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DRAFT MALAWI STANDARD

Fresh sweet cassava – Specification

NOTE: This is a draft Malawi standard and it shall neither be used nor regarded as a Malawi Standard

Fresh sweet cassava – Specification

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FOREWORD

This draft standard was prepared by MBS/TC 53, the Technical Committee on *Root and tuber crops and their products*, to provide the requirements and methods of sampling and test for fresh sweet cassava (*Manihot esculenta Crantz, of the Euphorbiaceae family*) for human consumption.

In preparing this draft Malawi standard, reference was made to the following standards:

Codex Standard 238:2013, *Standard for sweet cassava; and*

African Standard, ARS 835: 2016, *Fresh sweet cassava – Specification.*

Acknowledgement is made for the use of the information.

TECHNICAL COMMITTEE

This draft Malawi standard was prepared by MBS/TC 53, the Technical Committee on *Root and tuber crops and their products* and the following companies, organizations and institutions were represented:

Blantyre City Council;
International Potato Center Malawi;
Lilongwe University of Agriculture and Natural Resources;
Malawi Bureau of Standards;
Ministry of Agriculture, Irrigation and Water Development – Bvumbwe Agricultural Research Station;
Ministry of Industry – Department of Small and Medium Enterprises and Cooperatives;
Peoples Trading Centre;
Shoprite Trading Limited;
Tehilah Enterprise; and
University of Malawi – The Polytechnic

NOTICE

This standard shall be revised every five years or whenever necessary in order to keep abreast of progress. Comments are welcome and shall be considered when the standard is being revised.

DRAFT MALAWI STANDARD

Fresh sweet cassava – Specification

1 SCOPE

This draft Malawi standard applies to commercial sweet varieties of cassava roots grown from *Manihot esculenta* Crantz, of the *Euphorbiaceae* family, to be supplied fresh to the consumer, after preparation and packaging. Cassava for industrial processing is excluded.

2 NORMATIVE REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this draft Malawi standard. All standards are subject to revision and, since any reference to a standard is deemed to be a reference to the latest edition of that standard, parties to agreements based on this draft Malawi standard are encouraged to take steps to ensure the use of the most recent edition of the standards indicated below. Information on current valid national and international standards can be obtained from the Malawi Bureau of Standards.

MS 19: *Labelling of prepackaged foods – General standard;*

MS 237: *Food additives – General standard;*

MS 302: *Contaminants and toxins in food and feed – General standard;*

MS 1386: *Cassava and cassava products – Determination of total cyanogens – Enzymatic assay method;*

MS 1520: *Fresh fruits and vegetables – Sampling;*

MS 1579: *Production and handling of cassava – Code of practice; and*

ISO 7563: *Fresh fruits and vegetables – Vocabulary.*

3 TERMS AND DEFINITIONS

For the purposes of this draft Malawi standard, the terms and definitions in ISO 7563, and the following terms and definitions shall apply

3.1

badly misshapen

cassava is so curved, crooked, constricted, ridged or otherwise misshapen that its appearance is seriously affected, or there is a loss of more than 10 % of the total weight in the ordinary preparation for use

3.2

clean

practically free of visible soil, dust, or other visible foreign matter, except substances used to prolong its shelf life

3.3

fairly well shaped

cassava is not so curved, crooked, constricted, ridged or otherwise misshapen that its appearance is materially affected, or there is loss of more than 5 % of the total weight of the cassava in the ordinary preparation for use

3.4

firm

resistant to externally applied pressure

3.5

food grade material

one that will not transfer non-food chemicals into the food and contains no chemicals which would be hazardous to human health

3.6

fresh

appearance at the time of sale, similar visual characteristics to the fresh sweet cassava recently harvested (i.e., colour, texture, firmness or shrivelled)

3.7

cassava

storage roots from varieties of cassava [*Manihot esculenta* (Crantz)] of the *Euphorbiace* family which contain stored carbohydrates mainly as starch

3.8

industrial processing

production of potato products such as starch, flour, livestock feeds, paste, granules and syrups

3.9

practically free

product 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 cassava

3.10

sound wholesome

free from disease, serious deterioration (such as but not limited to decay, breakdown, freezing damage, or soft or shrivelled specimens) or adulteration/contamination, that appreciably affects their appearance, edibility, the keeping quality of the produce or market value

3.11

sweet cassava

cassava roots that contain less than 50 mg/kg hydrogen cyanide (fresh weight basis)

3.12

well shaped

cassava is not so curved, crooked, constricted, ridged or otherwise misshapen that its appearance is appreciably affected, relative to variety

3.13

whole

fresh sweet cassava which has not been subjected to any cutting or peeling of its initial harvested mass, "trimming" exempted

4 QUALITY REQUIREMENTS

4.1 General requirements

4.1.1 The fresh sweet 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.

4.1.2 The development and condition of the fresh sweet cassava shall be such as to enable it to:

4.1.2.1 Withstand normal transport and handling condition; and

4.1.2.2 Arrive in a satisfactory condition at the place of destination.

4.2 Specific requirements

4.2.1 In all classes, subject to the special provisions for each class and the tolerances allowed, the cassava must be:

4.2.1.1 Fresh, whole and firm;

4.2.1.2 Of colour, taste and texture characteristic of the variety;

4.2.1.3 Sound, produce affected by rotting, mould or deterioration such as to make it unfit for consumption is excluded;

4.2.1.4 Clean, practically free of any visible foreign matter, except permitted substances used to prolong its shelf life;

4.2.1.5 Practically free of pests affecting the general appearance of the produce;

4.2.1.6 Practically free of damage caused by pests;

4.2.1.7 Free of abnormal external moisture, excluding condensation following removal from cold storage;

4.2.1.8 Free of any foreign smell and/or taste with exception of preservation agents allowed;

4.2.1.9 Practically free of mechanical damage and bruising of inner skin; and

4.2.1.10 Free of loss of colour in the flesh.

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

4.2.3 The stalk end of the root should have a clean cut between 1 cm and 2.5 cm in length.

4.2.4 Defects in the minimum requirements affecting no more than 10 % of the roots may be allowed, provided the cassava retains its essential characteristics as regards the quality, the keeping quality and presentation. The defects shall not, in any case, affect the quality of the pulp of the cassava roots.

4.3 Total cyanogen content

When tested according to MS 1386, fresh sweet cassava roots shall have no more than 10 mg/kg of hydrogen cyanide (fresh weight basis).

5 CLASSIFICATION OF FRESH SWEET CASSAVA

5.1 Types of classes

Fresh sweet cassava 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 7.

5.1.1 Extra class;

5.1.2 Class I; and

5.1.3 Class II.

5.2 Class requirements

5.2.1 "Extra" class

5.2.1.1 Extra class sweet cassava shall be cassava roots that meet the specific requirements in clause 4.2 and are:

5.2.1.1.1 Of superior quality in terms of taste, texture, skin and flesh colour;

5.2.1.1.2 Characteristic of the variety and/or commercial type, uniform in shape, quality and size; and

5.2.1.2 Extra class cassava roots shall be free from defects, with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package and not in any case affecting not more than 2 % of the cassava roots.

5.2.2 Class I

5.2.2.1 Class I sweet cassava shall be cassava roots that meet the specific requirements in clause 4.2 and are:

- a) Of good quality; and
- b) It must be characteristic of the variety and/or commercial type.

5.2.2.2 The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

5.2.2.2.1 Slight defects in shape not exceeding 5 % of the roots;

5.2.2.2.2 Bruising not exceeding 10 % of the surface area of the roots;

5.2.2.2.3 Scraped areas, not exceeding 10 % of the surface area; and

5.2.2.2.4 Scarring and healed damage, not exceeding 5% of the surface area.

5.2.2.3 The defects must not, in any case, affect the pulp of the produce.

5.2.3 Class II

5.2.3.1 This class includes cassava which does not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in clause 4.2.

5.2.3.2 The following defects, however, may be allowed, provided the cassava retains its essential characteristics as regards the quality, the keeping quality and presentation:

5.2.3.2.1 Defects in shape not exceeding 10 % of the roots;

5.2.3.2.2 Bruising not exceeding 20% of the surface area of the roots;

5.2.3.2.3 Scarring or healed damage, not exceeding 10 % of the surface area; and

5.2.3.2.4 Scraped areas, not exceeding 20 % of the surface area.

5.2.3.3 The defects must not, in any case, affect the pulp of the produce.

6 PROVISIONS CONCERNING SIZING

6.1 Sweet cassava shall be coded in sizes in accordance with Table 1. Size shall be determined by measuring the diameter at the thickest cross-section of the root.

6.2 Size tolerances for all classes shall be a maximum of 10 % by number of the weight of cassava corresponding to the size immediately above or below the size declared or indicated on the package.

Table 1: Sizing for fresh sweet cassava

1	2	3
S/N	Size Code	Diameter (in centimetres)
1	A	3.5 – 6.0
2	B	6.1 – 8.0
3	C	> 8.0

7 PROVISIONS CONCERNING TOLERANCES

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

7.1 Quality tolerances

7.1.1 "Extra" Class

10 % by number or weight of cassava not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

7.1.2 Class I

10 % by number or weight of cassava not satisfying the requirements of the class, but meeting those of Class II or, exceptionally, coming within the tolerances of that class.

7.1.3 Class II

10 % by number or weight of cassava satisfying neither the requirements of the class nor the specific 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 cassava corresponding to the size immediately above and/or below that indicated on the package.

8 FOOD ADDITIVES

Fresh sweet cassava may be preserved by use of food additives in accordance with MS 237.

9 CONTAMINANTS

9.1 Pesticide residues

Fresh sweet cassava shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission for this commodity.

9.2 Heavy metals

Fresh sweet cassava shall comply with those maximum levels for heavy metal contaminants established by the Codex Alimentarius Commission for this commodity.

9.3 Other contaminants

Fresh sweet cassava shall comply with the maximum levels of contaminants and toxins in MS 302.

10 HYGIENE

Fresh sweet cassava shall be handled a hygienic manner complying with MS 1579.

11 PACKAGING AND LABELLING

11.1 Packaging

In addition to the requirements of the packaging section in MS 1579, the following specific requirements should be met:

11.1.1 The visible part of the contents of the pre-packaged must be representative of the entire contents. A special effort should be made to suppress camouflage, i.e. concealing in the lower layers of the package produce inferior in quality and size to that displayed and marked;

11.1.2 Similarly prohibited is any packaging method or practice intended to give a deceptively superior appearance to the top layer of the consignment; and

11.1.3 For the sake of uniformity, the contents of each package must be uniform in shape and contain only cassava of the same origin, variety and/or commercial type, quality and size. The visible part of the contents of the package must be representative of the entire contents.

11.2 Labelling

11.2.1 Consumer packages

In addition to the requirements of MS 19, the following specific requirements shall apply and shall be legibly and indelibly marked:

11.2.1.1 The name of the produce to be shown on the label of each package as “Fresh sweet cassava” and may be added with the name of the variety.

11.2.1.2 The name, location and address of the producer, vendor and /or packer shall be declared

11.2.1.3 Country of origin of the produce, and optionally, place of origin such as region or district

11.2.1.4 Commercial identification shall be declared by:

11.2.1.4.1 Grade only when classified;

11.2.1.4.2 Variety /cultivar or type;

11.2.1.4.3 Size (size code);

11.2.1.4.4 Net weight (in metric system);

11.2.1.5 Lot identification (batch number);

11.2.1.6 Declaration of preservatives, if used;

11.2.1.7 Preparation instructions, a statement indicating that cassava should be peeled and fully cooked being consumed;

11.2.1.8 Date of harvest;

11.2.1.9 Packing date;

11.2.1.10 Storage conditions; and

11.2.1.11 Indication for human food.

11.2.2 Non-retail containers

Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside, or in the documents accompanying the shipment.

11.2.2.1 Identification

Name and address of exporter, packer and/or dispatcher.

11.2.2.2 Name of produce

Name of the produce if the contents are not visible from the outside. Name of the variety or commercial type is optional.

11.2.2.3 Origin of produce

Country of origin and, optionally, district where grown or national, regional or local place name.

11.2.2.4 Commercial identification

The following information shall appear for commercial identification:

11.2.2.4.1 Class;

11.2.2.4.2 Size (size code or minimum and maximum diameter in cm);

11.2.2.4.3 Net weight; and

11.2.2.4.4 Preparation instructions, a statement indicating that cassava should be peeled and fully cooked being consumed.

12 METHODS OF SAMPLING AND TESTING

12.1 Sampling shall be done in accordance with MS 1520.

12.2 Tests for pesticide residues, contaminants and toxins shall be conducted in accordance with the recommended methods of the Codex Alimentarius Commission, AOAC and other internationally recognized methods of test.

THE MALAWI BUREAU OF STANDARDS

The Malawi Bureau of Standards is the standardizing body in Malawi under the aegis of the Ministry of Industry and Trade. Set up in 1972 by the Malawi Bureau of Standards Act (Cap: 51:02), the Bureau is a parastatal body whose activities aim at formulating and promoting the general adoption of standards relating to structures, commodities, materials, practices, operations and from time to time revise, alter and amend the same to incorporate advanced technology.

CERTIFICATION MARK SCHEME

To bring the advantages of standardization within the reach of the common consumer, the Bureau operates a Certification Mark Scheme. Under this scheme, manufacturers who produce goods that conform to national standards are granted permits to use the Bureau's "Mark of Quality" depicted below on their products. This Mark gives confidence to the consumer of the commodity's reliability.

