

DRAFT KENYA STANDARD

DKS 2842: 2018

ICS 67.060

Fresh Arrowroots (Taro) — Specification

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the National Technical Committee:

University of Nairobi-Department of Food Science, Nutrition and Technology
Agriculture and Food Authority- Food Cop directorate
Kenya Agricultural & Livestock Research Organization
Kenya Industrial Research & Development Institute
National Potato Council of Kenya
Propack Ltd.
Graduate Africa Ltd
Mhogo foods Ltd
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REVISION OF KENYA STANDARDS

In order to keep abreast with the progress in the industry, Kenya standards shall be regularly reviewed. Suggestions for improvement of published standards are welcome and should be addressed to the Managing Director, Kenya Bureau of Standards.

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PUBLIC REVIEW DRAFT

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DKS xxxx:2018

ICS 67.060

Fresh Arrowroots (Taro) — Specification

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Foreword

This Kenya standard was prepared by the tubers and tuber products technical committee under the guidance of the Standards Project Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Arrowroots have become common food in many households in Kenya due to its appreciable nutritional value. Arrowroot consumption in Kenya has been on the rise. However, the value chain actors lack appropriate standards to guide in production and post handling of fresh arrowroots. In order to assure quality and consumer safety, it is necessary to develop a national standard for fresh arrowroots. This first edition of the standard thus intends to safeguard the interests of the stakeholders in the entire value chain, guarantee product quality and enhance safety of the consumers.

In the preparation of this standard, reference was made to:

Philippines National Standard - PNS/BAFS 126:2014 Fresh root vegetables – Arrowroots – Classification and grading

Acknowledgement is hereby made for the assistance derived from these sources.

Fresh arrowroots (Taro) - specification

1 Scope

This Kenya standard specifies the requirements and methods of sampling and test for edible varieties of arrowroots (also referred to as cocoyam or taro), *Colocasia esculenta* (L.) Schott of the Araceae 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:

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*

ISO 874, *Fresh fruits and vegetables — Sampling*

CAC/RCP 1, *Recommended international code of practice general principles of food hygiene*

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

AOAC 2013.06, *Arsenic, Cadmium, Mercury and Lead in foods*

3.0 Terms and definitions

3.1 clean

practically free from adhering soil, not smeared or caked with dirt or other foreign matter

3.2 cut surface

exposed surface of the corms

3.3 firm

not soft, flabby or shriveled

3.4 fresh

firm, or free from deterioration

3.5 fairly well shaped

characteristic of the variety

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3.6 fully matured

fully developed, firm with tough skin and with no sprouting

3.8 corm

rounded underground storage organ of arrowroot

3.9 wholesome/ sound

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

3.11 Lot

a batch or consignment of arrowroots meeting similar characteristics

3.12 defects

Blemishes, scars/ scrapes, shape and colour that is not characteristic of the variety

4 Requirements

4.1 General requirements

Arrowroots shall be carefully harvested when physiologically mature and taking into account the characteristics of the variety and/or commercial type and the area in which they are grown

4.2 Minimum requirements

The arrowroot corms shall be:

- a) Wholesome/ sound;
- b) clean;
- c) fresh;
- d) firm;
- e) practically free of pests and disease
- f) practically free of damage caused by pests and disease
- g) free of abnormal external moisture, except for condensation following removal from cold storage;
- h) free of any foreign smell;
- i) of colour, taste and texture characteristic of variety
- j) practically free of mechanical damage and bruising;

4.3 Quality requirements

The quality requirements shall be that:

- a) not more than 10% of arrowroots in a lot may fail the requirements.
- b) not more than 3 % of the arrowroots may be affected by rot, mould or deterioration
- c) not more than 3 % of the arrowroots may be affected by damage caused by pests;

5 Classification

Arrowroots shall be classified into:

5.1 Extra class

Arrowroots in this class shall be of superior quality and bear the characteristics of the variety. They shall be practically free from defects

5.2 Class I

Arrowroots in this class shall be of good quality and bear the characteristics of the variety,

The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, packaging and storage quality:

- a) defects in shape not exceeding 10%
- b) scarring or scraped surfaces not more than 20% of the total surface area.
- c) The defects must not, in any case, affect the flesh of the produce.

5.3 Class II

This class of arrowroots only satisfy the minimum requirements specified in Clause 4.2 above. However, a maximum 30% defects in shape, scarring and scrapes of the total surface area may be allowed. The defects must not, in any case, affect the flesh of the produce.

6. Tolerances

6.1 Class tolerance

6.1.1 Extra class

Five percent by number or weight of arrowroots not satisfying the requirements of the class but meeting those of Class I, or exceptionally coming within the tolerances of that class is allowed.

6.1.2 Class I

Ten percent by number or weight of arrowroots not satisfying the requirements of the class, but meeting those of Class II, or exceptionally coming within the tolerances of that class is allowed.

6.1.3 Class II

Ten percent by number or weight of arrowroots not satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting, is allowed.

6.2 Size tolerance

For all classes, 10% by number or weight of arrowroots corresponding to the size immediately below

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or above the size indicated on the package is allowed

7 Provisions concerning sizing

Size is determined by the weight of individual arrowroots in grams, as presented in table 1.

Table 1 – Size classification by weight (g) of arrowroots

1	Very Small	50 – 149
2	Small	150 – 250
3	Medium	251 – 350
4	Large	351 – 450
5	Extra Large	> 450

8 Food additives

Food additives may be used in the preparation of fresh arrowroots in accordance with EAS 103.

9 Contaminants

9.1 Heavy metals

Limits of heavy metal shall comply with maximum levels set in Table 2

Table 2— Heavy metals limits for fresh arrowroots

S/N	Heavy metal	Maximum Limit mg/kg	Test method
i.	Arsenic (As)	0.1	AOAC 2013.06
ii.	Lead (Pb)	0.1	
iii.	Cadmium (Cd)	0.1	
iv.	Mercury (Hg)	0.1	

9.2 Pesticide residues

Arrowroots shall comply with those maximum residue limits established by the Codex Alimentarius Commission

110 Hygiene

10.1 It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the Recommended Code

of Practice – General Principles of Food Hygiene (CAC/RCP 1) and Recommended Code of Hygienic Practice for Fresh Fruits and Vegetables (CAC/RCP 53),

11 Provisions concerning presentation

11.1 Uniformity

The contents of each package shall be uniform and contain only arrowroots of the same origin, variety, quality and size. The visible part of the contents of the package shall be representative of the entire contents.

11.2 Packaging

11.2.1 Arrowroots shall be packaged in such a way as to protect the produce. The materials used shall be clean and of a quality such as to avoid causing any external or internal damage to the produce. The packaging material shall be food grade.

11.2.2 Arrowroots shall be packaged in compliance with the Recommended Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables (KS CAC/RCP 44-1995).

11.2.1 Description of packing Containers

The containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preserving of the arrowroots. Packages shall be free of all foreign matters or smell.

12 labeling

12.1 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 Arrowroots”
- b) name and location address of the vendor and/or packer shall be declared;
- c) country of origin of the produce;
- d) commercial identification shall be declared by:
 - class (only when classified)
 - variety;
 - size (size code); and
 - net weight (in metric system).
- e) lot identification (batch number);
- f) declaration of preservatives, if used;
- g) date of harvest;

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- h) packaging date;
- i) storage conditions

12.2 When labelling non-retail packages, information 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 producer or packer shall appear on the package.

13 Sampling

Sampling shall be done in accordance with ISO 874.

14 Criteria for conformity

A lot shall be declared as conforming to this standard if samples inspected or analysed for quality requirements conform to the provisions of this standard.

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