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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

CHINESE CHIVE

(*Allium tuberosum* Rottler ex Spreng.) *

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	*English*	*French*	*German*	*Spanish*
Allium tuberosum Rottler ex Spreng.	Chinese Chive	Civette chinoise	Allium tuberosum	Cive chino

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Allium tuberosum* Rottler ex Spreng.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of seed for seed-propagated varieties and in the form of plantlets for vegetatively propagated varieties.

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

for seed-propagated varieties: 20 g of seed or 3,000 seeds;

for vegetatively propagated varieties: 100 plantlets.

2.4 In the case of seed-propagated varieties, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should be stated by the applicant.

2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.6 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Duration of Tests

The minimum duration of tests should normally be two independent growing cycles.

3.2 Testing Place

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

3.3 Conditions for Conducting the Examination

The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.4 Test Design

3.4.1 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.4.2 Each test should be designed to result in a total of at least 60 plants which should be divided between two or more replicates.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations determined by measuring or counting should be made on 20 plants or parts taken from each of 20 plants.

3.6 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 The assessment of uniformity for vegetatively propagated varieties should be made on the basis of the number of off-types. A population standard of 1% and an acceptance

probability of at least 95% should be applied. In the case of a sample size of 60 plants, 2 off-types are allowed.

4.2.3 For the assessment of uniformity of seed-propagated varieties, the recommendations in the General Introduction for the cross-pollinated or hybrid varieties should be followed, as appropriate.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

4.3.3 The stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness is aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Leaf: attitude (characteristic 4);

(b) Leaf blade: width (characteristic 6);

(c) Pseudo-stem: shape in cross section (characteristic 12).

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

(*) Asterisked characteristic – see Section 6.1.2

(a)-(b) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8, Section 8.2

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) (+)	**(a)**	**Plant: height**	**Plante: hauteur**	**Pflanze: Höhe**	**Planta: altura**		
		short	basse	niedrig	baja		3
		medium	moyenne	mittel	media	Gurin beruto	5
		high	haute	hoch	alta	Wanda gurin beruto	7
2.	**(a)**	**Seed-propagated varieties only: Plant: number of tillers**	**Variétés à reproduction sexuée seulement: Plante: nombre de talles**	**Nur samenvermehrte Sorten: Pflanze: Anzahl Seitentriebe**	**Sólo variedades de reproducción sexuada: Planta: número de hijuelos**		
		few	petit	gering	bajo	Tairyou	3
		medium	moyen	mittel	medio	Wanda gurin beruto	5
		many	grand	groß	alto	Gurin beruto	7
3.	**(a)**	**Plant: number of flowering stems**	**Plante: nombre de tiges florales**	**Pflanze: Anzahl Blütenstengel**	**Planta: número de tallos florales**		
		few	petit	gering	bajo		3
		medium	moyen	mittel	medio	Gurin beruto	5
		many	grand	groß	alto	Tenda poru	7
4. (*) (+)	**(a)**	**Leaf: attitude**	**Feuille: port**	**Blatt: Haltung**	**Hoja: porte**		
		erect	dressé	aufrecht	erecto	Tairyou	1
		erect to semi-erect	dressé à demi-dressé	aufrecht bis halbaufrecht	erecto a semierecto	Daiyamondo beruto	2
		semi-erect	demi- dressé	halbaufrecht	semierecto	Gurin beruto	3
		semi-erect to horizontal	demi- dressé à horizontal	halbaufrecht bis abgespreizt	semierecto a horizontal	Kuraun beruto	4
		horizontal	horizontal	abgespreizt	horizontal	Tenda poru	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. **(*)** **(+)**	**(a)**	**Leaf blade: length**	**Limbe: longueur**	**Blattspreite: Länge**	**Limbo: longitud**		
		short	court	kurz	corto		3
		medium	moyen	mittel	medio	Gurin beruto	5
		long	long	lang	largo	Kuraun beruto	7
6. **(*)** **(+)**	**(a)**	**Leaf blade: width**	**Limbe: largeur**	**Blattspreite: Breite**	**Limbo: anchura**		
		narrow	étroit	schmal	estrecho	Tenda poru	3
		medium	moyen	mittel	medio	Gurin beruto	5
		broad	large	breit	ancho	Tairyou	7
7.	**(a)**	**Leaf blade: intensity of green color**	**Limbe: intensité de la couleur verte**	**Blattspreite: Intensität der Grünfärbung**	**Limbo: intensidad del color verde**		
		light	claire	hell	claro	Tairyou	3
		medium	moyenne	mittel	medio	Gurin beruto	5
		dark	foncée	dunkel	oscuro	Kuraun beruto	7
8.	**(a)**	**Leaf blade: glossiness**	**Limbe: brillance**	**Blattspreite: Glanz**	**Limbo: brillo**		
		weak	faible	gering	débil	Tenda poru	3
		medium	moyenne	mittel	medio	Gurin beruto	5
		strong	forte	stark	fuerte	Tairyou	7
9.	**(a)**	**Leaf blade: thickness**	**Limbe: épaisseur**	**Blattspreite: Dicke**	**Limbo: grosor**		
		thin	fine	dünn	delgado		3
		medium	moyenne	mittel	medio	Gurin beruto	5
		thick	épaisse	dick	grueso	Tairyou	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10. (a)	**Leaf blade: drooping of tip**	**Limbe: inclinaison de l'extrémité**	**Blattspreite: Überhängen der Spitze**	**Limbo: curvatura del ápice**		
	weak	faible	gering	débil	Wanda gurin beruto	3
	medium	moyenne	mittel	media	Gurin beruto	5
	strong	forte	stark	fuerte	Kuraun beruto	7
11. (a)	**Leaf blade: bloom**	**Limbe: pruine**	**Blattspreite: Bereifung**	**Limbo: pruína**		
	weak	faible	gering	débil	Tairyou	3
	medium	moyenne	mittel	media	Gurin beruto	5
	strong	forte	stark	fuerte	Ooba nanyou nira	7
12. (*) (+)	**Pseudo-stem: shape in cross section**	**Fausse tige: forme de la section transversale**	**Pseudostamm: Form im Querschnitt**	**Pseudotallo: forma en sección transversal**		
	round	arrondie	rund	redonda	Gurin beruto	1
	oval	ovale	eiförmig	oval	Wanda gurin beruto	2
13. (*) (+)	**Pseudo-stem: length**	**Fausse tige: longueur**	**Pseudostamm: Länge**	**Pseudotallo: longitud**		
	short	courte	kurz	corto		3
	medium	moyenne	mittel	medio	Gurin beruto	5
	long	longue	lang	largo	Kuraun beruto	7
14. (*) (+)	**Pseudo-stem: maximum width**	**Fausse tige: largeur maximale**	**Pseudostamm: maximale Breite**	**Pseudotallo: anchura máxima**		
	narrow	étroite	schmal	estrecho		3
	medium	moyenne	mittel	medio	Gurin beruto	5
	broad	large	breit	ancho	Kuraun beruto	7
15. (*)	**Pseudo-stem: predominant color**	**Fausse tige: couleur prédominante**	**Pseudostamm: überwiegende Farbe**	**Pseudotallo: color predominante**		
	white	blanc	weiß	blanco	Kuraun beruto	1
	greenish	verdâtre	grünlich	verdoso	Gurin beruto	2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**Pseudo-stem: number of leaves**	**Fausse tige: nombre de feuilles**	**Pseudostamm: Anzahl Blätter**	**Pseudotallo: número de hojas**		
	few	petit	gering	bajo	Tenda poru	3
	medium	moyen	mittel	medio	Gurin beruto	5
	many	grand	groß	alto		7
17. (b)	**Flowering stem: length**	**Tige florale: longueur**	**Blütenstengel: Länge**	**Tallo floral: longitud**		
	short	courte	kurz	corto		3
	medium	moyenne	mittel	medio	Tenda poru	5
	long	longue	lang	largo	Wanda gurin beruto	7
18. (b)	**Flowering stem: diameter**	**Tige florale: diamètre**	**Blütenstengel: Durchmesser**	**Tallo floral: diámetro**		
	small	petit	klein	pequeño		3
	medium	moyen	mittel	medio	Tenda poru	5
	large	grand	groß	grande	Wanda gurin beruto	7
19. (*)	**Time of bolting**	**Époque de montaison**	**Zeitpunkt des Schossens**	**Época de subida a flor**		
	early	précoce	früh	temprana	Tenda poru	3
	medium	moyenne	mittel	media	Gurin beruto	5
	late	tardive	spät	tardía		7

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

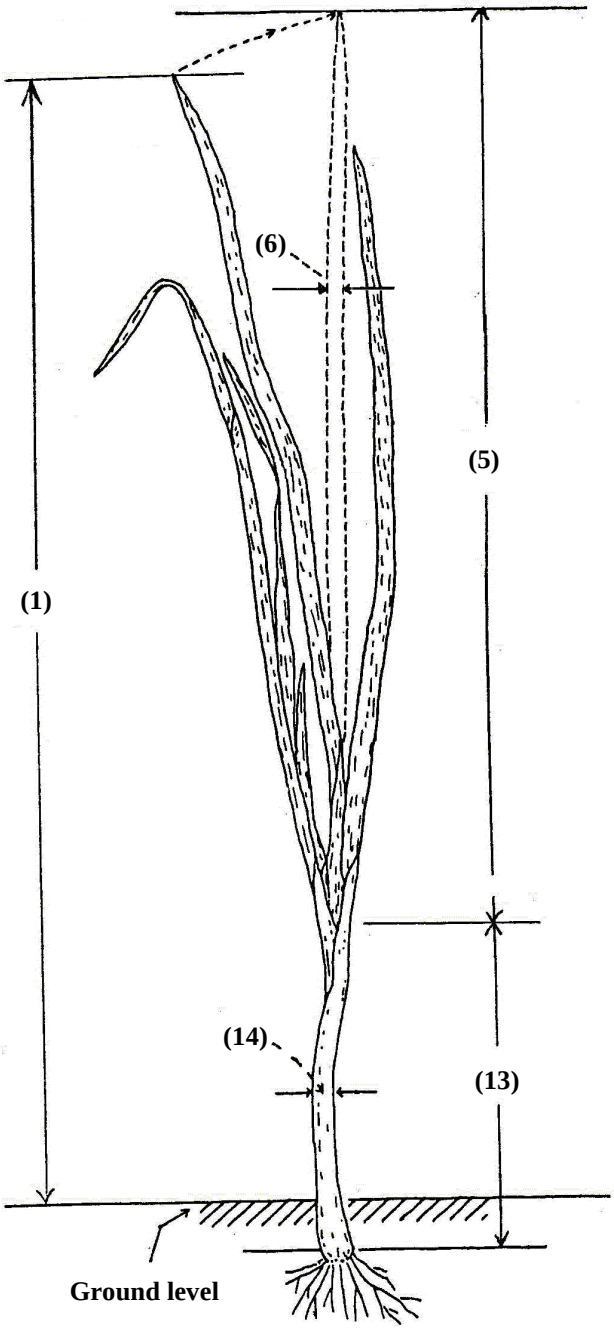
Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

(a) Plant and leaf: Observations on the plant and leaf should be made at harvest maturity.

(b) Flowering stem: Observations on the flowering stem should be made at time of full flowering.

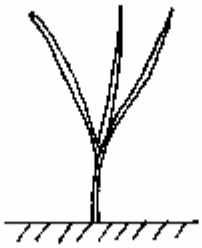
8.2 Explanations for individual characteristics

Ads. 1, 5, 6, 13 and 14: Plant: height (1); Leaf blade: length and width (5+6); Pseudo-stem: length and maximum width (13+14)

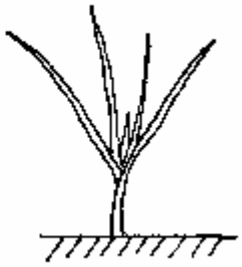


Ad. 4: Plant: growth habit

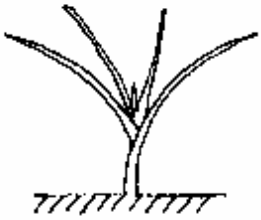
1
erect



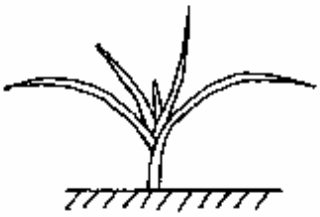
2
erect to semi-erect



3
semi-erect



4
semi-erect to horizontal



5
horizontal

Ad. 12: Pseudo-stem: shape in cross section

1
round

2
oval

9. Literature

Anonym. "Standard Tables of Food Composition for Japan," Japan Scientific Agency, 1984.

Aoba, T. and Iwasaki, T.: "Studies on the ecological characteristics of Chinese chive", II. Differentiation and development of inflorescences, Agric. Hortic., 45, 845, 1970.

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10. Technical Questionnaire

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	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 Latin Name	*Allium tuberosum* Rottler ex Spreng.
1.2 Common Name	Chinese Chive

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

4. Information on the breeding scheme and propagation of the variety

4.1 Breeding Scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]
(please state parent varieties)

(b) partially unknown cross [ ]
(please state known parent variety(ies))

(c) totally unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery [ ]
(please state where, when and how developed)

4.1.4 Other [ ]
(please provide details)

4.2 Method of Propagating the Variety

4.2.1 Seed-propagated varieties

(a) Cross-pollination [ ]

(b) Hybrid [ ]

(c) Other [ ]
(please provide details)

4.2.2 Vegetatively propagated varieties

(a) cuttings [ ]
(b) *in vitro* propagation [ ]
(c) other (state method) [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (4)	**Leaf: attitude**		
	erect	Tairyou	1[ ]
	erect to semi-erect	Daiyamondo beruto	2[ ]
	semi-erect	Gurin beruto	3[ ]
	semi-erect to horizontal	Kuraun beruto	4[ ]
	horizontal	Tenda poru	5[ ]
5.2 (6)	**Leaf blade: width**		
	narrow	Tenda poru	3[ ]
	medium	Grin beruto	5[ ]
	broad	Tairyou	7[ ]
5.3 (12)	**Pseudo-stem: shape in cross section**		
	round	Grin beruto	1[ ]
	oval	Wanda grin beruto	2[ ]
5.4 (15)	**Pseudo-stem: predominant color**		
	white	Kuraun beruto	1[ ]
	greenish	Gurin beruto	2[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

6. Similar varieties and differences from these varieties

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
(Example)	*Leaf: attitude*	*erect*	*erect to semi-erect*

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

7.2.2 If yes, please give details:

7.3 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 (b) is yes, please attach a copy of the authorization.

9. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature Date

[End of document]