



## **PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY**

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### **PETUNIA**

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## **1. SUBJECT OF THE PROTOCOL AND REPORTING**

### **1.1 Scope of the technical protocol**

This Technical Protocol applies to all varieties of *Petunia Juss.; xPetchoa J. M. H. Shaw*.

The protocol describes the technical procedures to be followed in order to meet the requirements of Council Regulation 2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on documents agreed by the International Union for the Protection of New Varieties of Plants (UPOV), such as the General Introduction to DUS (UPOV Document TG/1/3 [http://www.upov.int/en/publications/intro\\_dus.htm](http://www.upov.int/en/publications/intro_dus.htm)), its associated TGP documents (<http://www.upov.int/en/publications/tgp/>) and the relevant UPOV Test Guideline TG/2012/2 proj. 4 dated 24/01/2017 for the conduct of tests for Distinctness, Uniformity and Stability.

### **1.2 Entry into Force**

The present protocol enters into force on **15.03.2017**. Any on-going DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the Technical Protocol. Technical examinations of candidate varieties are carried out according to the TP in force when the DUS test starts. The starting date of a DUS examination is considered to be the due date for submitting of plant material for the first test period.

In cases where the Office requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process to be carried out at the moment of this request, such report can only be accepted if the technical examination has been carried out according to the CPVO TP which was in force at the moment when the technical examination started.

### **1.3 Reporting between Examination Office and CPVO and Liaison with Applicant**

#### **1.3.1 Reporting between Examination Office and CPVO**

The Examination Office shall deliver to the CPVO a preliminary report ("the preliminary report") no later than two weeks after the date of the request for technical examination by the CPVO.

The Examination Office shall also deliver to the CPVO a report relating to each growing period ("the interim report") and, when the Examination Office considers the results of the technical examination to be adequate to evaluate the variety or the CPVO so requests, a report relating to the examination ("the final report").

The final report shall state the opinion of the Examination Office on the distinctness, uniformity and stability of the variety. Where it considers those criteria to be satisfied, or where the CPVO so requests, a description of the variety shall be added to the report. If a report is negative the Examination Office shall set out the detailed reasons for its findings.

The interim and the final reports shall be delivered to the CPVO as soon as possible and no later than on the deadlines as laid down in the designation agreement.

#### **1.3.2 Informing on problems in the DUS test**

If problems arise during the course of the test the CPVO should be informed immediately so that the information can be passed on to the applicant. Subject to prior permanent agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

#### **1.3.3 Sample keeping in case of problems**

If the technical examination has resulted in a negative report, the CPVO shall inform the Examination Office as soon as possible in case that a representative sample of any relevant testing material shall be kept.

## **2. MATERIAL REQUIRED**

### **2.1 Plant material requirements**

Information with respect to the agreed closing dates and submission requirements of plant material for the technical examination of varieties can be found on <http://www.cpvo.europa.eu/main/en/home/documents-and-publications/s2-gazette> in the special issue S2 of the Official Gazette of the Office. General requirements on submission of samples are also to be found following the same link.

## **2.2 Informing the applicant of plant material requirements**

The CPVO informs the applicant that

- he is responsible for ensuring compliance with any customs and plant health requirements.
- the plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.
- 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.

## **2.3 Informing about problems on the submission of material**

The Examination Office shall report to the CPVO immediately in cases where the test material of the candidate variety has not arrived in time or in cases where the material submitted does not fulfil the conditions laid down in the request for material issued by the CPVO.

In cases where the examination office encounters difficulties to obtain plant material of reference varieties the CPVO should be informed.

## **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"  
[http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp\\_9\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_9_1.pdf).

### **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.

Because daylight varies, colour determinations made against a colour 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 colour 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 15 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**

In accordance with Article 83(3) of Council Regulation No. 2100/94 an applicant may claim either in the Technical Questionnaire or during the test that a candidate has a characteristic which would be helpful in establishing distinctness. If such a claim is made and is supported by reliable technical data, an additional test may be undertaken providing that a technically acceptable test procedure can be devised.

Additional tests will be undertaken, with the agreement of the President of CPVO, where distinctness is unlikely to be shown using the characters listed in the protocol.

### **3.6 Constitution and maintenance of a variety collection**

The process for the constitution and the maintenance of a variety collection can be summarized as follows:

Step 1: Making an inventory of the varieties of common knowledge

Step 2: Establishing a collection ("variety collection") of varieties of common knowledge which are relevant for the examination of distinctness of candidate varieties

Step 3: Selecting the varieties from the variety collection which need to be included in the growing trial or other tests for the examination of distinctness of a particular candidate variety.

#### **3.6.1 Forms of variety collection**

The variety collection shall comprise variety descriptions and may comprise living plant material. The variety description shall be produced by the EO unless special cooperation exists between EOs and the CPVO. The descriptive and pictorial information produced by the EO shall be held and maintained in a form of a database.

#### **3.6.2 Living Plant Material**

The EO shall obtain living plant material of reference varieties as and when those varieties need to be included in growing trials or other tests.

#### **3.6.3 Making an inventory of varieties of common knowledge for inclusion in the variety collection**

The inventory shall include varieties protected under National and Community PBR and varieties in trade or in commercial registers. In addition to the above, the inventory shall be extended to the appropriate to

- any commercial document in which varieties are marketed as propagating or harvested material, especially when there is no official registration system;
- any list including varieties which are publicly available within plant collections (varieties included in genetic resource collections, collection of old varieties, etc.);
- information provided by relevant plant experts;
- relevant example varieties referred to in the technical protocols for the examination of distinctness.

## **4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY**

The prescribed procedure is to assess distinctness, uniformity and stability in a growing trial.

### **4.1 Distinctness**

#### **4.1.1 General recommendations**

It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 9 'Examining Distinctness' ([http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp\\_9\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_9_1.pdf)) prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in this Technical Protocol.

To assess distinctness of hybrids, a pre-screening system on the basis of the parental lines and the formula may be established according to the following recommendations:

- (i) description of parental lines according to the Technical Protocols;
- (ii) check of the distinctness of the parental lines in comparison with the reference collection, based on the characteristics in the table of characteristics in order to screen the closest inbred lines;
- (iii) check of the distinctness of the hybrid formula in comparison with those of the hybrids in common knowledge, taking into account the closest inbred lines;
- (iv) assessment of the distinctness at the hybrid level of varieties with a similar formula.

Further guidance is provided in documents TGP/9 "Examining Distinctness" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability".

#### 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 Technical Protocols are familiar with the recommendations contained in the UPOV-General Introduction to DUS 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 10 plants or parts taken from each of 10 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 third 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. colour 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**

It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 10 'Examining Uniformity' ([http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp\\_10\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_10_1.pdf)) prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in this Technical Protocol:

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 It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 11 'Examining Stability' ([http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp\\_11\\_1.pdf](http://www.upov.int/export/sites/upov/en/publications/tgp/documents/tgp_11_1.pdf))

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 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 colour (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 colour (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 If other characteristics than those from the TP are used for the selection of varieties to be included into the growing trial, the EO shall inform the CPVO and seek the prior consent of the CPVO before using these characteristics.

## 6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS

### 6.1 Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the table of characteristics. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental conditions under which the test is conducted or by specific legislation on plant health. In the latter case, the CPVO should be informed.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation N°874/2009, to insert additional characteristics and their expressions in respect of a variety.

#### States of expression and corresponding notes

In the case of qualitative and pseudo-qualitative characteristics, 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 Example Varieties

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

### 6.3 Legend

G	Grouping characteristic	– see Chapter 5
(*)	Asterisked characteristic	– see Chapter 6.1.2
MG, MS, VG, VS		– see Chapter 4.1.5
QL	Qualitative characteristic	
QN	Quantitative characteristic	
PQ	Pseudo-qualitative characteristic	
(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

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>1.</b>	<b>1.</b>	<b>VG</b>	<b>Plant: growth habit</b>		
(+)	(*)	(a)	upright	Dueplubana	1
<b>QN</b>			upright to spreading	Sunsurf Grihuti	2
			spreading	DCAS 303	3
<b>2.</b>	<b>2.</b>	<b>MG/MS VG</b>	<b>Plant: height</b>		
(+)	(*)		short	Kerpurflash	3
<b>QN</b>			medium	KUMIYAMA 1 GOU	5
			tall	PEHY 0011	7
<b>3.</b>	<b>3.</b>	<b>MS/VG</b>	<b>Shoot: length</b>		
(+)			short	PEHY 0010	3
<b>QN</b>			medium	Kerpurflash	5
			long	Sunsurfviomi	7
<b>4.</b>	<b>4.</b>	<b>MS/VG</b>	<b>Leaf: length</b>		
(+)	(*)	(a), (b)	short	KUMIYAMA 1 GOU	3
<b>QN</b>			medium	Keroyal	5
			long	Duefuque	7
<b>5.</b>	<b>5.</b>	<b>MS/VG</b>	<b>Leaf: width</b>		
<b>QN</b>	(*)	(a), (b)	narrow	KAKEGAWA S 91	3
			medium	Kerpurflash	5
			large	PEHY 0016	7
<b>6.</b>	<b>6.</b>	<b>VG</b>	<b>Leaf: shape</b>		
(+)		(a), (b)	ovate		1
<b>PQ</b>			elliptic		2
			circular		3
			obovate		4
			rhombic		5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>7.</b>	<b>7.</b>	<b>VG</b>	<b>Leaf blade: width</b>		
<b>(+)</b>		<b>(a), (b)</b>	acuminate		1
<b>PQ</b>			acute		2
			obtuse		3
			rounded		4
<b>8.</b>	<b>8.</b>	<b>VG</b>	<b>Leaf: variegation</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a), (b)</b>	absent		1
<b>QL</b>			present		9
<b>9.</b>	<b>9.</b>	<b>VG</b>	<b>Leaf: main colour</b>		
<b>PQ</b>		<b>(a), (b), (c)</b>	light yellow		1
			light green		2
			medium green		3
			dark green		4
<b>10.</b>	<b>10.</b>	<b>MG/MS /VG</b>	<b>Pedicle: length</b>		
<b>(+)</b>		<b>(a)</b>	very short	PEHY 0016	1
<b>QN</b>			short	Duefuque	2
			medium	Sunsurf Grihuti	3
			long	Kerpurflash	4
			very long	SUNPE 2271	5
<b>11.</b>	<b>11.</b>	<b>VG</b>	<b>Pedicle: anthocyanin coloration</b>		
<b>(+)</b>		<b>(a)</b>	absent or very weak	Kerverflush	1
<b>QN</b>			weak	Florpemiblu	2
			medium	KLEPH 13235	3
			strong	KLEPH 14250	4
			very strong	SAKPXC 016	5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>12.</b>	<b>12.</b>	<b>VG</b>	<b>Calyx lobe: length</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a)</b>	very short		1
<b>QN</b>			short	Duepepre	2
			medium	PEHY 0010	3
			long	BHTUN 31501	4
			very long	PEHY 0011	5
<b>13.</b>	<b>13.</b>	<b>VG</b>	<b>Calyx lobe: width</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a)</b>	very narrow	Sunsurfviomi	1
<b>QN</b>			narrow	KAKEGAWA S 91	2
			medium	PEHY 0010	3
			broad	Keroyal	4
			very broad	SUNPE 2271	5
<b>14.</b>	<b>14.</b>	<b>VG</b>	<b>Flower: type</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a)</b>	single		1
<b>QL</b>			double		2
<b>15.</b>	<b>15.</b>	<b>VG</b>	<b><u>Only varieties with Flower: type: double:</u> Flower: density</b>		
<b>(+)</b>		<b>(a)</b>	sparse		1
<b>QN</b>			medium		2
			dense		3
<b>16.</b>	<b>16.</b>	<b>MS/VG</b>	<b>Flower: width</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a), (d)</b>	narrow	SAKPXC 011	3
<b>QN</b>			medium	PEHY 0011	5
			broad	PEHY 0013	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>17.</b>	<b>17.</b>	<b>VG</b>	<b>Flower: lobing</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a), (d)</b>	absent or very weak		1
<b>QN</b>			weak		2
			medium		3
			strong		4
			very strong		5
<b>18.</b>	<b>18.</b>	<b>VG</b>	<b>Flower: undulation</b>		
<b>(+)</b>		<b>(a), (d)</b>	absent or very weak		1
<b>QN</b>			weak		2
			medium		3
			strong		4
			very strong		5
<b>19.</b>	<b>19.</b>	<b>VG</b>	<b>Flower: conspicuousness of veins</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a), (d)</b>	absent or very weak		1
<b>QN</b>			weak		3
			medium		5
			strong		7
			very strong		9
<b>20.</b>	<b>20.</b>	<b>VG</b>	<b>Flower: colour of veins</b>		
<b>(+)</b>		<b>(a), (d)</b>	white		1
<b>PQ</b>			greenish		2
			yellow		3
			pink		4
			red		5
			purple		6
			violet		7
			black		8

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
<b>21.</b>	<b>21.</b>	<b>VG</b>	<b>Flower: main colour</b>		
<b>PQ</b>	<b>(*)</b>	<b>(a), (c), (d)</b>	RHS Colour Chart (indicate reference number)		
<b>22.</b>	<b>22.</b>	<b>VG</b>	<b>Flower: secondary colour</b>		
<b>(+) PQ</b>	<b>(*)</b>	<b>(a), (c), (d)</b>	RHS Colour Chart (indicate reference number)		
<b>23.</b>	<b>23.</b>	<b>VG</b>	<b>Flower: distribution of secondary colour</b>		
<b>(+)</b>	<b>(*)</b>	<b>(a), (c), (d)</b>	at transition to corolla tube		1
<b>PQ</b>			along mid-veins of corolla lobes		2
			along the fused parts of the corolla lobes		3
			at margin of corolla		4
			irregular		5
<b>24.</b>	<b>24.</b>	<b>VG</b>	<b>Flower: area of secondary colour</b>		
<b>(+)</b>		<b>(a), (c), (d)</b>	small		1
<b>QN</b>			medium		2
			large		3
<b>25.</b>	<b>25.</b>	<b>VG</b>	<b>Plant: number of flowers with different size of area of secondary colour</b>		
<b>(+)</b>		<b>(a)</b>	absent or few		1
<b>QN</b>			medium		2
			many		3
<b>26.</b>	<b>26.</b>	<b>VG</b>	<b>Flower: tertiary colour</b>		
<b>(+) PQ</b>		<b>(a), (d)</b>	RHS Colour Chart (indicate reference number)		
<b>27.</b>	<b>27.</b>	<b>VG</b>	<b>Young flower: main colour</b>		
<b>(+) PQ</b>	<b>(*)</b>	<b>(a), (c)</b>	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
28.	28.	VG	<b>Aged flower: main colour</b>		
(+) PQ		(a), (c)	RHS Colour Chart (indicate reference number)		
29.	29.	VG	<b>Corolla lobe: shape of apex</b>		
(+)		(a), (d)	acute		1
PQ			cuspidate		2
			rounded		3
			truncate		4
			emarginate		5
30.	30.	MG/MS /VG	<b><u>Only varieties with Flower: type: single: Corolla tube: width</u></b>		
(+)		(a)	very narrow		1
QN			narrow		2
			medium		3
			broad		4
			very broad		5
31.	31.	VG	<b>Corolla tube: main colour of inner side</b>		
(+) PQ		(a), (c)	RHS Colour Chart (indicate reference number)		
32.	32.	VG	<b>Corolla tube: conspicuousness of veins on inner side</b>		
(+)		(a)	absent or very weak		1
QN			weak		3
			medium		5
			strong		7
			very strong		9
33.	33.	VG	<b>Corolla tube: main colour of outer side</b>		
(+) PQ	(*)	(a), (c)	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
34.	34.	VG	<b><u>Only varieties with Flower: type: single: Anther: colour of pollen</u></b>		
	(*)	(a)	whitish		1
PQ			yellow		2
			pink		3
			light blue		4
			blueish violet		5

## 8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

### 8.1 Explanations covering several characteristics

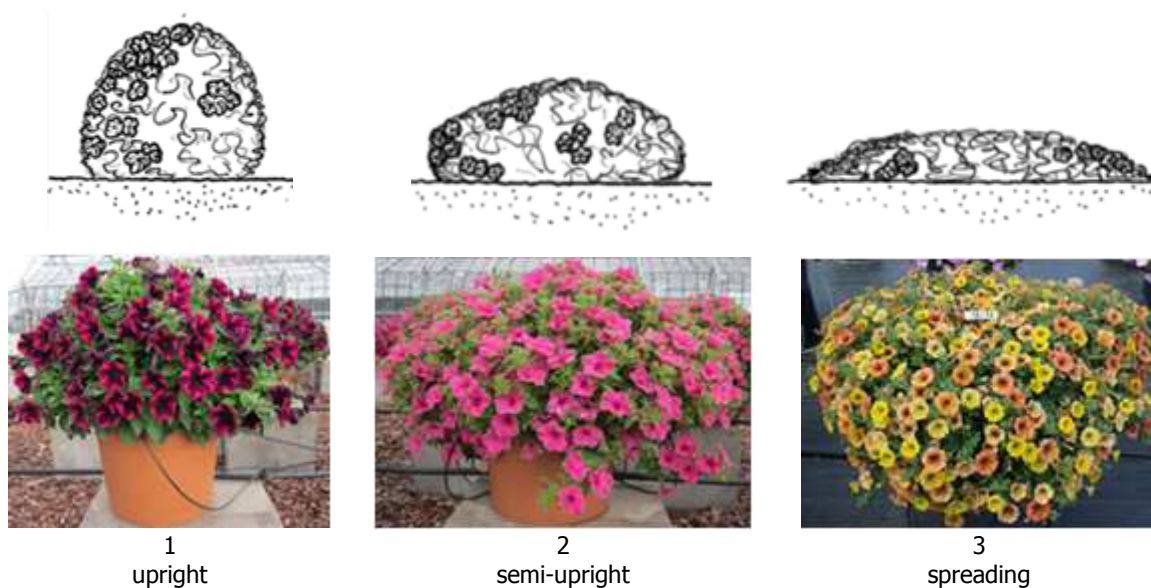
Characteristics containing the following key in the first column of the Table of Characteristics should be examined as indicated below:

- a) Unless otherwise indicated, 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 colour is the colour with the largest surface area excluding veins. In cases where the areas of the main and the secondary colour are too similar to reliably decide which colour has the largest area, the darker colour is considered to be the main colour.
- 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

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.



#### 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.

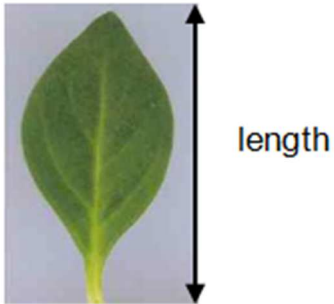
#### Ad. 3: Shoot: length

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

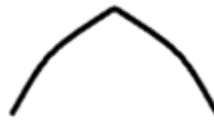
Ad. 7: Leaf: shape of apex



1  
acuminate



2  
acute



3  
obtuse



4  
rounded

Ad. 8: Leaf: variegation

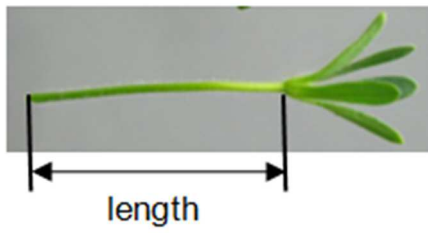


1  
absent



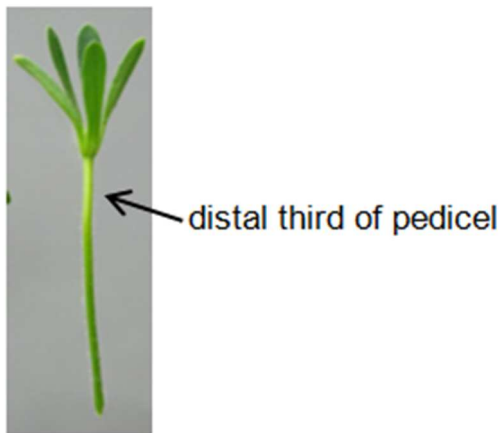
9  
present

Ad. 10: Pedicel: length



Ad. 11: Pedicel: anthocyanin coloration

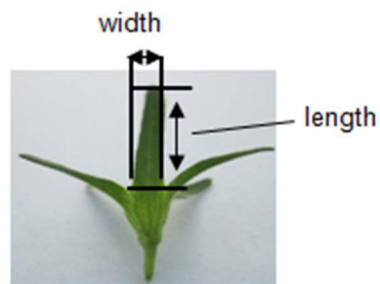
The anthocyanin coloration should be observed on the distal third of the pedicel.



Ad. 12: Calyx lobe: length

Ad. 13: Calyx 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 one whorl of corolla lobes.



1  
single



9  
double

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



1  
sparse



2  
medium



3  
dense

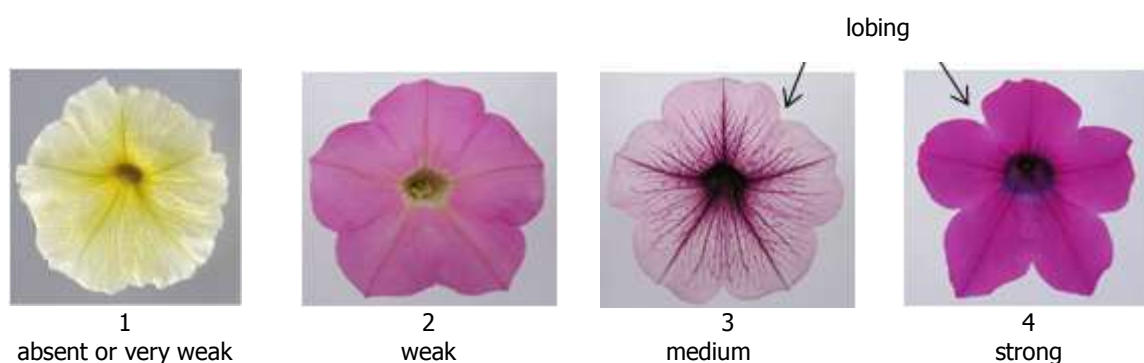
Ad. 16: Flower: width

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



width

Ad. 17: Flower: lobing



Ad. 18: Flower: undulation



Ad. 19: Flower: conspicuousness of veins

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



Ad. 20: Flower: colour of veins

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

Ad. 22: Flower: secondary colour

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

Ad. 23: Flower: distribution of secondary colour

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



1  
at transition to  
corolla tube



2  
along mid-veins of  
corolla lobes



3  
along the fused  
parts of the corolla  
lobes



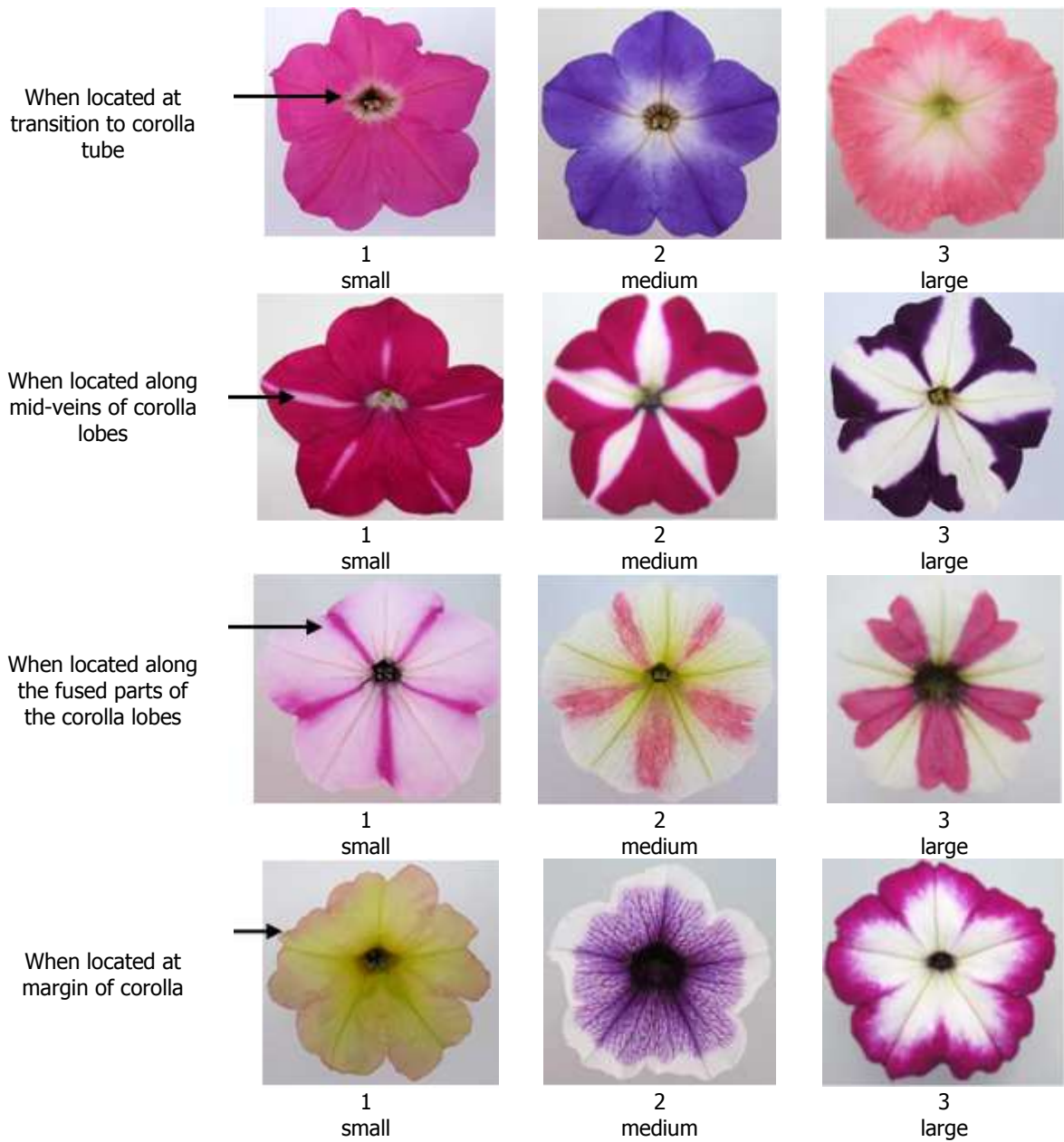
4  
at margin of corolla



5  
irregular

Ad. 24: Flower: area of secondary colour

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





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

Observations should be made on fully developed flowers.



1  
absent or very few



3  
many

Ad. 26: Flower: tertiary colour

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

Ad. 26: Young flower: main colour

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 colour

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  
very narrow



3  
medium



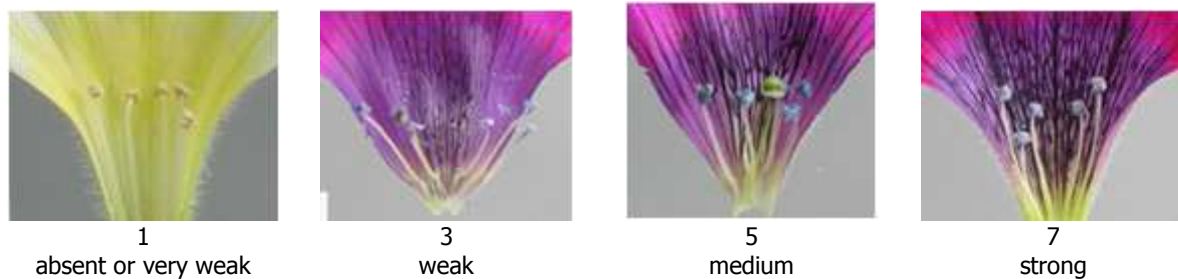
5  
very broad

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

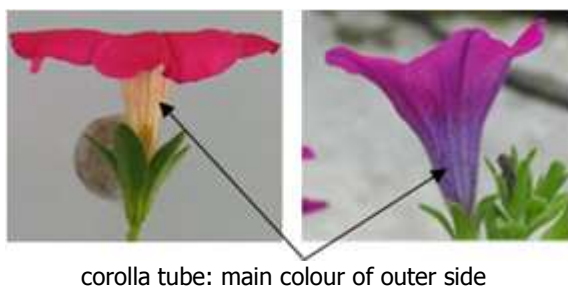
The main colour should be observed in the middle part of the corolla tube.

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

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



Ad. 33: Corolla tube: main colour 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**

The Technical Questionnaire is available on the CPVO website under the following reference:  
CPVO-TQ/212/2