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DRAFT

RANUNCULUS

UPOV Code(s): RANUN_ASI;
RANUN_COR*Ranunculus asiaticus* L.;
Ranunculus cortusifolius Willd.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by an expert from Japan**to be considered by the**Technical Committee at its fifty-sixth session
to be held in Geneva on October 26 and 27, 2020**Disclaimer: this document does not represent UPOV policies or guidance*

Alternative names:*

Botanical name	English	French	German	Spanish
<i>Ranunculus asiaticus</i> L.	Garden Ranunculus	Renoncule des jardins	Ranunkel	Ranúnculo
<i>Ranunculus cortusifolius</i> Willd.				

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 *Ranunculus asiaticus* L. and *Ranunculus cortusifolius* Willd. and hybrids between these species.

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 corms or young plants.

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

15 corms or 15 young plants

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

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

3. Method of Examination

3.1 *Number of Growing Cycles*

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

3.1.2 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

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 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*

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 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 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 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 For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 15 plants, 1 off-type is allowed.

4.3 *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: height (characteristic 1)
 - (b) Basal leaf: type (characteristic 2)
 - (c) Cauline leaf: type (characteristic 6)
 - (d) Flower: type (characteristic 15)
 - (e) Flower: diameter (characteristic 16)
 - (f) Petal: main color of inner side (characteristic 22) with the following groups:
 - Group 1: white
 - Group 2: green
 - Group 3: yellow
 - Group 4: orange
 - Group 5: pink
 - Group 6: red
 - Group 7: purple
 - Group 8: violet
 - (g) Petal: secondary color of inner side (characteristic 23) with the following groups:
 - Group 1: absent
 - Group 2: white
 - Group 3: green
 - Group 4: yellow
 - Group 5: orange
 - Group 6: pink
 - Group 7: red
 - Group 8: purple
 - Group 9: violet

- (h) Petal: distribution of secondary color of inner side (characteristic 24)
- (i) Petal: tertiary color of inner side (characteristic 26) with the following groups:
 - Group 1: absent
 - Group 2: white
 - Group 3: green
 - Group 4: yellow
 - Group 5: orange
 - Group 6: pink
 - Group 7: red
 - Group 8: purple
 - Group 9: violet
- (j) Petal: main color of outer side (characteristic 29) with the following groups:
 - Group 1: white
 - Group 2: green
 - Group 3: yellow
 - Group 4: orange
 - Group 5: pink
 - Group 6: red
 - Group 7: purple
 - Group 8: violet
- (k) Petal: secondary color of outer side (characteristic 30) with the following groups:
 - Group 1: absent
 - Group 2: white
 - Group 3: green
 - Group 4: yellow
 - Group 5: orange
 - Group 6: pink
 - Group 7: red
 - Group 8: purple
 - Group 9: violet
- (l) Petal: tertiary color of outer side (characteristic 33) with the following groups:
 - Group 1: absent
 - Group 2: white
 - Group 3: green
 - Group 4: yellow
 - Group 5: orange
 - Group 6: pink
 - Group 7: red
 - Group 8: purple
 - Group 9: violet

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

- 1 Characteristic number
- 2 (*) Asterisked characteristic – see Chapter 6.1.2
- 3 Type of expression
 QL Qualitative characteristic – see Chapter 6.3
 QN Quantitative characteristic – see Chapter 6.3
 PQ Pseudo-qualitative characteristic – see Chapter 6.3
- 4 Method of observation (and type of plot, if applicable)
 MG, MS, VG, VS – see Chapter 4.1.5
- 5 (+) See Explanations on the Table of Characteristics in Chapter 8.2
- 6 (a)-(d) See Explanations on the Table of Characteristics in Chapter 8.1
- 7 Not applicable

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

	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
1. (*)	QN MG/MS/VG	(+)				
	Plant: height	Plante : hauteur	Pflanze: Höhe	Planta: altura		
	short	courte	niedrig	baja	Salonica No Niji	3
	medium	moyenne	mittel	media	Ableigong	5
	tall	haute	hoch	alta	Rax Artemis	7
2. (*)	QL VG	(+)				
	Basal leaf: type	Feuille basale : type	Basalblatt: Typ	Hoja basal: tipo		
	simple	simple	einfach	simple	Seiren	1
	ternate	ternaire	dreizählig	ternada	Abtanatos	2
	biternate	biternaire	doppelt dreizählig	biternada	Rocyellow	3
	triternate	triternaire	dreifach dreizählig	triternada		4
3.	QN MG/MS/VG	(+)				
	Basal leaf: length of petiole	Feuille basale : longueur du pétiole	Basalblatt: Länge des Blattstiels	Hoja basal: longitud del pecíolo		
	short	courte	kurz	corta	Ableigong	3
	medium	moyenne	mittel	media	Abtanatos	5
	long	longue	lang	larga	Abepona	7
4. (*)	QN MG/MS/VG	(+)				
	Basal leaf: length of leaf blade	Feuille basale : longueur du limbe	Basalblatt: Länge der Blattspreite	Hoja basal: longitud del limbo		
	short	courte	kurz	corta	Rocyellow	3
	medium	moyenne	mittel	media	Abtanatos	5
	long	longue	lang	larga	abizanagi	7
5. (*)	QN MG/MS/VG	(+)				
	Basal leaf: width of leaf blade	Feuille basale : largeur du limbe	Basalblatt: Breite der Blattspreite	Hoja basal: anchura del limbo		
	narrow	étroite	schmal	estrecha	Rocyellow	3
	medium	moyenne	mittel	media	Abtanatos	5
	broad	large	breit	ancha	Ableigong	7
6. (*)	QL VG	(+)				
	Cauline leaf: type	Feuille caulinaire : type	Stängelblatt: Typ	Hoja caulinar: tipo		
	simple	simple	einfach	simple	Seiren	1
	ternate	ternaire	dreizählig	ternada	Ableigong	2
	biternate	biternaire	doppelt dreizählig	biternada	abperkons	3
	triternate	triternaire	dreifach dreizählig	triternada	Rocyellow	4

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.	QN	MG/MS/VG	(+)			
	Cauline leaf: length of petiole	Feuille caulinare : longueur du pétiole	Stängelblatt: Länge des Blattstiels	Hoja caulinar: longitud del pecíolo		
	short	courte	kurz	corta	Rax Artemis	3
	medium	moyenne	mittel	media	abizanagi	5
	long	longue	lang	larga	abperkons	7
8. (*)	QN	MG/MS/VG	(+)			
	Cauline leaf: length of leaf blade	Feuille caulinare : longueur du limbe	Stängelblatt: Länge der Blattspreite	Hoja caulinar: longitud del limbo		
	short	courte	kurz	corta	Ableigong	3
	medium	moyenne	mittel	media	M Pink	5
	long	longue	lang	larga	abperkons	7
9. (*)	QN	MG/MS/VG	(+)			
	Cauline leaf: width of leaf blade	Feuille caulinare : largeur du limbe	Stängelblatt: Breite der Blattspreite	Hoja caulinar: anchura del limbo		
	narrow	étroite	schmal	estrecha		3
	medium	moyenne	mittel	media	M Pink	5
	broad	large	breit	ancha	Rax Ariadne	7
10.	QN	VG				
	Cauline leaf: intensity of green color on upper side	Feuille caulinare : intensité de la couleur verte sur la face supérieure	Stängelblatt: Intensität der Grünfärbung an der Oberseite	Hoja caulinar: intensidad del color verde del haz		
	light	claire	hell	clara	Aya Poissy	1
	medium	moyenne	mittel	media	abperkons	2
	dark	foncée	dunkel	oscura	Rocyellow	3
11.	QN	VG				
	Cauline leaf: glossiness on upper side	Feuille caulinare : brillance sur la face supérieure	Stängelblatt: Glanz an der Oberseite	Hoja caulinar: brillo del haz		
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	abperkons	1
	medium	moyenne	mittel	medio	M Pink	2
	strong	forte	stark	fuerte	Rax Lycia	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12. (*)	QN	MG/MS/VG				
	Flowering stem: number of flowers	Tige florifère : nombre de fleurs	Blütentrieb: Anzahl Blüten	Tallo floral: número de flores		
	very few	très petit	sehr wenige	muy bajo	Abumbreon	1
	few	petit	wenige	bajo	abizanagi	2
	medium	moyen	mittel	medio	abperkons	3
	many	grand	viele	alto	Rax Phytalos	4
	very many	très grand	sehr viele	muy alto	Rocyellow	5
13. (*)	QN	MG/MS/VG	(+)			
	Flowering stem: thickness	Tige florifère : épaisseur	Blütentrieb: Dicke	Tallo floral: grosor		
	very thin	très mince	sehr dünn	muy delgado		1
	thin	mince	dünn	delgado		2
	medium	moyenne	mittel	medio	M Pink	3
	thick	épaisse	dick	grueso	abizanagi	4
	very thick	très épaisse	sehr dick	muy grueso	Abtanatos	5
14.	PQ	VG	(+)			
	Flower bud: color	Bouton floral : couleur	Blütenknospe: Farbe	Botón floral: color		
	light green	vert clair	hellgrün	verde claro	Abxocolt	1
	medium green	vert moyen	mittelgrün	verde medio	abavesca	2
	dark green	vert foncé	dunkelgrün	verde oscuro	Abtanatos	3
	purple	pourpre	purpurn	púrpura	Ablackest	4
	green and purple	vert et pourpre	grün und purpurn	verde y púrpura	Rax Europe	5
	greyish purple	pourpre grisâtre	gräulichpurpurn	púrpura grisáceo	abperkons	6
15. (*)	QL	VG	(+)	(a)		
	Flower: type	Fleur : type	Blüte: Typ	Flor: tipo		
	single	simple	einfach	simple	Rax Lycia	1
	semi-double	semi-double	halbgefüllt	semidoble	Rax Ariadne	2
	double	double	gefüllt	doble	M White	3
16. (*)	QN	MG/MS/VG	(+)	(a)		
	Flower: diameter	Fleur : diamètre	Blüte: Durchmesser	Flor: diámetro		
	small	petit	klein	pequeño	Rax Hades	3
	medium	moyen	mittel	medio	Rax Lycia	5
	large	grand	groß	grande	Rocyellow	7

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
17.	QN	MG/MS/VG	(+)	(a)				
	Flower: height		Fleur : hauteur		Blüte: Höhe	Flor: altura		
	short		courte		niedrig	baja	Rocyellow	3
	medium		moyenne		mittel	media	abperkons	5
	tall		haute		hoch	alta	Ableigong	7
18. (*)	QN	MG/MS/VG		(a)				
	Only varieties with Flower: type: semi- double and double: Flower: number of petals		Seulement les variétés avec Fleur : type : semi-double et double: Fleur : nombre de pétales		Nur Sorten mit Blüte: Typ: halbgefüllt und gefüllt: Blüte: Anzahl Blütenblätter	Solo variedades con Flor: tipo: semidoble y doble: Flor: número de pétalos		
	very few		très petit		sehr wenige	muy bajo	Rax Artemis	1
	few		petit		wenige	bajo		3
	medium		moyen		mittel	medio	Aya Poissy	5
	many		grand		viele	alto	abperkons	7
	very many		très grand		sehr viele	muy alto		9
19.	QN	VG	(+)	(a)				
	Flower: size of green colored part at center		Fleur : taille de la partie de couleur verte du centre		Blüte: Größe des grün gefärbten Teils in der Mitte	Flor: tamaño de la zona central de color verde		
	absent or very small		absente ou très petite		fehlend oder sehr klein	ausente o muy pequeño		1
	small		petite		klein	pequeño		2
	medium		moyenne		mittel	medio		3
	large		grande		groß	grande		4
	very large		très grande		sehr groß	muy grande		5
20.	QN	MG/MS/VG	(+)	(a), (b)				
	Petal: length		Pétale : longueur		Blütenblatt: Länge	Pétalo: longitud		
	short		courte		kurz	corta	abperkons	3
	medium		moyenne		mittel	media	Rax Lycia	5
	long		longue		lang	larga	Ableigong	7
21.	QN	MG/MS/VG	(+)	(a), (b)				
	Petal: width		Pétale : largeur		Blütenblatt: Breite	Pétalo: anchura		
	narrow		étroite		schmal	estrecha	Rax Lycia	3
	medium		moyenne		mittel	media	M White	5
	broad		large		breit	ancha	abizanagi	7

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. (*)	PQ	VG	(a), (b), (c)				
	Petal: main color of <u>inner</u> side	Pétale : couleur principale de la face <u>interne</u>	Blütenblatt: Hauptfarbe der <u>Innenseite</u>	Pétalo: color principal de la cara <u>interna</u>			
	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)			
23. (*)	PQ	VG	(a), (b), (c)				
	Petal: secondary color of <u>inner</u> side	Pétale : couleur secondaire de la face <u>interne</u>	Blütenblatt: Sekundärfarbe der <u>Innenseite</u>	Pétalo: color secundario de la cara <u>interna</u>			
	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)			
24. (*)	PQ	VG	(+)	(a), (b), (c)			
	Petal: distribution of secondary color of <u>inner</u> side	Pétale : distribution de la couleur secondaire de la face <u>interne</u>	Blütenblatt: Verteilung der Sekundärfarbe der <u>Innenseite</u>	Pétalo: distribución del color secundario de la cara <u>interna</u>			
	none	aucune	keine	ausente			1
	at base	à la base	an der Basis	en la base	Seiren		2
	basal half	moitié basale	basale Hälfte	en la mitad basal	abairesekui		3
	distal half	moitié distale	distale Hälfte	en la mitad distal			4
	at apex	à l'extrémité	an der Spitze	en el ápice			5
	marginal part	partie marginale	am Rand	en la zona del borde	Abepona		6
	central part	partie centrale	mittlerer Teil	en la zona central	Absalecami		7
	throughout	partout	überall	en la totalidad			8
25.	PQ	VG	(+)	(a), (b), (c)			
	Petal: pattern of secondary color of <u>inner</u> side	Pétale : répartition de la couleur secondaire de la face <u>interne</u>	Blütenblatt: Muster der Sekundärfarbe der <u>Innenseite</u>	Pétalo: forma de disposición del color secundario de la cara <u>interna</u>			
	solid	uniforme	ganzflächig	uniforme			1
	flushed	diffuse	flächig	difusa			2
	striped	striée	gestreift	en rayas			3
	irregular	irrégulière	unregelmäßig	irregular			4
26. (*)	PQ	VG	(a), (b), (c)				
	Petal: tertiary color of <u>inner</u> side	Pétale : couleur tertiaire de la face <u>interne</u>	Blütenblatt: Tertiärfarbe der <u>Innenseite</u>	Pétalo: color terciario de la cara <u>interna</u>			
	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
27. (*)	PQ	VG	(+)	(a), (b), (c)				
	Petal: distribution of tertiary color of <u>inner</u> side	Pétale : distribution de la couleur tertiaire de la face <u>interne</u>	Blütenblatt: Verteilung der Tertiärfarbe der <u>Innenseite</u>	Pétalo: distribución del color terciario de la cara <u>interna</u>				
	none	aucune	keine	ausente				1
	at base	à la base	an der Basis	en la base				2
	basal half	moitié basale	basale Hälfte	en la mitad basal				3
	distal half	moitié distale	distale Hälfte	en la mitad distal				4
	at apex	à l'extrémité	an der Spitze	en el ápice				5
	marginal part	partie marginale	am Rand	en la zona del borde				6
	central part	partie centrale	mittlerer Teil	en la zona central				7
	throughout	partout	überall	en la totalidad				8
28.	PQ	VG	(+)	(a), (b), (c)				
	Petal: pattern of tertiary color of <u>inner</u> side	Pétale : répartition de la couleur tertiaire de la face <u>interne</u>	Blütenblatt: Muster der Tertiärfarbe der <u>Innenseite</u>	Pétalo: forma de disposición del color terciario de la cara <u>interna</u>				
	solid	uniforme	ganzflächig	uniforme				1
	flushed	diffuse	flächig	difusa				2
	striped	striée	gestreift	en rayas				3
	irregular	irrégulière	unregelmäßig	irregular				4
29. (*)	PQ	VG		(a), (b), (c)				
	Petal: main color of <u>outer</u> side	Pétale : couleur principale de la face <u>externe</u>	Blütenblatt: Hauptfarbe der <u>Außenseite</u>	Pétalo: color principal de la cara <u>externa</u>				
	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)				
30. (*)	PQ	VG		(a), (b), (c)				
	Petal: secondary color of <u>outer</u> side	Pétale : couleur secondaire de la face <u>externe</u>	Blütenblatt: Sekundärfarbe der <u>Außenseite</u>	Pétalo: color secundario de la cara <u>externa</u>				
	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
31.	PQ	VG	(+)	(a), (b), (c)				
	Petal: distribution of secondary color of <u>outer side</u>		Pétale : distribution de la couleur secondaire de la face <u>externe</u>		Blütenblatt: Verteilung der Sekundärfarbe der <u>Außenseite</u>	Pétalo: distribución del color secundario de la cara <u>externa</u>		
	none		aucune		keine	ausente		1
	at base		à la base		an der Basis	en la base		2
	basal half		moitié basale		basale Hälfte	en la mitad basal		3
	distal half		moitié distale		distale Hälfte	en la mitad distal		4
	at apex		à l'extrémité		an der Spitze	en el ápice		5
	marginal part		partie marginale		am Rand	en la zona del borde		6
	central part		partie centrale		mittlerer Teil	en la zona central		7
	longitudinal stripes		stries longitudinales		Längsstreifen	en rayas longitudinales		8
	throughout		partout		überall	en la totalidad		9
32.	PQ	VG	(+)	(a), (b), (c)				
	Petal: pattern of secondary color of <u>outer side</u>		Pétale : répartition de la couleur secondaire de la face <u>externe</u>		Blütenblatt: Muster der Sekundärfarbe der <u>Außenseite</u>	Pétalo: forma de disposición del color secundario de la cara <u>externa</u>		
	solid		uniforme		ganzflächig	uniforme		1
	flushed		diffuse		flächig	difusa		2
	striped		striée		gestreift	en rayas		3
	irregular		irrégulière		unregelmäßig	irregular		4
33. (*)	PQ	VG		(a), (b), (c)				
	Petal: tertiary color of <u>outer side</u>		Pétale : couleur tertiaire de la face <u>externe</u>		Blütenblatt: Tertiärfarbe der <u>Außenseite</u>	Pétalo: color terciario de la cara <u>externa</u>		
	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
34.	PQ	VG	(+)	(a), (b), (c)				
	Petal: distribution of tertiary color of <u>outer</u> side	Pétale : distribution de la couleur tertiaire de la face <u>externe</u>	Blütenblatt: Verteilung der Tertiärfarbe der <u>Außenseite</u>	Pétalo: distribución del color terciario de la cara <u>externa</u>				
	none	aucune	keine	ausente				1
	at base	à la base	an der Basis	en la base				2
	basal half	moitié basale	basale Hälfte	en la mitad basal				3
	distal half	moitié distale	distale Hälfte	en la mitad distal				4
	at apex	à l'extrémité	an der Spitze	en el ápice				5
	marginal part	partie marginale	am Rand	en la zona del borde				6
	central part	partie centrale	mittlerer Teil	en la zona central				7
	longitudinal stripes	stries longitudinales	Längsstreifen	en rayas longitudinales				8
	throughout	partout	überall	en la totalidad				9
35.	PQ	VG	(+)	(a), (b), (c)				
	Petal: pattern of tertiary color of <u>outer</u> side	Pétale : répartition de la couleur tertiaire de la face <u>externe</u>	Blütenblatt: Muster der Tertiärfarbe der <u>Außenseite</u>	Pétalo: forma de disposición del color terciario de la cara <u>externa</u>				
	solid	uniforme	ganzflächig	uniforme				1
	flushed	diffuse	flächig	difusa				2
	striped	striée	gestreift	en rayas				3
	irregular	irrégulière	unregelmäßig	irregular				4
36.	QN	VG	(+)	(a), (b)				
	Petal: incisions of margin	Pétale : incisions du bord	Blütenblatt: Randeinschnitte	Pétalo: incisiones del margen				
	absent or weak	absentes ou faibles	fehlend oder gering	ausentes o débiles	M White			1
	medium	moyennes	mittel	medias	Abumbreon			2
	strong	fortes	stark	fuertes	Seiren			3
37. (*)	QN	VG	(+)	(a), (b)				
	Petal: undulation of margin	Pétale : ondulation du bord	Blütenblatt: Wellung des Randes	Pétalo: ondulación del margen				
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	M White			1
	medium	moyenne	mittel	media	Abumbreon			2
	strong	forte	stark	fuerte	abairesekui			3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38.	QN VG	(a), (b)				
	Petal: glossiness	Pétale : brillance	Blütenblatt: Glanz	Pétalo: brillo		
	absent or weak	absente ou faible	fehlend oder gering	ausente o débil	abavesca	1
	medium	moyenne	mittel	medio	M White	2
	strong	forte	stark	fuerte	Rax Europe	3
39.	PQ VG	(d)				
	<u>Only varieties with Flower: type: single and semi-double:</u> Anther: color	<u>Seulement les variétés avec Fleur : type : simple et semi-double:</u> Anthère : couleur	<u>Nur Sorten mit Blüte: Typ: einfach und halbgefüllt:</u> Anthere: Farbe	<u>Solo variedades con Flor: tipo: simple y semidoble:</u> Antera: color		
	yellow	jaune	gelb	amarillo		1
	orange	orange	orange	naranja		2
	purple	pourpre	purpurn	púrpura		3
	violet	violet	violett	violeta		4
40.	PQ VG	(d)				
	<u>Only varieties with Flower: type: single and semi-double:</u> Stigma: color	<u>Seulement les variétés avec Fleur : type : simple et semi-double:</u> Stigmate : couleur	<u>Nur Sorten mit Blüte: Typ: einfach und halbgefüllt:</u> Narbe: Farbe	<u>Solo variedades con Flor: tipo: simple y semidoble:</u> Estigma: color		
	green	vert	grün	verde		1
	yellow	jaune	gelb	amarillo		2
	purple	pourpre	purpurn	púrpura		3
	violet	violet	violett	violeta		4

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Unless otherwise indicated observations should be made at the time of full flowering.

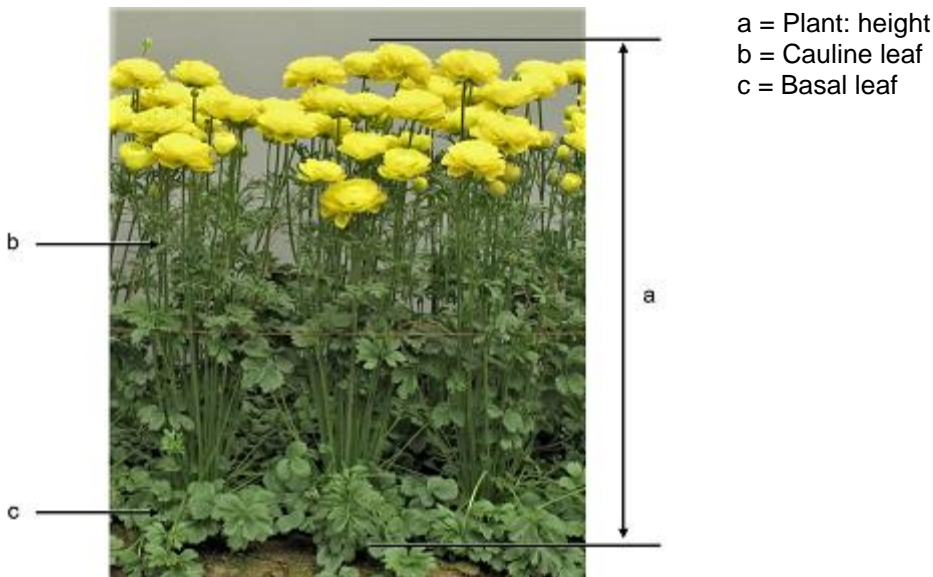
Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

- (a) Observations on the flower should be made on a fully opened flower at the time of anther dehiscence.
- (b) Observations on the petal should be made on:
Semi double flowers: on a petal from the middle whorl.
Double flowers: on a petal from the 3rd outer whorl.
- (c) The main color is the color with the largest surface area. The color with the second largest area is the secondary color. In cases where the areas of the colors are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color.
The tertiary color is the color with the third largest area. In cases where the areas of the secondary and the tertiary color are too similar to reliably decide which color has the largest area, the lighter color is considered to be the tertiary color.
- (d) Observations on the anthers and stigma should be made just before anthers opening.

8.2 *Explanations for individual characteristics*

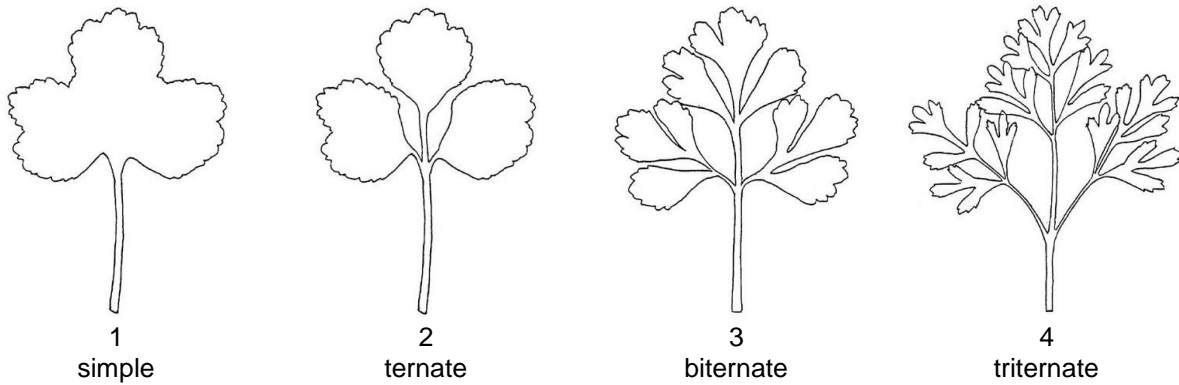
Ad. 1: Plant: height

Plant height should be observed from the surface of the growing medium to the top of the tallest flower.

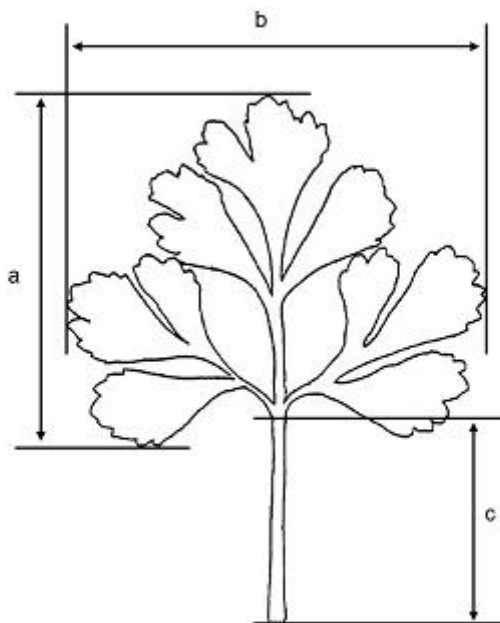


Ad. 2: Basal leaf: type

The predominant leaf type is observed.



Ad. 3: Basal leaf: length of petiole



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

Ad. 4: Basal leaf: length of leaf blade

See Ad. 3

Ad. 5: Basal leaf: width of leaf blade

See Ad. 3

Ad. 6: Cauline leaf: type

The predominant leaf type is observed.

See Ad. 2

Ad. 7: Cauline leaf: length of petiole

See Ad. 3

Ad. 8: Cauline leaf: length of leaf blade

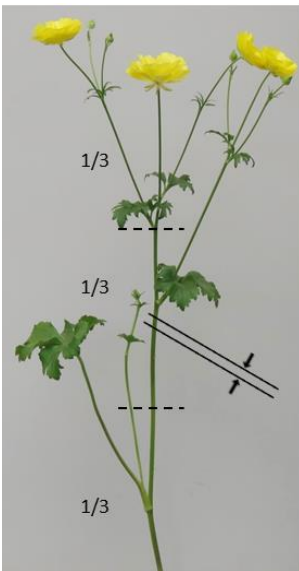
See Ad.3

Ad. 9: Cauline leaf: width of leaf blade

See Ad.3

Ad. 13: Flowering stem: thickness

The thickness should be observed on the middle third of a flowering stem.



Ad. 14: Flower bud: color

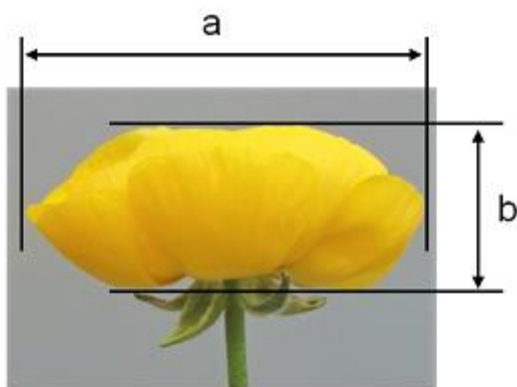
Observations on the flower bud should be when the flower bud is fully formed.

Ad. 15: Flower: type



1. Single: flowers with one row of petals.
2. Semi-double: flowers with more than one row of petals, and clearly visible pistils and stamens.
3. Double: double flowers where a pistil and stamen are not visible.

Ad. 16: Flower: diameter



a = Flower: diameter
b = Flower: length

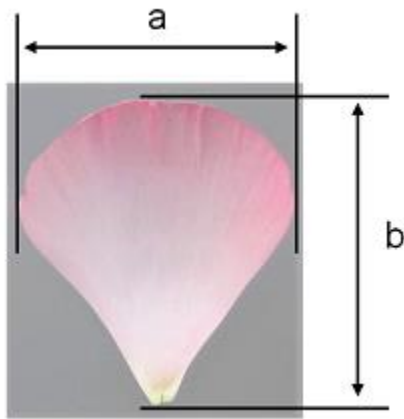
Ad. 17: Flower: height

See Ad. 16

Ad. 19: Flower: size of green colored part at center



Ad. 20: Petal: length

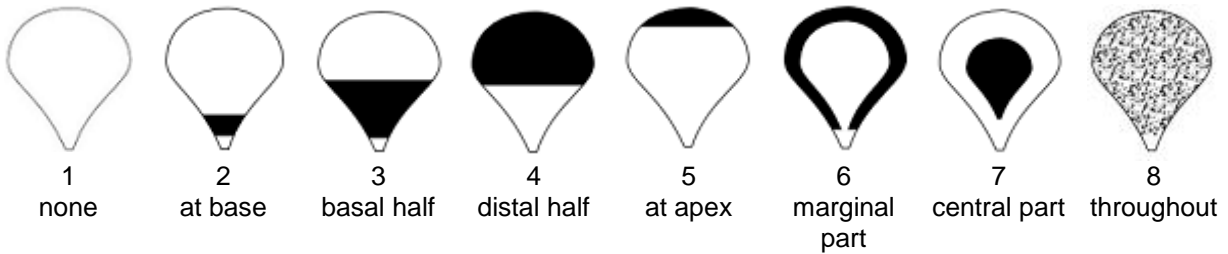


a = Petal: width
b = Petal: length

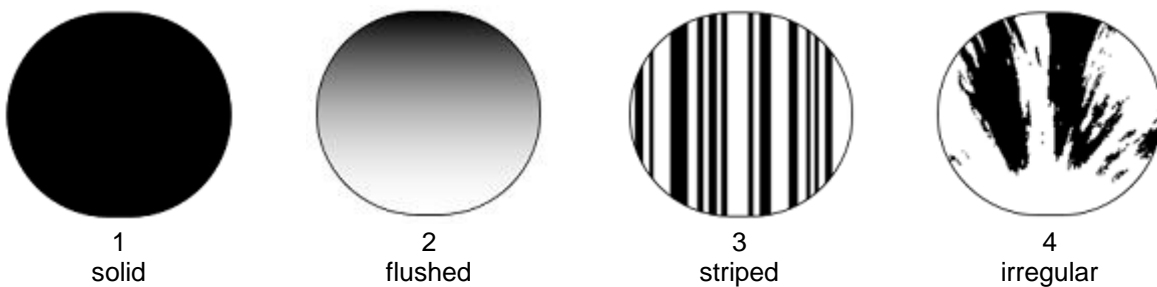
Ad. 21: Petal: width

See Ad. 20

Ad. 24: Petal: distribution of secondary color of inner side



Ad. 25: Petal: pattern of secondary color of inner side



Ad. 27: Petal: distribution of tertiary color of inner side

See Ad. 24

Ad. 28: Petal: pattern of tertiary color of inner side

See Ad. 25

Ad. 31: Petal: distribution of secondary color of outer side

See Ad. 24

Ad. 32: Petal: pattern of secondary color of outer side

See Ad. 25

Ad. 34: Petal: distribution of tertiary color of outer side

See Ad. 24

Ad. 35: Petal: pattern of tertiary color of outer side

See Ad. 25

Ad. 36: Petal: incisions of margin



1
absent or weak



2
medium



3
strong

Ad. 37: Petal: undulation of margin



1
absent or weak



2
medium



3
strong

9. Literature

Tsukamoto, Y., 1994: The Grand Dictionary of Horticulture, Volume 1. Shogakukan. Tokyo, JP, pp.692-696

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights		
1. Subject of the Technical Questionnaire		
1.1.1	Botanical name	<input type="text" value="Ranunculus asiaticus L."/> []
1.1.2	Common name	<input type="text" value="Garden Ranunculus"/>
1.2.1	Botanical name	<input type="text" value="Ranunculus cortusifolius Willd."/> []
1.2.2	Common name	<input type="text"/>
2. Applicant		
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>
3. Proposed denomination and breeder's reference		
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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 variety)

(.....) 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:
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4.2	Method of propagating the variety	
4.2.1	Vegetative propagation	
(a)	Corms	[]
(b)	<i>In vitro</i> propagation	[]
(c)	Other (state method)	[]
	<input type="text"/>	
4.2.2	Other (Please provide details)	[]
	<input type="text"/>	

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
5.1 Plant: height (1)		
very short		1 []
very short to short		2 []
short	Salonica No Niji	3 []
short to medium		4 []
medium	Ableigong	5 []
medium to tall		6 []
tall	Rax Artemis	7 []
tall to very tall		8 []
very tall		9 []
5.2 Basal leaf: type (2)		
simple	Seiren	1 []
ternate	Abtanatos	2 []
biterbate	Rocyellow	3 []
triterbate		4 []
5.3 Cauline leaf: type (6)		
simple	Seiren	1 []
ternate	Ableigong	2 []
biterbate	abperkons	3 []
triterbate	Rocyellow	4 []
5.4 Flowering stem: number of flowers (12)		
very few	Abumbreon	1 []
few	abizanagi	2 []
medium	abperkons	3 []
many	Rax Phytalos	4 []
very many	Rocyellow	5 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.5 Flower: type (15)		
single	Rax Lycia	1 []
semi-double	Rax Ariadne	2 []
double	M White	3 []
5.6 Flower: diameter (16)		
very small		1 []
very small to small		2 []
small	Rax Hades	3 []
small to medium		4 []
medium	Rax Lycia	5 []
medium to large		6 []
large	Rocyellow	7 []
large to very large		8 []
very large		9 []
5.7(i) Petal: main color of <u>inner</u> side (22)		
RHS Colour Chart (indicate reference number)		
5.7(ii) Petal: main color of <u>inner</u> side (22)		
white		1 []
green		2 []
yellow		3 []
orange		4 []
pink		5 []
red		6 []
purple		7 []
violet		8 []
other (indicate)		9 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8(i) Petal: secondary color of <u>inner</u> side (23)		
RHS Colour Chart (indicate reference number)		
5.8(ii) Petal: secondary color of <u>inner</u> side (23)		
absent		1 []
white		2 []
green		3 []
yellow		4 []
orange		5 []
pink		6 []
red		7 []
purple		8 []
violet		9 []
other (indicate)		10 []
5.9 Petal: distribution of secondary color of <u>inner</u> side (24)		
none		1 []
at base	Seiren	2 []
basal half	abairesekui	3 []
distal half		4 []
at apex		5 []
marginal part	Abepona	6 []
central part	Absalecami	7 []
throughout		8 []
5.10(i) Petal: tertiary color of <u>inner</u> side (26)		
RHS Colour Chart (indicate reference number)		
5.10(ii) Petal: tertiary color of <u>inner</u> side (26)		
absent		1 []
white		2 []
green		3 []
yellow		4 []
orange		5 []
pink		6 []
red		7 []
purple		8 []
violet		9 []
other (indicate)		10 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.11(i) Petal: main color of <u>outer</u> side (29)		
RHS Colour Chart (indicate reference number)		
5.11(ii) Petal: main color of <u>outer</u> side (29)		
white		1 []
green		2 []
yellow		3 []
orange		4 []
pink		5 []
red		6 []
purple		7 []
violet		8 []
other(indicate)		9 []
5.12(i) Petal: secondary color of <u>outer</u> side (30)		
RHS Colour Chart (indicate reference number)		
5.12(ii) Petal: secondary color of <u>outer</u> side (30)		
absent		1 []
white		2 []
green		3 []
yellow		4 []
orange		5 []
pink		6 []
red		7 []
purple		8 []
violet		9 []
other (indicate)		10 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.13(i) Petal: tertiary color of <u>outer</u> side (33)		
RHS Colour Chart (indicate reference number)		
5.13(ii) Petal: tertiary color of <u>outer</u> side (33)		
absent		1 []
white		2 []
green		3 []
yellow		4 []
orange		5 []
pink		6 []
red		7 []
purple		8 []
violet		9 []
other (indicate)		10 []

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 similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Plant: height</i>	<i>short</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.]

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