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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

GREVILLEA

UPOV Code(s): GREVI

Grevillea R. Br. corr. R. Br.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Australia
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fiftieth session, to be held in Victoria, British Columbia, Canada
from 2017-09-11 to 2017-09-15

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Grevillea R. Br. corr. R. Br., *Grevillea* hybrid, *Grevillea* R. Br	Grevillea	Grevillea	Grevillea	Grevillea

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 *Grevillea* R. Br. corr. 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 plants expressing relevant characteristics of the variety in the first growing cycle.

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

10 plants.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Number of Growing Cycles

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

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

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.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 10 plants.

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

3.5 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of plants or 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 of plants taken from each of 1 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

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

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

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

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

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

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, 1 off-type is allowed.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a 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: habit (characteristic 1)
(b) Inflorescence: type (characteristic 32)
(c) Inflorescence: predominant color (characteristic 34)
(d) Perianth: color (characteristic 49)
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: orange
Gr. 5: pink
Gr. 6: red

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)-(f) 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.	**(*)**	**PQ VG**	**(+) (a)**				
		Plant: habit					
		upright				Callum's Gold	1
		semi upright				Honey Gem	2
		spreading				Ninderry-Sunrise	3
		prostrate				Raptor	4
2.	**(*)**	**QN MG/VG**	**(a)**				
		Plant: height					
		short				Jelly Baby	3
		medium				LowstenoGL	5
		tall				Cream Passion	7
3.		**QN VG**	**(a)**				
		Plant: density of foliage	**Plante : densité du feuillage**	**Pflanze: Dichte des Laubes**	**Planta: densidad del follaje**		
		sparse				Raptor	1
		medium				Callum's Gold	2
		dense				Billy Bonkers	3
4.		**PQ VG**	**(+)**				
		Young stem: color					
		yellow green				Honey Gem	1
		green				Coastal Prestige, Fireworks	2
		purple				Raptor	3
		orange				Callum's Gold	4
		brown				Autumn Waterfall	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.	**(*)**	**PQ VG**	**(+) (a)**				
		Stem: color					
		yellow green				New Blood	1
		green				Burke 3	2
		orange				Ninderry-Sunrise	3
		purple				Callum's Gold	4
		brown				Honey Gem	5
6.		**QN MS/VG**	**(b)**				
		Leaf: length of blade					
		short					3
		medium					5
		long					7
7.		**QN MS/VG**	**(a), (b)**				
		Leaf: width of blade					
		narrow					3
		medium					5
		broad					7
8.	**(*)**	**QN VG**	**(a)**				
		Leaf: attitude relative to stem					
		erect				Raptor	1
		erect to semi-erect				Honey Gem	2
		semi erect				Callum's Gold	3
		semi-erect to horizontal				Billy Bonkers	4
		horizontal				Prostrate Yellow	5
9.	**(*)**	**QL VG**	**(+) (a), (b)**				
		Leaf: type of division of blade					
		entire				Raptor	1
		primary				Autumn Waterfall	2
		secondary				Callum's Gold	3
		tertiary				Fire Cracker	4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10.		**QN VG**	**(a)**				
		Leaf: undulation of margin	**Feuille: ondulation du bord**	**Blatt: Wellung des Randes**	**Hoja: ondulación del borde**		
		weak				Callum's Gold	3
		medium				Raptor	5
		strong				Entrée	7
11.	**(*)**	**QN VG**	**(+) (a)**				
		Only varieties with divided leaves: Leaf: number of lobes of primary division	**Feuille: nombre de lobes**	**Blatt: Anzahl Lappen**	**Hoja: número de lóbulos**		
		few	petit	gering	bajo	Parakeet Pink	3
		medium	moyen	mittel	medio	Callum's Gold	5
		many	grand	groß	alto	Honey Gem	7
12.		**QN VG**	**(a), (c)**				
		Only varieties with divided leaves: Leaf: depth of sinus of primary division					
		shallow				Bedspread	1
		medium				Callum's Gold	2
		deep					3
13.	**(*)**	**PQ VG**	**(+) (a)**				
		Only varieties with entire leaves: Leaf: blade shape					
		ovate				Burke 3	1
		lanceolate				H22	2
		circular					3
		rhombic				Molly	4
		elliptic				TWD01	5
		oblong					6
		linear				Fire Cracker	7
		obovate					8

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14.		**QN VG**	**(+) (a)**				
		Only varieties with divided leaves: Leaf: attitude of primary lobes in relation to midrib					
		erect					1
		erect to semi-erect				Honey Gem	2
		semi-erect				Callum's Gold	3
		semi-erect to horizontal					4
		horizontal					5
15.		**PQ VG**	**(+) (a)**				
		Only varieties with divided leaves: Leaf: shape of apex of sinus of primary division					
		pointed				Ninderry-Sunrise	1
		rounded					2
		truncated					3
16.		**QN MS/VG**	**(+) (a), (c)**				
		Only varieties with divided leaves: Leaf: width of sinus of primary division					
		very narrow					1
		narrow					3
		medium				Billy Bonkers	5
		broad				Callum's Gold	7
		very broad					9
17.	**(*)**	**QN MS/VG**	**(+) (a), (c)**				
		Only varieties with divided leaves: Leaf: length of lobe of primary division					
		short				Autumn Waterfall	3
		medium				Billy Bonkers	5
		long				Callum's Gold	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18. (*)	**QN MS/VG**	**(+) (a), (c)**				
	Only varieties with divided leaves: Leaf: width of lobe of primary division					
	narrow				Callum's Gold	3
	medium				Ivory Whip	5
	broad				Bedspread	7
19.	**PQ VG**	**(+) (a)**				
	Only varieties with divided leaves: Leaf: shape of apex of primary division					
	apiculate				New Blood	1
	mucronate				H22	2
	acute				Little Honey	3
	obtuse					4
	truncate					5
20.	**PQ VG**	**(+) (a)**				
	Leaf: profile in cross section					
	flat or slightly recurved				Raptor	1
	strongly recurved				Callum's Gold	2
	angularly revolute to the mid vein					3
	smoothly revolute to the mid vein				Little Honey	4
21.	**QN VG**	**(a)**				
	Leaf: intensity of green color of upper side					
	light				Autumn Waterfall	1
	medium				Raptor	2
	dark				Callum's Gold	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22.	**PQ VG**	**(+) (a)**				
	Leaf: color of lower side					
	white				Callum's Gold	1
	light green				Raptor	2
	medium green				Ninderry-Sunrise	3
	dark green				Entrée	4
23.	**QN VG**	**(a)**				
	Leaf: hairiness of upper side					
	weak				Ninderry-Sunrise	1
	medium				Callum's Gold	2
	strong					3
24.	**QN VG**	**(a)**				
	Leaf: hairiness of lower side					
	weak				Little Honey	1
	medium				Blood Orange	2
	strong				Ninderry-Sunrise	3
25.	**QL VG**	**(a)**				
	Leaf: color of hairs on lower side					
	white				Callum's Gold	1
	red brown				Honey Gem	2
26.	**QN MS/VG**	**(a), (b)**				
	Leaf: length of petiole					
	short				Raptor	3
	medium				Callum's Gold	5
	long				Red Rover	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27.		**QL VG**	**(d)**				
		Flowering branch: position of inflorescence					
		terminal only				Ninderry-Sunrise	1
		both terminal and axillary				Callum's Gold	2
		axillary only					3
28.	**(*)**	**QN VG**	**(+) (d)**				
		Inflorescence: attitude					
		erect				Red Rover	1
		erect to semi-erect				Little Honey	2
		semi-erect				Honey Gem	3
		semi-erect to horizontal				Blood Orange	4
		horizontal				Callum's Gold	5
		horizontal to semi-drooping				Ninderry-Sunrise	6
		semi-drooping					7
		semi-drooping to drooping					8
		drooping				Entrée	9
29.		**QN VG**	**(a), (d)**				
		Inflorescence: branching					
		absent or very weak				Ninderry-Sunrise	1
		weak				Red Rover	2
		medium				Autumn Waterfall	3
		strong					4
		very strong					5
30.	**(*)**	**QN MS/VG**	**(d), (e)**				
		Inflorescence: length					
		short				Raptor	1
		medium				Callum's Gold	2
		long				Autumn Waterfall	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31.	**(*)**	**QN MS/VG**	**(d)**				
		Inflorescence: width					
		narrow				Raptor	1
		medium				Callum's Gold	2
		broad				Red Rover	3
32.	**(*)**	**PQ VG**	**(+) (d)**				
		Inflorescence: type					
		secund				Ninderry-Sunrise	1
		irregular				LadyO	2
		cylindrical				Callum's Gold	3
		triangular				Fireworks	4
		umbellate					5
		ovoid					6
		domed				H22	7
33.	**(*)**	**QL VG**	**(+) (d)**				
		Inflorescence: sequence of flower opening					
		acropetal				Callum's Gold	1
		synchronous				Coastal Prestige	2
		basipetal				Knockout	3
34.	**(*)**	**PQ VG**	**(d)**				
		Inflorescence: predominant color					
		white				Ivory Whip	1
		green					2
		yellow				Callum's Gold	3
		orange				Ninderry-Sunrise	4
		pink				Blood Orange	5
		red				Raptor	6

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35.	**QN VG**	**(d)**				
	Inflorescence: density of flowers					
	sparse				Coastal Dawn	3
	medium				Honey Gem	5
	dense				Callum's Gold	7
36.	**QN MS/VG**	**(d)**				
	Inflorescence: number of flowers					
	few				Fire Cracker	3
	medium				Raptor	5
	many				Red Rover	7
37.	**QN MS/VG**	**(d)**				
	Rachis: length					
	short				Raptor	3
	medium				Callum's Gold	5
	long				Honey Gem	7
38.	**QN VG**	**(+)** **(d), (f)**				
	Pedicel: attitude in relation to rachis					
	leaning towards the apex				Callum's Gold	1
	perpendicular				Ninderry-Sunrise	2
	leaning towards the base				Autumn Waterfall	3
39.	**QN MS/VG**	**(d)**				
	Pedicel: length					
	very short					1
	short				Callum's Gold	2
	medium				Billy Bonkers	3
	long				Autumn Waterfall	4
	very long					5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
40.	**QN VG**	**(+) (d)**				
	Flower bud: attitude of limb in relation to longitudinal axis of bud					
	upright				Ninderry-Sunrise	1
	horizontal				New Blood	2
	drooping				Callum's Gold	3
41. **(*)**	**PQ VG**	**(d)**				
	Flower bud: color of limb					
	green				Callum's Gold	1
	yellow				Honey Gem	2
	orange				Sylvia	3
	pink				Winter Delight	4
	red				Raptor	5
	brown				New Blood	7
42. **(*)**	**PQ VG**	**(d)**				
	Flower bud: perianth color					
	white				Ivory Whip	1
	green				Ninderry-Sunrise	2
	yellow				Callum's Gold	3
	orange				Entrée	4
	pink				Molly	5
	red				Raptor	6
43. **(*)**	**QN MS/VG**	**(d)**				
	Perianth: length					
	short				Raptor	3
	medium				Callum's Gold	5
	long				Red Rover	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
44.	**(*)**	**QN MS/VG**	**(d)**				
		Perianth: width					
		narrow				Callum's Gold	3
		medium				Ninderry-Sunrise	5
		broad				Entrée	7
45.	**(*)**	**QN VG**	**(+) (d)**				
		Perianth: hairiness					
		absent or very weak				Ninderry-Sunrise	1
		weak				Honey Gem	2
		medium				Raptor	3
		strong				Callum's Gold	4
		very strong					5
46.		**QL VG**	**(d)**				
		Perianth: hair color					
		white				Raptor	1
		red brown				Callum's Gold	2
47.		**QN VG**	**(+) (d)**				
		Perianth: coherence of tepals on dorsal side					
		less than one third				Ninderry-Sunrise	1
		one third to two thirds				Molly	2
		greater than two thirds				Callum's Gold	3
48.		**QN VG**	**(+) (d)**				
		Perianth: coherence of tepals on ventral side					
		less than one third				Ninderry-Sunrise	1
		one third to two thirds				Molly	2
		greater than two thirds				Callum's Gold	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
49. **(*)**	**PQ** **VG**	**(+)** **(d)**				
	Perianth: color					
	white				Ivory Whip	1
	green				Sandra Gordon	2
	yellow				Callum's Gold	3
	orange				Ninderry-Sunrise	4
	pink				Blood Orange	5
	red				Raptor	6
50.	**QN** **VG**		**(d)**			
	Ovary: hairiness					
	absent or very weak				Knockout	1
	weak				Jubilee	2
	medium				Raptor	3
	strong				Callum's Gold	4
	very strong					
51.	**PQ** **VG**		**(d)**			
	Ovary: color					
	white				Raptor	1
	green				Callum's Gold	2
	yellow				Honey Gem	3
	orange					4
	pink				Goldfever	5
	red					6
52.	**PQ** **VG**	**(+)** **(d)**				
	Style: curvature					
	straight				Callum's Gold	1
	slightly curved				Ninderry-Sunrise	2
	sharply curved				Pink Surprise	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
53.		**QN VG**	**(d)**				
		Style: hairiness					
		absent or weak				Callum's Gold, Ivory Whip	1
		medium				Entrée	2
		strong					3
54.		**QN VG**	**(d)**				
		Style: distribution of hair					
		concentrated towards style end					1
		evenly distributed along length				Entrée	2
		concentrated towards ovary end				Ninderry-Sunrise	3
55.	**(*)**	**PQ VG**	**(d)**				
		Style: color					
		white				Ivory Whip	1
		green				Misty Pink	2
		yellow				Golden Yul-lo	3
		orange				Callum's Gold	4
		pink				Knockout	5
		red				Raptor	6
56.		**QN VG**	**(d)**				
		Pistil: length					
		short				Knockout	3
		medium				Ninderry-Sunrise	5
		long				Callum's Gold	7
57.		**QN VG**	**(d)**				
		Pistil: length in relation to length of perianth					
		same length					1
		moderately longer				Ivory Whip	2
		much longer				Callum's Gold	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
58.		**PQ VG**	**(d)**				
		Stigma: color					
		white				Knockout	1
		green				Raptor	2
		yellow				Callum's Gold	3
		orange				Jubilee	4
		pink				Billy Bonkers	5
		red				Red Rover	6
59.	**(*)**	**PQ VG**	**(+) (d)**				
		Pollen presenter: attitude to style					
		lateral				Honey Gem	1
		oblique				Callum's Gold	2
		transverse					3
60.	**(*)**	**PQ VG**	**(+) (d)**				
		Pollen presenter: shape					
		domed				Callum's Gold	1
		flat				LadyO	2
		conic				Raptor	3
		cylindric				Honey Gem	4
61.	**(*)**	**PQ VG**	**(d)**				
		Pollen presenter: color					
		white				Billy Bonkers	1
		green				Raptor	2
		yellow				Callum's Gold	3
		orange				Autumn Waterfall	4
		pink				Fireworks	5
		red				LadyO	6
62.		**PQ VG**	**(d)**				
		Pollen: color					
		white				Little Honey	1
		yellow				Callum's Gold	2
		purple				Raptor	3

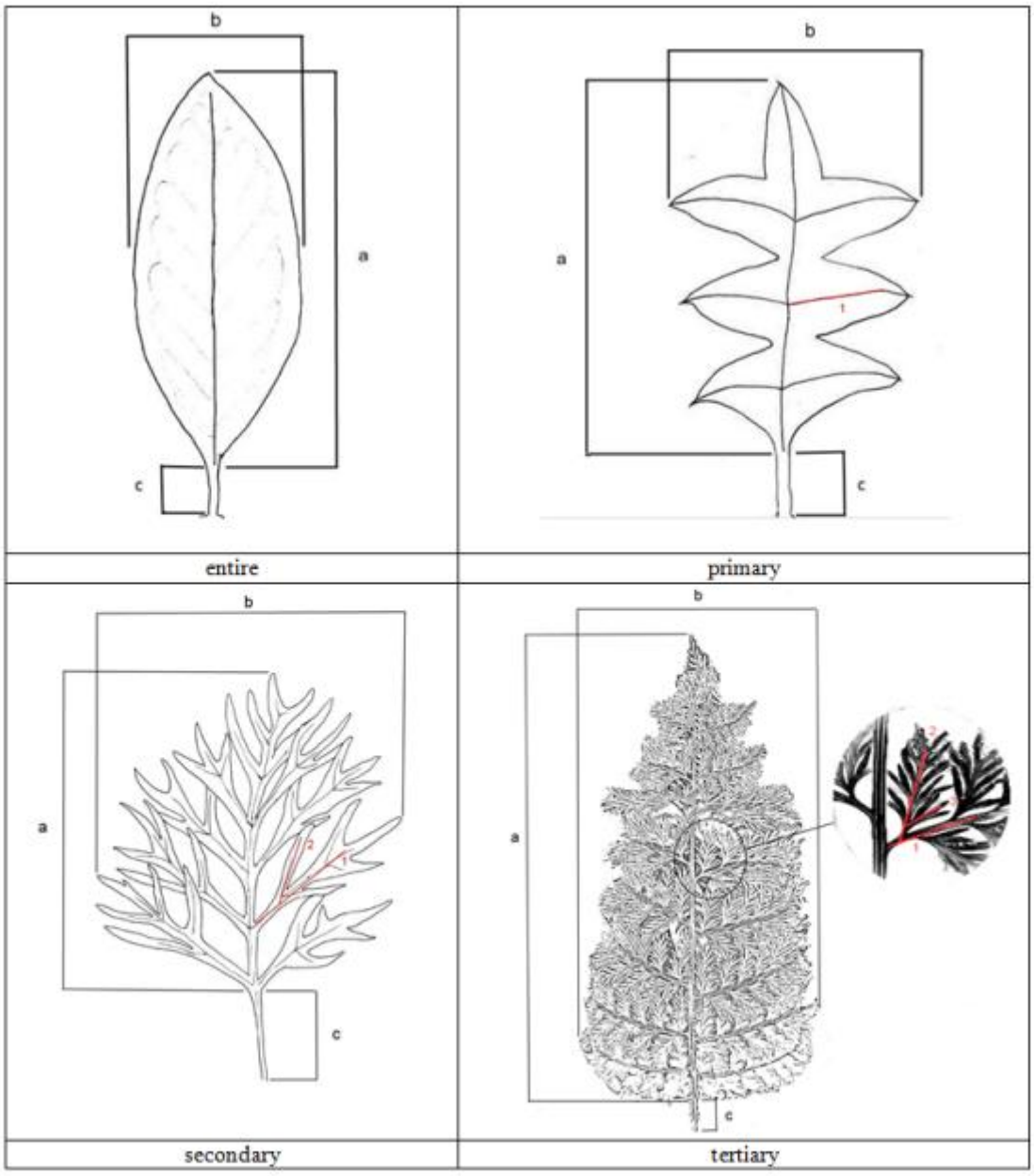
8. Explanations on the Table of Characteristics

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:

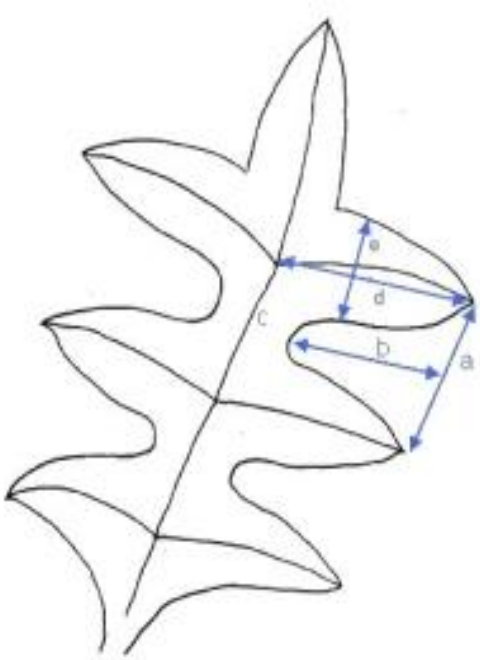
(a) The assessment of plant characteristics should be carried out towards the end of active vegetative growth.

(b)



a – leaf length of blade, observed excluding petiole	1 – primary division
b – leaf width of blade, observed at widest point	2 – secondary division
c – petiole length	3 – tertiary division

(c)



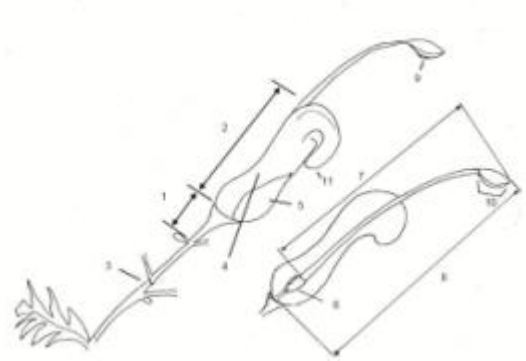
a: sinus width
b: sinus depth
c: midrib
d: lobe length
e: lobe width

(d) Observations on inflorescence and flower characteristics should be made on a main flowering branch.

(e)

a: inflorescence
b:peduncle
c: rachis

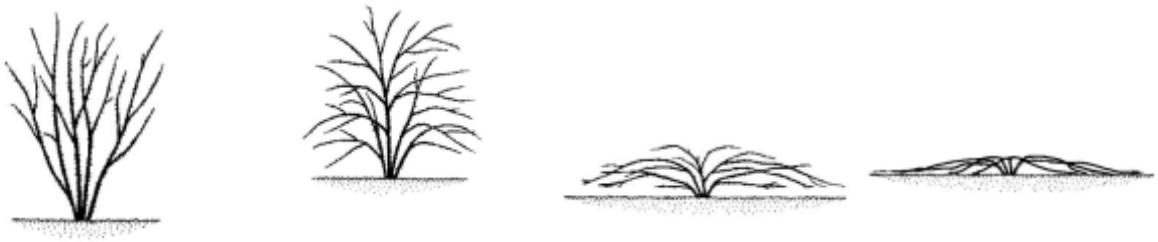
(f)



1: pedicel
2: perianth
3: rachis
4: dorsal tepal
5: ventral tepal
6: ovary
7: style
8: pistil
9: stigma
10: pollen presenter
11: limb

8.2 Explanations for individual characteristics

Ad. 1: Plant: habit



1	2	3	4
upright	semi upright	spreading	prostrate

Ad. 4: Young stem: color

Observations on the young stem below the shoot apex should be early in the season during active vegetative growth

Sometimes there is a waxy layer covering the stem surface which gives a bluish or whitish appearance. The layer should be removed by rubbing before observing stem color.

Ad. 5: Stem: color

Assessed on side least exposed to sun. Sometimes there is a waxy layer covering the stem surface which gives a bluish or whitish appearance. The layer should be removed by rubbing before observing stem color.

Ad. 9: Leaf: type of division of blade

Leaf terminology

Division – A leaf blade that is dissected ¼ or more to the midrib (primary division). Each segment may be further dissected to form a secondary division or, again, to form a tertiary division.

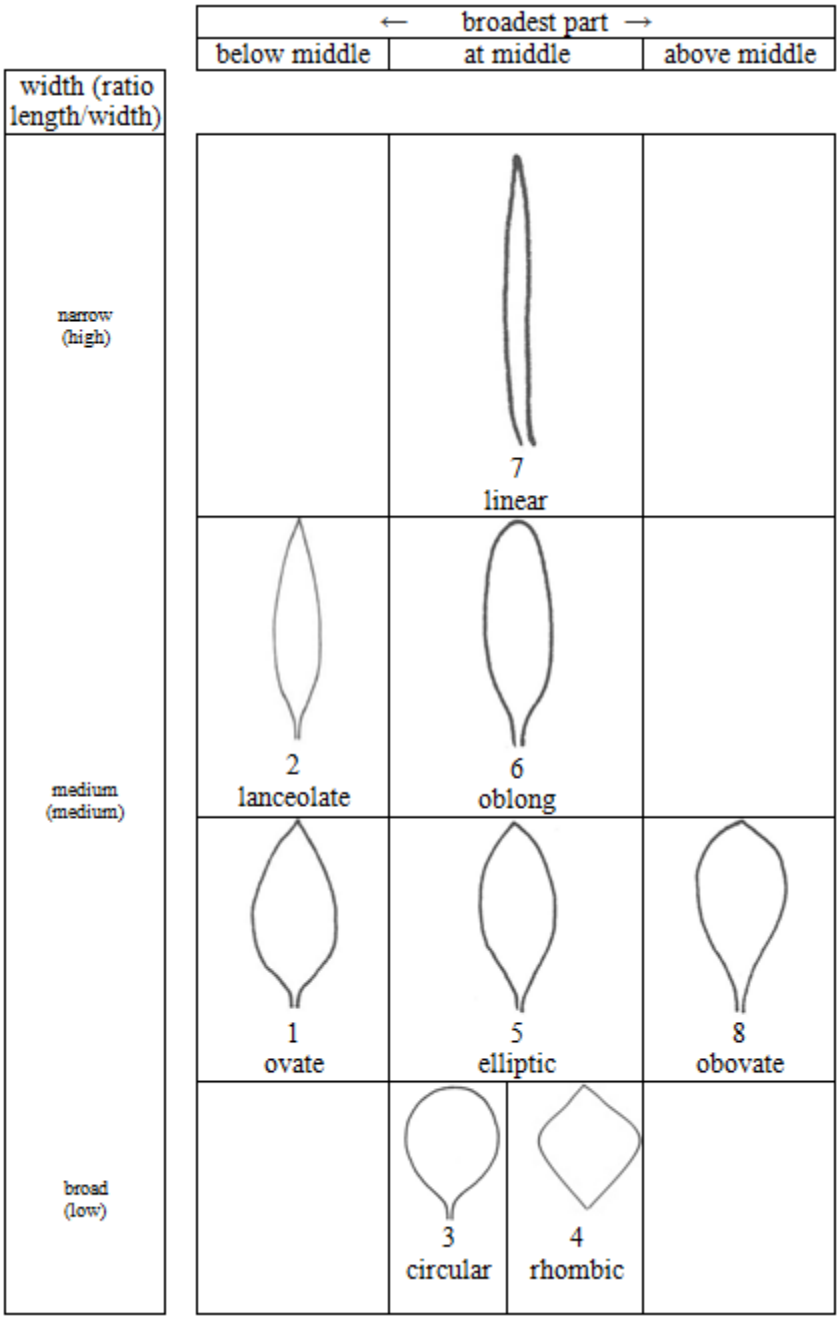
Lobe – a segment of a leaf division.

Sinus – the space between two segments of a leaf division.

Ad. 11: Only varieties with divided leaves: Leaf: number of lobes of primary division

Observed including lobes of primary, secondary and tertiary divisions.

Ad. 13: Only varieties with entire leaves: Leaf: blade shape



Only observed on entire leaves.

Ad. 14: Only varieties with divided leaves: Leaf: attitude of primary lobes in relation to midrib

Observed on lobes of primary division. Excluding secondary and tertiary divisions, if present.

1	2	3	4	5
erect	erect to semi-erect	semi-erect	semi-erect to horizontal	horizontal

Ad. 15: Only varieties with divided leaves: Leaf: shape of apex of sinus of primary division

Observed on sinus immediately below leaf apex on primary division. Excluding secondary and tertiary divisions, if present.

1	2	3
pointed	rounded	truncated

Ad. 16: Only varieties with divided leaves: Leaf: width of sinus of primary division

Observed, at widest point, on varieties with only primary division of blade present

Ad. 17: Only varieties with divided leaves: Leaf: length of lobe of primary division

Observed on lobe immediately below leaf apex on primary division. Excluding secondary and tertiary divisions, if present.

Ad. 18: Only varieties with divided leaves: Leaf: width of lobe of primary division

Observed on lobe immediately below leaf apex on primary division. Excluding secondary and tertiary divisions, if present.

Ad. 19: Only varieties with divided leaves: Leaf: shape of apex of primary division

Observed on entire leaves only.

1	2	3	4	5
apiculate	mucronate	acute	obtuse	truncate

Ad. 20: Leaf: profile in cross section

To be observed on entire and primary leaf types only.

1	2	3	4
flat or slightly recurved	strongly recurved	angularly revolute to the mid vein	smoothly revolute to the mid vein

Ad. 22: Leaf: color of lower side

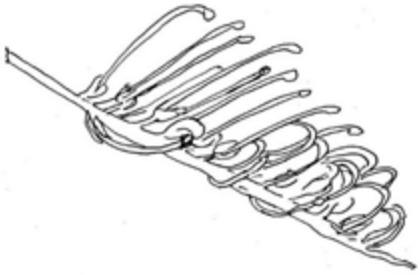
Overall appearance of color with hairs present

Ad. 28: Inflorescence: attitude

Observed on natural position on plant

Ad. 32: Inflorescence: type

Irregular type is a loose asymmetrical inflorescence



1
secund

2
irregular

3
cylindric

4
triangular

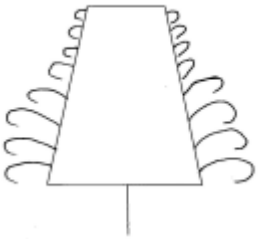
5
umbellate

6
ovate

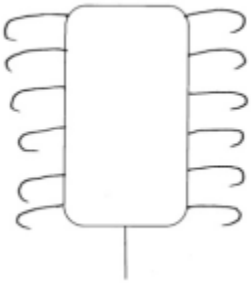
7
domed

Ad. 33: Inflorescence: sequence of flower opening

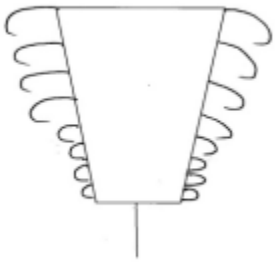
Acropetal - flowers open sequentially towards the top of the inflorescence. Basipetal - flowers open sequentially towards the base of the inflorescence. Synchronous - flowers open approximately the same time across the length of the inflorescence



1
acropetal



2
synchronous



3
basipetal

Ad. 38: Pedicel: attitude in relation to rachis

1
leaning towards the apex

2
perpendicular

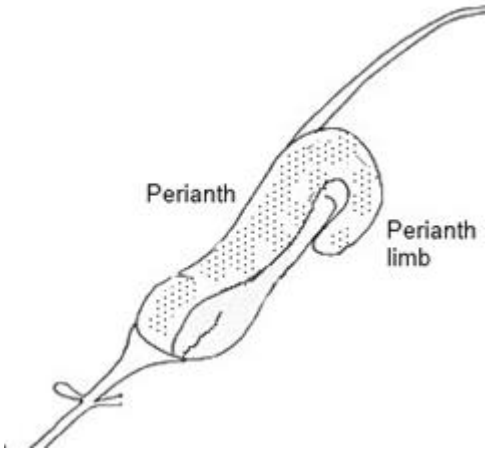
3
leaning towards the base

Ad. 40: Flower bud: attitude of limb in relation to longitudinal axis of bud

Observed during late bud prior to anthesis.

Ad. 45: Perianth: hairiness

observed on the outerside of perianth and including limb



Ad. 47: Perianth: coherence of tepals on dorsal side

Observed as the length of tepal sticking (not fused) to the perianth

Ad. 48: Perianth: coherence of tepals on ventral side

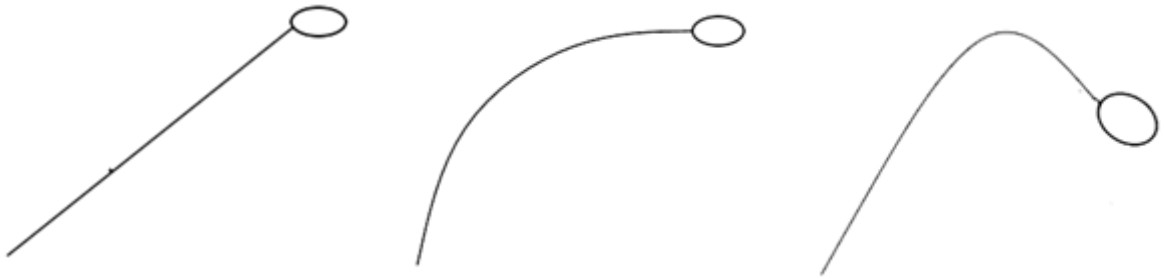
See Ad. 48

Ad. 49: Perianth: color

Observed on open flower

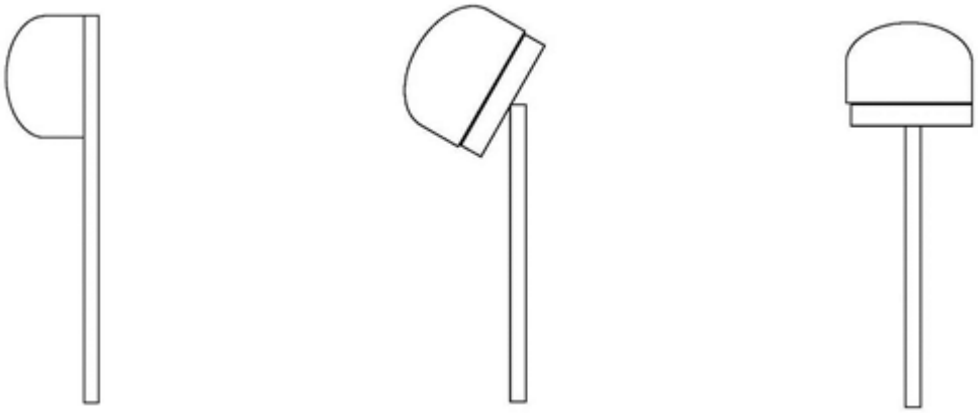
Ad. 52: Style: curvature

Observed after anthesis before dehiscence of perianth.



1	2	3
straight	slightly curved	sharply curved

Ad. 59: Pollen presenter: attitude to style

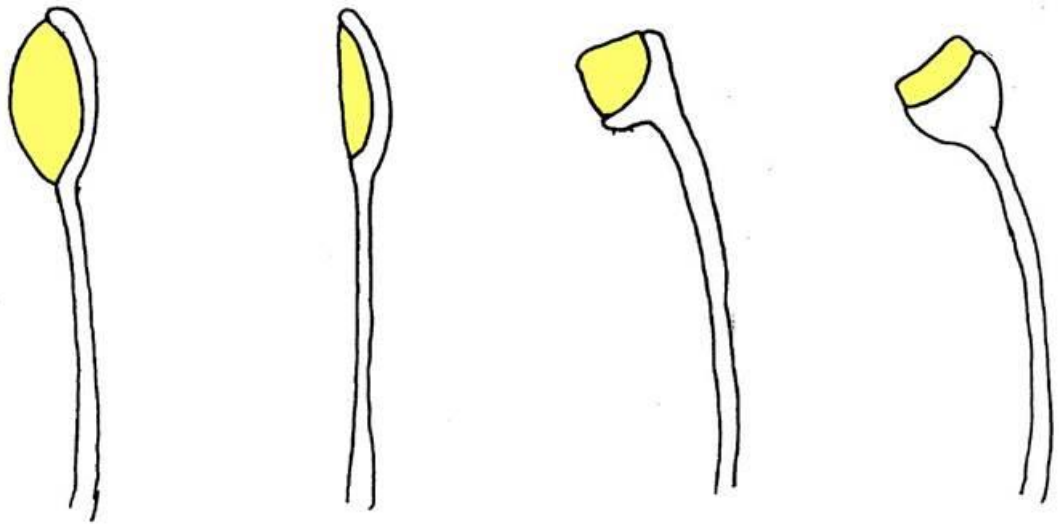


1
lateral

2
oblique

3
transverse

Ad. 60: Pollen presenter: shape



1
domed

2
flat

3
conic

4
cylindric

9. Literature

McGillivray, D. J.,Makinson, R. O., 1993: Grevillea, Proteaceae: a taxonomic revision. Melbourne University Press at the Miegunyah Press, Carlton, Vic. AU, 465 pp.

10. Technical Questionnaire

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

	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1	Botanical name	*Grevillea* R. Br. corr. R. Br.
1.2	Common name	Grevillea

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.

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

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

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

4.2.2 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 (1)	**Plant: habit**		
	upright	Callum's Gold	1 [ ]
	semi upright	Honey Gem	2 [ ]
	spreading	Ninderry-Sunrise	3 [ ]
	prostrate	Raptor	4 [ ]
5.2 (32)	**Inflorescence: type**		
	secund	Ninderry-Sunrise	1 [ ]
	irregular	LadyO	2 [ ]
	cylindrical	Callum's Gold	3 [ ]
	triangular	Fireworks	4 [ ]
	umbellate		5 [ ]
	ovoid		6 [ ]
	domed	H22	7 [ ]
5.3 (34)	**Inflorescence: predominant color**		
	white	Ivory Whip	1 [ ]
	green		2 [ ]
	yellow	Callum's Gold	3 [ ]
	orange	Ninderry-Sunrise	4 [ ]
	pink	Blood Orange	5 [ ]
	red	Raptor	6 [ ]
5.4 (49)	**Perianth: color**		
	white	Ivory Whip	1 [ ]
	green	Sandra Gordon	2 [ ]
	yellow	Callum's Gold	3 [ ]
	orange	Ninderry-Sunrise	4 [ ]
	pink	Blood Orange	5 [ ]
	red	Raptor	6 [ ]

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	*Plant habit*	*upright*	*spreading*

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.

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

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

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]