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Seed for bulb vegetable crops — Requirements for certification

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TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Seed Trade Association of Kenya
KAKUZI Ltd.
Consumer Information Network
Kenya Plant Health Inspectorate Service (KEPHIS)
Kenya Seed Company
Simlaw Seed co.
Agriculture and Food Authority - Horticultural Development Authority
Kenya Agricultural and Livestock Research Organization
University of Nairobi
Kenya Organic Agriculture Network
Kenya Bureau of Standards — Secretariat

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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Seed for bulb vegetable crops — Requirements for certification

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KS 693: 2023

Foreword

This Kenya Standard was prepared by the Propagation Materials Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

The revision of this standard has been necessitated by the need to incorporate new developments in the seed industry.

This standard specifies minimum field requirements in seed production and seed quality. It is subject to the provisions of the Seed and Plant Varieties Act, Cap. 326 and the regulations that may be framed thereof.

During the preparation of this standard, reference was made to the following documents:

- Minimum seed certification standard, United States.
- International Crop Improvement Association, Publication No. 21.
- OECD Schemes for seed certification.

Acknowledgement is hereby made for the assistance derived from these sources.
Seed for bulb vegetable crops — Requirements for certification

1 Scope

This Kenya Standard specifies minimum and quality field requirements in seed production and seed quality for bulb vegetable crops in the family *Alliaceae* that are locally produced or imported.

This standard applies to seeds of the vegetables in the family *Alliaceae* given in Table 1.

| I. Leeks | *Allium ampelopraeum var porrum* |
| I. Shallot/ Spring onion | *Allium aecalonicum* |
| III. Onion | *Allium cepa var cepa* |
| IV. *a) Garlic* | *Allium sativum* |
| V. Chinese chives | *Allium tuberosum* |
| VI. European chives | *Allium achoenoproasum* |

*a) Garlic mainly propagated by clones*

2.0 Normative references

KS 790: 2023 Glossary of terms for seeds

3 Terms and Definitions

In addition to the definitions in KS 790:1, the following shall apply:

4 Requirements

4.1 General requirements

4.1.1 The seed companies and the seed growers of bulb seed shall be registered by the Designated National Authority.

4.1.2 Key parameters required to implement this standard are the variety descriptors, the genetic purity of the seed sown, the field and laboratory requirements and the post-control tests.
4.2 Eligible varieties

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

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

4.3 Application for seed field Inspection

4.3.1 Registered growers will make applications for seed field inspection to the certification Authority by filling in the prescribed form;

4.3.2 The minimum information for an application for certification of a cucurbit seed field 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
g) proof of origin of the seed planted.

4.3.3 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.

4.3.4 The inspection of seed crops shall be done in accordance with OECD Seed Schemes; Guidelines for Control Plot Tests and Field Inspection of Seed Crops.

4.3.5 The seed lot shall be sampled and tested in an official or authorized laboratory. The sampling and testing of seed lots shall be done in accordance with the relevant procedures described in the ISTA rules.

4.3.6 A seed lot that conforms to the requirements set out in Table 3 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.

4.4 Seed classes

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

- Breeders seed
- Prebasic
• Basic seed
• certified seed:
  ▪ C1 - 1st generation
  ▪ C2 - 2nd generation
• Standard seed

5.0 Field requirements

______________________________

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5.1. The crop shall not be planted on land on which the same crop or any other crop in the same family was grown in the previous two seasons unless if the seeds were certified. An isolation distance of not less than 800 m for basic seed and not less than 500 m for certified and commercial seed shall be provided all around a seed field to separate it from fields of other varieties and fields of the same variety from which no seed production is intended. These distances can be disregarded if there is sufficient protection from undesirable pollen sources and seed–borne diseases.

5.2 There shall be at least two field inspections, one during vegetative growth and the other at harvest of bulbs at which time varietal purity shall be determined.

5.3 The maximum off types permitted shall be 0.5 % for certified and commercial seed. Bulbs for basic seed shall be required to be free of off types.

5.4 Basic seed crop shall be required to be free of seed borne diseases. Maximum permitted infestation by seed borne diseases in certified and commercial field crop shall be as indicated in Table 2.

### Table 2 — Limits for field disease

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Disease Organism</th>
<th>Maximum percent plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Alternaria porri</td>
<td>0.2</td>
</tr>
<tr>
<td>ii)</td>
<td>Botrytis allii</td>
<td>0.2</td>
</tr>
<tr>
<td>iii)</td>
<td>Peronospora destructor</td>
<td>0.2</td>
</tr>
<tr>
<td>iv)</td>
<td>Puccinia dipsaei</td>
<td>0.2</td>
</tr>
<tr>
<td>v)</td>
<td>Combined tolerances, max</td>
<td>0.5</td>
</tr>
</tbody>
</table>

7.0 Seed quality requirements

i. 7.1 Seed shall comply with the requirements listed in Table 3.

### Table 3 — Seed quality requirements

<table>
<thead>
<tr>
<th>Sl/no</th>
<th>Species</th>
<th>purity</th>
<th>Other crop seed, max.</th>
<th>Maximum Weed seeds,% by weight</th>
<th>Min. germination, % by wt</th>
<th>Moisture content, max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Onion</td>
<td>97</td>
<td>0.5</td>
<td>0.5</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>ii)</td>
<td>Leeks</td>
<td>97</td>
<td>0.5</td>
<td>0.5</td>
<td>65</td>
<td>11</td>
</tr>
<tr>
<td>iii)</td>
<td>Shallot/spring onion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>European chives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v)</td>
<td>Garlic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi)</td>
<td>Chinese chives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.3 Bulbs shall be typical of the variety in shape and colour.

7.4 No seed shall be multiplied or sold commercially if the seed has onion smut (*Urocystis cepulae*) and/or the nematode (*Ditylenchus dipsaci*) with no tolerance.

8.0 Certificates

8.1 The seed test certificate for a seed lot shall be issued by the national seed certification authority.

8.2 Certificates shall only be issued for true seed for bulb vegetables seed.

8.3. This certificate shall be valid for a period of 9 months.

8.4 Carryover seed shall be re-sampled and retested for germination upon expiry of the validity period of certification. 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 reference to previously certified seed lot.

9 Environment

9.1 Bulb vegetable seed shall be produced and handled in an environment complying with the stipulations of the Environmental Management and Co-ordination Act (EMCA) Cap 387 of the Laws of Kenya and in addition conforming to modern production technological practices.
10.0 Packaging and labelling

10.1 All classes of seed that have been certified shall be packaged and labelled in accordance with prevailing national regulations.

10.2 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.

10.3 The labels shall be prominent, indelible, legible, uniquely serialized and fixed to the package by an authorized person in such a way that they cannot be destroyed or easily removed.

10.4 The minimum labelling requirements shall include:

i. name of the crop

ii. species (Latin name);

iii. variety name;

iv. seed lot number;

v. net weight;

vi. seed treatment declaration (if applicable);

vi. logo of the national designated authority;

vii. name and address of certifying authority;

viii. seed class;

ix) germination percentage

x) percentage purity

xi) name and address of the registered seed company under the provisions as stipulated by the National designated authority

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

xi. statement stating “Not for human and animal consumption”.

xii) A declaration shall be made on the genetic modification status of the seeds

Note: the label may also contain other information such as the test certificate number and the date of test where applicable

10.5 All containers/bags shall be sealed in such a way that if they are opened illegally, that violation can be detected.

10.6 Repackaging and relabeling 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.

11.0 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.

12.0 Sampling and testing

Sampling and tests shall be carried out in accordance with the latest version of the International Seed Testing Association (ISTA) procedures and as prescribed by the seeds and plant varieties act Cap 326.

i)