DEAS 2: 2026

ICS 67.060

DRAFT EAST AFRICAN STANDARD

Maize grain — Specification

EAST AFRICAN COMMUNITY

Sixth Edition 2026

Copyright notice

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.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 Principles and procedures for development of East African Standards.

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.

The committee responsible for this document is Technical Committee EASC/TC 014, *Cereals, pulses and related products.*

This sixth edition cancels and replaces the fifth edition (EAS 2:2025), which has been technically revised.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Maize grain — Specification

1 Scope

This draft East African Standard specifies requirements, sampling and test methods for maize grain of varieties grown from common maize grain, *Zea mays indentata* L. and/or *Zea mays indurata* L. *Zea mays everta* or their hybrids intended for human consumption.

2 Normative references

The following 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.

CXS 193, *General standards for contaminants and toxins in food and feed*

EAS 38, *Labelling of pre-packaged foods — General requirements*

EAS 39, *General principles of food hygiene — Code of practice*

EAS 900, *Cereals, pulses and their products — Sampling*

EAS 901, *Cereals, pulses and their products — Test methods*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
maize (corn) grain
shelled grain or kernel of the species *Zea mays indentata* L. (dent maize) and/or *Zea mays indurata* L. (flint maize), *Zea mays everta* and/or their hybrids

3.2
pest damaged grain
grain which shows damage or owing attack by rodents, insects, mites or other pests

3.3
discoloured grain
maize grain which are damaged by heat, frost, burnt spores or water

3.4
rotten and diseased grain
grain affected by mould growth or bacterial decomposition or other causes that may be noticed without having to cut the grain to examine it and renders it unsafe for human consumption

3.5
mouldy grain
grain with visible mycelial growth on its tip or surface

3.6
immature and shrivelled grain
grain which is underdeveloped, thin and papery in appearance

3.7
broken kernels
pieces of maize which pass through a 4.50-mm metal sieve

3.8
other grain
edible grain, whole or broken, other than maize, that is, cereals, pulses and other edible legumes

3.9
foreign matter
all organic and inorganic material other than maize grain, broken kernels and other grain

3.9.1
inorganic matter
stones, glass, pieces of soil and other mineral matter

3.9.2
organic matter
any animal or plant matter (seed coats, straws, weeds) other than grain of maize, damaged maize grain, other grain, inorganic extraneous matter and harmful/toxic seeds

3.10
harmful/noxious seeds
seeds such as Crotolaria (*Crotalaria spp*.), Corn cockle (*Agrostemma githago L*.), Castor bean (*Ricinus communis L*.), Jimson weed (*Datura spp*.) which can have a damaging or dangerous effect on health, sensory properties or technological performance

3.11
filth
impurities of animal origin including dead insects

3.12
defective/damaged grain
pest damaged, discoloured, stained, rotten and diseased, immature and shrivelled grain and broken grain

3.13
food grade packaging material
material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

3.14
flint maize
form of corn whose mature kernel has a smooth, vitreous, appearance and a rather round shape

3.15
dent maize
form of corn whose mature kernel has the shape of a horse's tooth with a depression in the crown

3.16
expansion ratio
total popped volume (cc) expressed as a ratio of the mass (g) of the working samples

4 Classification

4.1 Colour

Maize shall be classified as yellow, white, red or a mixture of these colours as follows:

a) yellow maize shall contain not more than 5 % by weight of maize of other colours. Maize grain which are yellow and/or light red in colour are considered to be yellow maize;

b) white maize shall contain not more than 2 % by weight of maize of other colours. Maize grain which are white and/or light pink in colour are considered to be white maize; and

c) red maize shall contain not more than 5 % by weight of maize of other colours.

4.2 Shape

Maize may be classified as flint or dent or their hybrids or mixtures thereof as follows:

a) flint maize includes maize of any colour which consists of 95 % or more by weight of grain of flint maize;

b) dent maize includes maize of any colour which consists of 95 % or more by weight of grain of dent maize; and

c) a mixture of flint and dent maize includes maize of any colour which consists of more than 5 % but less than 95 % of flint maize.

5 Requirements

5.1 General requirements

Maize grain shall be practically free from foreign odours, moulds, live pests, toxic or noxious weed seeds and other edible grain.

5.2 Specific requirements

5.2.1 Maize grain shall comply with the specific requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for maize grain

S/N	Characteristic	Maximum limit %, m/m			Test method
		Grade 1	Grade 2	Grade 3	
i.	Pest damaged grain	1.0	3.0	5.0	EAS 901
ii.	Rotten and diseased grain	1	2	3	
iii.	Discoloured grain	1.5	2.0	2.5	
iv.	Immature and shrivelled grain	1.0	2.0	3.0	
v.	Broken kernels	2.0	4.0	6.0	
vi.	Total defective grains, %, m/m	5	9	14	
vii.	Foreign matter	0.5			
viii.	Inorganic matter	0.25			
ix.	Filth	0.1			
x.	Moisture	13.5			
NOTE 1 The parameter for Total defective grains is not the sum total of the individual defects. It is limited to 70 % of the sum total of individual defects. NOTE 2 The parameter, Discoloured grains is limited to at least 25 % discolouration on both sides of the kernel.					

5.2.2 In addition to the requirements given in Table 1, all grades of popcorn kernels shall be of such quality that meets the expansion ratio (cc/g) specified in Table 2.

Table 2 — Additional requirements for popcorn grain

S/N	Butterfly popcorn		Mushroom popcorn		Test method
	Grade	Expansion ratio cc/g	Grade	Expansion ratio cc/g	
i.	Grade 1	39-42	Grade M1	29-32	Annex A
ii.	Grade 2	36-38	Grade M2	26-28	
iii.	Grade 3	30-35	N/A	N/A	

6 Contaminants

6.1 Pesticide residues

Maize grain shall comply with the pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

6.2 Other contaminants

6.2.1 Maize grain shall comply with the limits for heavy metals specified in CXS 193 established by the Codex Alimentarius Commission.

6.2.2 Maize grain shall comply with the maximum limits for mycotoxins given in Table 2 when tested in accordance with the test method specified therein.

Table 3 — Mycotoxin limits for maize grain

S/N	Mycotoxin	Maximum limit µg/kg	Test method
i.	Total aflatoxins	10	**EAS 901**
ii.	Aflatoxin B1	5	
iii.	Fumonisins	2 000	

7 Hygiene

Maize grain shall be produced, prepared and handled in accordance with EAS 39.

8 Packaging

8.1 Maize grain shall be packaged in food grade packaging material which will safeguard the hygienic, nutritional and organoleptic qualities of the product.

8.2 Each package shall be securely closed and sealed.

9 Labelling

9.1 Labelling of retail containers

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

a) product name as “White maize grain”, “Yellow maize grain”, “Red maize grain” or “Mixed maize grain” “Popcorn grain”;

b) grade;

c) name, address and physical location of the producer/packer/importer;

d) lot/batch/code number;

e) net weight, in metric units;

f) the declaration “Food for human consumption’’;

g) storage instruction as “Store in a cool dry place away from any contaminants’’;

h) crop year;

i) packing date;

j) instructions on disposal of used package;

k) country of origin; and

l) declaration on whether the maize was genetically modified, where applicable.

9.2 Labelling of non-retail containers

Information detailed in 9.1 shall be given either on the container or in accompanying documents, except that the name of the product, lot identification and the name and address of the processor or packer as well as storage instructions, shall appear on the container.

However, lot identification and the name and address of the processor or packer may be replaced by an identification mark provided that such a mark is clearly identifiable with the accompanying documents.

10 Sampling

Sampling shall be done in accordance with EAS 900.

Annex A
(normative)

Determination of expansion ratio (Volume of popped popcorn kernels obtained)

A.1 The volume of popped popcorn kernels are determined with an industrial standard metric weight/volume tester:

A.2 Obtain three working samples of 250 g of raw popcorn kernels after all foreign matter and poisonous seeds have been removed. Label one as “warm up sample” and the other two as “Sample A” and “Sample B”.

A.3 Set the power of the metric weight/volume tester at 1 400 W and the temperature at 240 °C (± 480 °F), add the 118 g of oil while the pot is still cold.

A.4 When the popping pan reaches a temperature of 240 °C, add the 250 g of popcorn kernels.

A.5 Determine the volume of popped popcorn kernels after completion of the popping process, as well as of the time that has to pass afterwards as prescribed in the directions for use of the apparatus, the popped volume is determined in a cylinder of 13 cm in diameter and calibrated to provide a reading in cubic centimetre per gram (cc/g).

A.6 The average volumes of sample A and sample B, will represent the popped popcorn kernels of a consignment.

Bibliography

EAS 2: 2025, *Maize grains — Specification*