



TG/SOLEN\_SCU(proj.4)

ORIGINAL: English

DATE: 2018-01-23

## INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

## COLEUS\*

UPOV Code(s): PLECT\_SCU

*Plectranthus scutellarioides* (L.) R. Br.

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from Japan  
to be considered by the  
Enlarged Editorial Committee  
at its meeting, to be held in Geneva  
from 2018-03-26 to 2018-03-27*

*Disclaimer: this document does not represent UPOV policies or guidance*

## Alternative names:\*

Botanical name	English	French	German	Spanish
<i>Plectranthus scutellarioides</i> (L.) R. Br., <i>Coleus blumei</i> Benth., <i>Solenostemon scutellarioides</i> (L.) Codd	coleus, painted-nettle		Buntblatt, Buntnessel	macho, nene

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 *Plectranthus scutellarioides* (L.) R. Br. .

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 seeds or rooted cuttings.

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

seed-propagated varieties: sufficient seeds to produce 30 plants,  
vegetatively propagated varieties: 10 rooted cuttings

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 In the case of seed-propagated varieties, each test should be designed to result in a total of at least 30 plants.

3.4.2 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 10 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 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.

In the case of vegetatively propagated varieties, 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 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 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 These Test Guidelines have been developed for the examination of cross-pollinated seed propagated and vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

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

4.2.4 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 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) Plant: height (characteristic 2)
- (c) Leaf blade: depth of incisions of margin (characteristic 11)
- (d) Leaf blade: color covering the largest surface area, with the following groups:
  - Gr. 1: white
  - Gr. 2: green
  - Gr. 3: yellow green
  - Gr. 4: light yellow
  - Gr. 5: yellow
  - Gr. 6: orange
  - Gr. 7: pink
  - Gr. 8: red
  - Gr. 9: purple red
  - Gr. 10: purple
  - Gr. 11: brown
- (e) Leaf blade: color covering the next largest surface area, with the following groups:
  - Gr. 1: white
  - Gr. 2: green
  - Gr. 3: yellow green
  - Gr. 4: light yellow
  - Gr. 5: yellow
  - Gr. 6: orange
  - Gr. 7: pink
  - Gr. 8: red
  - Gr. 9: purple red
  - Gr. 10: purple
  - Gr. 11: brown

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:

<i>State</i>	<i>Note</i>
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:

<i>State</i>	<i>Note</i>
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 Beispielsorten 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
<b>1. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>				
	<b>Plant: growth habit</b>	<b>Plante : port</b>	<b>Pflanze: Wuchsform</b>	<b>Planta: hábito de crecimiento</b>			
	upright	dressé	aufrecht	erguido			1
	semi-upright	demi-dressé	halbaufrecht	semierguido			2
	spreading	étalé	breitwüchsig	extendido			3
	trailing	retombant	hängend	rastrero			4
<b>2. (*)</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>				
	<b>Plant: height</b>	<b>Plante : hauteur</b>	<b>Pflanze: Höhe</b>	<b>Planta: altura</b>			
	short	basse	kurz	baja	Highway mosaic		3
	medium	moyenne	mittel	media	COL-06-076C		5
	tall	haute	hoch	alta	Grecom Orange Marmalade		7
<b>3. (*)</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>				
	<b>Plant: width</b>	<b>Plante : largeur</b>	<b>Pflanze: Breite</b>	<b>Planta: anchura</b>			
	narrow	étroite	schmal	estrecha	COL-06-076C		3
	medium	moyenne	mittel	media	Splash Yellow		5
	broad	large	breit	ancha	Grecom Orange Marmalade		7
<b>4.</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>				
	<b>Stem: color</b>	<b>Tige : couleur</b>	<b>Stengel: Farbe</b>	<b>Tallo: color</b>			
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)			

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>5.</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>	<b>(a)</b>		
	<b>Petiole: length</b>	<b>Pétiole : longueur</b>	<b>Blattstiel: Länge</b>	<b>Pecíolo: longitud</b>		
	short	court	kurz	corto	Balaublach	3
	medium	moyen	mittel	medio	Versa Lime	5
	long	long	lang	largo		7
<b>6. (*)</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>	<b>(a)</b>		
	<b>Leaf blade: length</b>	<b>Limbe : longueur</b>	<b>Blattspreite: Länge</b>	<b>Limbo: longitud</b>		
	short	court	kurz	corto	Carefree White	3
	medium	moyen	mittel	medio	Wizard Scarlet	5
	long	long	lang	largo	Grecom Orange Marmalade	7
<b>7. (*)</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>	<b>(a)</b>		
	<b>Leaf blade: width</b>	<b>Limbe : largeur</b>	<b>Blattspreite: Breite</b>	<b>Limbo: anchura</b>		
	narrow	étroit	schmal	estrecho	Balaublach	3
	medium	moyen	mittel	medio	Versa Lime	5
	broad	large	breit	ancho	Grecom Orange Marmalade	7
<b>8.</b>	<b>QN</b>	<b>MG/MS/VG</b>	<b>(+)</b>	<b>(a)</b>		
	<b>Leaf blade: ratio length/width</b>	<b>Limbe : rapport longueur/largeur</b>	<b>Blattspreite: Verhältnis Länge/Breite</b>	<b>Limbo: relación longitud/anchura</b>		
	low	bas	klein	baja		3
	medium	moyen	mittel	media		5
	high	élevé	groß	alta		7

	English		français		deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>9.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>			
		<b>Leaf blade: shape of apex</b>	<b>Limbe : forme de l'extrémité</b>	<b>Blattspreite: Form des Apex</b>	<b>Limbo: forma del ápice</b>			
		acuminate	acuminée	zugespitzt	acuminado			1
		acute	aiguë	spitz	agudo			2
		obtuse	obtuse	stumpf	obtuso			3
		rounded	arrondie	abgerundet	redondeado			4
<b>10.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>			
		<b>Leaf blade: shape of base</b>	<b>Limbe : forme de la base</b>	<b>Blattspreite: Form der Basis</b>	<b>Limbo: forma de la base</b>			
		acute	aiguë	spitz	aguda			1
		obtuse	obtuse	stumpf	obtusa			2
		truncate	tronquée	gerade	truncada			3
		shallow cordate	peu profondément cordée	flach herzförmig	cordada poco profunda			4
		deep cordate	profondément cordée	tief herzförmig	cordada profunda			5
<b>11.</b>	<b>(*)</b>	<b>QN</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>			
		<b>Leaf blade: depth of incisions of margin</b>	<b>Limbe : profondeur des incisions du bord</b>	<b>Blattspreite: Tiefe der Randeinschnitte</b>	<b>Limbo: profundidad de las incisiones del borde</b>			
		very shallow	très peu profondes	sehr flach	muy poco profundas			1
		shallow	peu profondes	flach	poco profundas			3
		medium	moyennes	mittel	medias			5
		deep	profondes	tief	profundas			7
		very deep	très profondes	sehr tief	muy profundas			9
<b>12.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>		<b>(a), (b)</b>			
		<b>Leaf blade: color one</b>	<b>Limbe : première couleur</b>	<b>Blattspreite: Farbe eins</b>	<b>Limbo: primer color</b>			
		RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)			

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>13. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (c)</b>				
	<b>Leaf blade: color one: distribution</b>	<b>Limbe : première couleur : distribution</b>	<b>Blattspreite: Farbe eins: Verteilung</b>	<b>Limbo: primer color: distribución</b>			
	single colored	unicolore	einfarbig	monocolor			1
	along veins	le long des nervures	entlang der Adern	a lo largo de los nervios			2
	between veins	entre les nervures	zwischen den Adern	entre los nervios			3
	marginal zone	zone marginale	Randzone	en la zona del borde			4
	central zone	zone centrale	mittlere Zone	en la zona central			5
	basal zone	zone basale	basale Zone	en la zona basal			6
	between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde			7
	throughout	partout	überall	en la totalidad			8
<b>14. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: color one: pattern</b>	<b>Limbe : première couleur : répartition</b>	<b>Blattspreite: Farbe eins: Muster</b>	<b>Limbo: primer color: forma de disposición</b>			
	flushed	diffuse	flächig	difuso			1
	blotched	taches	gefleckt	en manchas			2
	irregular	irrégulière	unregelmäßig	irregular			3
	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso			4
<b>15. (*)</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: color one: total area</b>	<b>Limbe : première couleur : surface totale</b>	<b>Blattspreite: Farbe eins: Gesamtfläche</b>	<b>Limbo: primer color: superficie total</b>			
	small	petite	klein	pequeña			3
	medium	moyenne	mittel	media			5
	large	grande	groß	grande			7

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>16. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (b)</b>				
	<b>Leaf blade: color two</b>	<b>Limbe : deuxième couleur</b>	<b>Blattspreite: Farbe zwei</b>	<b>Limbo: segundo color</b>			
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)			
<b>17. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (c)</b>				
	<b>Leaf blade: color two: distribution</b>	<b>Limbe : deuxième couleur : distribution</b>	<b>Blattspreite: Farbe zwei: Verteilung</b>	<b>Limbo: segundo color: distribución</b>			
	none	aucune	keine	ausente			1
	along veins	le long des nervures	entlang der Adern	a lo largo de los nervios			2
	between veins	entre les nervures	zwischen den Adern	entre los nervios			3
	marginal zone	zone marginale	Randzone	en la zona del borde			4
	central zone	zone centrale	mittlere Zone	en la zona central			5
	basal zone	zone basale	basale Zone	en la zona basal			6
	between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde			7
	throughout	partout	überall	en la totalidad			8
<b>18. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: color two: pattern</b>	<b>Limbe : deuxième couleur : répartition</b>	<b>Blattspreite: Farbe zwei: Muster</b>	<b>Limbo: segundo color: forma de disposición</b>			
	flushed	diffuse	flächig	difuso			1
	blotched	taches	gefleckt	en manchas			2
	irregular	irrégulière	unregelmäßig	irregular			3
	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso			4

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>19.</b>	<b>(*)</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>			
		<b>Leaf blade: color two: total area</b>	<b>Limbe : deuxième couleur : surface totale</b>	<b>Blattspreite: Farbe zwei: gesamte Fläche</b>	<b>Limbo: segundo color: superficie total</b>		
		small	petite	klein	pequeña		3
		medium	moyenne	mittel	media		5
		large	grande	groß	grande		7
<b>20.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (b)</b>			
		<b>Leaf blade: color three</b>	<b>Limbe : troisième couleur</b>	<b>Blattspreite: Farbe drei</b>	<b>Limbo: tercer color</b>		
		RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
<b>21.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (c)</b>			
		<b>Leaf blade: color three: distribution</b>	<b>Limbe : troisième couleur : distribution</b>	<b>Blattspreite: Farbe drei: Verteilung</b>	<b>Limbo: tercer color: distribución</b>		
		none	aucune	keine	ausente		1
		along veins	le long des nervures	entlang der Adern	a lo largo de los nervios		2
		between veins	entre les nervures	zwischen den Adern	entre los nervios		3
		marginal zone	zone marginale	Randzone	en la zona del borde		4
		central zone	zone centrale	mittlere Zone	en la zona central		5
		basal zone	zone basale	basale Zone	en la zona basal		6
		between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde		7
		throughout	partout	überall	en la totalidad		8

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>22.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>			
		<b>Leaf blade: color three: pattern</b>	<b>Limbe : troisième couleur : répartition</b>	<b>Blattspreite: Farbe drei: Muster</b>	<b>Limbo: tercer color: forma de disposición</b>		
		flushed	diffuse	flächig	difuso		1
		blotched	taches	gefleckt	en manchas		2
		irregular	irrégulière	unregelmäßig	irregular		3
		solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso		4
<b>23.</b>	<b>(*)</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>			
		<b>Leaf blade: color three: total area</b>	<b>Limbe : troisième couleur : surface totale</b>	<b>Blattspreite: Farbe drei: Gesamtfläche</b>	<b>Limbo: tercer color: superficie total</b>		
		small	petite	klein	pequeña		3
		medium	moyenne	mittel	media		5
		large	grande	groß	grande		7
<b>24.</b>	<b>(*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (b)</b>			
		<b>Leaf blade: color four</b>	<b>Limbe : quatrième couleur</b>	<b>Blattspreite: Farbe vier</b>	<b>Limbo: cuarto color</b>		
		RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>25. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (c)</b>				
	<b>Leaf blade: color four: distribution</b>	<b>Limbe : quatrième couleur : distribution</b>	<b>Blattspreite: Farbe vier: Verteilung</b>	<b>Limbo: cuarto color: distribución</b>			
	none	aucune	keine	ausente			1
	along veins	le long des nervures	entlang der Adern	a lo largo de los nervios			2
	between veins	entre les nervures	zwischen den Adern	entre los nervios			3
	marginal zone	zone marginale	Randzone	en la zona del borde			4
	central zone	zone centrale	mittlere Zone	en la zona central			5
	basal zone	zone basale	basale Zone	en la zona basal			6
	between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde			7
	throughout	partout	überall	en la totalidad			8
<b>26. (*)</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: color four: pattern</b>	<b>Limbe : quatrième couleur : répartition</b>	<b>Blattspreite: Farbe vier: Muster</b>	<b>Limbo: cuarto color: forma de disposición</b>			
	flushed	diffuse	flächig	difuso			1
	blotched	taches	gefleckt	en manchas			2
	irregular	irrégulière	unregelmäßig	irregular			3
	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso			4
<b>27. (*)</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: color four: total area</b>	<b>Limbe : quatrième couleur : surface totale</b>	<b>Blattspreite: Farbe vier: Gesamtfläche</b>	<b>Limbo: cuarto color: superficie total</b>			
	small	petite	klein	pequeña			3
	medium	moyenne	mittel	media			5
	large	grande	groß	grande			7



	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>28.</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (b)</b>				
	<b>Leaf blade: color one of lower side</b>	<b>Limbe : première couleur de la face inférieure</b>	<b>Blattspreite: Farbe eins der Unterseite</b>	<b>Limbo: primer color del envés</b>			
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)			
<b>29.</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (c)</b>				
	<b>Leaf blade: color one: distribution on lower side</b>	<b>Limbe : première couleur : distribution sur la face inférieure</b>	<b>Blattspreite: Farbe eins: Verteilung auf der Unterseite</b>	<b>Limbo: primer color: distribución en el envés</b>			
	single colored	unicolore	einfarbig	monocolor			1
	along veins	le long des nervures	entlang der Adern	a lo largo de los nervios			2
	between veins	entre les nervures	zwischen den Adern	entre los nervios			3
	marginal zone	zone marginale	Randzone	en la zona del borde			4
	central zone	zone centrale	mittlere Zone	en la zona central			5
	basal zone	zone basale	basale Zone	en la zona basal			6
	between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde			7
	throughout	partout	überall	en la totalidad			8
<b>30.</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: color one: pattern of lower side</b>	<b>Limbe : première couleur : répartition sur la face inférieure</b>	<b>Blattspreite: Farbe eins: Muster der Unterseite</b>	<b>Limbo: primer color: forma de disposición en el envés</b>			
	flushed	diffuse	flächig	difuso			1
	blotched	taches	gefleckt	en manchas			2
	random	irrégulière	zufällig	aleatorio			3
	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso			4

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>31.</b>	<b>QN</b> <b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: color one: total area of lower side</b>	<b>Limbe : première couleur : surface totale de la face inférieure</b>	<b>Blattspreite: Farbe eins: Gesamtfläche der Unterseite</b>	<b>Limbo: primer color: superficie total en el envés</b>		
	small	petite	klein	pequeña		3
	medium	moyenne	mittel	media		5
	large	grande	groß	grande		7
<b>32.</b>	<b>PQ</b> <b>VG</b>	<b>(a), (b)</b>				
	<b>Leaf blade: color two of lower side</b>	<b>Limbe : deuxième couleur de la face inférieure</b>	<b>Blattspreite: Farbe zwei der Unterseite</b>	<b>Limbo: segundo color del envés</b>		
	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
<b>33.</b>	<b>PQ</b> <b>VG</b>	<b>(a), (c)</b>				
	<b>Leaf blade: color two: distribution of lower side</b>	<b>Limbe : deuxième couleur : distribution sur la face inférieure</b>	<b>Blattspreite: Farbe zwei: Verteilung auf der Unterseite</b>	<b>Limbo: segundo color: distribución en el envés</b>		
	none	aucune	keine	ausente		1
	along veins	le long des nervures	entlang der Adern	a lo largo de los nervios		2
	between veins	entre les nervures	zwischen den Adern	entre los nervios		3
	marginal zone	zone marginale	Randzone	en la zona del borde		4
	central zone	zone centrale	mittlere Zone	en la zona central		5
	basal zone	zone basale	basale Zone	en la zona basal		6
	between midrib and margin	entre la nervure médiane et le bord	zwischen Mittelrippe und Rand	entre el nervio central y el borde		7
	throughout	partout	überall	en la totalidad		8

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
<b>34.</b>	<b>PQ</b>	<b>VG</b>	<b>(a), (d)</b>				
	<b>Leaf blade: color two: pattern of lower side</b>	<b>Limbe : deuxième couleur : répartition sur la face inférieure</b>	<b>Blattspreite: Farbe zwei: Muster der Unterseite</b>	<b>Limbo: segundo color: forma de disposición en el envés</b>			
	flushed	diffuse	flächig	difuso			1
	blotched	taches	gefleckt	en manchas			2
	random	irrégulière	zufällig	aleatorio			3
	solid or nearly solid	uniforme ou presque	ganzflächig oder fast ganzflächig	liso o prácticamente liso			4
<b>35.</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: color two: total area of lower side</b>	<b>Limbe : deuxième couleur : surface totale de la face inférieure</b>	<b>Blattspreite: Farbe zwei: Gesamtfläche der Unterseite</b>	<b>Limbo: segundo color: superficie total en el envés</b>			
	small	petite	klein	pequeña			3
	medium	moyenne	mittel	media			5
	large	grande	groß	grande			7
<b>36.</b>	<b>QN</b>	<b>VG</b>	<b>(a)</b>				
	<b>Leaf blade: undulation of margin</b>	<b>Limbe : ondulation du bord</b>	<b>Blattspreite: Wellung des Randes</b>	<b>Limbo: ondulación del borde</b>			
	absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Wizard Scarlet		1
	weak	faible	gering	débil	Zigzag		2
	medium	moyenne	mittel	media	UF0843		3
	strong	forte	stark	fuerte			4
	very strong	très forte	sehr stark	muy fuerte			5

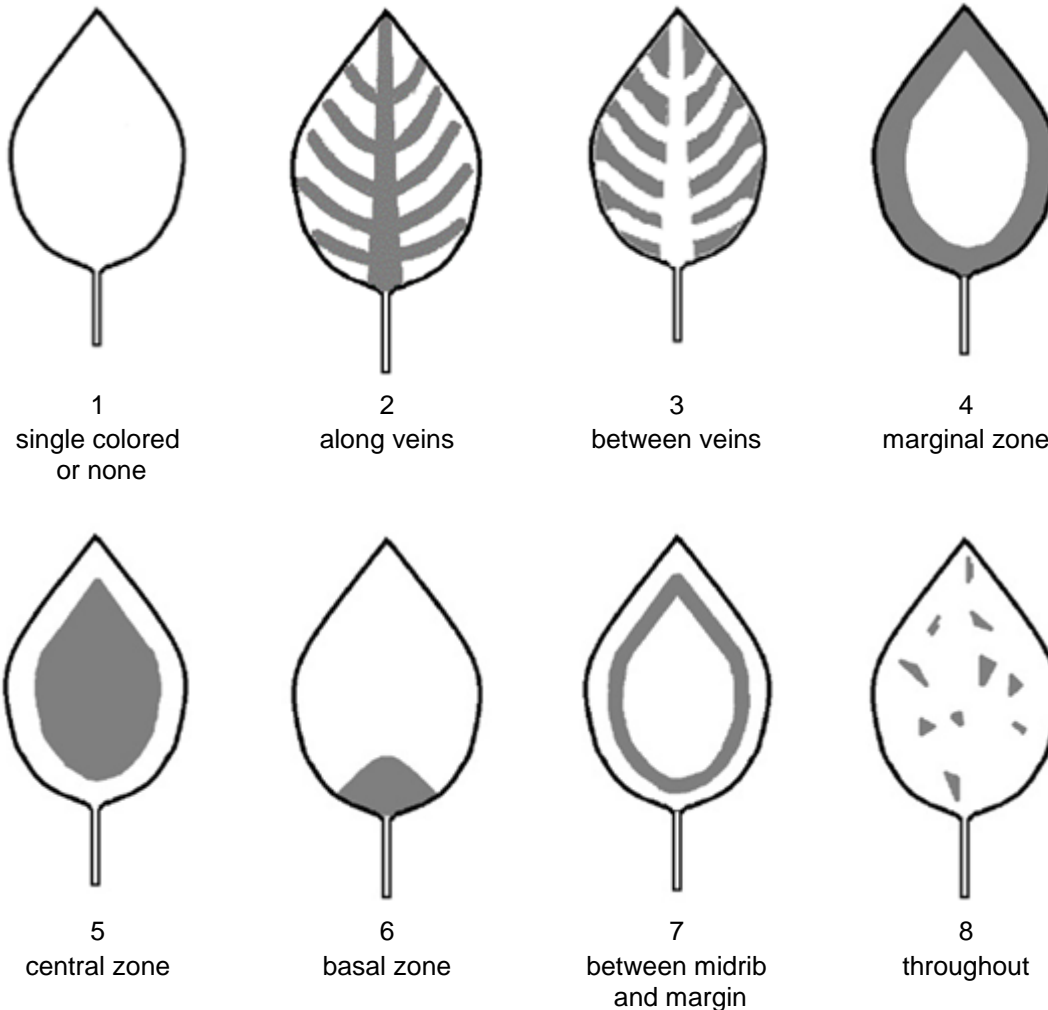
8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

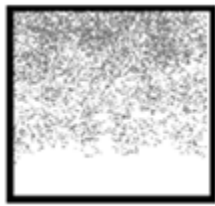
Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

- (a) Observations on the leaf should be made on the upper side of fully expanded leaves from the middle third of the stem, unless otherwise specified.
- (b) Where the characteristic refers to colors as "one", "two" etc., they are to be recorded in the order that they appear on the RHS chart, i.e. color one is the one with the lowest number, color two with the second lowest and so on. For example, if the leaves are Green 137A dotted with White 155A, Green 137A will be color one and White 155A color two. If two colors are on the same leaf of the chart, for example Green 137A and Green 137D, 137A is regarded as the lower numbered color. It should be noted that under this system, ranking is independent of surface area, so the color covering the greatest surface area may be classified as color three or four. The Guideline makes provision for four colors; if there are more, the color[s] with the smallest surface area[s] should be discounted.

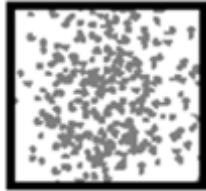
(c)



(d)



1  
flushed



2  
blotched



3  
irregular



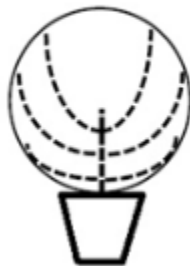
4  
solid or nearly solid

## 8.2 Explanations for individual characteristics

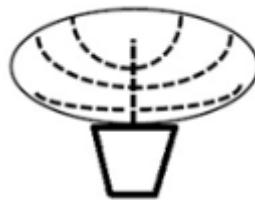
### Ad. 1: Plant: growth habit



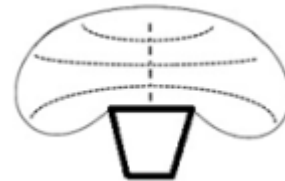
1  
upright



2  
semi-upright



3  
spreading



4  
trailing

### Ad. 2: Plant: height



a = Plant: height  
b = Plant: width

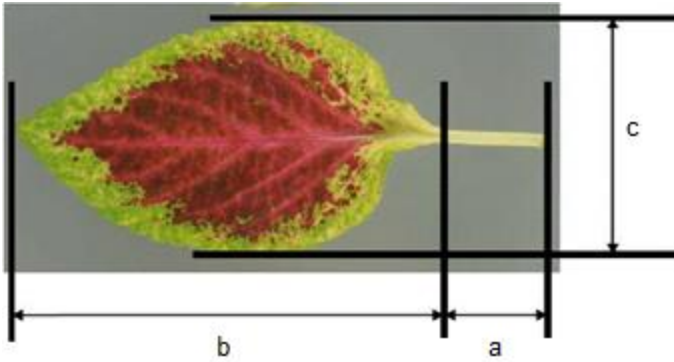
Ad. 3: Plant: width

See Ad. 2

Ad. 4: Stem: color

Observations should be made on the middle third of an actively growing stem.

Ad. 5: Petiole: length



a = Petiole: length  
b = Leaf blade: length  
c = Leaf blade: width

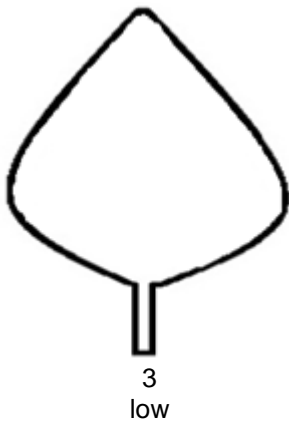
Ad. 6: Leaf blade: length

See Ad. 5

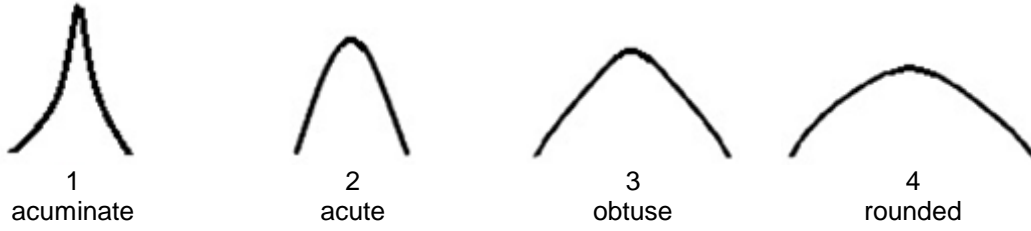
Ad. 7: Leaf blade: width

See Ad. 5

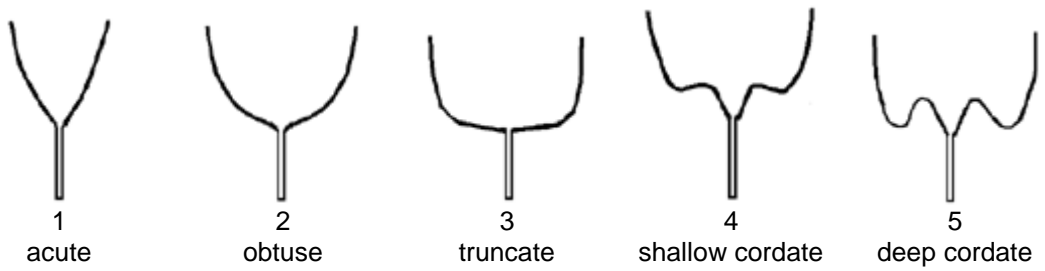
Ad. 8: Leaf blade: ratio length/width



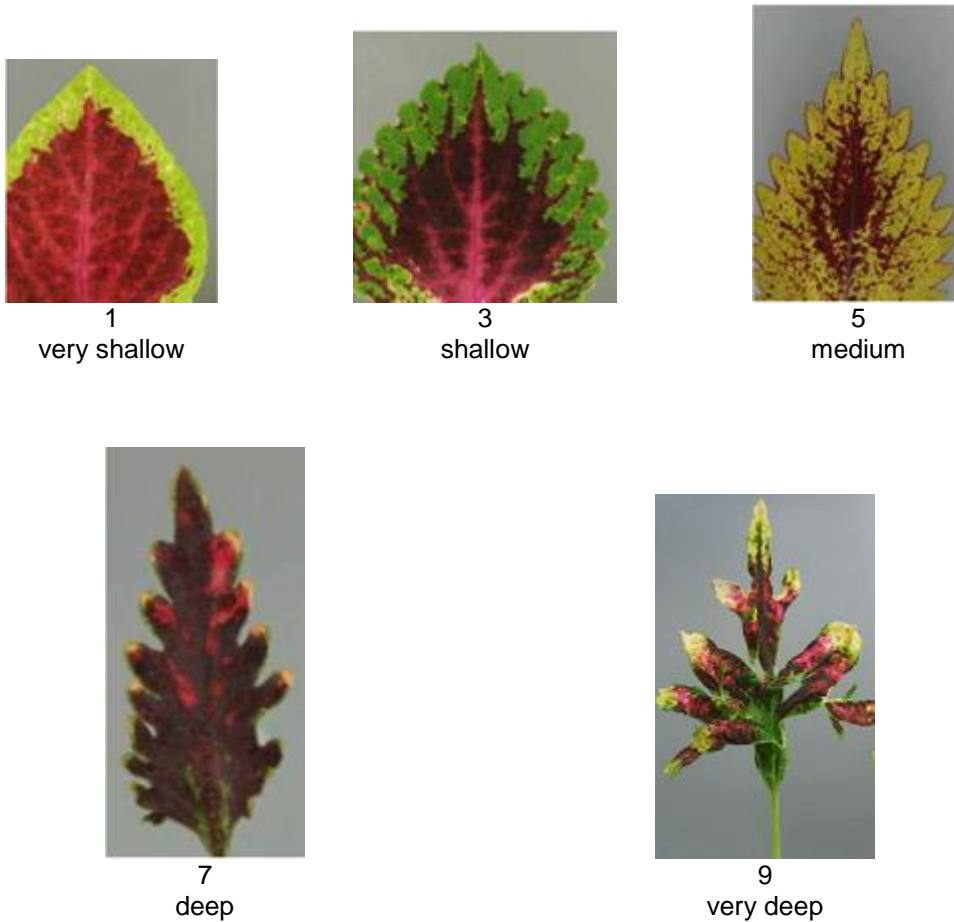
Ad. 9: Leaf blade: shape of apex



Ad. 10: Leaf blade: shape of base



Ad. 11: Leaf blade: depth of incisions of margin



9. Literature

Tsukamoto, Y., 1994: The Grand Dictionary of Horticulture, Volume 1. The Shogakukan Ltd., Tokyo, JP, pp. 908-910.

Hartlage, R., 2008: Coleus-Rainbow Foliage for Containers and Gardens. Timber Press, Portland, Oregon, US.



10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Application date: (not to be filled in by the applicant)
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TECHNICAL QUESTIONNAIRE  
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 Botanical name

1.2 Common name

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

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

4.1.3 Mutation [ ]  
(please state parent variety)

4.1.4 Other [ ]  
(Please provide details)

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

- (a) Self-pollination [ ]
- (b) Cross-pollination [ ]
- (c) 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:
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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
<b>5.1 Plant: growth habit</b> <b>(1)</b>		
upright		1 [ ]
semi-upright		2 [ ]
spreading		3 [ ]
trailing		4 [ ]
<b>5.2 Plant: height</b> <b>(2)</b>		
very short		1 [ ]
very short to short		2 [ ]
short	Highway mosaic	3 [ ]
short to medium		4 [ ]
medium	COL-06-076C	5 [ ]
medium to tall		6 [ ]
tall	Grecom Orange Marmalade	7 [ ]
tall to very tall		8 [ ]
very tall		9 [ ]
<b>5.3 Leaf blade: depth of incisions of margin</b> <b>(11)</b>		
very shallow		1 [ ]
very shallow to shallow		2 [ ]
shallow		3 [ ]
shallow to medium		4 [ ]
medium		5 [ ]
medium to deep		6 [ ]
deep		7 [ ]
deep to very deep		8 [ ]
very deep		9 [ ]

Characteristics	Example Varieties	Note
<b>5.4 Leaf blade: color covering the largest surface area</b>		
white		1 [ ]
green		2 [ ]
yellow green		3 [ ]
light yellow		4 [ ]
yellow		5 [ ]
orange		6 [ ]
pink		7 [ ]
red		8 [ ]
purple red		9 [ ]
purple		10 [ ]
brown		11 [ ]
<b>5.5 Leaf blade: color covering the next largest surface area</b>		
white		1 [ ]
green		2 [ ]
yellow green		3 [ ]
light yellow		4 [ ]
yellow		5 [ ]
orange		6 [ ]
pink		7 [ ]
red		8 [ ]
purple red		9 [ ]
purple		10 [ ]
brown		11 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
<i>Example</i>	<i>Leaf blade: depth of incisions of margin</i>	<i>shallow</i>	<i>medium</i>
Comments:			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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.]

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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]