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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

CAMPANULA

UPOV Code: CAMPA

Campanula L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from the United Kingdom

to be considered by the

Technical Working Party for Ornamental Plants and Forest Trees
at its forty-fourth session, to be held in Fukuyama City, Hiroshima Prefecture, Japan, from November 7 to 11, 2011

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Campanula L.	Campanula, Bell flower			

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.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Campanula* L.

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 young plants.

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

10 young 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 a single growing cycle.

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 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. The color chart and version used should be specified in the variety description.

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 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.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 9 plants or parts taken from each of 9 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of

Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation 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

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.”

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

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 of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% 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.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

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: growth habit (characteristic 1)
(b) Plant: height (characteristic 2)
(c) Corolla: attitude (characteristic 24)
(d) Corolla: number of whorls (characteristic 26)
(e) Corolla: main or only color of outer surface
Gr. 1: white
Gr. 2: pink
Gr. 3: blue
Gr. 4: mauve
Gr. 5: purple

(f) Corolla: main or only color of inner surface (characteristic 33)
Gr. 1: white
Gr. 2: pink
Gr. 3: blue
Gr. 4: mauve
Gr. 5: purple

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

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

6.2.1 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.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

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 4.1.5
(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: growth habit**					
QN	**(a)**	upright				La Bello	1
		semi-upright				Bowl of Cherries	2
		spreading				PKMP05	3
		semi-trailing				Camgood	4
		trailing				*C. isophylla* 'Alba'	5
2. **(*)** **(+)**	**MG/ VG**	**Plant: height**					
QN	**(a)**	very short					1
		short					3
		medium					5
		tall					7
		very tall					9
		extremely tall					11
3. **(+)**	**MG/ VG**	**Plant: width**					
QN	**(a)**	very narrow					1
		narrow					3
		medium					5
		broad					7
		very broad					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	**VG**	**Plant: density**					
(+)							
QN	**(a)**	very sparse					1
		sparse					3
		medium					5
		dense					7
		very dense					9
5.	**VG**	**Stem: color**					
(+)							
PQ		yellow green					1
		light green					2
		medium green					3
		dark green					4
		grey green					5
		green tinged with red					6
		green tinged with purple					7
		red					8
		purple				Joan Elliot	9
6. **(*)**	**MG/ VG**	**Leaf: petiole**					
QN	**(b)**	absent or very short					1
		short					3
		medium					5
		long					7
		very long					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7. **(*)**	**MG/ VG**	**Leaf blade: length**					
QN	**(b)**	very short					1
		short					3
		medium					5
		long					7
		very long					9
8. **(*)**	**MG/ VG**	**Leaf blade: width**					
QN	**(b)**	very narrow					1
		narrow					3
		medium					5
		broad					7
		very broad					9
9. **(*)**	**MG/ VG**	**Leaf blade: length/width ratio**					
QN	**(b)**	slightly compressed					1
		roundish					3
		slightly elongated					5
		moderately elongated					7
		strongly elongated					9
10. **(+)**	**VG**	**Leaf blade: shape of apex**					
PQ	**(b)**	acuminate					1
		acute					2
		obtuse					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. **(+)**	**VG**	**Leaf blade: shape of base**					
PQ	**(b)**	acute					1
		obtuse					2
		rounded					3
		truncate					4
		cordate					5
12. **(+)**	**VG**	**Leaf blade: position of broadest part**					
QN	**(b)**	strongly towards base					1
		moderately towards base					2
		at middle					3
		moderately towards apex					4
13.	**VG**	**Leaf blade: profile in cross section**					
QN	**(b)**	concave					1
		flat					2
		convex					3
14. **(*)**	**VG**	**Leaf blade: color of upper side**					
PQ	**(b)**	yellow green					1
		light green					2
		medium green					3
		dark green					4
		grey green					5
		green tinged with red or purple					6

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.	**VG**	**Leaf blade: rugosity of surface**					
QN	**(b)**	absent or very weak					1
		weak					2
		medium					3
		strong					4
16.	**VG**	**Leaf blade: glossiness of upper side**					
QN	**(b)**	absent or very weak					1
		weak					2
		medium					3
		strong					4
17. (*)	**VG**	**Leaf blade: pubescence of upper side**					
QN	**(b)**	absent or very sparse					1
		sparse					2
		medium					3
		dense					4
18.	**VG**	**Leaf blade: indentations of the margin**					
QN	**(b)**	absent or very few					1
		few					3
		medium					5
		many					7
		very many					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	**VG**	**Leaf blade: depth of indentations of the margin**					
QN	**(b)**	very shallow					1
		shallow					3
		medium					5
		deep					7
		very deep					9
20.	**VG**	**Leaf blade: undulation of margin**					
QN	**(b)**	absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
21. **(*)** **(+)**	**VG**	**Calyx: petaloid lobes**					
QL	**(c)**	absent				Kent Belle	1
		present				Pantaloons	9
22. **(+)**	**VG**	**<u>Only varieties with petaloid calyx lobes</u>: Calyx lobe: color**					
PQ	**(c)**	Assessed by RHS Colour Chart					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. **(+)**	**MG**	**Calyx: angle of lobes**					
PQ	**(c)**	adpressed to corolla					1
		slightly spreading					3
		horizontal					5
		weakly reflexed					7
		strongly reflexed					9
24. **(*)** **(+)**	**VG**	**Corolla: attitude**					
QN	**(c)**	upwards				Samantha	1
		slightly outwards				PKMM01	2
		strongly outwards				Blue Eyed Blonde	3
		slightly downwards				Bowl of Cherries	4
		strongly downwards				Purple Sensation	5
25. **(*)** **(+)**	**VG**	**Corolla: type**					
PQ	**(c)**	tubular				Sarastro	1
		campanulate				Elizabeth Oliver	2
		rotate				Samantha	3
		with strap-shaped lobes				Pink Octopus	4
26. **(*)** **(+)**	**VG**	**Corolla: number of whorls**					
QN	**(c)**	very few				PKMH01	1
		few				Havidb701	2
		medium				Snowball	3
		many				PKMH04	4
		very many				La Bello	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27. (*) (+)	**MG/ VG**	**Corolla: diameter**					
QN	**(c)**	very small					1
		small					3
		medium					5
		large					7
		very large					9
28. (*) (+)	**MG/ VG**	**Corolla: length**					
QN	**(c)**	very short					1
		short					3
		medium					5
		long					7
		very long					9
29. (*)	**VG**	**Corolla: color of outer surface**					
PQ	**(c)** **(d)**	RHS Colour Chart (indicate reference number)					
30. (*)	**VG**	**Corolla: second color of outer surface**					
PQ	**(c)** **(d)**	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. **(+)**	**VG**	**Corolla: distribution of second color of outer surface**					
PQ	**(c)**	none					1
	(d)	distal quarter					2
		basal three quarters					3
		basal half					4
		basal quarter					5
		at base					6
		marginal zone					7
		midrib					8
		throughout				Pink Chimes	9
32. **(+)**	**VG**	**Corolla: pattern of second color of outer surface**					
PQ	**(c)**	solid or nearly so					1
	(d)	flushed					2
		along veins					3
		dotted				Pink Chimes	4
		spotted					5
33. **(*)**	**VG**	**Corolla: main or only color of inner surface**					
PQ	**(c)**	RHS Colour Chart (indicate reference number)					
	(d)						
34. **(*)**	**VG**	**Corolla: second color of inner surface**					
PQ	**(c)**	RHS Colour Chart (indicate reference number)					
	(d)						

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35. **(+)**	**VG**	**Corolla: distribution of second color of inner surface**					
PQ	**(c)**	none					1
	(d)	distal quarter				Chettle Charm	2
		basal three quarters					3
		basal half				Havibi806	4
		basal quarter					5
		at base				Harjen	6
		marginal zone				Caroline	7
		midrib					8
		throughout				Hot Lips	9
36. **(+)**	**VG**	**Corolla: pattern of second color of inner surface**					
PQ	**(c)**	solid or nearly solid				Havibi806	1
	(d)	flushed					2
		along veins					3
		dotted					4
		spotted				Hot Lips	5
37. **(*)** **(+)**	**VG**	**Corolla tube: length as a proportion of the total corolla length**					
QN	**(c)**	absent or very short					1
		short					3
		medium					5
		long					7
		very long					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38. **(+)**	**MG/ VG**	**Corolla tube: length**					
QN	**(c)**	absent or very short				Pink Octopus	1
		short					3
		medium					5
		long					7
		very long				Cherry Bells	9
		extremely long				Sarastro	11
39. **(*)** **(+)**	**VG**	**Corolla tube: profile of fused part in longitudinal section**					
PQ	**(c)**	converging				Pink Chimes	1
		parallel				Sarastro	2
		slightly diverging				Kent Belle	3
		moderately diverging				Harjen	4
		strongly diverging					5
		horizontal					6
		reflexing				*C. persicifolia* var. *planiflora*	7
40. **(+)**	**MG/ VG**	**Corolla tube: diameter**					
QN	**(c)**	absent or very small					1
		small					3
		medium					5
		large					7
		very large					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
41. (*) (+)	**VG**	**Corolla lobe: shape**					
PQ	**(c)**	triangular					1
		ovate					2
		elliptic					3
		strap-shaped					4
42. (*)	**MG/ VG**	**Corolla lobe: length**					
QN	**(c)**	very short					1
		short					3
		medium				Kent Belle	5
		long					7
		very long					9
		extremely long				Pink Octopus	11
43. (+)	**MG/ VG**	**Corolla lobe: width**					
QN	**(c)**	very narrow					1
		narrow					3
		medium					5
		broad					7
		very broad					9
44. (*) (+)	**VG**	**Corolla lobe: reflexing**					
QN	**(c)**	absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
45.	**VG**	**Corolla lobe: twisting**					
QN	**(c)**	absent or very weak					1
		weak					2
		medium					3
		strong					4
46.	**VG**	**Corolla lobe: profile in cross section**					
(+)							
QN	**(c)**	strongly concave					1
		moderately concave					2
		weakly concave					3
		flat					4
		weakly convex					5
		moderately convex					6
47.	**VG**	**Corolla lobe: shape of apex**					
(+)							
PQ	**(c)**	acuminate					1
		acute					2
		obtuse					3
		rounded					4
48.	**VG**	**Stamen: pollen**					
PQ	**(c)**	absent or very sparse					1
		sparse					2
		medium					3
		dense					4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
49.	**VG**	**Stamen: pollen color**					
PQ	**(c)**	whitish					1
		yellow					2
		bluish					3
		Purplish					4

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

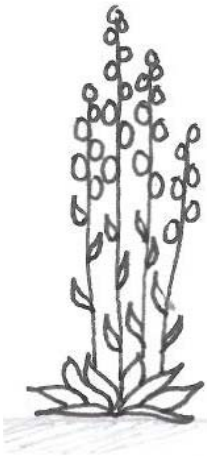
Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:

(a) Observation should be made on plants at the time of full flowering.
(b) Observations on the leaf should be made on fully expanded leaves from the middle third of a flowering stem, excluding the inflorescence.
(c) Observations on the calyx and corolla should be made on new fully open flowers.
(d) The main color is the color with the largest surface area, when more than one color is present the second color is the one with the second largest area.

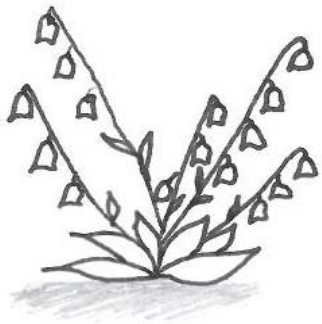
8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit

The plants should be grown in containers to observe the plant growth habit.



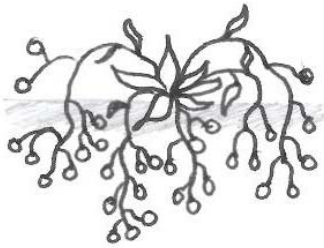
1
upright



2
semi-upright

3
spreading

4
semi-trailing



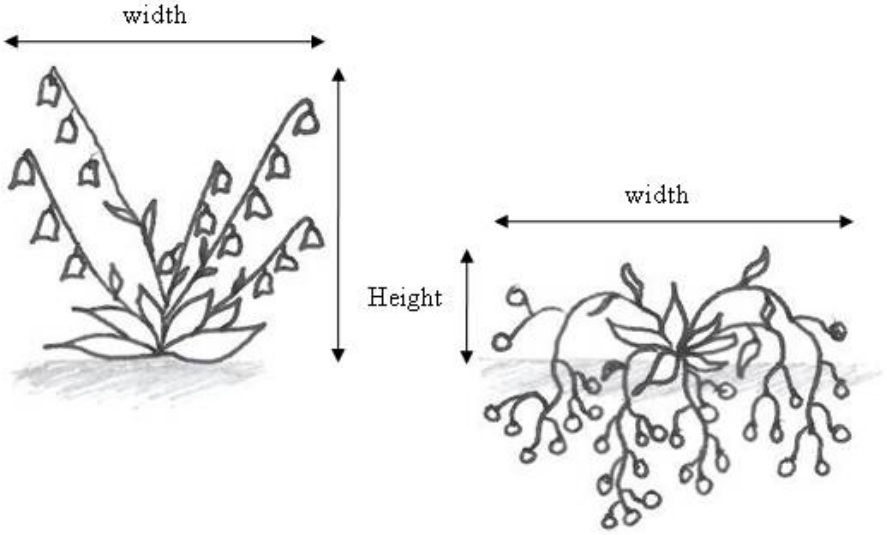
5
trailing

Ad. 2: Plant: height

Plant height should be assessed from the surface of the growing medium.

Ad. 3: Plant: width

The natural width of the plants should be observed.



Ad. 4: Plant: density

This is an overall assessment of the density of the whole plant.

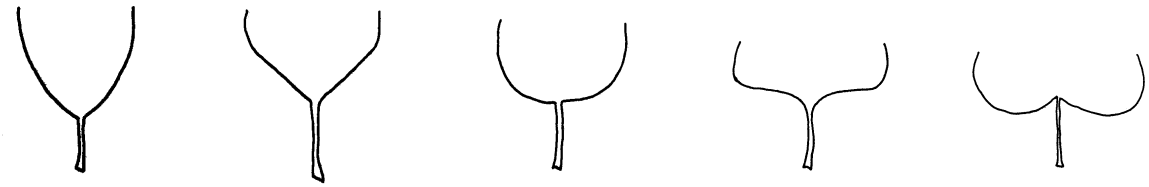
Ad. 5: Stem: color

To be observed in the mid third of the flowering stem, excluding the flowering part.

Ad. 10: Leaf blade: shape of apex

1 acuminate | 2 acute | 3 obtuse

Ad. 11: Leaf blade: shape of base



1 acute | 2 obtuse | 3 rounded | 4 truncate | 5 cordate

Ad. 12: Leaf blade: position of broadest part

1
strongly towards base

2
moderately towards base

3
at middle

4
moderately towards apex

Ad. 21: Calyx: petaloid lobes

1
absent

9
present

Ad. 22: Only varieties with petaloid calyx lobes: calyx lobe: color

To be observed on the outer surface of the petaloid lobe

Ad. 23: Calyx: angle of lobes

The observation is on the lobe of the calyx and excludes any appendage that might be present between the lobes.

1
adpressed to corolla

3
slightly spreading

5
horizontal

7
weakly reflexed

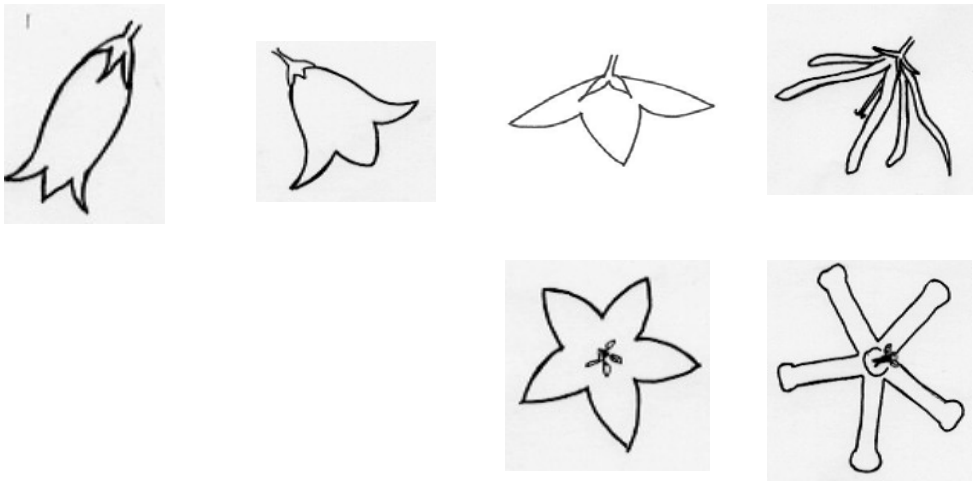
9
strongly reflexed

Ad.: 24 Corolla: attitude

The natural attitude of the Corolla should be observed irrespective of the angle of the pedicel.

1	2	3	4	5
upward	slightly outwards	strongly outwards	slightly downwards	strongly downward

Ad. 25: Corolla: type



1	2	3	4
tubular	campanulate	rotate	with strap-shaped lobes

Ad. 26: Corolla: number of whorls

This does not include the petaloid calyx where present.

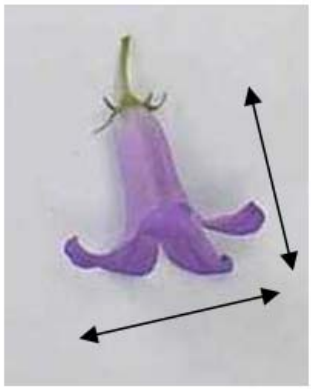
1	2	3	4	5
very few	few	medium	many	very many

Ad. 27: Corolla: diameter

Assess the natural diameter of the corolla.

Ad. 28: Corolla: length

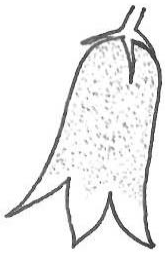
Assess the natural length of the corolla.



Ad. 31: Corolla: distribution of second color of outer surface.

1
none

2
distal quarter



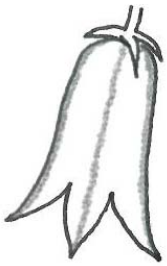
3
basal three quarters

4
basal half

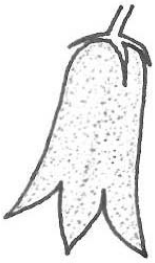
5
basal quarter

6
at base

7
marginal zone



8
midrib



9
throughout

Ad. 32: Corolla: pattern of second color of outer surface

1
solid or nearly so

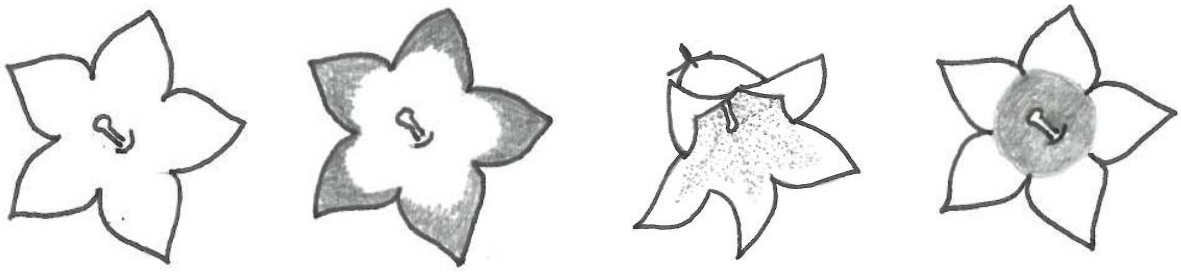
2
flushed

3
along veins

4
dotted

5
spotted

Ad. 35: Corolla: distribution of second color of inner side

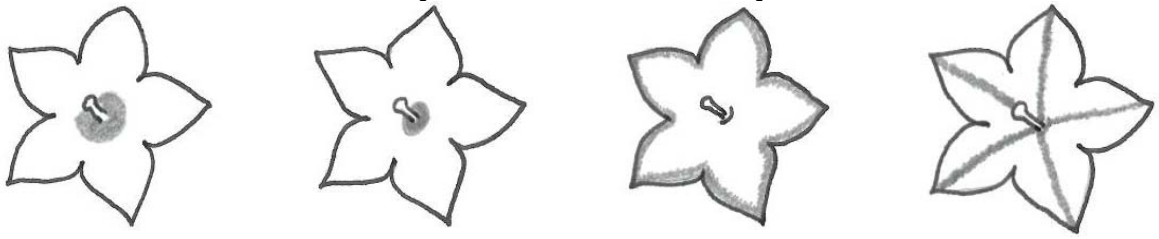


1
none

2
distal quarter

3
basal three quarters

4
basal half



5
basal quarter

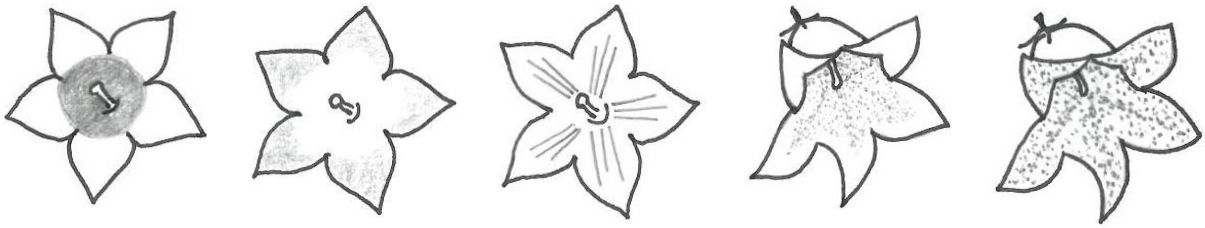
6
at base

7
marginal zone

8
midrib

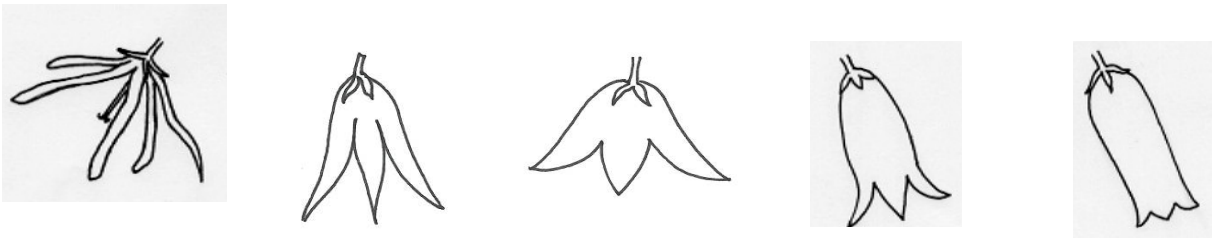
9
throughout

Ad. 36: Corolla: pattern of second color of inner side



1	2	3	4	5
solid or nearly solid	flushed	along veins	dotted	spotted

Ad. 37: Corolla tube: length of as a proportion of the total corolla length



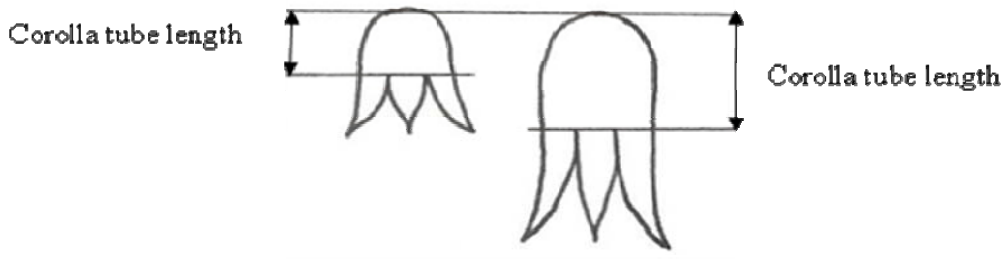
1	3	5	7	9
absent or very short	short	medium	long	very long

Ad. 37: Corolla tube: length of as a proportion of the total corolla length
Ad. 38: Corolla tube: length

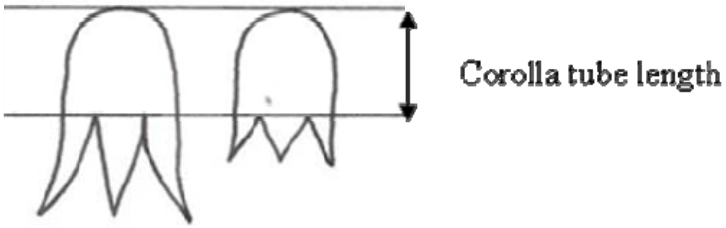
The tube is the part of the corolla that is fused, but is not always tube shaped.

The length can be expressed in absolute terms in characteristics 38 or as a proportion of the total length of the corolla in characteristic 37. The expression of the two characteristics is independent as shown in the two examples below.

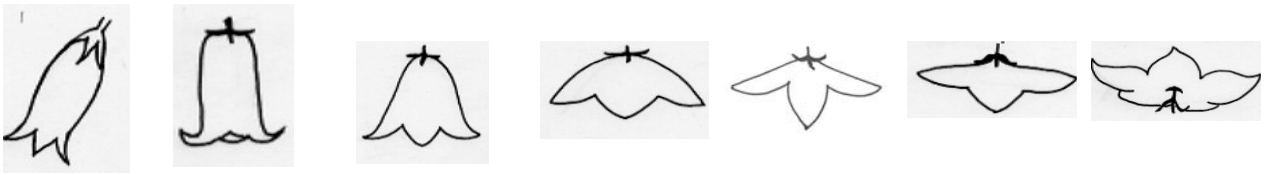
Example 1
In this case the observation for characteristics 37 would be the same, the proportion of the corolla made up of the fused part is 'medium' for both varieties. However the observation for the absolute length of the tube, Characteristic 38, would be different.



Example 2
In this case the observation for characteristics 37 would be the different as the proportion of the corolla made up of the fused part is 'medium' for the first variety and 'long' for the second variety. However the observation for the absolute length of the tube, Characteristic 38, would be the same.



Ad. 39: Corolla tube: profile of fused part in longitudinal section

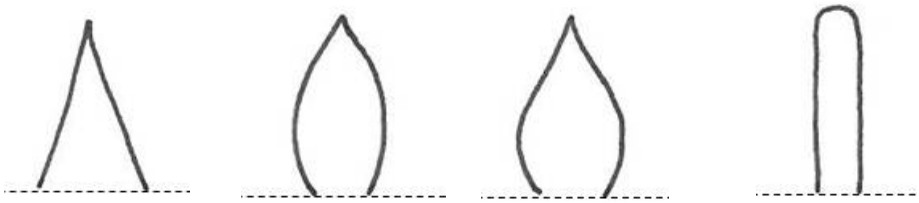


1	2	3	4	5	6	7
converging	parallel	slightly diverging	moderately diverging	strongly diverging	horizontal	reflexing

Ad. 40: Corolla tube: diameter

The distance across the corolla at the base of the lobes.

Ad. 41: Corolla lobe: shape



1	2	3	4
triangular	ovate	elliptic	strap-shaped

Ad. 43: Corolla lobe: width

To be observed at the at widest point.

Ad. 44: Corolla lobe: reflexing

1	3	5	7	9
absent or very weak	weak	medium	strong	very strong

Ad. 46: Corolla lobe: profile in cross section

To be observed at widest point of the lobe.

1	2	3	4	5	6
strongly concave	moderately concave	weakly concave	flat	weakly convex	moderately convex

Ad. 47: Corolla lobe: shape of apex

1	2	3	4
acuminate	acute	obtuse	rounded

9. Literature

Brickell, C.,(ed.)., 1996: The Royal Horticultural Society A-Z Encyclopedia of Garden Plants. Dorling Kindersley Ltd.. London, GB

Huxley, A., (ed.), Griffiths, M., (ed.), Levy, M., (ed.), 1999: The Royal Horticultural Society Dictionary of Gardening. McMillan Reference Ltd.. London, GB

Lewis, P., Lynch, M., 1989: Campanulas. Christopher Helm Ltd. Bromley, Kent, GB

Nicholls, G., 2006: Dwarf Campanulas and Associated Genera. Timber Press Inc. Oregon, US

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

1. Subject of the Technical Questionnaire

1.1 Botanical name	*Campanula* L.
1.2 Common name	Campanula
1.3 Species (please complete)	

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)

(……..……..…) x (……..……..…)
female parent male parent

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

(……..……..…) x (……..……..…)
female parent male parent

(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.

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 Other [ ]

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 (1)	**Plant: growth habit**		
	upright	La Bello	1[ ]
	semi-upright	Bowl of Cherries	2[ ]
	spreading	PKMP05	3[ ]
	semi-trailing	Camgood	4[ ]
	trailing	*C. isophylla* 'Alba'	5[ ]
5.2 (2)	**Plant: height**		
	very short		1[ ]
	very short to short		2[ ]
	short		3[ ]
	short to medium		4[ ]
	medium		5[ ]
	medium to tall		6[ ]
	tall		7[ ]
	tall to very tall		8[ ]
	very tall		9[ ]
	very tall to extremely tall		10[ ]
	extremely tall		11[ ]

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

	Characteristics	Example Varieties	Note
5.3 (24)	**Corolla: attitude**		
	upwards	Samantha	1[ ]
	slightly outwards	PKMM01	2[ ]
	strongly outwards	Blue Eyed Blonde	3[ ]
	slightly downwards	Bowl of Cherries	4[ ]
	downwards	Purple Sensation	5[ ]
5.4 (26)	**Corolla: number of whorls**		
	very few	PKMH01	1[ ]
	few	Havidb701	2[ ]
	medium	Snowball	3[ ]
	many	PKMH04	4[ ]
	very many	La Bello	5[ ]
5.5(i) (29)	**Corolla: main or only color of outer surface**		
	RHS Colour Chart (indicate reference number)		
5.5(ii) (29)	**Corolla: main or only color of outer surface**		
	white		1[ ]
	pink		2[ ]
	blue		3[ ]
	mauve		4[ ]
	purple		5[ ]

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

	Characteristics	Example Varieties	Note
5.6(i) (30)	**Corolla: second color of outer surface** RHS Colour Chart (indicate reference number)		
5.6(ii) (30)	**Corolla: second color of outer surface**		
	white		1[ ]
	pink		2[ ]
	blue		3[ ]
	mauve		4[ ]
	purple		5[ ]
5.7(i) (33)	**Corolla: main or only color of inner surface** RHS Colour Chart (indicate reference number)		
5.7(ii) (33)	**Corolla: main or only color of inner surface**		
	white		1[ ]
	pink		2[ ]
	blue		3[ ]
	mauve		4[ ]
	purple		5[ ]
5.8(i) (34)	**Corolla: second color of inner surface** RHS Colour Chart (indicate reference number)		
5.8(ii) (34)	**Corolla: second color of inner surface**		
	white		1[ ]
	pink		2[ ]
	blue		3[ ]
	mauve		4[ ]
	purple		5[ ]

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	*Corolla: attitude*	*upwards*	*strongly outwards*

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 Main use of the variety

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

.....

7.4 A representative color image 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”.

……

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]