E

TG/GYPSO(proj.1)
ORIGINAL: English
DATE: August 29, 2005

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 the Israel

to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its thirty-eighth session to be held in Seoul, Republic of Korea,
from September 12 to 16, 2005

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

These Test Guidelines apply to all varieties of .....

{ GN 3 - 6

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 **{xxxxxxxxxxxxx}**.

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

{ GN 7 – quantity of plant material required }

ASW 1

(a) Test Guidelines which only apply to seed-propagated varieties

Alternative 1: "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."

Alternative 2: "The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority."

(b) Test Guidelines which apply to seed-propagated as well as other types of varieties

Alternative 1: "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. 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."

Alternative 2: "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."

2.4 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:

ASW 2

(a) Single growing cycle

"The minimum duration of tests should normally be a single growing cycle."

(b) Two independent growing cycles

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

{ GN 8 – explanation of the growing cycle }

ASW 3

(a) Fruit species with clearly defined dormant period

"3.1.2 The growing cycle is considered to be the duration of a single growing season, beginning with bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds."

(b) Fruit species with no clearly defined dormant period

"3.1.2 The growing cycle is considered to be the period ranging from the beginning of active vegetative growth or flowering, continuing through active vegetative growth or flowering and fruit development and concluding with the harvesting of fruit."

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

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.

{ GN 9 – requirements for a satisfactory growing cycle }

ASW 4

1. Fruit species

In the case of Test Guidelines covering fruit species, the following sentence may be added after the first sentence of section 3.3:

"In particular, it is essential that the [trees] / [plants] produce a satisfactory crop of fruit in each of the two growing cycles."

2. Information for conducting the examination of particular characteristics

(a) Stage of development for the assessment

"The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8."

(b) Type of observation

"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"

(c) Type of plot for observation

The following text may, for example, be added to appropriate Test Guidelines:

"The recommended type of plot in which to observe the characteristic is indicated by the following key in the second column of the Table of Characteristics:

A: spaced plants
B: row plot
C: special test

"Other examples may also be developed, for example to refer to other types of plots (e.g. drilled plots)."

(d) Observation of color by eye

"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

{ GN 10 – test design }

ASW 5

(a) Single plots

"Each test should be designed to result in a total of at least {…} [plants] /[trees]"

(b) Spaced plants and row plots

"Each test should be designed to result in a total of at least {…} spaced plants and {…} meters of row plot."

(c) Replicated plots

"Each test should be designed to result in a total of at least {…} plants, which should be divided between {…} replicates."

{ **ASW 6**

"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

{ **ASW 7**

(a) Test Guidelines where all plants in the test are observed for all characteristics

Alternative 1: "Unless otherwise indicated, all observations should be made on { x } plants or parts taken from each of { x } plants."

Alternative 2: "Unless otherwise indicated, all observations should be made on { x } plants or parts taken from each of { x } plants. In the case of parts of plants, the number to be taken from each of the plants should be { y }."

(b) Test Guidelines where the observation of certain characteristics is made on a sample of plants in the test

Alternative 1: "Unless otherwise indicated, all observations on single plants should be made on { x } plants or parts taken from each of { x } plants and any other observations made on all plants in the test."

Alternative 2: "Unless otherwise indicated, all observations on single plants should be made on { x } plants or parts taken from each of { x } plants and any other observations made on all

plants in the test. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be { y }."

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

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:

{ GN 11 – uniformity assessment }

ASW 8

(a) Cross-pollinated varieties

(i) Test Guidelines covering only cross-pollinated varieties

"The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction."

(ii) Test Guidelines covering cross-pollinated varieties and varieties with other forms of propagation

"The assessment of uniformity for [cross-pollinated][seed-propagated] varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction."

(b) Hybrid varieties

"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."

(c) Uniformity assessment by off-types

(i) Test Guidelines covering only varieties with uniformity assessed by off-types

"For the assessment of uniformity, a population standard of { x }% and an acceptance probability of at least { y } % should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [1 off-type is] allowed."

(ii) Test Guidelines covering varieties with uniformity assessed by off-types and other types of varieties

"For the assessment of uniformity of [self-pollinated] [vegetatively propagated] [seed-propagated] varieties, a population standard of { x }% and an acceptance probability of at least { y } % should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [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.

4.3.2 **ASW 9**

(a) Test Guidelines covering seed-propagated and vegetatively propagated varieties

"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."

(b) Test Guidelines covering only seed-propagated varieties

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

(c) Test Guidelines covering only vegetatively propagated varieties

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

4.3.3 **ASW 10**

"Where appropriate, or in cases of doubt, 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 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: .....

{ GN 13.2 – Grouping characteristics }

{ GN 13.4 – The relationship between grouping, asterisked and TQ characteristics }

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

ASW 4.2(b)/(c)

MG: single measurement of a group of plants or parts of plants – see Chapter 3.3.1
MS: measurement of a number of individual plants or parts of plants – see Chapter 3.3.1
VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.1
VS: visual assessment by observation of individual plants or parts of plants" –see Chapter 3.3.1

A: spaced plants
B: row plot
C: special test

ASW 11

"(a)-{x} 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.	**Plant: height**					
	short					3
	medium					5
	tall					7
2.	**Stem: thickness**					
	thin					3
	medium					5
	thick					7
3.	**Stem: length of longest node**					
	short					3
	medium					5
	long					7
4.	**Stem: anthocyanin coloration**					
	absent					1
	present					9
5.	**Stem: intensity of anthocyanin coloration**					
	weak					3
	medium					5
	strong					7
6.	**Stem: number of nodes on 60cm of main stem**					
	few					3
	medium					5
	many					7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
7.	**Branch: pubescence**					
	absent					1
	present					9
8.	**Leaf: shape**					
	elliptic					1
	ovate					2
9.	**Leaf: length**					
	short					3
	medium					5
	long					7
10.	**Leaf: width**					
	narrow					3
	medium					5
	broad					7
11.	**Leaf: longitudinal axis**					
	straight					
	incurved					
12.	**Leaf: cross section**					
	straight					1
	concave					2
13.	**Leaf: apex**					
	straight					1
	incurved					2
14.	**Leaf: color**					
	green					1
	grey-green					2

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
15.	**Flower: diameter**					
	small					3
	medium					5
	large					7
16.	**Flower: number of petals**					
	few					3
	medium					5
	many					7
17.	**Flower: length of pedicel**					
	short					3
	medium					5
	long					7
18.	Flower: profile of upper part of corolla					
	flat					1
	convex					2
19.	**Calyx: shape**					
	Cup-shaped					1
	bowl-shaped					2
	flat					3
20.	**Calyx: number of lobes**					
	ca. 5					
	Ca. 10					

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
21.	**Calyx: size of lobe**					
	small					3
	medium					5
	large					7
22.	**Petal: longitudinal axis**					
	incurved					3
	straight					5
	recurved					7
23.	**Petal: color**					
	white					1
	white and pink					2
	pink					3
24.	**Time of beginning of flowering**					
	early					3
	medium					5
	late					7

8. Explanations on the Table of Characteristics

ASW 12

"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)
(b) etc.

"8.2 Explanations for individual characteristics

Ad. 1 etc."

{ GN 29 – Example varieties: Name }

9. Literature

{ GN 30 - 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

ASW 13

"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}

ASW 14

(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 completation by the applicant.

2. Applicant

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

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

ASW 15

(a) Alternative 1

"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:

(b) *Alternative 2*

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

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

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

4.2 Method of propagating the variety

GN 31

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

Example 1

"4.2.1 Seed-propagated varieties

"(a) Self-pollination [ ]

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

"(c) Hybrid [ ]
{*…see GN 32 for example...*}

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

"4.2.2 Vegetatively propagated varieties

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

"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
GN 33 *Example*	*[e.g. Flower color]*	*[e.g. orange]*	*[e.g. 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

Example 1

7.3.1Main use

(a) seed [ ]
(b) forage [ ]
(c) other [ ]
(please provide details)

Example 2

7.3.1Main use

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

ASW 16

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

[#] 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:

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.

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".

……

ASW 17

"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]