.1 Quality tolerances

Tolerances in respect of quality and size shall be allowed in each package for produce not satisfying the requirements of the class indicated.

The following tolerance limits may be allowed for specific classes:

- a) Extra class: Five percent by number or weight of fresh bitter cassava roots not satisfying the requirements of extra class, but meeting those of Class I or exceptionally coming within the tolerances of class I;
- b) Class I: Ten percent by number or weight of fresh bitter cassava roots not satisfying the requirements of class I, but meeting those of Class II or exceptionally, coming within the tolerances of class II; and
- c) Class II: 10 % by number or weight of fresh bitter cassava roots not satisfying the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

7.2 Size tolerances

For all classes, 10% by number or weight of fresh bitter cassava roots corresponding to the size immediately above and/or below that indicated on the package.

8 Sizing

Size is determined by measuring the diameter at the thickest cross-section of the root. Fresh bitter cassava roots may be coded and designated in accordance with Table 1.

Table 1 — Size for fresh bitter cassava roots

Size code	Size	Diameter (cm)
A	Large	> 10.0
B	Medium	7.6 – 10.0
C	Small	<7.6

9 Contaminants

9.1 Heavy metals

Fresh bitter cassava roots shall comply with those maximum levels of the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193).

9.2 Pesticide residues

Fresh bitter cassava roots shall conform to those maximum residue limits for pesticide residues established by Codex Alimentarius Commission for this commodity.

10 Hygiene

Fresh bitter cassava roots shall be handled in hygienic manner in accordance with the appropriate sections EAS 39 and CAC/RCP 53.

11 Packaging

Fresh bitter cassava roots shall be packaged in food grade material. Fresh bitter cassava roots shall be packaged in each container in compliance with CAC/RCP 44.

13 Labelling

13.1 In addition to the requirements of EAS 38, the following specific requirements shall apply and shall be legibly and indelibly marked:

- a) name of the produce to be shown on the label shall be "Fresh bitter cassava root";
- b) name and location address of the exporter and/or packer shall be declared;
- c) country of origin of the produce;
- d) place of origin such as district, or region;
- e) class where applicable;
- f) variety;
- g) size (size code);
- h) net weight (in metric system);
- i) lot identification (batch number);
- j) declaration of preservatives, if used;
- k) date of harvest;
- l) packing date;
- m) storage conditions; and
- n) Cautions "Not to be eaten raw" and "To be detoxified to safe level before consumption".

13.2 When labelling non-retail packages, information for non-retail packages shall either be given on the packages or in accompanying documents, except that the name of the produce, lot identification and the name and address of the manufacturer or packer; date of harvest; declaration of preservatives, if used; shall appear on the non-retail packages.

13.3 A statement on preparation instructions indicating the following is required:

- a) Bitter cassava shall be peeled, de-pithed, scraped, sliced into pieces, rinsed and fully cooked before consumption; and
- b) cooking or rinsing water shall not be consumed or used for other food preparation purposes.

14 Sampling

Sampling of fresh bitter cassava roots shall be done in accordance with ISO 874.

PUBLIC REVIEW DRAFT

Bibliography

- [1] EAS 778:2012, *Fresh bitter cassava — Specification*

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