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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

LING, SCOTS HEATHER *

UPOV Code(s): CALLU_VUL

Calluna vulgaris (L.) Hull

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Germany
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fifty-third session, to be held in Roelofarendsveen, Netherlands,
from 2021-06-07 to 2021-06-11

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Calluna vulgaris (L.) Hull	Ling, Scots Heather	Callune	Besenheide	Calluna

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 *Calluna vulgaris* (L.) Hull.

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 well-rooted young plants.

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

20 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 20 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 5 plants or parts of plants taken from each of 5 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 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, 2 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 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: flowering type (characteristic 1)
(b) Leaf: main color on sunny side in autumn (characteristic 13)
(c) Flower: opening of bud (characteristic 17)
(d) Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering (characteristic 21)
with the following groups:
white
light pink
medium pink
dark pink
red
purple red
blue violet
(e) Only varieties with Flower: opening of bud: absent: Flower: main color at the beginning of flowering (characteristic 23)
with the following groups:
white
light pink
medium pink
dark pink
red
purple red
blue 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 All relevant states of expression are presented in the characteristic.

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
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)-(h) 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/
1.	**(*)**	**QL**	**VG**	**(+)**	**(a)**				
		Plant: flowering type							
		regular						Laurentine	1
		irregular						Cologne	2
2.	**(*)**	**PQ**	**VG**	**(+)**	**(a)**				
		Plant: growth habit							
		narrow upright						Linda	1
		broad upright						Laurentine	2
		broad upright to spreading						Angie	3
		spreading						Vaika	4
		drooping						Janina	5
3.		**QN**	**VG**	**(+)**	**(a)**				
		Plant: density							
		sparse						Zulu	3
		medium						Dallas	5
		dense						Las Vegas	7
4.	**(*)**	**QN**	**MG/VG**	**(+)**	**(a)**				
		Plant: height							
		short						Svenja	3
		medium						Franca	5
		tall						Sydney	7
5.	**(*)**	**QN**	**MG/VG**	**(+)**	**(a)**				
		Shoot: length							
		short						Samara	3
		medium						Sandy	5
		long						Amethyst	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
6.	**(*)**	**PQ** **VG**	**(b), (c), (d)**				
		Shoot: main color					
		orange				Alicia	1
		yellow orange					2
		yellow					3
		yellow green					4
		light green					5
		medium green					6
		dark green					7
		grey green					8
		green red					9
		red					10
		brown red					11
		brown					12
7.		**QN** **VG**	**(b), (c), (e)**				
		Shoot: anthocyanin overcolor					
		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
8.	**(*)**	**PQ** **VG**	**(+)** **(a), (d)**				
		<u>Only varieties with Plant: flowering type: regular:</u> Leaf on shoot tip: color					
		yellow					1
		yellow green					2
		light green				Alicia	3
		medium green				Angie	4
		dark green				Amethyst	5
		grey green					6
		blue green				WI 3 201	7
		black green					8

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
9.		**QN VG**	**(+) (a), (e)**				
		Only varieties with Plant: flowering type: regular: Leaf on shoot tip: anthocyanin coloration					
		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
10	**(*)**	**QN VG**	**(+) (e), (f)**				
		Only varieties with Plant: flowering type: regular: Leaf on shoot tip: anthocyanin coloration in winter					
		absent or very weak				Madonna	1
		weak				Angie	3
		medium				Samara	5
		strong				Laurentine	7
		very strong				Vaika	9
11	**(*)**	**PQ VG**	**(+) (a), (d), (g)**				
		Leaf: main color					
		yellow green					1
		light green					2
		medium green					3
		dark green					4
		grey green					5
		blue green					6
		black green					7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
12	**(*)**	**PQ** **VG**	**(g)**				
		Leaf: main color on sunny side in summer					
		yellow				Zipi	1
		yellow green				Sydney	2
		light green				Melanie	3
		medium green				Angie	4
		dark green				Loki	5
		grey green				Grizabella	6
		blue green				Zalina	7
		brown green					8
		black green				Zulu	9
		yellow orange					10
		orange					11
		orange red					12
		pink red					13
		medium red					14
		dark red					15
		purple red					16
		brown red				Zora	17
		black red					18

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
13	**(*)**	**PQ**	**VG**		**(a), (g)**				
		Leaf: main color on sunny side in autumn							
		yellow							1
		yellow green							2
		light green							3
		medium green							4
		dark green							5
		grey green							6
		blue green							7
		brown green							8
		black green							9
		yellow orange							10
		orange							11
		orange red							12
		pink red							13
		medium red							14
		dark red							15
		purple red							16
		brown red							17
		black red							18

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
14	**(*)**	**PQ** **VG**	**(f), (g)**				
		<u>Only varieties with Plant: type: irregular:</u> Leaf: main color on sunny side in winter					
		yellow					1
		yellow green					2
		light green					3
		medium green					4
		dark green					5
		grey green					6
		blue green					7
		brown green					8
		black green					9
		yellow orange					10
		orange					11
		orange red					12
		pink red					13
		red					14
		dark red					15
		purple red					16
		brown red					17
		black red					18
15	**(*)**	**PQ** **VG**	**(+)** **(a), (c)**				
		<u>Only varieties with Plant: flowering type: regular:</u> Inflorescence: arrangement of flowers					
		solitary				Madonna	1
		whorl				Linda	2
		at lateral shoots				Mandy, Vaika	3
16		**QN** **VG**	**(+)** **(a), (c)**				
		<u>Only varieties with Plant: flowering type: regular:</u> Inflorescence: density of flowers					
		sparse					3
		medium					5
		dense					7

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
17	**(*)**	**QL**	**VG**	**(+)**	**(a)**				
		Flower: opening of bud							
		absent						Laurentine	1
		present						Dark Beauty	9
18	**(*)**	**QL**	**VG**	**(+)**	**(a)**				
		<u>Only varieties with Flower: opening of bud: present:</u> Flower: type							
		single						Grizabella	1
		double						Dark Beauty	2
19	**(*)**	**QN**	**VG**		**(a)**				
		Flower: size							
		small						Moulin Rouge	3
		medium						Valeska	5
		large						Rita	7
20	**(*)**	**PQ**	**VG**	**(+)**	**(a)**				
		<u>Only varieties with Flower: opening of bud: present:</u> Flower: color of outer side of sepal							
		RHS Colour Chart (indicate reference number)							
21	**(*)**	**PQ**	**VG**	**(+)**	**(a)**				
		<u>Only varieties with Flower: opening of bud: present:</u> Flower: color of outer side of petal at <u>beginning of flowering</u>							
		RHS Colour Chart (indicate reference number)							

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
22	**(*)**	**PQ**	**VG**	**(+)**	**(h)**				
		<u>Only varieties with Flower: opening of bud: present:</u> Flower: color of outer side of petal <u>at the end of flowering</u>							
		RHS Colour Chart (indicate reference number)							
23	**(*)**	**PQ**	**VG**		**(a)**				
		<u>Only varieties with Flower: opening of bud: absent:</u> Flower: main color <u>at the beginning of flowering</u>							
		RHS Colour Chart (indicate reference number)							
24	**(*)**	**PQ**	**VG**		**(h)**				
		<u>Only varieties with Flower: opening of bud: absent:</u> Flower: main color <u>at the end of flowering</u>							
		RHS Colour Chart (indicate reference number)							
25		**PQ**	**VG**		**(a)**				
		Flower: Time of beginning of flowering							
		very early							1
		early							2
		medium							3
		late							4
		very late						Pina, Ronja	5

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Observations on varieties with Plant: flowering type: regular should be made at the beginning of flowering when one third of the flowers are flowering on 50% of the plants. Observations on varieties with Plant: flowering type: irregular should be made in the middle of autumn.

(b) Observations should be made in the middle of summer.

(c) Observations should be made in the middle third of a shoot.

(d) Observations should be made on the shaded side.

(e) Observations should be made on the sunny side.

(f) Observations should be made after a few days with temperatures below zero Celsius.

(g) Observations should be made based on the general impression of the leaves in the respective area.

(h) Observations at the end of flowering should be made when at least 10 flowers on 10% of the plants present brown coloration.

8.2 Explanations for individual characteristics

Ad. 1: Plant: flowering type

Varieties with Plant: flowering type: regular flower on the majority of shoots in each growing cycle.
Varieties with Plant: flowering type: irregular do not flower on the majority of shoots and if flowering does occur the numbers are few.

Ad. 2: Plant: growth habit

1
narrow upright

2
broad upright

3
broad upright to spreading

4
spreading

5
drooping

Ad. 3: Plant: density

3
sparse

5
medium

7
dense

Ad. 4: Plant: height

The height from ground level to the top of the plant should be observed.

Ad. 5: Shoot: length

The shoot length of current season's growth from the pinching point to the tip of the longest shoot should be observed.

Ad. 8: Only varieties with Plant: flowering type: regular: Leaf on shoot tip: color

Observations should be made on the leaves above the top flowers.

Ad. 9: Only varieties with Plant: flowering type: regular: Leaf on shoot tip: anthocyanin coloration

See Ad. 8

Ad. 10: Only varieties with Plant: flowering type: regular: Leaf on shoot tip: anthocyanin coloration in winter

See Ad. 8

Ad. 11: Leaf: main color

Observations should be made in the lower third of the plant.

Ad. 15: Only varieties with Plant: flowering type: regular: Inflorescence: arrangement of flowers

1
solitary

2
whorl

3
lateral shoots

Ad. 16: Only varieties with Plant: flowering type: regular: Inflorescence: density of flowers

3
sparse

5
medium

7
dense

Ad. 17: Flower: opening of bud

1
absent

9
present

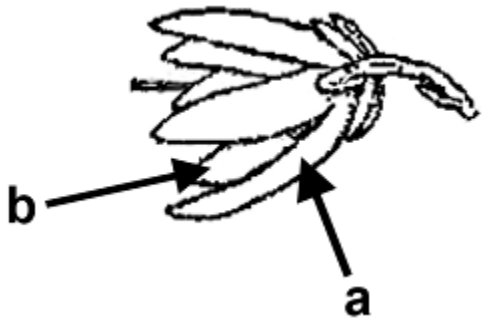
Ad. 18: Only varieties with Flower: opening of bud: present: Flower: type

A single flower has four petals. A double flower has more than four petals.

1
single

2
double

Ad. 20: Only varieties with Flower: opening of bud: present: Flower: color of outer side of sepal



a = sepal (characteristic 20)
b = petal (characteristics 21 and 22)

Ad. 21: Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering

See Ad. 20

Ad. 22: Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at the end of flowering

See Ad. 20

9. Literature

Nelson, E. C., 2011: Hardy Heathers from the Northern Hemisphere. Royal Botanic Gardens, Kew, GB

Knight, F. P., 1986: Heaths and Heathers. Wisley Handbook, Cassell/RHS.

Underhill, T., 1990: Heaths & Heathers, The Growers Encyclopedia. David & Charles, Newton Abbot, GB.

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	*Calluna vulgaris* (L.) Hull
1.2	Common name	Ling, Scots Heather

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 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: flowering type**		
	regular	Laurentine	1 [ ]
	irregular	Cologne	2 [ ]
5.2 (13)	**Leaf: main color on sunny side in autumn**		
	yellow		1 [ ]
	yellow green		2 [ ]
	light green		3 [ ]
	medium green		4 [ ]
	dark green		5 [ ]
	grey green		6 [ ]
	blue green		7 [ ]
	brown green		8 [ ]
	black green		9 [ ]
	yellow orange		10 [ ]
	orange		11 [ ]
	orange red		12 [ ]
	pink red		13 [ ]
	medium red		14 [ ]
	dark red		15 [ ]
	purple red		16 [ ]
	brown red		17 [ ]
	black red		18 [ ]
5.3 (17)	**Flower: opening of bud**		
	absent	Laurentine	1 [ ]
	present	Dark Beauty	9 [ ]

	Characteristics	Example Varieties	Note
5.4(i) (21)	**Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering**		
	RHS Colour Chart (indicate reference number)		
5.4(ii) (21)	**Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering**		
	white		1 [ ]
	light pink		2 [ ]
	medium pink		3 [ ]
	dark pink		4 [ ]
	red		5 [ ]
	purple red		6 [ ]
	blue violet		7 [ ]
	other (please indicate)		8 [ ]
5.5(i) (23)	**Only varieties with Flower: opening of bud: absent: Flower: main color at the beginning of flowering**		
	RHS Colour Chart (indicate reference number)		
5.5(ii) (23)	**Only varieties with Flower: opening of bud: absent: Flower: main color at the beginning of flowering**		
	white		1 [ ]
	light pink		2 [ ]
	medium pink		3 [ ]
	dark pink		4 [ ]
	red		5 [ ]
	purple red		6 [ ]
	blue violet		7 [ ]
	other (please indicate)		8 [ ]

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	*Leaf: main color*	*light green*	*dark green*

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]