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## Common beans — Requirements for certification

PUBLIC REVIEW DRAFT



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## National foreword

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The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Draft Uganda Standard, DUS DEAS 1039:2020, *Common beans — Requirements for certification*, is identical with and has been reproduced from a Draft East African Standard, DEAS 1039:2020, *Common beans — Requirements for certification*, and is being proposed for adoption as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 2, *Food and agriculture*.

Wherever the words, "East African Standard" appear, they should be replaced by "Uganda Standard."



## EAST AFRICAN STANDARD

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### Common beans — Requirements for certification

PUBLIC REVIEW 2020

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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.

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. XXXXXX

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 012, *Seed and propagation materials*.

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.



# Common bean seeds — Requirements for certification

## 1 Scope

This Draft East Africa Standard specifies the certification requirements for pre-basic, basic and certified seed of common bean (*Phaseolus vulgaris* L.). It includes requirements for eligible varieties, field requirements, field inspections, seed sampling, laboratory requirements, certificates, packaging and labelling, and post-control tests.

## 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.

*International Seed Testing Association ISTA Rules*

OECD, *Seed Schemes; Guidelines for Control Plot Tests and Field Inspection of Seed Crops*

OECD, *Schemes for Varietal Certification or the Control of Seed Moving in the International Trade*

UPOV TG/12/9, *Guidelines for conducting DUS tests for Common bean (Phaseolus vulgaris L.)*

## 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>

### 3.1

#### **seed test certificate**

legal document issued by the national seed certification authority, which states that a seed lot has met the requirements set in this standard

### 3.2

#### **distinctness**

variety is deemed to be distinct if it is clearly distinguishable in at least one character from any other variety whose existence is a matter of common knowledge at the time of filing the application for registration

### 3.3

#### **field**

defined and identifiable area of land or facility that is used to produce a seed crop under the Seed Certification Scheme

- 3.4**  
**field inspection**  
inspection of a field and/or seed crop, by an inspector to check if the minimum requirements for seed certification have been satisfied
- 3.5**  
**field number**  
number assigned to the field by the national seed certification authority, when the application form for certification is submitted
- 3.6**  
**germination**  
emergence and development of a seedling to a stage where the aspect of its essential structures indicates whether or not it is able to develop further into a satisfactory plant under favourable conditions in the field
- 3.7**  
**seed grower**  
person or entity registered to grow a crop intended to produce seed
- 3.8**  
**inert matter**  
seed units and all other matter and structures not defined as pure seed or other seeds
- 3.9**  
**isolation**  
minimum distance or time between two crops of common bean that is required to prevent contamination either mechanically or by cross pollination
- 3.10**  
**inspector**  
authorized official or accredited entity responsible for carrying out seed certification activities
- 3.11**  
**International Seed Testing Association (ISTA) rules**  
rules for seed testing published by the International Seed Testing Association
- 3.12**  
**label**  
tag or other device that is attached to or written, stamped, or printed on any container of seed or that accompanies any lot of bulk seed and which describes the kind of seed and any other information required by relevant regulation.
- 3.13**  
**previous cropping**  
period (seasons or years) that elapses between the production of a crop of the same species in a field and the production of a crop entered in the certification scheme in the same field
- 3.14**  
**maintainer**  
person or organisation responsible for the production or maintenance of a bred variety included in a national list of varieties/variety catalogue eligible for certification, and ensure that the variety remains true to type throughout its full life-span and in the case of hybrid varieties, that the formula for hybridisation is followed
- 3.15**  
**National Seed Certification Authority (NSCA)**  
national authority responsible for conducting seed certification processes

**3.16****noxious weed**

weed species, the seed of which is difficult to separate during processing or has undesirable effects on the crop produced, for example by possible genetic contamination

**3.17****off-type**

plant of the same species which does not exhibit the recognised and accepted habit and characteristics of the variety being grown

**3.18****other seeds**

seeds of any plant species other than that of the crop sample that is being tested. They consist of weed seeds and other crop seeds

**3.19****parental material**

population or lines used by a breeder to maintain a variety

**3.20****person**

natural person or legal entity

**3.21****post-control plot**

small plot where a representative sample of a seed lot is grown to determine the identity and purity of the variety and to check if the seed certification system is operating satisfactorily

**3.22****pure seed**

species stated by an applicant, or found to predominate in a test, and includes all botanical varieties and cultivars of that species, including intact seeds and pieces of seed units larger than one-half their original size

**3.23****variety registration**

recording of a new variety in a national variety catalogue/national variety list when it has been tested and satisfied the requirements for distinctness, uniformity, stability, and has value for cultivation and use

**3.24****rogueing**

removal of off-types and diseased plants or any other unwanted plant from a seed crop if they may reduce the quality of the harvested crop

**3.25****seed certification**

process by which the quality and identity of a seed lot is assured

**3.26****seed lot**

defined quantity of seed bearing the same reference number and for which the origin, production history and identity is known

**3.27****stability**

condition of a variety distinguishing characteristics to remain unchanged after repeated growing cycles

### 3.28

#### **uniformity**

relevant characteristics subject to the variations that may be expected from the particular features of its propagation

### 3.29

#### **variety**

assemblage of cultivated plants that is clearly distinguished from other varieties by any characters (morphological, physiological, cytological, chemical, or others) and which retains its distinguishing characteristics when reproduced by the normal means for the crop and variety

### 3.30

#### **variety catalogue/national list varieties**

list of varieties that have been registered by a national authority and can be produced and marketed as certified seed

### 3.31

#### **carryover seed**

seed produced in previous season and stored for one or more cropping seasons

### 3.32

#### **pre-basic seed**

seed that is derived from breeder seed and is used to produce basic seed through one cycle of multiplication

### 3.33

#### **breeder seed**

nucleus seed from the breeder and is used to produce pre-basic seed

### 3.34

#### **seed**

planting materials used for generative propagation of plants

### 3.35

#### **basic seed**

seed that has been produced from breeder or pre-basic seed and is used for the production of certified seed

### 3.36

#### **certified seed**

seed that is produced from basic seed through one or two generations of multiplication

#### 3.36.1

##### **certified seed 1st generation**

first generation of seed derived from basic seed

#### 3.36.2

##### **certified seed 2nd generation**

seed derived from 1st generation certified seed

### 3.37

#### **seed class**

Seed class-system that shows the generations involved during seed multiplication

## 4 Seed classes

For the purpose of this standard, the following classes of seed shall apply:

- a) pre-basic seed;

- b) basic seed; and
- c) certified seed:
- d) 1st generation (C1); and
- e) 2<sup>nd</sup> generation (C2).

## 5 Requirements

### 5.2 Eligible varieties

**5.2.1** Varieties eligible for seed certification shall be those that have been examined, tested and registered in the national list of varieties/national variety catalogue.

**5.2.2** The national seed certification authority shall keep the official descriptor of the varieties in hard and electronic copies.

### 5.3 Application for certification

**5.3.1** The minimum information for an application for certification of a seed crop shall include the following:

- a) name, address and contact details of the seed grower;
- b) crop and variety to be sown;
- c) physical location;
- d) area and reference number of the field, and its cropping history for the past two cropping seasons;
- e) class of seed to be produced; and
- f) registration number of the seed grower.

**5.3.2** Information and records related to the previous cropping history, origin of seed planted, and field inspections shall be kept and used for certification to ensure full traceability of quality, genetic identity and purity of the seed harvested.

### 5.4 Field requirements

**5.4.1** The inspection of seed crops shall be done in accordance with Organization for Economic Co-operation and Development (OECD) seed schemes; Guidelines for Control Plot Tests and Field Inspection of Seed Crops if the field is found to be in conformity with the requirements stated in Table 1.

**Table 1 — Field requirements for seed crops of common bean**

S/N	Variable	Pre-basic seed	Basic seed	Certified seed
i.	Previous cropping requirements, min.	1	1	1
ii.	Isolation, m, min.	10	10	5
iii.	Maximum off-types, per 100 m <sup>2</sup> , max.	0	1	2

iv.	Bean Anthracnose ( <i>Colletotrichum lindemuthianum</i> ), %, max.	0.02	0.02	0.02
v.	Bean common mosaic virus, %, max.	0	0	0.1
vi.	Bacterial canker, %, max.	0	0	0.05
vii.	Halo blight ( <i>Pseudomonas syringae</i> pv. <i>phaseolicola</i> ), %, max.	0	0	0.05
viii.	Angular bean leaf spot ( <i>Peudocercospora griseola</i> ), %, max.	0.02	0.02	0.05
ix.	Common bacterial blight ( <i>Xanthomonas Phaseoli</i> ), %, max.	0	0	0.05

**5.4.2** The seed lot shall be sampled and tested in an ISTA accredited or an officially authorized laboratory. The sampling and testing of seed lots shall be done in accordance with ISTA rules.

**5.4.3** A seed lot that conforms to the requirements set out in Table 2 shall be given a seed test certificate and a unique reference number to confirm its status under the certification scheme. One part of the seed sample shall be retained for sowing in a post-control plot in the next season, or earlier if that can be achieved.

## 6 Field requirements

**6.1** Pre basic and basic seed shall be produced under the responsibility of the breeder or maintainer.

**6.2** Certified seed shall be produced for up to a maximum of 2 generations.

**6.3** The national certification authority shall inspect and certify the production of pre-basic, basic and certified seed crops

**6.4** A field producing a seed crop of common bean shall be approved for certification if it complies with the requirements in Table 1.

**6.5** Fields may be rejected for certification because of unsatisfactory condition caused by noxious weeds, poor growth, poor stands, excessive disease presence, insect damage and any other condition that prevents accurate inspection or creates doubt as to the identity of the variety.

## 7 Field inspection

**7.1** The national seed certification authority shall prepare the inspections' schedule for the inspectors, based on all necessary information on the application form, to ensure that the timing of inspections allows the requirements in Table 1 to be properly assessed.

**7.2** The inspector shall inspect the field in accordance with OECD seed schemes and shall check for isolation requirements, off types, the presence of noxious weeds and diseases.

**7.3** A minimum of three inspections shall be done for each seed production field to check if the field requirements specified in Table 1 are met.

**7.4** At the time of the first inspection, the inspector shall confirm with the grower the previous cropping of the field, checking on isolation and the proof of origin/authentication of the variety planted by using the labels.

**7.5** Depending on the degree of contamination, the inspector may give instructions for off-types and diseased plants to be rogued.

**7.6** The field inspection report shall indicate the field status and comments for any corrective actions required such as re-inspection to confirm the field requirements. All field inspection reports shall be provided to the grower and the seed enterprise after each inspection in a timely manner. The field inspection report in this document specifies a reference method for the determination of the iodine value (commonly known in the industry as IV) of animal and vegetable fats and oils, hereinafter referred to as fats. Annex A shall be signed by both the inspector and the grower or the grower's representative.

## 8 Seed sampling and laboratory requirements

**8.1** The harvested seed from the field approved for certification shall be kept as an identified unit until processing. After processing, a sample shall be submitted to laboratory for testing where a conformed sample shall be given a certificate with a unique lot number for the purpose of tracking and sampling.

**8.2** The maximum size of a seed lot for certification purposes is 30 000 kg; lots larger than this shall be divided and given separate lot numbers.

**8.3** A seed sampler shall draw a representative submitted sample from each lot according to the ISTA rules

**8.4** The submitted sample shall be divided into three sub-samples, one for testing in the laboratory, one to be stored for reference purposes in case re-testing is necessary, and one for the post-control tests. The samples shall be marked with the same identification as the seed lot, securely sealed and shall be stored in cool and dry conditions to prevent contamination and loss of germination.

**8.5** Laboratories authorized by the national seed certification authority to conduct seed testing for certification shall follow the methodology established in the ISTA rules for common bean seed.

**8.6** The seed lots shall comply with the laboratory requirements specified in Table 2.

**Table 2 — Laboratory requirements for seeds lots of common bean**

S/N	Variable	Pre-basic seed	Basic seed	Certified seed
i.	Pure seed, %, min.	99	99	99
ii.	Inert matter, %, max.	0.95	0.95	0.95
iii.	Other crop seeds, %, max.	0.05	0.05	0.05
iv.	Germination, %, min.	90	85	80
v.	Moisture content, %, max.	14	14	14
vi.	Weed seeds, per kg, max.	0	0	0

NOTE Moisture content is expressed as a percentage of the fresh weight of the original sample

**8.7** The laboratory test report shall be issued in accordance with Annex B.

## 9 Certificates

**9.1** The seed test certificate for a seed lot shall be signed and issued by the national seed certification authority and shall include all information presented in Annex C. This certificate shall be valid for a period of six months.

**9.2** Carryover seed shall be re-sampled and retested for germination. If the test result complies with the minimum requirements, a new test certificate shall be issued for the seed lot, which cancels the previously issued certificate, and shall include the certificate number of the cancelled certificate.

9.3 Issuing of certificates shall be in accordance to ISTA rules.

## 10 Packaging and labelling

10.1 All classes of seed that have been certified shall be packaged in new containers which shall be marked with the company name and crop species and shall have the official label of the national seed certification authority.

10.2 The labels for each class are identified by the following colours:

- a) pre-basic seed: Violet band on white;
- b) basic seed: White;
- c) certified 1 Seed: Blue; and
- d) certified 2 Seed: Red.

10.3 If seeds are treated with any chemical or product harmful for human or animal consumption, the container shall carry a label stating the chemical or product used and warning of the health risks.

10.4 The labels shall be prominent, indelible, and legible and fixed to the containers by an authorized person in such a way that they cannot be destroyed or easily removed. The following information shall be included on the official labels:

10.5 The labels shall be prominent and fixed to the containers by an authorized person in such a way that they cannot be destroyed or easily removed. The labelling shall be indelible, and legibly marked on the containers with the following information:

- a) front label:
  - i. name of the crop, "Common bean seed";
  - ii. species (scientific name);
  - iii. variety denomination;
  - iv. seed lot number;
  - v. test certificate number;
  - vi. date of test;
  - vii. net weight; and
  - viii. seed treatment declaration (if applicable);
- b) back label:
  - i. logo of the national certification authority;
  - ii. name and address of certifying authority;
  - iii. seed class;
  - iv. date of test and country of production; and



v. statement of re-packing and re-labelling (if applicable).

**10.6** All containers/bags shall be closed either by hand or machine stitching and shall be sealed in such a way that if they are opened illegally, that violation can be detected.

**10.7** Repackaging and relabelling are authorized in the following cases:

- a) the national seed certification authority may authorize the re-packaging and re-labelling of a particular seed lot that is produced in another country, but shall retain the original label information of the producing country; and
- b) blending of a seed lot with other lots of the same variety and class (generation) is allowable if all seed lots of the blend have met the field and laboratory requirements for certification prior to blending. A new lot number shall be issued. Details of the blended lots and their proportions shall be kept by the certifying authority for traceability.

## **11 Post-control tests**

The Post control tests shall be carried out in accordance with OECD Schemes for Varietal Certification or the Control of Seed Moving in the International Trade.

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**Annex A**  
(normative)

**Field inspection report**

Reference number.....

Date of the report.....

Seed grower information

Name ..... Address.....

Telephone: ..... E-mail.....

Registration number..... Number of inspection.....

Field location

Province/Region..... District .....Sector

Latitude..... Longitude ..... Field number

Field size (Ha/acre) ..... Cropping season ..... Crop species

Seed class ..... Variety ..... Previous cropping

Variable	Observations/results	Comments/remarks
Isolation, m		
Off types		
Noxious weeds		
Deliberative disease		
Other crops		
General conditions of the crop (for example, drought, crop husbandry, etc.)		

Decision

Decision on the approval	Justification
The seed crop is approved for certification	
The seed crop is not approved for certification	

Seed grower .....Inspector signature.....National seed certification authority

Date &signature.....Date & signature.....Date & signature

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**Annex B**  
(normative)

**Seed laboratory test report**

Name of seed grower										
Species, variety, class, weight of lot										
Testing and issuing laboratory										
Sampled by										
Test number										
Country of origin										
Label serial number										
Seed lot reference number:										
Number of containers		Date of sampling		Date sample received		Date test (s) concluded		Test number		
<b>ANALYSIS RESULTS</b>										
Purity				Germination						Moisture, content, %
Pure seed, %	Inert matter, %	Other crop seeds, %	Weed seeds, per kg	Number of days	Normal seedlings, %	Hard seeds, %	Fresh seeds, %	Abnormal seedlings, %	Dead seeds, %	
Kind of inert matter:										
Other crop seeds:										
Weed seed:										
Other determinations										
Place				Date				Signature		

**Annex C**  
(normative)

**Seed for certificate**

This certificate is issued for a seed lot which has satisfied all the requirements of the certification scheme

Previously issued certificate number.....				Certificate No. ....				Standard: .....	
APPLICANT INFORMATION									
Seed lot reference number			Species and Variety			Class	Weight of lot		Number of containers
Name of testing laboratory:					Test number:				
ANALYSIS RESULTS									
Purity				Germination					Moisture content, %
Pure seed, %	Inert matter, %	Other crop seed, %	Weed seeds per kg	Normal seedlings	Abnormal seedlings	Fresh seeds	Hard seeds	Dead seeds	
Kind of inert matter:						Statement of packaging and re-labelling: (if applicable)			
Kind of other crop seeds:									
Kind of weed seeds:									
Other determinations									

National Seed Certification Authority

Signature .....

Place and date .....

## Bibliography

KS 690: 2010

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