



FDEAS 89:2011
ICS 67.060

FINAL DRAFT EAST AFRICAN STANDARD

Millet flour — Specification

EAST AFRICAN COMMUNITY

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

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.

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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

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Table of contents

1	Scope.....	1
2	Normative references.....	1
3	Terms and definitions.....	1
4	Quality requirements.....	1
5	Food additives.....	2
6	Hygiene.....	2
7	Contaminants.....	3
8	Packaging.....	3
9	Labelling.....	3
10	Methods of sampling.....	4

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FDEAS 89:2011

Introduction

Millet flour is commonly used for making porridge. It is also used as a supplement or substitute to maize for special dietary foods such as weaning. Its use has increased in recent years leading to increased production from domestic to commercial.

This standard has therefore been developed to protect the consumer from fraud and from many adulterations that may occur during production which may be hazardous to health. This standard is also formulated to guide the manufacturer in production. The revision was done to update the compositional requirements and microbiological limits with the current international standards as well as the practice in the industries.

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Millet flour — Specification

1 Scope

This East African Standard specifies requirements and methods of sampling and test for millet flour for human consumption which is obtained from pearl millet of the Senegalese varieties (cultivars) “souna” and “sanio” grown from *Pennisetum glaucum* (L.) R.Br., proso millet grown from *Penicum maliaceum*) and finger millet grown from *Eleusine coracana* (L.) Gaertner.

2 Normative references

The following normative documents contain provisions which, through reference in this text constitute provisions of this East African Standard

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*

EAS 284, *Pearl millet 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*

CODEX Stan 193, *Codex general Standards for contaminants and toxins in Food and Feed*

ISO 9648, *Sorghum – Determination of tannin*

ISO 13690, *Cereals, pulses and milled products — Sampling of static batches*

3 Terms and definitions

3.1

millet flour

product destined for human consumption which is obtained from millet grains grown from *Pennisetum glaucum* (L.) R.Br., *Penicum maliaceum* and *Eleusine coracana* (L.) Gaertner through a process of milling during which the grain is cleaned, destoned and dehulled and the endosperm is reduced to a sufficiently fine powder.

4 Quality requirements

4.1 Raw materials

The millet from which the flour is obtained shall be suitably decorticated and of sound quality, free from sand, have characteristic odour and flavour complying with the relevant East African Standards

FDEAS 89:2011

4.2 General requirements

4.2.1 Millet flour shall be safe and suitable for human consumption.

4.2.2 Millet flour shall be free from abnormal flavours, odours, and living insects.

4.2.3 Millet flour shall be free from filth (impurities of animal origins, including dead insects) in amounts which may represent a hazard to human health.

4.3 Specific requirements

4.3.1 Particle size

Using a standard method of sifting, not less than 100 per cent of the product shall pass through a sieve the dimension of the mesh of which is: diameter of 500µm for 'fine' flour and diameter of 630µm for 'medium' flour.

4.3.2 The millet flour shall comply with the requirements of Table 1.

Table 1 — Specific requirements

Parameter	Pearl millet	Finger/ proso millet	Test method
Moisture content, % max. m/m	13	13	EAS 82
Total ash content, % max.	1.2	4.2	EAS 82
Acid insoluble ash, % max.	0.40	0.40	EAS 82
Protein content, % min. (N × 5.7)	8.0	6.8	EAS 74
Crude fat, % max.	5.0	2	EAS 74
Fibre content, % max.	1.8	3.0	EAS 82
Calcium % as CaO min.	0.02	0.10	EAS 82
Tannin content %m/m max.	0.3		ISO 9648
Total Aflatoxin (AFB1+AFB2+AFG1+AFG2), ppb max	10		ISO 16050
Aflatoxin B1 only, ppb max	5		
Fumonisin ppm max	2		

5 Food additives

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

6 Hygiene

6.1 Millet flour shall be produced, prepared and handled in accordance with the provisions of appropriate sections of EAS 39.

6.2 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.

6.3 The product shall be free from pathogenic micro-organism and shall comply with microbiological limits in Table 2.

Table 2 — Microbiological limits

Sl. No.	Micro-organism	Maximum limit	Methods of test
(i)	Total aerobic count per g	10 ⁵	EAS 217
(ii)	<i>E. Coli</i> per 1 g	Not detectable	EAS 217
(iii)	<i>Salmonella</i> per 25 g	Not detectable	EAS 217
(iv)	Yeast and Moulds cfu/g	10 ⁴	EAS 217
(V)	<i>S.aureus</i> per 25 g	Not detectable	EAS 217

7 Contaminants

7.1 Heavy metals

Millet flour shall comply with those maximum limits for heavy metals established by the Codex Alimentarius Commission for this commodity.

7.2 Pesticide residues

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

Note: where the use of certain pesticides is prohibited by some Partner States, then it shall be notified to all Partner States accordingly.

7.3 Mycotoxins:

Millet flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxin levels in pearl millet grains for human consumption shall not exceed 10 µg/kg (ppb) with B₁ not exceeding 5 µg/kg (ppb) when tested according to ISO 16050.

8 Packaging

8.1 Millet 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 food grade.

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

9 Labelling

In addition to the requirements in EAS 38, each package shall be legibly and indelibly marked with the following:

i) product name as "Finger/proso millet or pearl millet flour " and the terms 'Fine' or 'Medium', in

FDEAS 89:2011

accordance with Clause 4.3.1, shall appear in close proximity to the name of the food.

- ii) name, address and physical location of the manufacturer/ packer/importer;
- iii) lot/batch/code number;
- iv) net weight, in kg;

NOTE EAC Partner States are signatories to the International Labour Organizations (ILO) for maximum package weight of 50kg where human loading and offloading is involved.

- v) the declaration "Food for Human Consumption";
- vi) storage instruction as "Store in a cool dry place away from any contaminants";
- vii) Date of manufacture;
- viii) expiry date;
- ix) instructions on disposal of used package;
- x) country of origin;

10 Methods of sampling

Sampling shall be done in accordance with the ISO 13690.

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