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**DRAFT EAST AFRICAN STANDARD**

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**Sorghum grains — Specification**

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**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 757:2013 was prepared by Technical Committee EAS/TC 014, *Cereals, Pulses and related products*



## Sorghum grains — Specification

### 1 Scope

This East African Standard specifies the requirements, sampling and test methods for sorghum grains of varieties (cultivars) grown from *Sorghum bicolor* (L.) Moench 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.

EAS 38, *Labelling of pre-packaged foods — Specification*

EAS 39, *Code of Hygiene Practice in Food and Drink Manufacturing Industry*

EAS 901, Cereal and Pulses - Test methods

EAS 900, Cereal and Pulses - Sampling

ISO 9648, *Sorghum – Determination of tannin*

CODEX STAN 193, *Codex general standard for contaminants and toxins in food and feed*

### 3 Terms and definitions

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

#### 3.1

##### **Sorghum grain**

dried grain having the characteristics of the varieties (cultivars) grown from *Sorghum bicolor* (L.) Moench

#### 3.2

##### **Broken grain**

pieces of sorghum grain which pass through a screen having round holes of 1.8mm in diameter

#### 3.3

##### **Defective/ damaged grain**

pest damaged, discoloured, stained, rotten and diseased, immature and shrivelled grains and broken grain .

#### 3.4

##### **pest damaged grain**

grains that shows damage or owing attack by rodents, insects, mites or other pests

#### 3.5

##### **diseased grains-**

grains damaged by decay or rotting, moulds, or bacterial decomposition, and/or other causes that may be noticed without having to cut the grains open to examine them.

### **3.6**

#### **discoloured grains**

kernel that is damaged by heat, frost or water.

### **3.7**

#### **foreign matter**

all organic and inorganic material other than maize grain, broken kernels and other grains

#### **3.7.1**

##### **inorganic matter**

stones, glass, pieces of soil and other mineral matter

#### **3.7.2**

##### **organic matter**

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

### **3.8**

#### **immature and/or shrivelled**

grains that are not properly developed and/or fully green in colour.

### **3.9**

#### **harmful/ noxious seeds**

seeds such as *Crotalaria* (*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

### **3.10**

**sprouted** grains with visible evidence of root system beginning to emerge

### **3.11**

#### **test weight**

density of a measured volume of grain expressed in kilograms per hectolitre

### **3.12**

#### **food grade packaging material**

packaging 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

### **3.13 filth**

impurities of animal origin like dead insects.

## **4. Classification**

Sorghum shall be classified as red, pink, brown, orange, yellow, white or any mixture of these colors according to the buyer preference.

## **5.0 Quality Requirements**

### **5.1 General Requirement**

The dried mature grains of *Sorghum bicolor* (L.) Moench, shall be:

- a) clean, wholesome, uniform in size and shape;
- b) well-filled grains of uniform colour;
- c) free from musty or other undesirable odour.
- d) practically free from live pests;
- e) practically free from noxious or harmful seeds in amounts that could be harmful to human health.

### **5.2 Specific requirements**

Sorghum grains shall comply with the limits given in Table 1 when tested in accordance with the test methods specified therein



**Table 1 — Specific requirements for sorghum grains**

S/N	Characteristic		Grade			Method of test EAS 901	
			1	2	3		
i)	Moisture, % m/m max.		13.5				
ii)	Test weight, kg/hl min.		71	62	62		
iii)	in organic matter % m/m, max		0.3	0.4	0.5		
iv)	Foreign matter, % m/m, max.		0.5	1.5	2.0		
V	Filth , % m/m, max.		0.1	0.1	0.1		
vii)	Tanni content (on dry matter basis), % m/m, max.	Whole grains	0.5			ISO 9648	
viii)	Defective grains, % by Percentage , max.	Discolored	1.5	2.0	2.5		
		Diseased grain	1.0	2.0	3.0		
		Immature grain(fully green in colour)	1.0	2.0	3.0		
		broken	0.5	1.0	2.0		
		Pest damaged grains	1	3	5		
		Total defective	4	7	11		
ix)	Other edible grains , % m/m, max.		1.6				
<p>The parameter, Total defective grains is not the sum total of the individual defects. It is limited to 70 NOTE: % of the sum total of individual defects.</p>							

**6 Contaminants**  
**6.1 Pesticide residues**

Sorghum grains 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, it should be notified to all Partner States accordingly.

**6.2 Other contaminants**

Sorghum grains shall comply with those maximum limits for other contaminants established in CODEX STAN 193.

**6.2.1 Heavy metals**

Sorghum grain shall comply with those limits for heavy metals specified in CODEX STAN 193 established by the Codex Alimentarius Commission.

**6.2.2 Mycotoxin**

Sorghum grain shall comply with the mycotoxin limits established by the Codex Alimentarius Commission as given in Table 2 when tested in accordance with the test methods specified therein

**Table 2 — Mycotoxins limits for Sorghum grains**

S/N	Mycotoxin	limit	Test method
i.	Total Aflatoxin (AFB1+AFB2+AFG1+AFG2), ppb, max	10	EAS901, Clause 9 or 10
ii.	Aflatoxin B <sub>1</sub> ppb, max	5	
iii.	Fumonisin ppm, max	2	EAS901 Clause 10 or 11

**7 Hygiene**

Sorghum grains shall be produced, prepared and handled in accordance with the provisions of appropriate sections of EAS 39

**8. Weights and measures**

Sorghum grains shall be packaged in accordance with the weights and measures regulations of the destination country.

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

**9. Packaging**

Sorghum grains shall be packed in food grade packaging materials which will safeguard the hygienic, nutritional and organoleptic qualities of the product.

**9.2** Each package shall be securely closed and sealed

## **10 Labelling**

### **10.1**

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

- a) product name as “Whole Sorghum Grains”;
- b) grade;
- c) name, address and physical location of the producer/packer/importer;
- d) lot/batch/code number;
- e) net weight, in kilograms;
- 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 Sorghum was genetically modified, where applicable.

### **10.2 Labelling of non-retail containers**

Information detailed in 10.1 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.

## **11 Sampling**

Sampling shall be done in accordance with the EAS 900.



