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DRAFT EAST AFRICAN STANDARD

Millet flour — Specification

EAST AFRICAN COMMUNITY

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Foreword

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

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

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.

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.

EAS 89 was prepared by Technical Committee EAS/ TC 014, Cereals and pulses.

This second/third/... edition cancels and replaces the first/second/... edition (EAS nnn-n:19xx), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

Millet flour — Specification

1 Scope

This draft East African Standard specifies requirements, methods of sampling and test for millet flour obtained from pearl millet of varieties (cultivars) “souana” and “sanio” grown from *Pennisetum glaucum* (L.) R.Br. proso millet grown from *Penicum maliaceum* and finger millet grown from *Eleusine coracana* (L.) Gaertner intended for human consumption. It does not apply to grits obtained from pearl millet.

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, 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

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

3.1

millet flour

product obtained from millet grains grown from *Pennisetum glaucum* (L.) R.Br., *Penicum maliaceum* and *Eleusine coracana* (L.) Gaertner through a process of milling

3.2 food grade containers
containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

3.3 pearl millet
whole or decorticated grain of the species *Pennisetum glaucum(L) R.Br*

3.4 Finger/proso millet
Dried grain having the characteristics of the species *Eleusine coracana (L) Gaertner*

3.5 Filth
Impurities of animal origin including dead insects

4 Requirements

4.1 General requirements

4.1.1 Finger millet from which the flour is obtained shall conform to EAS 758.

4.1.2 Pearl millet from which the flour is obtained shall conform to EAS 284.

4.1.3 Millet flour shall be;

- a) safe and suitable for human consumption;
- b) free from objectionable flavours, odours, and living insects; and
- c) free from filth.

4.2 Specific requirements

The millet flour shall conform to the requirements of Table 1.

Table 1 — Specific requirements

S/No.	Parameter	Pearl millet	Finger/ proso millet	Test method
i)	Moisture content, % max. m/m	13.5	13.5	ISO 712
ii)	Total ash content, % max.	1.2	4.2	ISO 2171
iii)	Acid insoluble ash, % max.	0.40	0.40	EAS 82
iv)	Protein content, % min. (N × 5.7)	8.0	6.8	ISO 20483
v)	Crude fat, % max.	5.0	2	ISO 11085
vi)	Fibre content, % max.	1.8	3.0	ISO 5498
vii)	Tannin content, %m/m max. (remove from the table)	0.3		ISO 9648

S/No.	Parameter	Pearl millet	Finger/ proso millet	Test method
viii)	Particle size, Fine flour, min. Medium flour,min	100% shall pass through a 0.5 mm sieve 100% shall pass through a 1 mm sieve		

5 Food additives

The product shall contain only permitted additives conforming to Codex Stan 192.

6 Hygiene

6.1 Millet flour shall be prepared and handled in accordance with EAS 39.

6.2 The product shall conform to the microbiological limits specified in Table 2.

Table 2 — Microbiological limits

S/No.	Micro-organism	Maximum limit	Methods of test
i)	Total aerobic count per g	10 ⁵	ISO 4832
ii)	<i>E. Coli</i> per 1 g	absent	ISO 16649-1
iii)	<i>Salmonella</i> per 25 g	absent	ISO 6579
iv)	Yeast and moulds, cfu/g	10 ⁴	ISO 7954
v)	<i>S. Aureus</i> per 25 g	10 ²	ISO 6888-1

7 Contaminants

7.1 Heavy metals

Millet flour shall comply with those maximum limits for heavy metals established by the Codex Alimentarius Commission as specified in Table 3.

Table 3 — Heavy metals limits

S/No.	Heavy metal	Limits (mg/kg)	Test methods
i)	Arsenic (As)	0.1	ISO 27085
ii)	Lead (Pb)	0.2	ISO 6633
iii)	Cadmium (cd)	0.1	ISO 6561-1 or ISO 6561-2

7.2 Pesticide residues

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

7.3 Mycotoxins

Millet flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission as specified in Table 4.

Table 4 — Mycotoxins limits

S/No.	Mycotoxins	Limits	Test methods
i)	Total aflatoxins, µg/kg, max	10	ISO 16050.
ii)	Aflatoxins B1, µg/kg, max	5	
iii)	Fumonisin, µg/kg, max	2000	AOAC 2001.04

8 Weights and measures

The fill and the weight of the product shall conform to weights and measures regulations of the importing partner states.

9 Packaging

Millet flour shall be packaged in food grade containers. When the product is packaged in sacks, these must be clean, sturdy and strongly sewn or sealed.

10 Labelling

Labelling shall be done in accordance with EAS 38. At the minimum, the following information shall be displayed:

- a) product name as “Finger/proso millet or pearl millet flour ”;
- b) name, address and physical location of the manufacturer/ packer/importer;
- c) lot/batch/code number;
- d) net weight, in kg;
- e) the declaration “Food for Human Consumption”;
- f) storage instruction;
- g) Date of manufacture;
- h) expiry date;
- i) instructions on disposal of used package;
- j) country of origin;

11 Methods of sampling

Sampling shall be done in accordance with the ISO 24333.

Bibliography

CODEX STAN 170-1989 (Rev. 1 - 1995), *Pearl millet flour*

