



FDEAS 46:2011
ICS 67.060

FINAL DRAFT EAST AFRICAN STANDARD

Dry beans — Specifications

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

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 pulse crops that meet customer requirements.

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Dry beans — Specification

1 Scope

This East African Standard specifies requirements and methods of sampling and test for dry common beans (*Phaseolus vulgaris* Linn) 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*

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*

ISO 520, *Cereals and pulses — Determination of the mass of 1000 grains*

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

ISO 4112, *Cereals and pulses — Guidance on measurement of the temperature of grain stored in bulk*

ISO 5223, *Test sieves for cereals*

ISO 5527, *Cereals — Vocabulary*

ISO 6322-1, *Storage of cereals and pulses — Part 1: General recommendations for the keeping of cereals*

ISO 6322-2, *Storage of cereals and pulses — Part 2: Practical recommendations*

ISO 6322-3, *Storage of cereals and pulses — Part 3: Control of attack by pests*

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 16002:2004, *Stored cereal grains and pulses — Guidance on the detection of infestation by live invertebrates by trapping*

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*

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ISO/TS 16634-2, *Food products — Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content — Part 2: Cereals, pulses and milled cereal products*

ISO 20483, *Cereals and pulses — Determination of the nitrogen content and calculation of the crude protein content — Kjeldahl method*

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

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

3 Terms and definitions

For the purposes of this standard, the following definitions and grading factors shall apply:

3.1

damaged beans

beans and pieces of beans that are materially damaged or discoloured by frost, weather, disease, weevils or other insects, or other causes so as to materially affect the appearance and quality of the beans

3.2

beans

dry threshed field and garden beans, whole, broken, and split, commonly used for edible purposes

3.3

Broken/chipped/loose coat and split

beans with some but less than one-fourth of each bean broken off or with one-fourth or more of the seedcoat removed.

3.4

caps

parts of the seed coat adhering to split or broken seed

3.5

clean-cut weevil-bored beans

beans from which weevils have emerged, leaving a clean-cut open cavity free from larvae, webbing, refuse, mould, or stain

3.6

germinated beans

beans which have sprouted

3.7

mouldy beans

beans with visible mycelial growth on their surface

3.8

shriveled beans

beans which are under-developed and wrinkled over their entire surface excluding wrinkled beans

3.9

defective

refers to beans that have been damaged to some degree

3.10

foreign matter

any extraneous matter than dry beans 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.

**3.11
splits**

pieces of beans that are not damaged, each of which consists of three-fourths or less of the whole bean, and shall include any sound bean the halves of which are held together loosely.

4 Quality Requirements

4.1 General requirements

Dry beans shall meet the following general requirements/limits as determined using the relevant standards listed in Clause 2. Cranberry beans

- a) shall be the dried mature seeds of *Phaseolus vulgaris* Linn;
- b) shall be well-filled, clean, wholesome, uniform in size, and shape;
- c) shall be free from substances which render them unfit for human or animal consumption or processing into or utilisation thereof as food or feed;
- d) shall be free from abnormal flavours, musty, sour or other undesirable odour, obnoxious smell and discolouration;
- e) shall be free from micro-organisms and substances originating from micro-organisms, fungi or other poisonous or deleterious substances in amounts that may constitute a hazard to human health.

4.2 Specific requirements

4.2.1 Grading

Dry beans 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 dry beans

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

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

4.2.3 Reject grade dry beans

Reject dry beans shall be beans which are musty, sour, heating, materially weathered, or weevily; which have any commercially objectionable odour; which contain insect webbing or filth, animal filth, any unknown foreign substance, broken glass, or metal fragments; or which are otherwise of distinctly low quality. The characteristics are not within the parameters specified in Table 1. They cannot satisfy the conditions of under grade dry beans and shall be graded as reject dry beans and shall be regarded as unfit for human or animal consumption.

Table 1 — Specific requirements

Characteristics	Maximum limits			Method of test
	Grade 1	Grade 2	Grade 3	
Foreign matter, % m/m	0.5	0.75	1	ISO 605
Inorganic matter, % m/m	0.1	0.2	0.3	
Other edible grains, % m/m	0.1	0.2	0.5	
Pest damaged grains, % m/m	1	2	3	
Heat Damaged grains, % m/m	0.1	0.2	0.5	
Contrasting varieties %m/m	0.5	1	1.5	
Broken/split % m/m	1	2	3	
Discoloured %m/m	1	1	1	
Total Defectives Grains, % m/m	2	3.5	5.5	
Filth, % m/m	0.1	0.1	0.1	
Moisture, % m/m	13.0	13.0	13.0	
Total Aflatoxin (AFB1+AFB2+AFG1 +AFG2), ppb max	10			ISO 16050
Aflatoxin B1 only, ppb max	5			
Fumonisin ppm max	2			

5 Contaminants

5.1 Heavy metals

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

5.2 Pesticide residues

Dry beans 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

Dry beans shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxin levels in dry beans 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 Dry beans 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 Dry beans 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 Dry beans 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 dry beans of the same type and of the same grade designation.

7.5 If dry beans 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 beans”;
- 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;

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- xi) instructions on disposal of used package;
- xii) country of origin;
- xiii) a declaration on whether the dry beans were genetically modified or not.

9 Sampling methods

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

