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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

GYPSOPHILA

UPOV Code: GYPSO

Gypsophila L.

[*]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Israel

to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fortieth session, to be held in Kunming, China, from July 2 to 6, 2007

Alternative Names:[*]

Botanical name	*English*	*French*	*German*	*Spanish*
Gypsophila L.	Baby's Breath, Gyp, Gypsophila	Gypsophile	Gipskraut, Schleierkraut	Gipsófila

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with 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.]

TABLE OF CONTENTS PAGE

1. SUBJECT OF THESE TEST GUIDELINES 3
2. MATERIAL REQUIRED 3
3. METHOD OF EXAMINATION 3
3.1 Number of Growing Cycles 3
3.2 Testing Place 3
3.3 Conditions for Conducting the Examination 3
3.4 Test Design 4
3.5 Number of Plants / Parts of Plants to be Examined 4
3.6 Additional Tests 4
4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY 4
4.1 Distinctness 4
4.2 Uniformity 5
4.3 Stability 5
5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL 5
6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS 6
6.1 Categories of Characteristics 6
6.2 States of Expression and Corresponding Notes 6
6.3 Types of Expression 6
6.4 Example Varieties 6
6.5 Legend 6
7. TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES 7
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS 14
9. LITERATURE 16
10. TECHNICAL QUESTIONNAIRE 17

1. Subject of these Test Guidelines

These Test Guidelines apply to all vegetatively propagated varieties of *Gypsophila* L. of the family *Caryophyllaceae*.

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 rooted cuttings.

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

15 plants.

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

2.5 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 Number of Growing Cycles

The minimum duration of tests should normally be three subsequent flowering cycles.

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

3.3.1 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.

3.3.2 The recommended method of observing the characteristic is indicated by the following key in the second column of the Table of Characteristics:

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants”

3.3.3 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 10 plants.

3.4.2 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.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations should be made on 10 plants or parts taken from each of 10 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 differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

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 For the assessment of uniformity, a population standard of 95 % and an acceptance probability of at least 1 % should be applied. In the case of a sample size of 10 plants, 1 off-type is allowed.

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.

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 are 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) Plant: basal branching (characteristic 1)
(b) Plant: height (characteristic 2)
(c) Flower: type (characteristic 25)
(d) Flower: number of colors (characteristic 34)
(e) One-colored varieties only: Petal: color (characteristic 35)

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 Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3
QN: Quantitative characteristic – see Chapter 6.3
PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS See chapter 3.3.2

(a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 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. (*)	**VG**	**Plant: basal branching**					
QL	**(a)**	absent					1
		present					9
2. (*)	**MS**	**Plant: height**					
QN	**(b)**	short				White Festival	3
		medium				Dangypmini	5
		tall				Dangypfun	7
3.	**VS**	**Stem: thickness**					
QN	**(b)**	thin				Dangypmini	3
		medium				Esmamerica	5
		thick				Dangypwhifa	7
4. (*)	**MS**	**Stem: length of longest internode**					
QN	**(b)**	short				Dangysha	3
		medium				Dangypwhifa	5
		long				Esmamerica	7
5. (*)	**VG**	**Stem: anthocyanin coloration**					
QL	**(b)**	absent				Dangypchrys	1
		present				Esmamerica	9
6.	**VG**	**Stem: intensity of anthocyanin coloration**					
QN	**(b)**	weak				Barfast	3
		medium				Esmamerica	5
		strong				Festival	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
7.	**MS**	**Stem: number of internodes on 60cm of the main stem**					
QN	**(b)**	few				Dangysha	3
		medium				Dangypchrys	5
		many				Esmamerica	7
8.		**Stem**: **woodiness**					
		absent/herbaceous					1
		present/woody				Esmaustralia	2
9.		**Stem: color**					
PQ	**(b)**	light green					1
		yellow green					2
		dark green					3
		greyish green					4
		dark green					5
10. (*)	**VG**	**Leaf:** shape					
QL	**(c)**	elliptic				Esmamerica	1
		ovate				Barfast	2
11. (*)	**MS**	**Leaf:** length					
QN	**(c)**	short				Festival	3
		medium				Barfast	5
		long					7
12. (*)	**MS**	**Leaf: width**					
QN	**(c)**	narrow				Snowflake	3
		medium				Hila	5
		broad				Mydah Pink	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
13.	**VG**	**Leaf: longitudinal axis**					
QL	**(c)**	straight				Dangypchrys	1
		incurved				Esmamerica	2
14. (*)	**VG**	**Leaf: cross section**					
PQ	**(c)**	straight				Dangypink	1
		concave				Esmaustralia	2
15.	**VG**	**Leaf: attitude of apex**					
PQ		incurved				Dangysha	1
		straight				Dangypwhifa	2
		recurved					3
NEW		rolled downwards					4
16. (*)	**VG**	**Leaf: color of upper side**					
QL		green				Esmaustralia	1
		grey-green				Barfast	2
17. (*)	**VG**	**Inflorescence: pubescence**					
QL	**(b)**	absent				Esmasia	1
		present				Dangysha	9
18.		**Inflorescence: position of flowers**					
QL		in upper part only					1
		along whole length					2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
19.		**Inflorescence: number of flowers in terminal unit**	IL : difficult to observe				
New							
QN		few					3
		medium					5
		many					7
20.		**Inflorescence: shape of upper part**					
	(d)	flat					1
		Domed					2
21.		**Inflorescence: anthocyanin coloration of calyx**					
QN	**(b)**	absent or very weak					1
		weak					2
		strong					3
22.		**Inflorescence: angle of side branch in relation to main stem**					
QN	**(b)**	small					3
		medium					5
		large					7
23.		**Inflorescence: curvature of side branch**					
	(b)	absent or very weak					1
		weak					3
		medium					5
		strong					7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24.		**Varieties with curved side branch only: Inflorescence: length of non-curved basal part**					
QN	**(b)**	short					3
		medium					5
		long					7
25. (*)	**VG**	**Flower: type**					
PQ	**(d)**	single				Bregic	1
		double				Dangypmini	2
26. (*)	**MS**	**Flower: diameter**					
QL	**(d)**	very small					1
		small				Dangypmini	3
		medium				Magic Golan	5
		large				Dangyphappy	7
		very large				Anneke	9
27.	**VG**	**Varieties with double flowers only: Flower: number of petals**					
QN	**(d)**	few				Dangyphappy	3
		medium				Magic Golan	5
		many				Barfast	7
28. (*)	**VG**	**Flower: profile of upper part**					
QL	**(d)**	flat				Dangypcrys	1
		convex				Dangypwhifa	2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
29. (*)	**VG**	**Flower: presence of anthers**					
New							
QN	**(d)**	absent					1
		present					9
30.	**MS**	**Flower: length of pedicel**					
QN		short				Bregic	3
		medium				Mydah Sayo	5
		long				Dangypcrys	7
31. (*)	**VG**	**Petal**: **shape**					
QL		triangular					1
		obovate					2
32. (*)	**VG**	**Petal: dentation of apex**					
New							
QL		absent					1
		present					9
33. (*) (+)	**VG**	**Petal: longitudinal axis**					
PQ		incurved				Danfesroy	3
		straight				Dangypwhifa	5
		recurved				Blancanieves	7
34. (*)	**VG**	**Petal: number of colors**					
PQ		one				Dangypmini	1
		two				Dangysha, White Festival	2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
35. (*)	**VG**	**<u>One-colored varieties only:</u> Petal: color**					
QL		white					1
		pink				Mydah Pink	2
36. (*)	**VG**	**<u>Two-colored varieties only:</u> Petal: main color**					
QL		white				Dangysha	1
		pink					2
37. (*)	**VG**	**Calyx: shape in longitudinal section**					
QL	**(d)**	parallel-sided				Bregic	1
		divergent-sided				Dangysha	2
		flatened				Mydah Sayo	3
38. (*)	**VG**	**Calyx: number of lobes**					
PQ		about five				White Festival	1
		about ten				Bristo; Fairy	2
39.	**VG**	**Calyx: size of lobe**					
(+)							
QN		small				Dangypmini	3
		medium				Dangypcrys	5
		large				Mydah Ball	7
40. (*)	**VG**	**Time of beginning of flowering**					
QL	**(b)**	early				Gypso Queen	3
		medium				Esmeurope	5
		late				Mirabella	7

8. Explanations on the Table of Characteristics

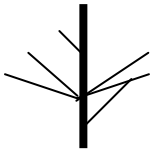
8.1 Explanations covering several characteristics

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

(a) Time of observation: one to two months after planting.
(b) Time of observation: beginning of flowering (first petals visible).
(c) The leaf to be observed is the larger of the two leaves at the node from which the lowest flowering side branch arises.
(d) Time of observation: full flowering (at least 10% of flowers fully open).

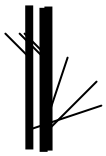
8.2 Explanations for individual characteristics

Ad. 1: Plant: basal branching



1	2
absent	present

Ad. 19. Inflorescence: angle of side branch in relation to main stam



3	5	7
small	medium	large

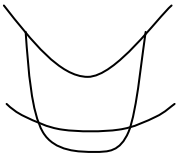
Ad. 20. Inflorescence: curvature of side branch

1	3	5	7
absent or very weak	weak	medium	strong

Ad. 21. Varieties with curved side branch only: Inflorescence: length of non-curved basal part

3	5	7
short	medium	long

Ad. 37. Calyx: shape in longitudinal section



1	2	3
parallel-sided	divergent sided	flattened

9. Literature

Literature }

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)

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

"In the case of hybrid varieties which are the subject of an application for plant breeders' rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety."

1. Subject of the Technical Questionnaire

1.1 Botanical name { Botanical name }

1.2 Common name { Common name}

(a) In the case of Test Guidelines covering more than one species, additional boxes should be added in the following format:

"1. Subject of the Technical Questionnaire (please indicate the relevant species):

1.1.1 Botanical name [species 1]
1.1.2 Common name [species 1] [ ]

1.2.1 Botanical name [species 2]
1.2.2 Common name [species 2] [ ]"

etc.

(b) If the Test Guidelines cover a genus or a large number of species, question 1 should be presented as follows:

"1. Subject of the Technical Questionnaire (please complete):

1.1 Botanical name
1.2 Common name"

with the boxes left blank for completion by the applicant.

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

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

4.1.2 Mutation [ ]
(please state parent variety)

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

4.1.4 Other [ ]
(please provide details)"

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

4.2 Method of propagating the variety

The examples below indicate how this section can be formatted and some appropriate terms which can be used:

4.2.1 Seed-propagated varieties

(a) Self-pollination [ ]

(b) Cross-pollination
(i) population [ ]
(ii) synthetic variety [ ]

(c) Hybrid [ ]
(see GN 32 below)

(d) Other [ ]
(please provide details)"

4.2.2 Vegetatively propagated varieties

{...see Example 2.below.} [ ]

4.2.3 Other [ ]
(please provide details)

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

Example 2

4.2.1 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 Other [ ]
(please provide details)

GN 32

"In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.

"*Single Hybrid*

"(… female parent …) x (… male parent …)

"*Three-Way Hybrid*

"(… female line …) x (… male line …)

"=> single hybrid used as female parent x (… male parent …)

"and should identify in particular:

"(a) any male sterile lines
"(b) maintenance system of male sterile lines."

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
GN 13.3 Technical Questionnaire (TQ) characteristics		
GN 13.4 Relationship between Asterisked, Grouping and TQ characteristics		

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

6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

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	*Flower color*	*orange*	*orange red*

Comments:

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

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

GN 34

7.3.1 Main use

(a) garden plant [ ]
(b) pot plant [ ]
(c) cut-flower [ ]
(d) other [ ]
(please provide details)

"A representative color photograph of the variety should accompany the Technical Questionnaire."

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.

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 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 the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma) Yes [ ] No [ ]

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details for where you have indicated “yes”.

……

“9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]”

10. 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]