



DEAS 762:2016

ICS 67.060

## **DRAFT EAST AFRICAN STANDARD**

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**Dry soybeans — 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 762 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.*

## Dry soybeans — Specification

### 1 Scope

This Draft East African Standard specifies the requirements and methods of sampling and test for dry soybeans of varieties (cultivars) grown from *Glycine max* (L.) Merr. 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 — Requirements*

*EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice*

*ISO 605, Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods*

*ISO 6579, Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

*ISO 6888-1, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

*ISO 7251, Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

*ISO 21527, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*  
*ISO 24333, Cereals and cereal products — Sampling*

*ISO 24557, Pulses — Determination of moisture content — Air-oven method*

### 3 Terms and definitions

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

#### 3.1

##### **soybeans**

mature dry grains of variety grown from *Glycine max* (L.) Merr.

#### 3.2

##### **defective**

beans that have been broken, pest damaged, shrivelled, immature, rotten, mouldy, diseased, discoloured and heat damaged

- 3.3**  
**foreign matter**  
total of inorganic and organic matter
- 3.3.1**  
**inorganic matter**  
stones, glass, pieces of soil, metal and other mineral matter
- 3.3.2**  
**organic matter**  
any plant matter (seed coats, straws, weeds) other than grains of soybeans, damaged soybean grains and other grains
- 3.4**  
**contrasting colours**  
other varieties that are of a different colour from the beans of the designated variety
- 3.5**  
**other edible grains**  
grain other than soybean, whole or broken such as maize, sorghum, wheat, etc.
- 3.6**  
**pest damaged**  
Grains which show damage owing to attack by rodents, insects, mites or other pests
- 3.7**  
**heat damaged**  
soybeans and pieces of soybeans that are materially discolored and damaged by heat. Soybeans with a light to dark brown cotyledon when cut in cross section are considered heated
- 3.8**  
**harmful matter/toxic matter**  
any substances in soybean that can have a damaging or dangerous effect on health
- 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, if present in quantities above a certain limit, can have a damaging or dangerous effect on health, sensory properties or technological performance
- 3.10**  
**immature**  
unripe and/or undeveloped whole or broken grain
- 3.11**  
**splits/broken**  
broken soybean seeds that are less than three-quarters of the whole seed, and cotyledons that are loosely held together by the seed coat
- 3.12**  
**filth**  
impurities of animal origin
- 3.13**  
**wholesome/sound**  
free from disease, serious deterioration (such as but not limited to decay, breakdown) or adulteration/contamination, that appreciably affects their appearance, the keeping quality of the produce or market value

**3.14****clean**

practically free of visible soil, dust, or other visible foreign matter, except substances used to prolong its shelf life

**3.15****other edible grains**

grains other than common soya beans whole or broken such as dry beans, maize, sorghum, wheat, etc. that are naturally comestible

**3.16****food grade container**

container which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product

**4 Requirements****4.1 General requirements**

Dry soybeans shall be:

- i) hard, clean, wholesome, uniform in size, shape, and colour;
 

NOTE The colour of soybeans may be yellow, green, brown or black;
- ii) safe and suitable for human consumption;
- iii) free from abnormal flavours, obnoxious smell and discolouration; and
- iv) practically free from foreign odours, moulds, live pests, rat droppings, toxic or noxious weed seeds and other injurious contaminants as determined from samples representative of the lot.

**4.2 Specific requirements****4.2.1 Grading**

Soybeans may be graded into three grades on the basis of the tolerable limits established in Table 1 which shall be additional to the general requirements set out in this standard.

**4.2.2 Ungraded soybeans**

Ungraded soybeans shall be soybeans which do not fall within the requirements of grades 1, 2 and 3 of this standard but meet the minimum requirements provided in 4.1 and are not rejected soybeans. Ungraded soybeans can be sorted out to grades 1, 2 or 3 in accordance with the relevant procedures.

**4.2.3 Reject grade soybeans**

This comprises soybeans which do not meet the requirements provided in 4.1 and which do not possess the quality characteristics specified in Table 1. They cannot satisfy the conditions of ungraded soybeans and shall be graded as reject soybeans and shall be regarded as unfit for human consumption.

**Table 1 — Specific requirements**

S/N	Characteristics	Requirements			Method of test
		Grade 1	Grade 2	Grade 3	



i)	Moisture, % m/m, max.	14			ISO 24557
ii)	Test weight, kg/hL min.	70	68	66	ISO 605
iii)	Total foreign matter, % m/m, max.	1	2	3	
iv)	Inorganic matter, % m/m, max.	0.1	0.3	0.5	
v)	Other edible grains, % m/m, max.	0.1	0.2	0.5	
vi)	Broken/split grains, % m/m, max.	1	2.5	5	
vii)	Pest damaged grains, % m/m, max.	0.3	0.8	1.5	
viii)	Diseased (rotten and mouldy) grains, % m/m, max.	0.2	0.5	1.0	
ix)	Heat damaged grains %m/m, max.	0.1	0.2	0.5	
x)	Contrasting colours, % m/m, max.	2	3	5	
xi)	Immature and shrivelled grains, % m/m, max.	0.1	0.2	0.5	
xii)	Filth, % m/m, max.	0.1			
xiii)	Total defective grains, % m/m, max.	2	3	5	
NOTE The parameter, "Total defective grains" is not the sum total of the individual defects. It is limited to 70 % of the sum total of individual defects.					

## 5 Hygiene

5.1 Dry soybeans shall be prepared and handled in accordance with the provisions of appropriate sections of EAS 39.

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

**Table 2 — Microbiological limits**

S/No.	Type of micro-organism	Limits	Methods of test
i)	Yeasts and moulds, cfu per g, max.	10 <sup>4</sup>	ISO 21527
ii)	<i>Staphylococcus aureus</i> cfu per g, max.	10 <sup>3</sup>	ISO 6888-1
iii)	<i>Escherichia coli</i> , per g	Absent	ISO 7251
iv)	<i>Salmonella</i> per 25 g	Absent	ISO 6579

## 7 Contaminants

### 7.1 Heavy metals

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

**Table 3 — Heavy metal limits for dry soybeans**

S/No.	Heavy metal	Limit	Methods of test
i)	Lead, mg/kg, max.	0.2	
ii)	Cadmium, mg/kg, max.	0.1	

## 7.2 Pesticide residues

Dry soybeans shall conform to those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

## 7.3 Mycotoxins

Dry soybeans shall conform to those maximum mycotoxin limits established by the Codex Alimentarius Commission as specified in Table 4.

**Table 4 — Mycotoxins limits**

S/N	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

Dry soybeans shall be packed 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:

- i) colour;
- ii) grade;
- iii) name, address and physical location of the producer/ packer/importer;
- iv) lot/batch/code number;
- v) net weight, in kilograms;
- vi) the declaration “Food for Human Consumption”;
- vii) storage instruction as “Store in a cool dry place away from any contaminants”;
- viii) crop year;
- ix) packing date;
- x) instructions on disposal of used package;

- xi) country of origin; and
- xii) a declaration on whether the soybeans were genetically modified or not.

## **11 Methods of sampling**

Sampling shall be done in accordance with the ISO 24333.

