

Technical Working Party for Vegetables

TWV/56/5

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PARTIAL REVISION OF THE TEST GUIDELINES FOR GARLIC

Document prepared by an expert from the Netherlands

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1. The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Garlic (document TG/162/4).
2. The Technical Working Party for Vegetables (TWV), at its fifty-fifth session hosted by Turkey and organized by electronic means, from May 3 to 7, 2021, agreed that the Test Guidelines for Garlic (document TG/162/4) be partially revised to include seed propagated varieties (see document TWV/55/16 "Report", Annex III).
3. The following changes are proposed:
 - (a) To include seed propagated varieties in Chapter I "Subject of these Guidelines";
 - (b) To include submission requirements for seed propagated varieties in Chapter II "Material Required";
 - (c) To include test design for seed propagated varieties in Chapter III "Conduct of test";
 - (d) To include observation requirements for seed propagated varieties in Chapter IV "Methods and Observation";
 - (e) To adapt Chapter X "Technical Questionnaire" for seed propagated varieties in Section 4 "Information on origin, maintenance, reproduction of the variety".
4. The proposed changes are presented below in highlight and underline (insertion) and ~~striethrough~~ (deletion).

Proposal to include seed propagated varieties in Chapter I "Subject of these Guidelines"

Current wording

I. Subject of these Guidelines

These Test Guidelines apply to all vegetatively propagated varieties of *Allium sativum* L.

Proposed new wording

I. Subject of these Guidelines

These Test Guidelines apply to all ~~vegetatively propagated~~ varieties of *Allium sativum* L.

Proposal to include submission requirements for seed propagated varieties in Chapter II "Material Required"*Current wording*II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the seed required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. The minimum quantity of plant material to be supplied by the applicant in one or several samples should be:

50 bulbs

2. The plant material should at least meet the minimum requirements for sprouting capacity, moisture content and purity for marketing plant material in the country in which the application is made. It must be in good sanitary condition and free from virus, in particular from leek yellow stripe virus and onion yellow dwarf virus.

3. The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

*Proposed new wording*II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the seed required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. ~~The minimum quantity of plant material to be supplied by the applicant in one or several samples should be:~~

~~50 bulbs~~

2. The material is to be supplied in the form of seed in the case of seed-propagated varieties, or in the form of bulbs in the case of vegetatively propagated varieties.

3. The minimum quantity of plant material, to be supplied by the applicant, should be:

15,000 seeds in the case of seed-propagated varieties, or
60 bulbs in the case of vegetatively propagated varieties.

4. In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

~~2 5.~~ In the case of bulbs, the plant material should at least meet the minimum requirements for sprouting capacity, moisture content and purity for marketing plant material in the country in which the application is made. It must be in good sanitary condition and free from virus, in particular from leek yellow stripe virus and onion yellow dwarf virus.

~~2 6.~~ The plant material must not have undergone any treatment unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

Proposal to include test design for seed propagated varieties in Chapter III “Conduct of test”*Current wording*III. Conduct of Tests

1. The minimum duration of tests should normally be two independent growing cycles.
2. The tests should normally be conducted at one place. If any important characteristic of the variety cannot be seen at that place, the variety may be tested at an additional place.
3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. As a minimum, each test should include a total of 100 plants which should be divided between two or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.
4. Because of the effect of conditions of storage of bulbs on the expression of characteristics, comparison of varieties should be made only on material which has been propagated and stored under the same temperature and humidity conditions (e.g. 15°C to 18°C).
5. Additional tests for special purposes may be established.

*Proposed new wording*III. Conduct of Tests

1. The minimum duration of tests should normally be two independent growing cycles.
2. The tests should normally be conducted at one place. If any important characteristic of the variety cannot be seen at that place, the variety may be tested at an additional place.
3. The tests should be carried out under conditions ensuring normal growth. The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. ~~As a minimum, each test should include a total of 100 plants which should be divided between two or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.~~ In the case of seed-propagated varieties, each test should be designed to result in a total of at least 200 plants divided between two or more replicates. In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 100 plants divided between two or more replicates. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.
4. Because of the effect of conditions of storage of bulbs on the expression of characteristics, comparison of varieties should be made only on material which has been propagated and stored under the same temperature and humidity conditions (e.g. 15°C to 18°C).
5. Additional tests for special purposes may be established.

Proposal to include observation requirements for seed propagated varieties in Chapter IV “Methods and Observation”

Current wording

IV. Methods and Observations

1. Unless otherwise indicated, all observations determined by measurement or counting should be made on 30 plants or parts taken from each of 30 plants.
2. For the assessment of uniformity a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 plants the maximum number of off-types allowed would be 3.
3. All observations on the leaf, foliage and flowering stem should be made before foliage fall-over.
4. All observations on the bulbs should be made on bulbs harvested in the trial.

Proposed new wording

IV. Methods and Observations

1. ~~Unless otherwise indicated, all observations determined by measurement or counting should be made on 30 plants or parts taken from each of 30 plants.~~ Unless otherwise indicated, in the case of seed-propagated varieties, all observations on single plants should be made on 60 plants or parts taken from each of 60 plants; and in the case of vegetatively propagated varieties, all observations on single plants should be made on 30 plants or parts taken from each of 30 plants.
2. The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross pollinated varieties in the General Introduction.
3. The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction.
- ~~2~~ 4. For the assessment of uniformity vegetatively propagated varieties, a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 plants the maximum number of off-types allowed would be 3.
- ~~3~~ 5. All observations on the leaf, foliage and flowering stem should be made before foliage fall-over.
- ~~4~~ 6. All observations on the bulbs should be made on bulbs harvested in the trial.

Proposed adaption of Chapter X “Technical Questionnaire” for seed propagated varieties in Section 4
“Information on origin, maintenance, reproduction of the variety”

Current wording

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin

- (a) natural clone []
- (b) clone from *in vitro* culture []
- (c) clone from seedlings []
- (d) others (please indicate) []

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4.2 Mode of propagation

- (a) vegetatively propagated variety []
- (b) others (please indicate) []

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4.3 Other information

Proposed new wording

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross ☐

(b) partially known cross ☐

(c) unknown cross ☐

4.1.2 Clone

(d) natural clone ☐

(e) clone from *in vitro* culture ☐

(f) clone from seedlings ☐

(g) others (please indicate) ☐

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4.3 Mode of propagation

4.2.1. Seed propagated varieties

(a) parent line ☐

(b) cross-pollinated ☐

(c) hybrid ☐

- seed propagated parents ☐

- one vegetatively propagated and one seed propagated parent ☐

- two vegetatively propagated parents ☐

(d) other (please provide details) ☐

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4.2.2 (a) vegetatively propagated variety ☐

(a) clone ☐

(b) other (please indicate) ☐

.....

4.3 Other information

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