



EAS 95:2010
ICS 67.060

EAST AFRICAN STANDARD

Sorghum flour — Specification

EAST AFRICAN COMMUNITY

Foreword

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

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

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.

© East African Community 2010 — All rights reserved

East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.int

Table of contents

1	Scope	1
2	Normative references	1
3	Description	1
4	Requirements	1
5	Food additives	2
6	Contaminants	2
7	Hygiene	3
8	Packaging (transport and storage).....	3
9	Labelling	3
10	Methods of test	4

Draft for comments only — Not to be cited as East African Standard

Introduction

Sorghum flour is used mainly for porridge and as a substitute for special dietary food. In recent years its consumption has greatly increased leading to commercial production. This standard has therefore been developed to protect the consumer from fraud and adulteration that may occur during production that may be hazardous to health or intended to cheat the consumers as well guiding the manufacturer in production. The revision to this standard addressed the compositional requirements as a result of changes such as improved varieties that have been released to the market.

Draft for comments only — Not to be cited as East African Standard

Sorghum flour — Specification

1 Scope

- 1.1 This East African Standard specifies requirements for sorghum flour for human consumption.
- 1.2 This standard does not apply to grits or meal obtained from *Sorghum bicolor* (L.) Moench.

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.

CAC/GL 21, *Principles for the Establishment and Application of Microbiological Criteria for Foods*

CAC/RCP 1, *Recommended International Code of Practice — General Principles of Food Hygiene*

EAS 38, *Labelling of prepackaged foods — Specification*

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

EAS 103, *Schedule for permitted food additives*

CD-K-455-2010, *Sorghum grains — Specification and grading*

EAS 41, *Fruits, vegetables and derived products*

EAs 74, *Methods of test for animal feedstuffs*

EAS 82, *Milled cereal products — Methods of test*

EAS 217, *Methods for the microbiological examination of foods*

ISO 16050, *Foodstuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products — High-performance liquid chromatographic method*

3 Description

Sorghum flour is the product destined for human consumption which is obtained from sorghum grains (*Sorghum bicolor* (L.) Moench) through a process of milling during which the grain is cleaned, destoned and the endosperm is reduced to a sufficiently fine power.

4 Requirements

4.1 General requirements

- 4.1.1 Sorghum flour shall be safe and suitable for human consumption.
- 4.1.2 Sorghum flour shall be free from abnormal flavours, odours, and living insects.
- 4.1.3 Sorghum flour shall be free from filth (impurities of animal origin, including dead insects) in amounts which may represent a hazard to human health.
- 4.1.4 All processing of the sorghum including drying milling or other treatment of the sorghum, intermediate milling products and the milled sorghum flour shall be carried out in a manner that:

EAS 95:2010

- a) minimizes loss of nutritive value, particularly protein quality;
- b) avoids undesirable changes in technological properties of the sorghum flour;
- c) avoids having unground grains and hull in the flour.

4.1.5 Tannin content

The tannin content of sorghum flour shall not exceed 0.3% on a dry matter basis.

4.2 Compositional requirements

Sorghum flour shall conform to the compositional requirements in Table 1

Table 1 — Compositional requirements for sorghum flour

Characteristic	Level	Method of test
Moisture content, per cent max. m/m	13.0	EAS 82
Crude ash content, per cent max.	1.5	EAS 82
Acid insoluble ash, per cent max.	0.40	EAS 82
Protein content, per cent max. (Nx5.7)	8.5	EAS 74
Crude fat content, per cent max.	4.7	EAS 74
Fibre content, per cent max.	2.5	EAS 82

4.3 Particle size

Using a standard method of sifting, not less than 85 per cent of the flour shall pass through a sieve of mesh diameter 1 mm for 'medium' flour and 0.5 mm for 'fine' flour.

5 Food additives

The product shall contain only permitted additives complying with EAS 103.

6 Contaminants

6.1 Heavy metals

Sorghum flour shall be free from heavy metals in amounts which may represent a hazard to human health. Sorghum flour shall not contain metal contaminants exceeding the limits in Table 2.

Table 2 — Limits for metal contaminants

S/No.	Element	Maximum limits mg/kg (ppm)	Method of test
(i)	Copper	2.0	EAS 41-9
(ii)	Lead	0.1	EAS 100
(iii)	Arsenic	0.1	EAS 41-14
(iv)	Mercury	0.01	EAS 41-16

6.2 Pesticide residues

Sorghum flour shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

6.3 Mycotoxins

Sorghum flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. The sorghum flour shall not exceed total aflatoxin of 10 ppb and 5 ppb for aflatoxin B1 when tested in accordance with ISO 16050.

7 Hygiene

7.1 The product shall be prepared with special care under good manufacturing practices, so that residues of those pesticides which may be required in the products, storage or processing of the product and in the disinfection of the premise and equipment use for the processing, do not remain, or if technically unavoidable, are reduced to the minimum extent possible, and shall comply with EAS 39. Other contaminants such as stones, leaves, sisal or any other foreign matter shall be absent in the flour.

7.2 It is recommended that the product covered by the provision of this standard shall be prepared in premises built and maintained under hygienic conditions complying with CAC/RCP 1 and duly registered by relevant health authorities.

7.3 To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.

7.4 When tested by appropriate methods of sampling and examination, the product:

- shall be free from microorganisms in amounts which may represent a hazard to health;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

7.5 The product shall be free from pathogenic micro-organisms and shall comply with microbiological limits in Table 3.

Table 3 — Microbiological limits for sorghum flour

Sl. No.	Micro-organism	Maximum limit	Methods of test
(i)	Total aerobic count per g	10 ⁵	EAS 217
(ii)	E.Coli per 10 g	Absent	EAS 217
(iii)	Salmonella per 10 g	Absent	EAS 217

8 Packaging (transport and storage)

8.1 Sorghum flour shall be packaged in containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

8.2 The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substance or undesirable odour or flavour to the product.

8.3 When the product is packaged in sacks, these must be clean, sturdy and strongly sewn or sealed.

9 Labelling

Labelling of sorghum flours shall be done according to EAS 38 and shall include the following:

EAS 95:2010

9.1 The name of the food — The name of the food to be declared on the label shall be 'sorghum Flour' and the terms 'Fine' or 'Medium', in accordance with Clause 4.3, shall appear in close proximity to the name of the food.

9.2 Net contents — The net contents shall be declared by weight in metric ('Système International') units.

9.3 Name and address — The name, location and address of both the manufacturer and packer, where the latter is different from the former, shall be declared.

9.4 Date marking — The date of minimum durability shall be declared (Sell by Date). The statements 'Human Food' and 'Store in a Cool Place' shall appear.

9.5 Country of origin or 'Made in East Africa' for regionally manufactured products.

9.6 batch or code number,

9.7 list of ingredient in descending order of proportion,

9.8 date of manufacture,

9.9 expiry date,

9.10 storage instructions,

9.11 instruction for the disposal of packaging waste.

9.12 Labelling of Non-Retail Containers

Information for non-retail containers shall either be given on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the container. However, lot identification and the name and address of the manufacturer or packer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

10 Methods of test

Testing of millet flour products shall be done according to the procedures stipulated in EAS 82.

Draft for comments only — Not to be cited as East African Standard