

**KENYA STANDARD**

**DKS 3005:2024**

ICS 67.040

**First Edition**

## **Arrow root Flour — Specification**



**Kenya Bureau of  
Standards**

Standards for Quality life

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## **Arrow root Flour — 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 Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards

Arrowroot flour, is a powder extracted from the rhizomes (rootstock) or underground stems of the arrowroot plant (*Maranta arundinacea*), commonly used as a thickening agent in cooking and baking.

Arrowroot flour has been gaining popularity in recent years. As more people adopt gluten-free diets due to celiac disease, gluten sensitivities, or personal preferences, the demand for gluten-free alternatives has increased. Arrowroot flour is naturally gluten-free, making it a valuable ingredient for those who need or choose to avoid gluten.

During the preparation of this standard, reference was made to the following document:

IS 1006(1984): Specification for arrow root starch

Acknowledgement is hereby made for the assistance derived from this source

Public Review Draft

Public Review Draft

## Arrow root Flour — Specification

### 1 Scope

This Draft Kenya standard prescribes the requirements and methods of sampling and test for arrowroot flour, which is derived from the rhizomes (rootstocks) of the tropical plant *Maranta arundinacea*.

### 2 Normative references

The following referenced 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.

AOAC 2013.06 Determination of Arsenic, Cadmium, Mercury, and Lead in Foods by Pressure Digestion and Inductively Coupled Plasma/Mass Spectrometry

CXS 192, General Standard for food additives

KS 2842, Fresh arrowroot (Taro)-Specification.

KS EAS 38, General standard for the labelling of pre-packaged foods

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

KS EAS 82, Milled cereal products — Methods of test (General methods)

KS ISO 712, Cereals, and cereal products — Determination of moisture content — Routine reference method

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

KS ISO 6888-1 Microbiology of the food chain, Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) Part 1: Method using Baird-Parker agar medium,

KS ISO 6579-1, Microbiology of the food chain, Horizontal method for the detection, enumeration and serotyping of *Salmonella*. Part 1: Detection of *Salmonella* spp.

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

KS ISO 21527, ISO 21527-1, Microbiology of food and animal feeding stuffs, Horizontal method for the enumeration of yeasts and moulds Part 1: Colony count technique in products with water activity greater than 0,95

KS ISO 13690, Cereals, pulses and milled cereal products- Sampling of static batches

### 3 Terms and definitions

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

#### 3.1

##### **arrow root flour**

The powdered form of the rhizomes of *Maranta arundinacea*.

#### 3.2

##### **food grade material**

packaging material, made of substances which are safe and suitable for the intended use, and which will not impart any toxic substance or undesirable odour or flavour to the product.

#### 3.3

##### **extraneous matter**

organic matter of arrow root origin other than arrow root flour

#### 3.4

##### **foreign matter**

any undesirable material visible with naked eye in arrow root flour

#### 3.5

##### **practically free**

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 arrow root flour

### 4 Requirements

#### 4.1 General requirements

4.1.1 Arrow root flour shall be processed from fresh arrow roots complying with KS 2842

4.1.2 Arrow root flour shall be:

a) practically free from extraneous matter.

b) Odourless



c) free from foreign matter and

e) have colour characteristic of the variety

#### 4.2 Specific requirements

Arrow root flour shall conform to the composition requirements in Table 1 below.

**Table 1 Compositional requirements for arrow root flour**

S. N	Parameter	Requirement	Test method
i)	Moisture content, % by mass on dry matter basis, max.	12.0	KS ISO 712
ii)	Starch content, % by mass on dry matter basis, min.	60.0	KS ISO 10520
iii)	Acid insoluble ash % by mass on dry matter basis, max	0.35	KS EAS 82
iv)	Crude Fibre content % by mass max on dry matter basis	2.0	KS ISO 5498

#### 4.3 Particle size

Not less than 90 % shall pass through a 0.60 mm sieve for fine flour, and not less than 90 % shall pass through a 1.20 mm sieve for coarse flour. Testing for particle size shall be done in accordance with KS EAS 82.

#### 5. Food additives

Food additives may be used in the preparation of arrow root flour in accordance with CXS 192

#### 6. Contaminants

##### 6.1 Pesticide residues

Arrow root flour shall conform to maximum residue limits for pesticide residues established by the Codex Alimentarius Commission for this commodity.

##### 6.2 Heavy metals

Limits of heavy metal shall comply with maximum levels set in Table 2 when tested in accordance with the test methods prescribed therein.

Table 2 - Heavy metal limits for arrowroot flour

S/N	Heavy metal	Max. limit, mg/kg	Test method
i)	Lead (pb)	0.1	AOAC 2013.06
ii)	Cadmium (cd)	0.1	

## 7 Hygiene

Arrow root flour shall be prepared and handled in a hygienic manner in accordance with KS EAS 39 and shall conform to microbiological limits specified in Table 3.

Table 3 — Microbiological limits for arrow root flour

SL No.	Micro-organism(s)	Requirement	Test method
i)	Escherichia coli, cfu/g, max.	Absent	KS ISO 7251
ii)	Salmonella, 25g, max.	absent	KS ISO 6579-1
iii)	Yeasts and moulds, cfu/g, max.	$10^3$	KS ISO 21527 -1
iv)	Staphylococcus aureas, cfu/g, max.	<10	KS ISO 6888-1

## 8 Packaging

Arrow root flour shall be packaged in food grade material which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

## 9 Labelling

**9.1** In addition to the requirements of KS EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

- common name of the product 'Arrow root flour'.
- name, and physical address of the manufacturer/ distributor and /or trade name/ brand name.
- date of manufacture.

- d) lot identification.
- e) expiry date.
- f) country of origin.
- g) the net weight in metric units.
- h) the statement 'Human Food' shall appear on the package.
- i) storage instructions; and
- j) instructions on disposal of used package.

## **10 Sampling**

Sampling of arrow root flour shall be done in accordance with KS ISO 13690