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ICS 67.060

FINAL DRAFT EAST AFRICAN STANDARD

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 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

This standard has been developed to take into account:

- the needs of the market for the product;
- the need to facilitate fair domestic, regional and international trade and prevent technical barriers to trade by establishing a common trading language for buyers and sellers.
- the structure of the CODEX, UNECE, USA, ISO and other internationally significant standards;
- the needs of the producers in gaining knowledge of market standards, conformity assessment, commercial cultivars and crop production process;
- the need to transport the product in a manner that ensures keeping of quality until it reaches the consumer;
- the need for the plant protection authority to certify, through a simplified form, that the product is fit for cross-border and international trade without carrying plant disease vectors;
- the need to promote good agricultural practices that will enhance wider market access, involvement of small-scale traders and hence making farming a viable means of wealth creation; and
- the need to ensure a reliable production base of consistent and safe crops that meet customer requirements.

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Dry soybeans — Specification

1 Scope

This East African Standard specifies the requirements and methods of sampling and test for dry whole soybeans of varieties (cultivars) grown from *Glycine max* (L.) Merr. intended for human consumption.

2 Normative references

The following normative documents contain provisions which, through reference in this text constitute provisions of this East African Standard

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 711, *Cereals and cereal products — Determination of moisture content (Basic reference method)*

ISO 712, *Cereals and cereal products — Determination of moisture content — Routine reference method*

ISO 5223, *Test sieves for cereals*

ISO 6639-1, *Cereals and pulses — Determination of hidden insect infestation — Part 1: General principles*

ISO 6639-2, *Cereals and pulses — Determination of hidden insect infestation — Part 2: Sampling*

ISO 6639-3, *Cereals and pulses — Determination of hidden insect infestation — Part 3: Reference method*

ISO 6639-4, *Cereals and pulses — Determination of hidden insect infestation — Part 4: Rapid methods*

ISO 13690, *Cereals, pulses and milled products — Sampling of static batches*

ISO 16050, *Foodstuffs — Determination of aflatoxin B₁, and the total content of aflatoxin B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method*

EAS 38, *Labelling of prepackaged foods — Specification*

EAS 79, *Cereals and pulses as grain — Methods of sampling*

EAS 217, *Methods for the microbiological examination of foods*

CODEX Stan 193, *Codex general Standards for contaminants and toxins in Food and Feed*

3 Terms and definitions

For the purpose of this East African Standard, the following definitions shall apply.

3.1

soybeans

whole mature dry seeds of varieties (*Glycine max* (L.) Merr.)

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3.2

colour

Soybeans may be yellow, green, brown or black.

3.3

Damaged/defective grains

soybeans and pieces of soybeans that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, germ-damaged, heat-damaged, insect-bored, mould-damaged, sprout-damaged, stinkbug-stung, or otherwise materially damaged. Stinkbug-stung kernels are considered damaged kernels at the rate of one-fourth of the actual percentage of the stung kernels.

3.4

foreign matter

any extraneous matter than dry soybeans or other food grains comprising of

- (a) "inorganic matter" includes metallic pieces, shale, glass, dust, sand, gravel, stones, dirt, pebbles, lumps or earth, clay, mud and animal filth etc;
- (b) "organic matter" consisting of detached seedcoats, straws, weeds and other inedible grains etc.

3.5

immature

immature damaged soybeans are characterized by a green exterior appearance in conjunction with green discoloration penetrating the cotyledon. Examination of the cotyledons is determined by cutting the soybeans in cross section. For grading purposes, immature damaged soybeans are considered as part of the "Total Damage" grade specification. Soybeans that are green in appearance and have no discoloration of the cotyledon or just a halo of green around the outside of the cotyledon are to be assessed against the overall colour of the sample.

3.6

poisonous, toxic and/or harmful seeds

any seed which if present in quantities above permissible limit may have damaging or dangerous effect on health, organoleptic properties or technological performance such as Jimson weed — datura (*D. fastuosa* Linn and *D. stramonium* Linn.) corn cockle (*Agrostemma githago* L., *Machai Lallium remulenum* Linn.) Akra (*Vicia* species), *Argemone mexicana*, Khesari and other seeds that are commonly recognized as harmful to health

3.7

rancid

Soybeans in various stages of rancidity are characterized by a deep pink discoloration on the seed coat and varying degrees of discoloration of the cotyledon.

3.8

splits

broken soybean seeds that are less than three-quarters of the whole seed, and cotyledons that are loosely held together by the seed coat.

4 Quality requirements

4.1 General requirements

Soybeans shall meet the following general requirements/limits as determined using the relevant standards listed in Clause 2:

- a) shall consist of grain that consists of 50 percent or more of whole or broken soybeans (*Glycine max* (L.) Merr.) that will not pass through an 8/64 round-hole sieve and not more than 10.0 percent of other grains for which standards have been established;
- b) shall be hard, clean, wholesome, uniform in size, shape, colour and in sound merchantable condition;

- c) shall be safe and suitable for human consumption;
- d) shall be free from abnormal flavours, obnoxious smell and discolouration.
- e) shall be free from micro-organisms and substances originating from micro-organisms or other poisonous or deleterious substances in amounts that may constitute a hazard to human health.

4.2 Specific requirements

4.2.1 Grading

Soybeans shall 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

Shall be soybeans which do not fall within the requirements of Grades 1, 2, and 3 of this standard but are not rejected soybeans.

Note: For Tanzania and Burundi this requirement shall not apply.

4.2.3 Reject grade soybeans

This comprises soybeans which have objectionable odour, off flavour, living insects or 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

Characteristics	Maximum limits			Method of test
	Grade 1	Grade 2	Grade 3	
Moisture, % m/m	13.0	13.0	13.0	EAS 285/ISO 711/712
Test weight kg/h (g/0.5L) min.	70(357)	68(347)	66(337)	ISO 605
Foreign matter, % m/m	1	2	3	
Inorganic matter, % m/m	0.1	0.3	0.5	
Broken/split grains, % m/m	1	2.5	5	
Pest damaged grains, % m/m	0.3	0.8	1.5	
Rotten & Diseased grains, % m/m	0.2	0.5	1.0	
Heat damaged grains %m/m	0.1	0.2	0.5	
Contrasting colours, % m/m	2	3	5	
Immature/Shriveled grains, % m/m	0.1	0.2	0.5	
Filth, % m/m	0.1	0.1	0.1	
Total Defective Grains, % m/m	2	3	5	
Total Aflatoxin (AFB1+AFB2+AFG1+AFG2), ppb max	10			
Aflatoxin B1 only, ppb max	5			
Fumonisin ppm max	2			

5 Contaminants

5.1 Heavy metals

Soybeans shall comply with those maximum limits for heavy metals established by the Codex Alimentarius Commission for this commodity.

5.2 Pesticide residues

Soybeans 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, then it shall be notified to all Partner States accordingly.

5.3 Mycotoxin limits

Soybeans shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxin levels in soybeans for human consumption shall not exceed 10 µg/kg (ppb) with B₁ not exceeding 5 µg/kg (ppb) when tested according to ISO 16050.

6 Hygiene

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

6.2 When tested by appropriate standards of sampling and examination listed in Clause 2, the products:

- shall be free from microorganisms in amounts which may represent a hazard to health and shall not exceed the limits stipulated in Table 2;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

Table 2 — Microbiological limits

	Type of micro-organism	Limits	Test method
i)	Yeasts and moulds, max. per g	10 ⁴	EAS 217
ii)	<i>S.aureus</i> per 25 g	Not detectable	
iii)	<i>E. Coli</i> , max. per g	Not detectable	
iv)	<i>Salmonella</i> , max. per 25 g	Not detectable	

7 Packaging

7.1 Soybeans shall be packed in suitable packages which shall be clean, sound, free from insect, fungal infestation and the packing material shall be of food grade quality.

7.2 Soybeans shall be packed in containers which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the products.

7.3 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.

7.4 Each package shall contain soybeans of the same type and of the same grade designation.

7.5 If soybeans are presented in bags, the bags shall also be free of pests and contaminants.

7.6 Each package shall be securely closed and sealed.

8 Labelling

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

- i) product name as “Dry Soybeans”;
- ii) variety;
- iii) grade;
- iv) name, address and physical location of the producer/ packer/importer;
- v) lot/batch/code number;
- vi) net weight, in kg;

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

- vii) the declaration “Food for Human Consumption”
- viii) storage instruction as “Store in a cool dry place away from any contaminants”;
- ix) crop year;
- x) packing date;
- xi) instructions on disposal of used package;
- xii) country of origin;
- xiii) a declaration on whether the soybeans were genetically modified or not.

9 Sampling methods

Sampling shall be done in accordance with the EAS 79/ISO 13690.

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