TG/RANUN(proj.3) Rev.
ORIGINAL: English
DATE: 2020-04-24

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

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 experts from Japan
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fifty-second session, to be held in Roelofarendsveen, Netherlands,
from 2020-06-08 to 2020-06-12

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Ranunculus asiaticus L.	Garden Ranunculus	Renoncule des jardins	Ranunkel	
Ranunculus cortusifolius 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.]

TABLE OF CONTENTS PAGE

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, young plants or seed.

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

vegetatively propagated varieties: 15 corms or 15 young plants
seed-propagated varieties: a sufficient quantity of seed to produce 30 plants.

In the case of seed, the seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

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 conducted 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 In the case of vegetatively propagated varieties, each test should be designed to result in a total of at least 15 plants.

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

3.4.3 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

In the case of vegetatively propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 15 plants or parts taken from each of 15 plants and any other observation made on all plants in the test, disregarding any off-type plants.

In the case of seed propagated varieties, unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 30 plants or parts taken from each of 30 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 vegetatively propagated varieties and cross-pollinated 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.

4.2.4 For the assessment of uniformity of seed propagated varieties, a population standard of 3% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 30 plants, 3 off-types are allowed.

4.3 Stability

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

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: height (characteristic 1)
(b) Basal leaf: type (characteristic 2)

(c) Cauline leaf: type (characteristic 6)
(d) Flowering stem: number of flowers (characteristic 13)
(e) Flower: type (characteristic 15)
(f) Flower: diameter (characteristic 16)
(g) Petal: main color of inner side (characteristic 22) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet
(h) Petal: secondary color of inner side (characteristic 23) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet
(i) Petal: distribution of secondary color of inner side (characteristic 24) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet
(j) Petal: tertiary color of inner side (characteristic 26) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet
(k) Petal: distribution of tertiary color of inner side (characteristic 27)
(l) Petal: main color of outer side (characteristic 29) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet
(m) Petal: secondary color of outer side (characteristic 30) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: violet

(n) Petal: tertiary color of outer side (characteristic 33) with the following groups:
Group 1: white
Group 2: yellow
Group 3: green
Group 4: orange
Group 5: pink
Group 6: red
Group 7: purple
Group 8: 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:

State	*Note*
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	*Note*
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

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

6.5 Legend

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

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

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

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

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

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

7 Not applicable

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) QN MG/MS/VG		**(+)**				
	Plant: height					
	short				Salonica No Niji	3
	medium				Ableigong	5
	tall				Rax Artemis	7
2. (*) QL VG		**(+)**				
	Basal leaf: type					
	simple				Seiren	1
	ternate				Abtanatos	2
	biternate				Rocyellow	3
	triternate					4
3. QN MG/MS/VG		**(+)**				
	Basal leaf: length of petiole					
	short				Ableigong	3
	medium				Abtanatos	5
	long				Abepona	7
4. (*) QN MG/MS/VG		**(+)**				
	Basal leaf: length of leaf blade					
	short				Rocyellow	3
	medium				Abtanatos	5
	long				abizanagi	7
5. (*) QN MG/MS/VG		**(+)**				
	Basal leaf: width of leaf blade					
	narrow				Rocyellow	3
	medium				Abtanatos	5
	broad				Ableigong	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**(*)**	**QL VG**	**(+)**				
		<u>Cauline</u> leaf: type					
		simple				Seiren	1
		ternate				Ableigong	2
		biternate				abperkons	3
		triternate				Rocyellow	4
7.		**QN MG/MS/VG**	**(+)**				
		<u>Cauline</u> leaf: length of petiole					
		short				Rax Artemis	3
		medium				abizanagi	5
		long				abperkons	7
8.	**(*)**	**QN MG/MS/VG**	**(+)**				
		<u>Cauline</u> leaf: length of leaf blade					
		short				Ableigong	3
		medium				M Pink	5
		long				abperkons	7
9.	**(*)**	**QN MG/MS/VG**	**(+)**				
		<u>Cauline</u> leaf: width of leaf blade					
		narrow					3
		medium				M Pink	5
		broad				Rax Ariadne	7
10.		**PQ VG**					
		<u>Cauline</u> leaf: intensity of green color on upper side					
		light				Aya Poissy	1
		medium				abperkons	2
		dark				Rocyellow	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN VG**					
		<u>Cauline</u> leaf: glossiness on upper side					
		absent or weak				abperkons	1
		medium				M Pink	2
		strong				Rax Lycia	3
12.		**PQ VG**	**(+)**				
		Flower bud: color					
		light green				Abxocolt	1
		medium green				abavesca	2
		dark green				Abtanatos	3
		purple				Abumbreon	4
		green and purple				RAX EUROPE	5
		greyish purple				abperkons	6
13.	**(*)**	**QN MG/MS/VG**					
		Flowering stem: number of flowers					
		very few				Abumbreon	1
		few				abizanagi	2
		medium				abperkons	3
		many				RAX PHYTALOS	4
		very many				Rocyellow	5
14.	**(*)**	**QN MG/MS/VG**	**(+)**				
		Flowering stem: thickness					
		very thin					1
		thin					2
		medium				M Pink	3
		thick				abizanagi	4
		very thick				Abtanatos	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. **(*)**	**QL** **VG**	**(+)** **(a)**				
	Flower: type					
	single				Rax Lycia	1
	semi-double				Rax Ariadne	2
	double				M WHITE	3
16. **(*)**	**QN** **MG/MS/VG**	**(+)** **(a)**				
	Flower: diameter					
	small				RAX HADES	3
	medium				Rax Lycia	5
	large				Rocyellow	7
17.	**QN** **MG/MS/VG**	**(+)** **(a)**				
	Flower: height					
	short				Rocyellow	3
	medium				abperkons	5
	tall				Ableigong	7
18. **(*)**	**QN** **MG/MS/VG**	**(a)**				
	Only varieties with Flower: type: semi-double and double: Flower: number of petals					
	very few				Rax Artemis	1
	few					3
	medium				Aya Poissy	5
	many				abperkons	7
	very many					9
19.	**QN** **VG**	**(+)** **(a)**				
	Flower: size of green colored part at center					
	absent or very small					1
	small					2
	medium					3
	large					4
	very large					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.		**QN MG/MS/VG**	**(+) (a), (b)**				
		Petal: length					
		short				abperkons	3
		medium				Rax Lycia	5
		long				Ableigong	7
21.		**QN MG/MS/VG**	**(+) (a), (b), (c), (d)**				
		Petal: width					
		narrow				Rax Lycia	3
		medium				M WHITE	5
		broad				abizanagi	7
22.	**(*)**	**PQ VG**	**(a), (b), (c)**				
		Petal: main color of <u>inner</u> side					
		RHS Colour Chart (indicate reference number)					
23.	**(*)**	**PQ VG**	**(a), (b), (c)**				
		Petal: secondary color of <u>inner</u> side					
		RHS Colour Chart (indicate reference number)					
24.	**(*)**	**PQ VG**	**(+) (a), (b), (c)**				
		Petal: distribution of secondary color of <u>inner</u> side					
		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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		**PQ** **VG**	**(+)**				
		Petal: pattern of secondary color of <u>inner</u> side					
		even					1
		diffuse					2
		stripe					3
		spray					4
		splash					5
26.	**(*)**	**PQ** **VG**					
		Petal: tertiary color of <u>inner</u> side					
		RHS Colour Chart (indicate reference number)					
27.	**(*)**	**PQ** **VG**	**(+)**				
		Petal: distribution of tertiary color of <u>inner</u> side					
		RHS Colour Chart (indicate reference number)					
28.		**PQ** **VG**	**(+)**				
		Petal: pattern of tertiary color of <u>inner</u> side					
		even					1
		diffuse					2
		stripe					3
		spray					4
		splash					5
29.	**(*)**	**PQ** **VG**					
		Petal: main color of <u>outer</u> side					
		RHS Colour Chart (indicate reference number)					

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.	**(*) PQ VG**					
	Petal: secondary color of <u>outer</u> side					
	RHS Colour Chart (indicate reference number)					
31.	**PQ VG**	**(+)**				
	Petal: distribution of secondary color of <u>outer</u> side					
	none					1
	at base					2
	basal half					3
	distal half					4
	at apex					5
	marginal part					6
	central part					7
	longitudinal stripes					8
	throughout					9
32.	**PQ VG**	**(+)**				
	Petal: pattern of secondary color of <u>outer</u> side					
	even					1
	diffuse					2
	stripe					3
	spray					4
	splash					5
33.	**(*) PQ VG**					
	Petal: tertiary color of <u>outer</u> side					
	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
34.		**PQ VG**	**(+)**				
		Petal: distribution of tertiary color of <u>outer</u> side					
		none					1
		at base					2
		basal half					3
		distal half					4
		at apex					5
		marginal part					6
		central part					7
		longitudinal stripes					8
		throughout					9
35.		**PQ VG**	**(+)**				
		Petal: pattern of tertiary color of <u>outer</u> side					
		even					1
		diffuse					2
		stripe					3
		spray					4
		splash					5
36.		**QL VG**	**(+)** **(a), (b)**				
		Petal: incisions of margin					
		absent or very weak				M WHITE	1
		medium				Abumbreon	2
		strong				Seiren	3
37.	**(*)**	**QN VG**	**(+)** **(a), (b)**				
		Petal: undulation of margin					
		absent or weak				M WHITE	1
		medium				Abumbreon	2
		strong				abairesekui	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38.	**QN VG**	**(a), (b)**				
	Petal: glossiness					
	absent or weak				abavesca	1
	medium				M WHITE	2
	strong				RAX EUROPE	3
39.	**PQ VG**	**(+) (d)**				
	Only varieties with Flower: type: single and semi-double: Anther: color					
	yellow					1
	orange					2
	purple					3
	violet					4
40.	**PQ VG**	**(+) (d)**				
	Only varieties with Flower: type: single and semi-double: Stigma: color					
	green					1
	yellow					2
	purple					3
	violet					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 just 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.

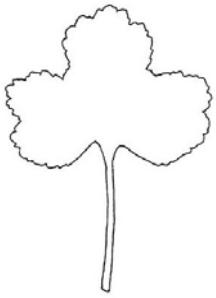
8.2 Explanations for individual characteristics

Ad. 1: Plant: height

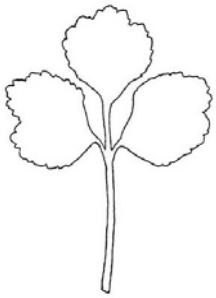
Plant height should be observed from the surface of the growing medium to the top of the tallest flower.

Ad. 2: Basal leaf: type

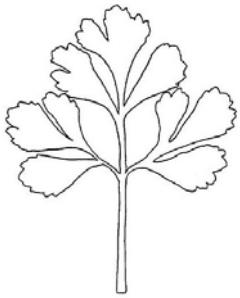
The predominant leaf type is observed.



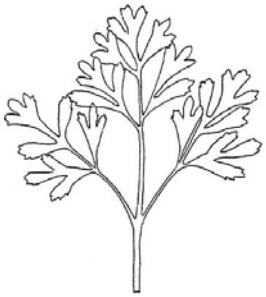
1
simple



2
ternate

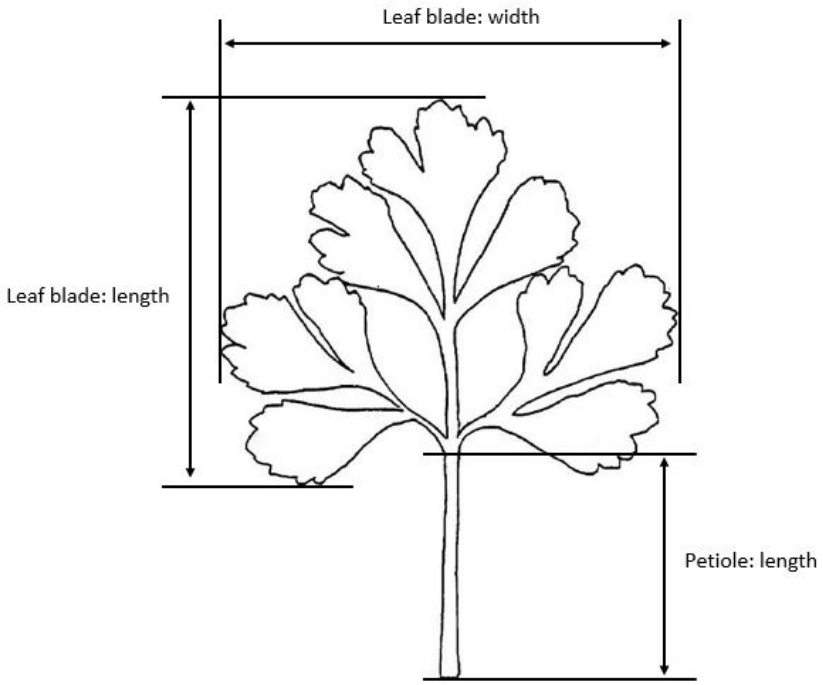


3
biternate



4
triternate

Ad. 3: Basal leaf: length of petiole



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

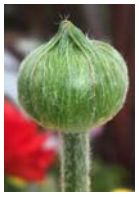
See Ad. 3

Ad. 12: Flower bud: color

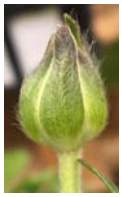
Observations on the flower bud should be made when the flower bud height is 1 to 1.5 cm.


1
light green


2
medium green

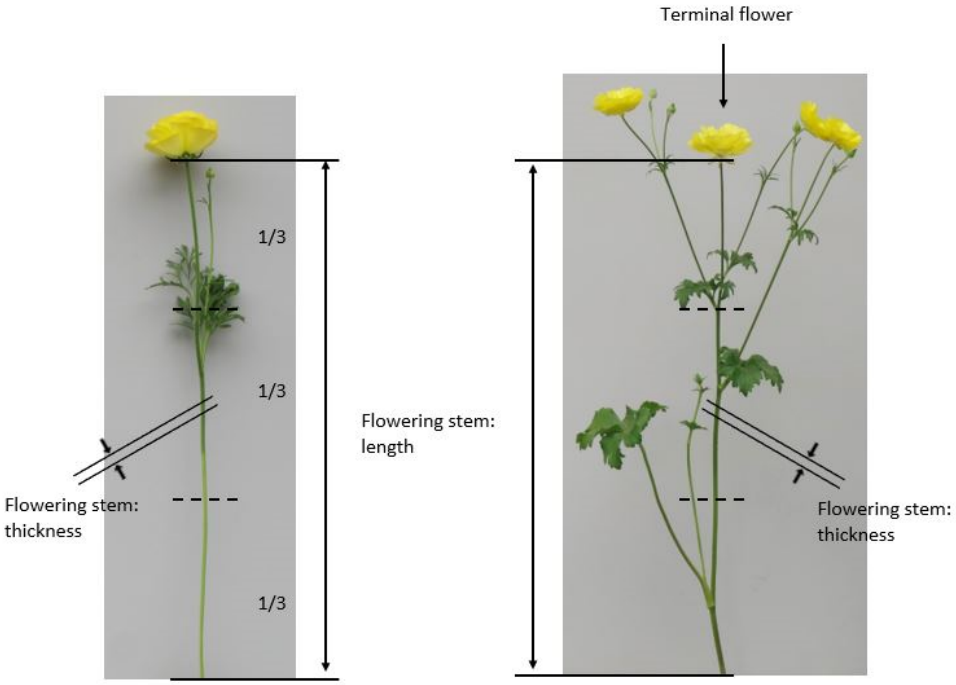

3
dark green


4
purple


5
green and purple


6
greyish purple

Ad. 14: Flowering stem: thickness



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

Ad. 15: Flower: type

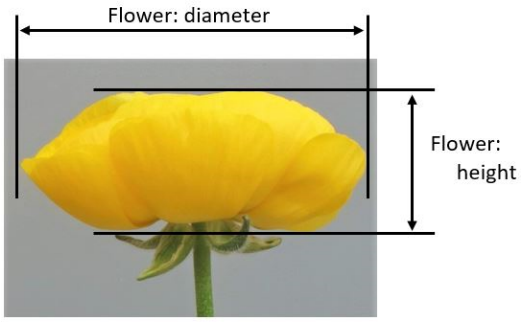
1
single

2
semi-double

3
double

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



Ad. 17: Flower: height

See Ad. 16

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

1
absent or
very small

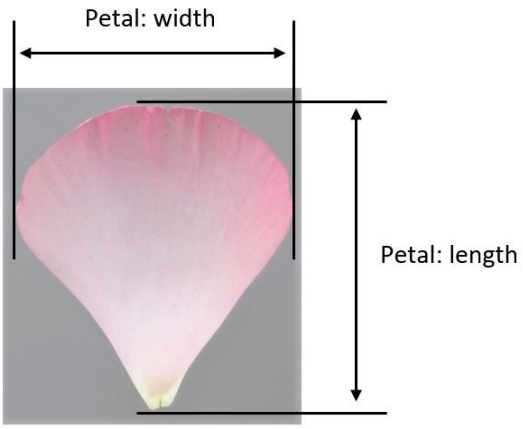
2
small

3
medium

4
large

5
very large

Ad. 20: Petal: length



Ad. 21: Petal: width

See Ad. 20

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

1 none | 2 at base | 3 basal half | 4 distal half | 5 at apex | 6 marginal part | 7 central part | 8 throughout

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

1 even | 2 diffuse | 3 stripe | 4 spray | 5 splash

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 very weak

2
medium

3
strong

Ad. 37: Petal: undulation of margin

1
absent or weak

2
medium

3
strong

Ad. 39: Only varieties with Flower: type: single and semi-double: Anther: color

1
yellow

2
orange

3
purple

4
violet

Ad. 40: Only varieties with Flower: type: single and semi-double: Stigma: color

1
green

2
yellow

3
purple

4
violet

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	*Ranunculus asiaticus* L.	[ ]
1.1.2	Common name	Garden Ranunculus	
1.2.1	Botanical name	*Ranunculus cortusifolius* Willd.	[ ]
1.2.2	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	

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 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:

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) Self-pollination [ ]
(b) Cross-pollination [ ]
(c) Hybrid [ ]
(d) Other (please provide details) [ ]

4.2.2 Vegetative propagation

(a) Tuber [ ]
(b) *In vitro* propagation [ ]
(c) corms [ ]
(d) Other (state method) [ ]

4.2.3 Other [ ]
(Please provide details)

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

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: height**		
	short	Salonica No Niji	3 [ ]
	medium	Ableigong	5 [ ]
	tall	Rax Artemis	7 [ ]
5.2 (2)	**Basal leaf: type**		
	simple	Seiren	1 [ ]
	ternate	Abtanatos	2 [ ]
	biternate	Rocyellow	3 [ ]
	triternate		4 [ ]
5.3 (6)	**Cauline leaf: type**		
	simple	Seiren	1 [ ]
	ternate	Ableigong	2 [ ]
	biternate	abperkons	3 [ ]
	triternate	Rocyellow	4 [ ]
5.4 (13)	**Flowering stem: number of flowers**		
	very few	Abumbreon	1 [ ]
	few	abizanagi	2 [ ]
	medium	abperkons	3 [ ]
	many	RAX PHYTALOS	4 [ ]
	very many	Rocyellow	5 [ ]
5.5 (15)	**Flower: type**		
	single	Rax Lycia	1 [ ]
	semi-double	Rax Ariadne	2 [ ]
	double	M WHITE	3 [ ]
5.6 (16)	**Flower: diameter**		
	small	RAX HADES	3 [ ]
	medium	Rax Lycia	5 [ ]
	large	Rocyellow	7 [ ]

	Characteristics	Example Varieties	Note
5.7(i) (22)	**Petal: main color of inner side**		
	RHS Colour Chart (indicate reference number)		
5.7(ii) (22)	**Petal: main color of inner side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]
5.8(i) (23)	**Petal: secondary color of inner side**		
	RHS Colour Chart (indicate reference number)		
5.8(ii) (23)	**Petal: secondary color of inner side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]
5.9 (24)	**Petal: distribution of secondary color of inner side**		
	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 [ ]

	Characteristics	Example Varieties	Note
5.10(i) (26)	**Petal: tertiary color of <u>inner</u> side**		
	RHS Colour Chart (indicate reference number)		
5.10(ii) (26)	**Petal: tertiary color of <u>inner</u> side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]
5.11(i) (29)	**Petal: main color of <u>outer</u> side**		
	RHS Colour Chart (indicate reference number)		
5.11(ii) (29)	**Petal: main color of <u>outer</u> side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]

	Characteristics	Example Varieties	Note
5.12(i) (30)	**Petal: secondary color of <u>outer</u> side**		
	RHS Colour Chart (indicate reference number)		
5.12(ii) (30)	**Petal: secondary color of <u>outer</u> side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]
5.13(i) (33)	**Petal: tertiary color of <u>outer</u> side**		
	RHS Colour Chart (indicate reference number)		
5.13(ii) (33)	**Petal: tertiary color of <u>outer</u> side**		
	white		1 [ ]
	yellow		2 [ ]
	green		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
	red		6 [ ]
	purple		7 [ ]
	violet		8 [ ]
	other(indicate)		9 [ ]

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	Characteristic(s) in which your candidate variety differs	Describe the expression of the characteristic(s) for the	Describe the expression of the characteristic(s) for **your**
Example	*Plant: height*	*short*	*medium*

Comments:

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

#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

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

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

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

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

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

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

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]