



EAS 44:2010
ICS 67.060

EAST AFRICAN STANDARD

Dry milled maize meal products — 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.

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Introduction

The standard stipulates the grading and quality requirements for both fortified and non-fortified dry milled maize products destined for human consumption. During the preparation of this standard, some amendments have been made on the definitions of different maize meal products. The microbiological requirements for dry milled maize products have been incorporated in an endeavour to safeguard the health and safety of consumers of these products.

CODEX STAN 154:1985(Rev.1:1995), *Standard for Whole Maize (Corn) Meal*

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Dry milled maize meal products — Specification

1 Scope

This East African Standard specifies the requirements for both fortified and non fortified dry milled maize products 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.

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 2, *Maize (grains) — Specification*

EAS 41, *Fruits, vegetables and derived products*

EAs 74, *Methods of test for animal feedstuffs*

EAS 82:2000, *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 Definitions

For the purposes of this standard the following definitions shall apply:

3.1

posho maize meal

the wholemeal product obtained by grinding clean maize by the use of mill or other grinding methods excluding roller *milling*

3.2

granulated maize meal

the product obtained by roller milling and sifting of shelled clean maize and complying with requirements indicated in Table 1

3.3

sifted maize meal

the product obtained by roller milling and sifting shelled clear maize and complying with the requirements Indicated in Table 1

3.4

sifting

the particle size separation by sieving and aspiration of roll-milled products

3.5

cleaned maize

the shelled maize that shall have been subjected to aspiration, screening, scouring and washing by mechanical means for the removal of foreign and objectionable matter originally present

4 Quality requirements

4.2 General requirements

4.2.1 Maize meal shall be made from shelled maize conforming to the requirements given in EAS 2.

4.2.2 Maize meal shall be of natural colour conforming to the colour of maize from which it was prepared.

4.2.3 Maize meal shall not contain any foreign matter such as insects, fungi, dirt or other contaminants above the level permitted in EAS 2.

4.2.4 Maize meal shall be free from fermented musty or other objectionable colours.

4.2.5 Maize meal shall be free from rancidity and foreign odours.

4.2.6 Maize meal shall be wholesome and fit for human consumption in all aspects.

4.2.7 All the manufacturing activities shall be done with due diligence to the principles of Good Manufacturing Practices (GMP).

4.2 Compositional requirements

Maize meal shall conform to the requirements given in Table 1.

Table 1 — Compositional requirements

SI No.	Characteristic	Type			Test method
		Sifted maize meal	Granulated maize meal	Posho maize meal	
i)	Fibre content, % by m/m, max.	0.7	1.0	3.0	EAS 82
ii)	Oil on a moisture free basis, % by m/m, max.	3.0	4.0	5.0	
iii)	Residue through 1 000 micron sieve, % by m/m, max.	0.5	2.0	5.0	
iv)	Moisture content, % by m/m, max.	14.0	14.0	14.0	
v)	Total ash, % by m/m, max.	0.75	1.75	2.0	
vi)	Acid insoluble ash, % by m/m, max.	0.15	0.35	0.40	

5 Flour fortification

5.1 Milk powder may be added to enrich sifted maize meal to a minimum of 15 % by mass.

5.2 The fortification of maize meal with vitamin and minerals is optional. Any maize meal that is declared as fortified with vitamins and minerals shall comply with the specification in Table 3.

5.3 Maize meal shall only be fortified with the forms of fortificants and the number of nutrients as indicated in Table 2:

Table 2 — Fortification requirements for maize meal

Nutrient	Fortification compound	Recommended factory average (mg/kg)	Regulatory requirements (mg/kg)	
			Minimum	Maximum
Vitamin A	Vitamin A palm. SD	0.5 ± 0.02	0.2	1.0
Thiamine (Vitamin B ₁)	Thiamin Mononitrate	4 ± 2	1.5	6.0
Riboflavin (Vitamin B ₂)	Riboflavin	3.5 ± 2.0	1.5	5
Niacin (Vitamin B ₃)	Niacinamide	25 ± 5	15	30
Folates	Folic acid	1.5 ± 1	0.5	2.5
Pyrodoxine (Vitamin B ₆)	Pyrodoxine	5.0 ± 2.5	2.0	7.5
Cobalamine (Vitamin B ₁₂)	Vitamin B ₁₂ 0.1% WS	0.005 ± 0.002	0.002	0.010
Iron	NaFeEDTA	10 ± 5	5	15
	Total iron	20 ± 5	15	30
Zinc	Zinc oxide	30 ± 10	20	40

6 Contaminants

6.1 Heavy metal contaminants

Dry milled maize products shall be free from heavy metals in amounts which may represent a hazard to human health. Heavy metals, if present, shall not exceed the limits specified in Table 3.

Table 3 — Limits for heavy metal contaminants in maize meal

SI no.	Contaminant	Maximum limit in mg/kg	Test method
i)	Arsenic (As)	1.0	EAs 41
ii)	Lead (Pb)	0.5	
iii)	Copper (Cu)	2.0	

6.2 Pesticide residues

Dry milled maize products shall comply with those maximum residue limits established by the Codex Alimentarius Commission for commodities in this class.

6.3 Mycotoxins

Dry milled maize products shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for commodities in this class.

7 Hygiene

7.1 Hygiene requirements

Maize meal shall be prepared in accordance with the food hygiene requirements stipulated EAS 39, and relevant food safety regulations.

7.2 Microbiological limits

Maize meal shall not contain any pathogenic organisms and shall comply with the microbiological requirements given in Table 4.

Table 4 — Microbiological requirements

Type of micro-organism	Maximum permissible number of counts	Method of test
(i) Total aerobic count	10 ⁵ per g	EAS 217
(ii) Yeasts and Moulds	10 ⁵ per g	EAS 217
(iii) E. Coli	shall be absent in 25 g	EAS 217
(iv) Salmonella	shall be absent in 25 g	EAS 217
EAS 217, Methods for the microbiological examination of foods		

7.3 The level of total aflatoxin in maize meal shall not exceed 10 ppb, wherein aflatoxin B₁ shall not be more than 5 ppb when tested according to ISO 16050.

8 Packaging

8.1 Maize meal shall be packed suitable packages which shall be clean, sound, free from insects, fungal infestation and the packing material shall be of food grade quality.

8.2 Maize meal shall be packed in containers which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the products.

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

8.4 The net weight of the maize meal in a package shall comply with OIML R87.

8.5 Each package shall be securely closed and sealed.

9 Labelling

Labelling of dry milled maize meal products shall be done in accordance with the provisions of EAS 38, Labelling of pre-packaged foods and shall include the following:

- i) name of product as "Maize Meal";
- ii) type of product;
- iii) name and address of the manufacturer/packer/importer;
- iv) brand name/registered trade mark;
- v) batch or code number;
- vi) net weight in metric units;
- vii) the statement "Store in a Cool Dry Place";
- viii) the statement "Human Food";
- ix) where a product has been fortified, the statement, "Fortified with vitamins and minerals" shall be included on the label.

- x) country of origin;
- xi) date of manufacture;
- xii) expiry date;
- xiii) instructions for disposal of used package.

10 Methods of test

Testing of dry milled maize meal products shall be done according to the procedures stipulated in EAS 82.

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