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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

PETUNIA

UPOV Code(s): PETCH; PETUN

Petunia Juss.;
×*Petchoa* J. M. H. Shaw

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Germany

to be considered by the

Technical Working Party for Ornamental Plants and Forest Trees
at its forty-ninth session, to be held in Gimcheon City, Republic of Korea,
from 2016-06-13 to 2016-06-17

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Petunia Juss.	Petunia	Pétunia	Petunie	Petunia
×*Petchoa* J. M. H. Shaw, *Petunia* × *Calibrachoa*				

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

1.1 These Test Guidelines apply to all varieties of *Petunia* Juss., ×*Petchoa* J. M. H. Shaw (Petunia x Calibrachoa)..

1.2 These Test Guidelines do not apply to varieties of the genus Calibrachoa, which are covered by the Test Guidelines for Calibrachoa (TG/207/2).

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 or seed.

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

vegetatively propagated varieties: 15 rooted cuttings
seed-propagated varieties: a sufficient quantity of seed to produce 30 plants.

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

3.4.2 Vegetatively propagated varieties: each test should be designed to result in a total of at least 15 plants.

3.4.3 Seed-propagated varieties: each test should be designed to result in a total of at least 30 plants.

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 or parts of plants to be Examined

In the case of vegetatively propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observation made on all plants in the test, disregarding any off-type plants.

In the case of seed-propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observation 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 15 plants, 1 off-type is allowed.

4.2.3 For the assessment of uniformity of self-pollinated seed propagated varieties, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 30 plants, 2 off-types are 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 new seed or 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) Shoot: length (characteristic 3)
(c) Leaf: variegation (characteristic 8)
(d) Flower: type (characteristic 14)
(e) Flower: width (characteristic 16)
(f) Flower: conspicuousness of veins (characteristic 19)
(g) Flower: main color (characteristic 21)
with the following groups:
Gr. 1: white
Gr. 2: yellow
Gr. 3: orange red
Gr. 4: red
Gr. 5: blue pink
Gr. 6: purple
Gr. 7: violet
Gr. 8: black
(h) Flower: secondary color (characteristic 22)
with the following groups:
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: red
Gr. 5 blue pink
Gr. 6: purple
Gr. 7: violet
Gr. 8: brown
Gr. 9: black

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1 2	**3 4**	**5 6**	**7**			
	Name of characteristics in English	**Nom du caractère en français**	**Name des Merkmals auf Deutsch**	**Nombre del carácter en español**		
	states of expression	types d'expression	Ausprägungsstufen	tipos de expresión		

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

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

7 Not applicable

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.		**QN VG**	**(+) (a)**				
		Plant: growth habit					
		upright	dressé	aufrecht	erguido	Dueplubana	1
		upright to spreading				Sunsurf Grihuti	2
		spreading	étalé	breitwüchsig	extendido	DCAS 303	3
2.	**(*)**	**QN MS/VG**	**(+)**				
		Plant: height					
		short	basse	niedrig	baja	Kerpurflash	3
		medium	moyenne	mittel	media	KUMIYAMA 1 GOU	5
		tall	haute	hoch	alta	PEHY 0011	7
3.	**(*)**	**QN MS/VG**	**(+)**				
		Shoot: length					
		short	courte	kurz	corta	PEHY 0010	3
		medium	moyenne	mittel	media	Kerpurflash	5
		long	longue	lang	larga	Sunsurfviomi	7
4.	**(*)**	**QN MS/VG**	**(+) (a), (b)**				
		Leaf: length					
		short	courte	kurz	corta	KUMIYAMA 1 GOU	3
		medium	moyenne	mittel	media	Keroyal	5
		long	longue	lang	larga	Duefuque	7
5.	**(*)**	**QN MS/VG**	**(a), (b)**				
		Leaf: width					
		narrow	étroite	schmal	estrecha	KAKEGAWA S 91	3
		medium	moyenne	mittel	media	Kerpurflash	5
		broad	large	breit	ancha	PEHY 0016	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.		**PQ VG**	**(+)** **(a), (b)**				
		Leaf: shape					
		ovate					1
		elliptic					2
		circular					3
		obovate					4
		rhombic					5
7.		**PQ VG**	**(+)** **(a), (b)**				
		Leaf: shape of apex					
		acuminate					1
		acute					2
		obtuse					3
		rounded					4
8.	**(*)**	**QL VG**	**(+)** **(a), (b)**				
		Leaf: variegation	**Feuille : panachure**	**Blatt: Panaschierung**	**Hoja: variegación**		
		absent					1
		present					9
9.		**PQ VG**	**(a), (b), (c)**				
		Leaf: main color					
		light yellow					1
		light green					2
		medium green					3
		dark green					4
10.		**QN MS/VG**	**(+)** **(a)**				
		Pedicel: length					
		very short				PEHY 0016	1
		short				Duefuque	2
		medium				Sunsurf Grihuti	3
		long				Kerpurflash	4
		very long				SUNPE 2271	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN VG**	**(+) (a)**				
		Pedicel: anthocyanin coloration					
		absent or very weak				Kerverflush	1
		weak				Florpemiblue	2
		medium				KLEPH 13235	3
		strong				Duefuque	4
12.	**(*)**	**QN VG**	**(+) (a)**				
		Calyx lobe: length					
		very short					1
		short				Duepepre	2
		medium				PEHY 0010	3
		long				BHTUN 31501	4
		very long				PEHY 0011	5
13.	**(*)**	**QN VG**	**(a)**				
		Calyx lobe: width					
		very narrow				Sunsurfviomi	1
		narrow				KAKEGAWA S 91	2
		medium				PEHY 0010	3
		broad				Keroyal	4
		very broad				SUNPE 2271	5
14.	**(*)**	**QL VG**	**(+) (a)**				
		Flower: type	**Fleur: type**	**Blüte: Typ**	**Flor: tipo**		
		single	simple	einfach	sencilla		1
		double	double	gefüllt	doble		2
15.		**QN VG**	**(+) (a)**				
		<u>Only varieties with</u> <u>Flower: type: double:</u> Flower: density					
		very sparse					1
		sparse					2
		medium					3
		dense					4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**(*)**	**QN MS/VG**	**(+) (a), (d)**				
		Flower: width					
		narrow				SAKPXC 011	3
		medium				PEHY 0011	5
		broad				Sunsurf Grihuti	7
17.	**(*)**	**QN VG**	**(+) (a), (d)**				
		Flower: lobing					
		absent or very weak					1
		weak					2
		medium					3
		strong					4
		very strong					5
18.		**QN VG**	**(+) (a), (d)**				
		Flower: undulation					
		absent or very weak					1
		weak					2
		medium					3
		strong					4
		very strong					5
19.	**(*)**	**QN VG**	**(+) (a), (d)**				
		Flower: conspicuousness of veins					
		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
20.		**PQ VG**	**(+)**	**(a), (d)**			
		Flower: color of veins					
		white					1
		greenish					2
		yellow					3
		pink					4
		red					5
		purple					6
		violet					7
		black					8
21.	**(*)**	**PQ VG**		**(a), (c), (d)**			
		Flower: main color	**Fleur: couleur principale**	**Blüte: Hauptfarbe**	**Flor: color principal**		
		RHS Colour Chart (indicate reference number)					
22.	**(*)**	**PQ VG**	**(+)**	**(a), (c), (d)**			
		Flower: secondary color					
		RHS Colour Chart (indicate reference number)					
23.	**(*)**	**PQ VG**	**(+)**	**(a), (c), (d)**			
		Flower: distribution of secondary color					
		at transition to corolla tube					1
		along mid-veins of corolla lobes					2
		along the fused parts of the corolla lobes					3
		at margin of corolla					4
		irregular					5
24.		**QN VG**	**(+)**	**(a), (c), (d)**			
		Flower: area of secondary color					
		small					1
		medium					2
		large					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		**QN VG**	**(+) (a)**				
		Plant: number of flowers with different size of area of secondary color					
		absent or few					1
		medium					2
		many					3
26.		**PQ VG**	**(+) (a), (d)**				
		Flower: tertiary color					
		RHS Color Chart (indicate reference number)					
27.	**(*)**	**PQ VG**	**(+) (a), (c)**				
		Young flower: main color					
		RHS Color Chart (indicate reference number)					
28.		**PQ VG**	**(+) (a), (c)**				
		Aged flower: main color					
		RHS Color Chart (indicate reference number)					
29.		**PQ VG**	**(+) (a), (d)**				
		Corolla lobe: shape of apex					
		acute					1
		cuspidate					2
		rounded					3
		truncate					4
		emarginate					5
30.		**QN MS/VG**	**(+) (a)**				
		<u>Only varieties with Flower: type: single:</u> Corolla tube: width					
		narrow					1
		medium					2
		broad					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31.		**PQ VG**	**(+) (a), (c)**				
		Corolla tube: main color of inner side					
		RHS Color Chart (indicate reference number)					
32.		**QN VG**	**(+) (a)**				
		Corolla tube: conspicuousness of veins on inner side					
		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
33.	**(*)**	**PQ VG**	**(+) (a), (c)**				
		Corolla tube: main color of outer side					
		RHS Color Chart (indicate reference number)					
34.	**(*)**	**PQ VG**	**(a)**				
		<u>Only varieties with Flower: type: single:</u> Anther: color of pollen					
		whitish to light blue					1
		yellow					2
		pink					3
		medium blue to violet					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) Observations should be made at the time of full flowering.

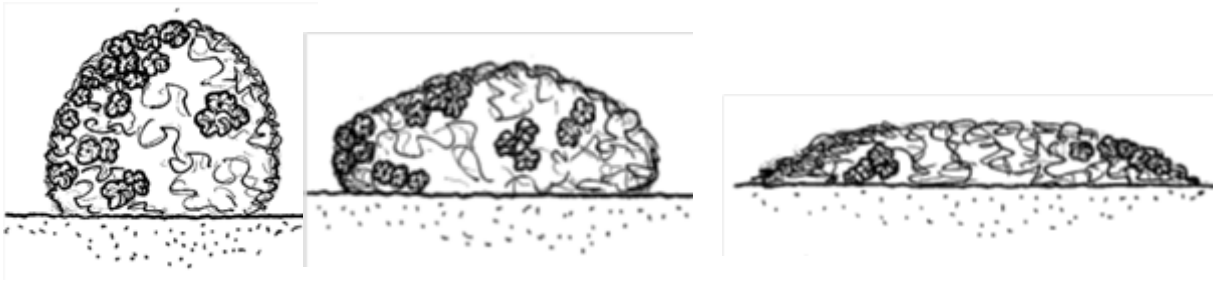
(b) Observations on the leaf should be made on the upper side of fully developed leaves from the middle part of a shoot.

(c) The main color is the color with the largest surface area excluding veins. In cases where the areas of the main and the secondary color are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color.

(d) Observations on the flower should be made on the inner side of the corolla lobes of a fully developed flower before fading. Observations on varieties with double flowers should be made on the outer corolla lobes.

8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit



1	2	3
upright	upright to spreading	spreading

Petunias can be grown in the ground or in pots. When grown in pots the growth habit of state 3 can be more drooping than spreading.

1	2	3
upright	upright to spreading	spreading

Ad. 2: Plant: height

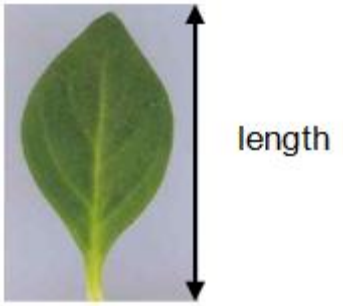
The plant height should be observed from the soil level to the highest point of the plant. The observation should be done towards the end of the trial.

Ad. 3: Shoot: length

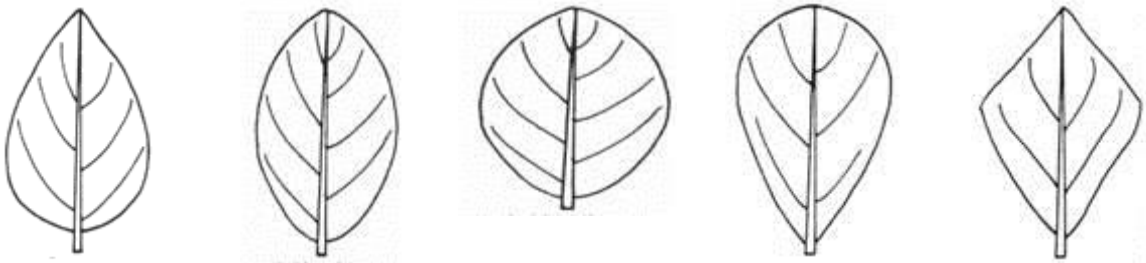
The shoot length should be observed on the longest shoot from the soil level to the end of the shoot. The observation should be done towards the end of the trial.

Ad. 4: Leaf: length

The leaf length is observed including petiole.

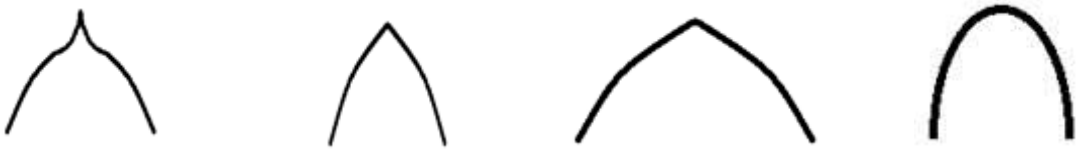


Ad. 6: Leaf: shape



1 ovate | 2 elliptic | 3 circular | 4 obovate | 5 rhombic

Ad. 7: Leaf: shape of apex



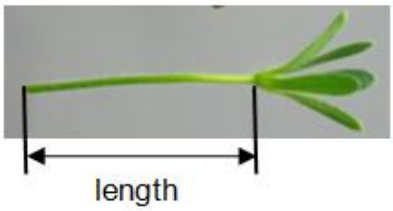
1 acuminate | 2 acute | 3 obtuse | 4 rounded

Ad. 8: Leaf: variegation

1
absent

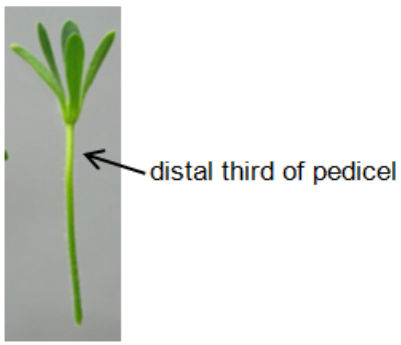
9
present

Ad. 10: Pedicel: length



Ad. 11: Pedicel: anthocyanin coloration

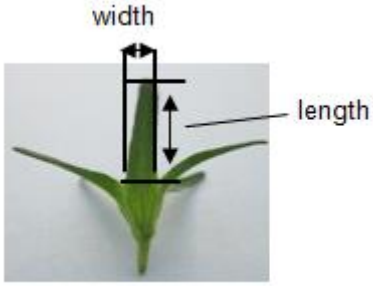
The anthocyanin coloration should be observed on the distal third of the pedicel.



Ad. 12: Calyx lobe: length

Ad. 13: Clayx lobe: width

Observations on the calyx lobe should be made on the broadest calyx lobe.



Ad. 14: Flower: type

A double flower has more than 1 whorl of corolla lobes.

1
single

2
double

Ad. 15: Only varieties with Flower: type: double: Flower: density

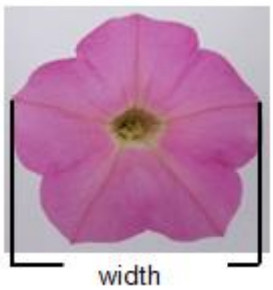
1
very sparse

3
medium

4
dense

Ad. 16: Flower: width

The width is observed at the broadest part of the flower.



Ad. 17: Flower: lobing

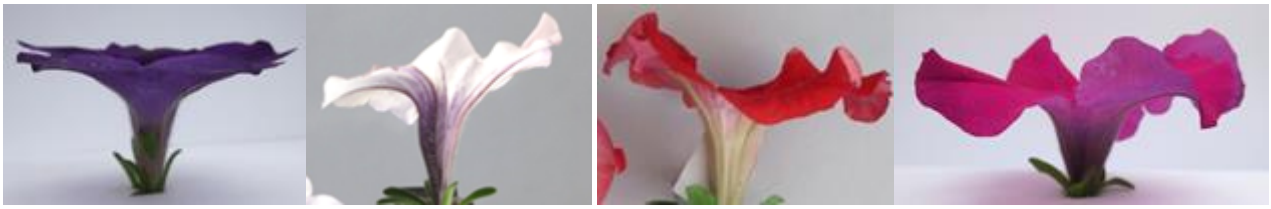
1
absent or very weak

2
weak

3
medium

4
strong

Ad. 18: Flower: undulation



1
absent or very weak

2
weak

3
medium

4
strong

Ad. 19: Flower: conspicuousness of veins

The conspicuousness is determined by the color contrast and the number of contrasting veins.

1
absent or very weak

3
weak

5
medium

7
strong

9
very strong

Ad. 20: Flower: color of veins

To be observed only when the conspiciuousness of the veins (char. 19) is at least weak (3).

Ad. 22: Flower: secondary color

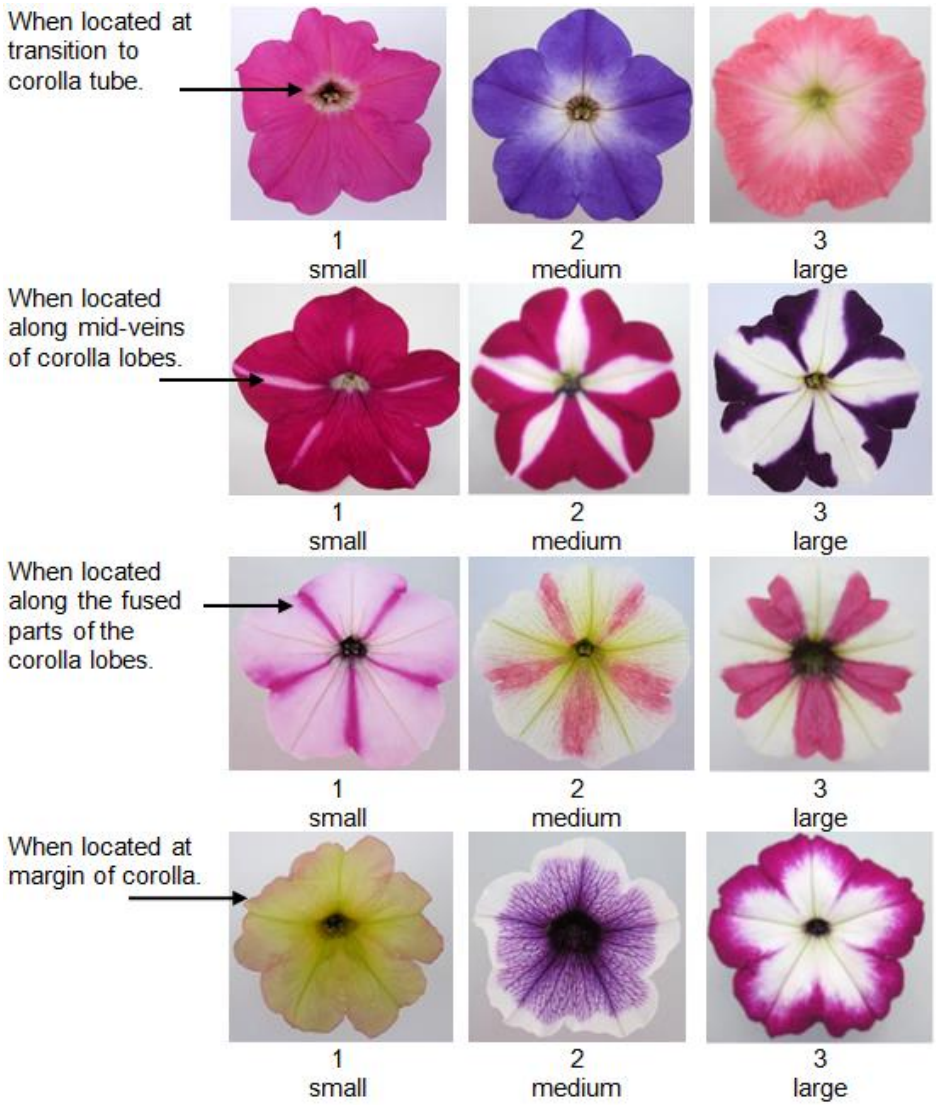
The secondary color is the color with the second largest surface area excluding veins. In cases where the areas of the main and the secondary color are too similar to reliably decide which color has the largest area, the lighter color is considered to be the secondary color. In cases where the areas of the secondary and the tertiary color are too similar to reliably decide which color has the largest area, the darker color is considered to be the secondary color.

Ad. 23: Flower: distribution of secondary color

Petunia varieties with bi- or multi-colored flowers can have a strong reaction on the environmental conditions. Due the conditions during a specific period of their bud development the area of the secondary color on some flowers can be different from the area on other flowers on the same plant. Therefore the distribution of the secondary color on those flowers should be observed which have the predominant distribution.

1	2	3	4	5
at transition to corolla tube	along mid-veins of corolla lobes	along the fused parts of the corolla lobes	at margin of corolla	irregular

Ad. 24: Flower: area of secondary color



Ad. 25: Plant: number of flowers with different size of area of secondary color

Observations should be made on fully developed flowers.

1
absent or few

3
many

Ad. 26: Flower: tertiary color

The tertiary color is the color with the third largest area excluding veins. In cases where the areas of the secondary and the tertiary color are too similar to reliably decide which color has the largest area, the lighter color is considered to be the tertiary color.

Ad. 27: Young flower: main color

Observations on the young flower should be made on the inner side of corolla lobes of flowers which have just fully opened. Observations on varieties with double flowers should be made on the outer corolla lobes.

Ad. 28: Aged flower: main color

Observations on the aged flower should be made on the inner side of corolla lobes of flowers which have just started to fade. Observations on varieties with double flowers should be made on the outer corolla lobes.

Ad. 29: Corolla lobe: shape of apex

1
acute

2
cuspidate

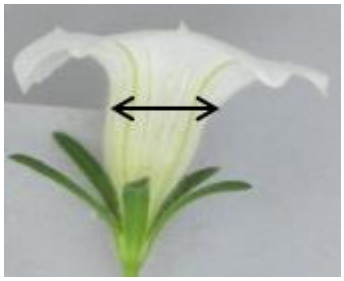
3
rounded

4
truncate

5
emarginate

Ad. 30: Only varieties with Flower: type: single: Corolla tube: width

1
narrow



3
broad

Ad. 31: Corolla tube: main color of inner side

The main color should be observed in the middle part of the corolla tube.

Ad. 32: Corolla tube: conspicuousness of veins on inner side

The conspicuousness is determined by the color contrast and the number of contrasting veins.

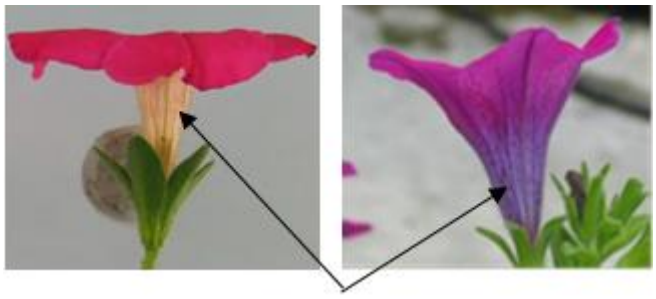
1
absent or very weak

3
weak

5
medium

7
strong

Ad. 33: Corolla tube: main color of outer side



corolla tube: main color of outer side

9. Literature

Rünger, W., 1976: Licht und Temperatur im Zierpflanzenbau. Verlag Paul Parey, DE, pp.62-64.

Wijsman, H.J.W., 1982: On the Interrelationships of Certain Species of Petunia I. Taxonomic Notes on the Parental Species of Petunia Hybrida. Acta Bot. Neerl. 31 (5/6), NL, pp. 477-490.

Wijsman, H.J.W. and de Jong, J.H., 1985: On the Interrelationships of Certain Species of Petunia IV. Hybridization Between P. linearis and P. calycina and Nomenclatorial Consequences in the Petunia Group. Acta Bot. Neerl. 34 (3), NL, pp. 337-349.

Wijsman, H.J.W., 1990: On the Interrelationships of Certain Species of Petunia VI. New Names for the Species of Calibrachoa Formerly Included Into Petunia (Solanaceae). Acta Bot. Neerl. 39 (19), NL, pp. 101 and 102.

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

1.1.1	Botanical name	×*Petchoa* J. M. H. Shaw	[ ]
1.1.2	Common name		
1.2.1	Botanical name	*Petunia* Juss.	[ ]
1.2.2	Common name	Petunia	

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 Seed-propagated varieties

(a) Self-pollination [ ]
(b) Other (please provide details) [ ]

4.2.2 Vegetative propagation

(a) Cuttings [ ]
(b) *In vitro* propagation [ ]
(c) Other (state method) [ ]

4.2.3 Other [ ]
(Please provide details)

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	**Plant: growth habit**		
(1)			
	upright	Dueplubana	1 [ ]
	upright to spreading	Sunsurf Grihuti	2 [ ]
	spreading	DCAS 303	3 [ ]
5.2	**Shoot: length**		
(3)			
	very short		
	very short to short		2 [ ]
	short	PEHY 0010	3 [ ]
	short to medium		4 [ ]
	medium	Kerpurflash	5 [ ]
	medium to long		6 [ ]
	long	Sunsurfviomi	7 [ ]
	long to very long		8 [ ]
	very long		9 [ ]
5.3	**Leaf: variegation**		
(8)			
	absent		1 [ ]
	present		9 [ ]
5.4	**Flower: type**		
(14)			
	single		1 [ ]
	double		2 [ ]

	Characteristics	Example Varieties	Note
5.5	**Flower: width**		
(16)			
	very narrow		1 [ ]
	very narrow to narrow		2 [ ]
	narrow	SAKPXC 011	3 [ ]
	narrow to medium		4 [ ]
	medium	PEHY 0011	5 [ ]
	medium to broad		6 [ ]
	broad	Sunsurf Grihuti	7 [ ]
	broad to very broad		8 [ ]
	very broad		9 [ ]
5.6	**Flower: conspicuousness of veins**		
(19)			
	absent or very weak		1 [ ]
	very weak to weak		2 [ ]
	weak		3 [ ]
	weak to medium		4 [ ]
	medium		5 [ ]
	medium to strong		6 [ ]
	strong		7 [ ]
	strong to very strong		8 [ ]
	very strong		9 [ ]
5.7	**Flower: main color**		
(21)			
	RHS Colour Chart (indicate reference number)		
	white		1 [ ]
	yellow		2 [ ]
	orange red		3 [ ]
	red		4 [ ]
	blue pink		5 [ ]
	purple		6 [ ]
	violet		7 [ ]
	black		8 [ ]
	other color (indicate)		9 [ ]

	Characteristics	Example Varieties	Note
5.8	**Flower: secondary color**		
(22)			
	RHS Colour Chart (indicate reference number)		
	white		1 [ ]
	green		2 [ ]
	yellow		3 [ ]
	red		4 [ ]
	blue pink		5 [ ]
	purple		6 [ ]
	violet		7 [ ]
	brown		8 [ ]
	black		9 [ ]
	other color (indicate)		10 [ ]

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: width*	*narrow*	*medium*

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

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (http://www.upov.int/tgp/en/).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

Authorities may allow certain of this information to be provided in a confidential section of 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.

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]