



EAST AFRICAN STANDARD

Wheat seeds — Requirements for certification

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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*.

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Wheat seeds — Requirements for certification

1 Scope

This Draft East African Standard specifies the certification requirements for pre-basic, basic and certified¹ and ² seed of wheat (*Triticum aestivum* L.). It includes requirements for eligible varieties, field standards, field inspections, seed sampling, laboratory standards, 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.

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

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

seed dealer/merchant

person trading in seed and who is licensed to do so

3.9

inert matter

seed units and all other matter and structures not defined as pure seed or other seeds

3.10

isolation

minimum distance or time between two crops of wheat that is required to prevent contamination either mechanically or by cross pollination

3.11

inspector

authorized official or accredited entity responsible for carrying out seed certification activities

3.12

international seed testing association (ISTA) rules

rules for seed testing published by the International Seed Testing Association

3.13

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

3.14

previous cropping

minimum period (seasons or years) that must elapse 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

3.15

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

3.16

national seed certification authority

national authority responsible for conducting seed certification processes

3.17

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

3.18

off-type

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

3.19

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

3.20

parental material

population or lines used by a breeder to maintain a variety

3.21

person

natural person or legal entity

3.22

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

3.23

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

3.24

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

3.25

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

3.26

seed certification

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

3.267

seed lot

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

3.28

stability

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

3.29

uniformity

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

3.30

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

3.31

variety catalogue/national variety list

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

3.32

carryover seed

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

3.33

pre-basic seed

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

3.34

breeder seed

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

3.35

seed

planting materials used for generative propagation of plants

3.36

basic seed

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

3.37

certified seed

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

3.37.1

certified seed 1st generation

first generation of seed derived from basic seed

3.37.2

certified seed 2nd generation

seed derived from 1st generation certified seed

3.38

seed class

system that shows the generations involved during seed multiplication

Abbreviated terms

- DUS: Distinctness, Uniformity and Stability
- ISTA: International Seed Testing Association

- OECD: Organization for Economic Co-operation and Development
- VCU: Value for Cultivation and Use

5 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:
 - i. 1st generation (C1); and
 - ii. 2nd generation (C2).

6 Requirements

6.1 Eligible varieties

6.1.1 Varieties eligible for seed certification shall be those that have been examined, tested and registered in at list one member country of the EAC and are included in the national list of varieties/national variety catalogue. The country adopting the variety shall test it for at least one season

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

6.2 Application for certification

6.2.1 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.

6.2.2 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.

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 standards 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 two (2) inspections shall be done for each seed production field to check if the field standards 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. In case of noxious weeds found in the field, the grower shall be instructed to remove the weeds before final inspection in the field.

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 standards. All field inspection reports shall be provided to the grower after each inspection in a timely manner. The field inspection report in Annex B shall be signed by both the inspector and the grower or the grower's representative.

8 Field requirements

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

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

8.3 For hybrid seed, certified seeds shall be produced from one generation.

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

8.4 A field producing a seed crop of wheat shall be approved for certification if it complies with the requirements in Table 1.

Table 1 — Field standards for seed crops of wheat

| S/N | Variable | Pre-basic seed | Basic seed | Certified 1st generation seed (c1) | Certified 2nd generation(c2) |
|-----|---|----------------|------------|------------------------------------|------------------------------|
| i | Previous cropping season requirements | 1 | 1 | 1 | 1 |
| ii | Isolation distance, m, min. | 10 | 10 | 4 | 4 |
| iii | Maximum off-types per 100 m ² | 1 | 1 | 3 | 3 |
| iv | Kernel burnt (<i>Tilletia barclayana</i>) per 100 m ² , max. | 0 | 0 | 0 | 0 |
| v | Loose smut (<i>Ustilago nuda</i>) head per 100 m ² , max. | 1 | 1 | 1 | 1 |

8.5 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.

9 Seed sampling and laboratory standards

9.1 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.

9.2 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.

9.3 A seed sampler shall draw a representative sample from each lot according to the ISTA rules.

9.4 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.

9.5 Laboratories authorized by the national seed certification authority to conduct seed testing for certification shall follow the methodology established in the ISTA rules for wheat seed.

9.6 The seed lots shall comply with the laboratory standards specified in Table 2.

9.7 A seed lot that conforms to the standards 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.

Table 2 — Laboratory standards for seeds lots of wheat

| 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. | 85 | 85 | 85 |
| v. | Moisture content, % max. | 13 | 13 | 13 |
| 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 | | | | |

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

10 Certificates

10.1 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 D. This certificate shall be valid for a period of six months.

10.2 Carryover seed shall be re-sampled and retested for germination. If the test result complies with the minimum standards, 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.

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

11 Packaging and labelling

11.1 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.

11.2 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 2nd seed: Red.

11.3 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.

11.4 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, "Wheat 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).

11.5 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.

11.6 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.

12 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.

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.....InspectorNational seed certification authority

Date &signatureDate & signatureDate & signature

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Annex B
(informative)

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 | | |
| | | | | | | | | | | |
| ANALYSIS RESULTS | | | | | | | | | | |
| 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 test 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 seeds, % | 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

RS 275-3: 2016, *Seeds — Requirements for certification — Part 3: Wheat*

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