



TG/162/3(proj.)

ORIGINAL: English

DATE: 2001-01-24

INTERNATIONAL UNION
FOR THE PROTECTION
OF NEW VARIETIES OF
PLANTS

UNION INTERNATIONALE
POUR LA PROTECTION
DES OBTENTIONS
VÉGÉTALES

INTERNATIONALER
VERBAND ZUM SCHUTZ
VON PFLANZEN-
ZÜCHTUNGEN

UNIÓN INTERNACIONAL
PARA LA PROTECCIÓN
DE LAS OBTENCIONES
VEGETALES

DRAFT

GUIDELINES
FOR THE CONDUCT OF TESTS
FOR DISTINCTNESS, UNIFORMITY AND STABILITY

GARLIC
(Allium sativum L.)

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

TABLE OF CONTENTS

PAGE

I.	Subject of these Guidelines	3
II.	Material Required	3
III.	Conduct of Tests	3
IV.	Methods and Observations.....	4
V.	Grouping of Varieties	4
VI.	Characteristics and Symbols	4
VII.	Table of Characteristics	5
VIII.	Explanations on the Table of Characteristics	12
IX.	Literature	15
X.	Technical Questionnaire	16

I. Subject of these Guidelines

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

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.

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 conditions and free from virus, in particular from leek yellow stripe virus and onion yellow dwarf virus.

2. 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.

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.

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 bulb should be made on harvested bulbs.

V. Grouping of Varieties

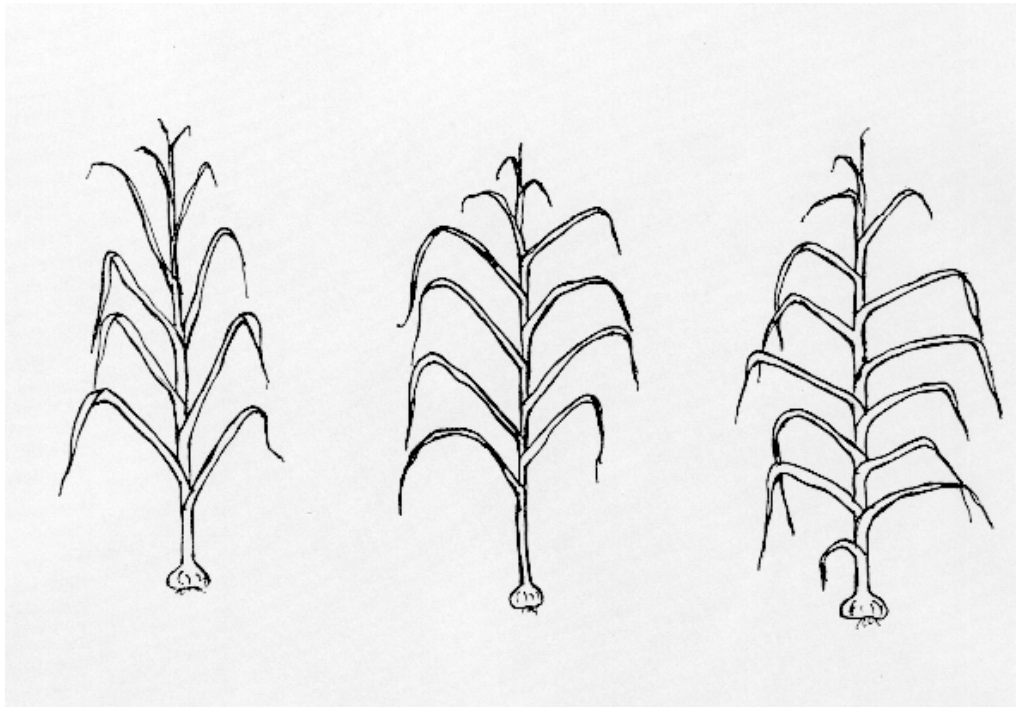
1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.
2. It is recommended that the competent authorities use the following characteristics for grouping varieties:
 - (a) Pseudostem: flowering stem (characteristic 10)
 - (b) Clove: color of scale (characteristic 29)
 - (c) Time of harvest maturity (fall-over of 80% of plants) (characteristic 33)
 - (d) End of dormancy of clove in bulb (characteristic 34).

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.
2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.
3. Legend:
 - (*) Characteristics that should be used on all varieties in every growing cycle over which the examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.
 - (+) See Explanations on the Table of Characteristics in Chapter VIII.

VIII. Explanations on the Table of Characteristics

Ad. 2: Foliage: attitude



1
erect

2
erect to semi-erect

3
semi-erect

Ad. 11: Flowering stem: curvature



1
absent

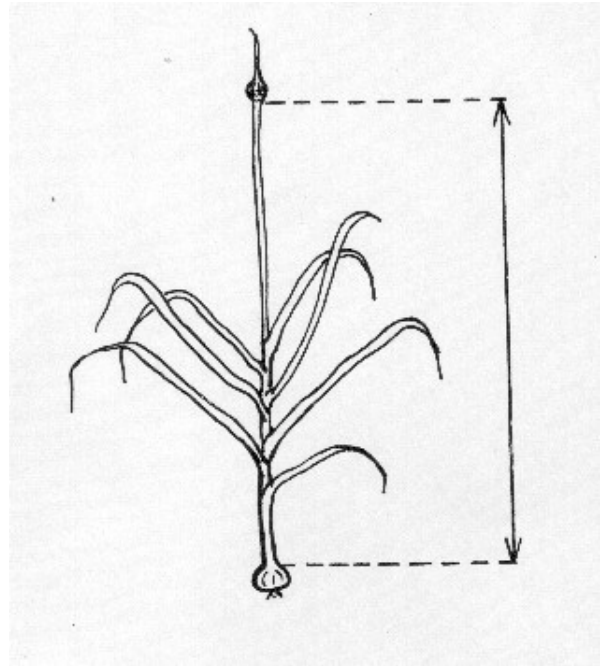


9
present

Ad. 12 and 13: Flowering stem: length and bulblets

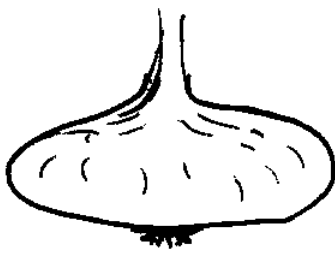


1
absent

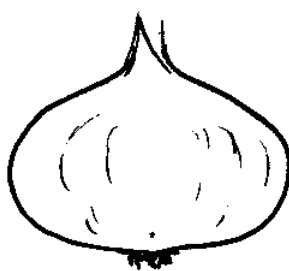


9
present

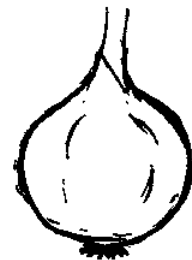
Ad. 15: Bulb: shape in longitudinal section



1
transverse narrow elliptic

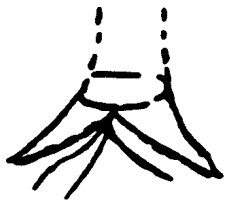


2
transverse broad elliptic



3
circular

Ad. 17: Bulb: position of cloves at tip of bulb



1
inserted



2
at same level



3
exerted

Ad. 19: Bulb: shape of base



1
recessed

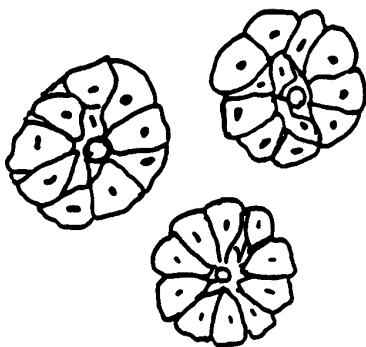


2
flat

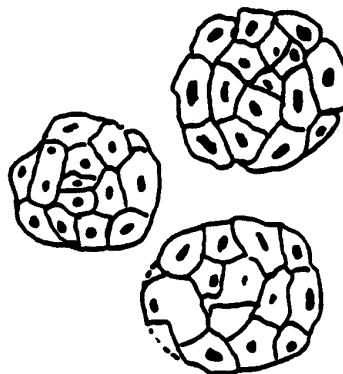


3
rounded

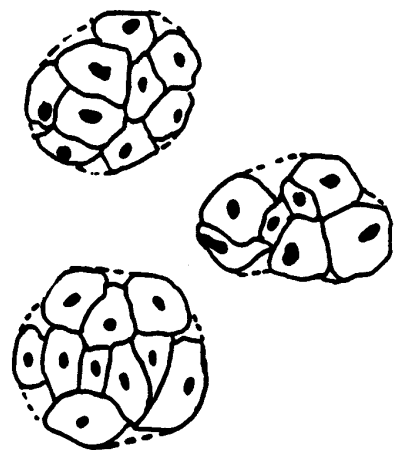
Ad. 26: Bulb: distribution of cloves



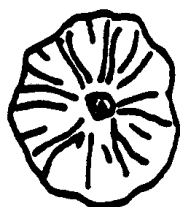
1
radial



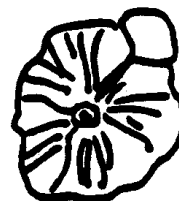
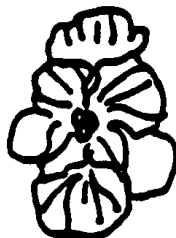
2
non-radial



Ad. 27: Bulb: external cloves



1
absent



9
present

Ad. 34: End of dormancy of clove in bulb

After harvest, bulbs are stored in a room at an optimum temperature (15-18 °C) and humidity without being split into cloves. The end of dormancy is evaluated by observing the percentage of sprouted or naturally dried bulbs.

IX. Literature

C. M. Messiaen, J. Cohat, J.P. Leroux, M. Pichon, A. Beyries, 1993: "Vegetatively Propagated Edible Alliums." Edition INRA, 222 pp.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights	
1. Species <i>Allium sativum</i> L. GARLIC	
2. Applicant (Name and address)	
3. Proposed denomination or breeder's reference	

4. Information on origin, maintenance and reproduction of the variety			
4.1 Origin of the clone			
(a)	natural clone		[]
(b)	clone from <i>in vitro</i> culture		[]
(c)	clone from seedlings		[]
4.2 Other information			
5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the state of expression which best corresponds).			
	Characteristics	Example Varieties	Note
5.1	Foliage: attitude		
(2)			
	erect	Jolimont	1[]
	erect to semi-erect	Printanor	2[]
	semi-erect	Jardinor	3[]
5.2	Leaf: green color		
(3)			
	light		3[]
	medium	Messidrome	5[]
	dark	Germidour	7[]

	Characteristics	Example Varieties	Note
5.3 (10)	Pseudostem: flowering stem		
	absent	Germidour	1[]
	present	Rose de Lautrec	9[]
5.4 (14)	Bulb: size		
	small	Fructidor	3[]
	medium	Printanor	5[]
	large	Messidrome	7[]
5.5 (15)	Bulb: shape in longitudinal section		
	transverse narrow elliptic	Sprint	1[]
	transverse broad elliptic	Germidour	2[]
	circular	De Roumanie	3[]
5.6 (21)	Bulb: ground color of dry external scales		
	white	Ramses, Printanor	1[]
	yellowish white	Vigor Max, Vigor Supreme	2[]
	reddish white	Germidour	3[]
5.7 (27)	Bulb: external cloves		
	absent	Sprint, Sultop	1[]
	present	Blanc de Beaumont, Morasol	9[]
5.8 (28)	Clove: size		
	small	Rose de Lautrec	3[]
	medium	Printanor	5[]
	large	Germidour	7[]

	Characteristics	Example Varieties	Note
5.9	Clove: color of scale		
(29)			
	white	Ramses	1[]
	cream	Messidrome	2[]
	pink	Printanor	3[]
	purple	Morasol, Sprint	4[]
	brown	Corail	5[]
5.10	Clove: color of flesh		
(32)			
	white	Printanor	1[]
	yellowish	Germidour	2[]
5.11	Time of harvest maturity		
(33)			
	very early	Ramses	1[]
	early	Sprint	3[]
	medium	Germidour, Messidrome	5[]
	late	Printanor	7[]
	very late	Gayant	9[]
5.12	End of dormancy of clove in bulb		
(34)			
	very early	Ramses	1[]
	early	Sprint	3[]
	medium	Rose de Lautrec	5[]
	late	Fructidor	7[]
	very late	Gayant	9[]

6. Similar varieties and differences between these varieties

Denomination of similar variety	Characteristic in which the similar variety is different ^{o)}	State of expression of similar variety	State of expression of candidate variety
^{o)} In the case of identical states of expressions of both varieties, please indicate the size of the difference.			

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

7.3 Type

Long-day type	Autumn	[]
Short-day type	Spring	[]

7.4 Other information

8. Authorization for release

- (a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes ☐ No ☐

- (b) Has such authorization been obtained?

Yes ☐ No ☐

If the answer to that question is yes, please attach a copy of such an authorization.

[End of document]