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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

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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 Committee at its fifty-eighth session**to be held in Geneva on October 24 and 25, 2022**Disclaimer: this document does not represent UPOV policies or guidance*

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Calluna vulgaris</i> (L.) Hull	Heather, Ling, Scots Heather	Callune	Besenheide	Biercol, Brezo

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 10)
 - (c) Flower: opening of bud (characteristic 14)
 - (d) Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering (characteristic 20)
with the following groups:
 - Gr. 1: white
 - Gr. 2: pink
 - Gr. 3: red
 - Gr. 4: purple red
 - Gr. 5: blue violet
 - (e) Only varieties with Flower: opening of bud: absent: Flower: main color at the beginning of flowering (characteristic 22)
with the following groups:
 - Gr. 1: white
 - Gr. 2: pink
 - Gr. 3: red
 - Gr. 4: purple red
 - Gr. 5: 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/ 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)-(e) 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. (*)	QL	VG	(+)				
	Plant: flowering type	Plante: type de floraison	Pflanze: Blühtyp	Planta: tipo de floración			
	regular	régulier	regelmäßig	regular	Laurentine		1
	irregular	irrégulier	unregelmäßig	irregular	Cologne		2
2. (*)	PQ	VG	(+)				
	Plant: growth habit	Plante: port	Pflanze: Wuchsform	Planta: hábito de crecimiento			
	narrow upright	dressé étroit	schmal aufrecht	erecto estrecho	Linda		1
	broad upright	dressé large	breit aufrecht	erecto ancho	Laurentine		2
	broad upright to spreading	dressé large à étalé	breit aufrecht bis breitwüchsig	erecto ancho a extendido	Angie		3
	spreading	étalé	breitwüchsig	extendido	Vaika		4
	weeping	pleureur	lang überhängend	llorón	Nelly		5
3.	QN	VG	(+)				
	Plant: density	Plante: densité	Pflanze: Dichte	Planta: densidad			
	very sparse	très lâche	sehr locker	muy laxa			1
	very sparse to sparse	très lâche à lâche	sehr locker bis locker	muy laxa a laxa			2
	sparse	lâche	locker	laxa	Zulu		3
	sparse to medium	lâche à moyenne	locker bis mittel	laxa a media			4
	medium	moyenne	mittel	media	Dallas		5
	medium to dense	moyenne à dense	mittel bis dicht	media a densa			6
	dense	dense	dicht	densa	Las Vegas		7
	dense to very dense	dense à très dense	dicht bis sehr dicht	densa a muy densa			8
	very dense	très dense	sehr dicht	muy densa			9
4. (*)	QN	MG/VG	(+)				
	Plant: height	Plante: hauteur	Pflanze: Höhe	Planta: altura			
	very short	très courte	sehr niedrig	muy baja	Nelly		1
	very short to short	très courte à courte	sehr niedrig bis niedrig	muy baja a baja			2
	short	courte	kurz	baja	Inid		3
	short to medium	courte à moyenne	kurz bis mittel	baja a media			4
	medium	moyenne	mittel	media	Franca		5
	medium to tall	moyenne à haute	mittel bis hoch	media a alta			6
	tall	haute	hoch	alta	Sydney		7
	tall to very tall	haute à très haute	hoch bis sehr hoch	alta a muy alta			8
	very tall	très haute	sehr hoch	muy alta			9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. (*)	PQ	VG	(a), (b)			
	Shoot: main color	Rameau: couleur principale	Trieb: Hauptfarbe	Rama: color principal		
	yellow green	vert-jaune	gelbgrün	verde amarillento	Aufrechte Gelbe	1
	light green	vert clair	hellgrün	verde claro	Nebula	2
	grey red	rouge-gris	graurot	rojo grisáceo	Zilly	3
	brown red	rouge-brun	braunrot	rojo amarronado	Selma	4
	brown	brun	braun	marrón	Zulu	5
6. (*)	PQ	VG	(+)	(b)		
	<u>Only varieties with Plant: flowering type: regular:</u> Leaf on shoot tip: color	<u>Seulement variétés avec Plante: type de floraison: régulier:</u> Feuille sur le sommet de la tige: couleur	<u>Nur Sorten mit Pflanze: Blühtyp: regelmäßig:</u> Blatt an Triebspitze: Farbe	<u>Solo variedades con Planta: tipo de floración: regular:</u> Hoja en la punta de la rama: color		
	light green	vert clair	hellgrün	verde claro	Sandy	1
	medium green	vert moyen	mittelgrün	verde medio	Angie	2
	dark green	vert foncé	dunkelgrün	verde oscuro	Lisbeth	3
	grey green	vert-gris	graugrün	verde grisáceo	Grizabella	4
7. (*)	PQ	VG	(c)			
	<u>Only varieties with Plant: flowering type: regular:</u> Leaf on shoot side in winter	<u>Seulement variétés avec Plante: type de floraison: régulier:</u> Feuille sur le sommet de la tige: couleur du côté ensoleillé en hiver	<u>Nur Sorten mit Pflanze: Blühtyp: regelmäßig:</u> Blatt an Triebspitze: Farbe auf der Sonnenseite im Winter	<u>Solo variedades con Planta: tipo de floración: regular:</u> Hoja en la punta de la rama: color en el lado expuesto al sol en invierno		
	yellow	jaune	gelb	amarillo	Sandy	1
	yellow green	vert-jaune	gelbgrün	verde amarillento	Lunolemon	2
	light green	vert clair	hellgrün	verde claro	Lunospätrosa	3
	medium green	vert moyen	mittelgrün	verde medio	Marlike	4
	dark green	vert foncé	dunkelgrün	verde oscuro	Linda	5
	grey green	vert-gris	graugrün	verde grisáceo	Silvana	6
	green brown	brun-vert	grünbraun	marrón verdoso	WI 52018	7
	brown	brun	braun	marrón	Nirina	8
	red	rouge	rot	rojo	Bonita	9
	black purple	pourpre-noir	schwarzpurpurn	negro púrpura	Martina	10

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8. (*)	PQ	VG	(+)	(b), (d)				
	Leaf: main color	Feuille: couleur principale	Blatt: Hauptfarbe	Hoja: color principal				
	light green	vert clair	hellgrün	verde claro	Aufrechte Gelbe		1	
	medium green	vert moyen	mittelgrün	verde medio	Angie		2	
	dark green	vert foncé	dunkelgrün	verde oscuro	Lisbeth		3	
	grey green	vert-gris	graugrün	verde grisáceo	Zilly		4	
9. (*)	PQ	VG		(d)				
	Leaf: main color on sunny side in summer	Feuille: couleur principale du côté ensoleillé en été	Blatt: Hauptfarbe auf der Sonnenseite im Sommer	Hoja: color principal en el lado expuesto al sol en verano				
	yellow	jaune	gelb	amarillo	Aufrechte Gelbe		1	
	yellow green	vert-jaune	gelbgrün	verde amarillento	Sandy		2	
	light green	vert clair	hellgrün	verde claro	Nebula		3	
	medium green	vert moyen	mittelgrün	verde medio	Laurentine		4	
	dark green	vert foncé	dunkelgrün	verde oscuro	Havanna		5	
	grey green	vert-gris	graugrün	verde grisáceo	Cologne, Grizabella		6	
	brown green	vert-brun	braungrün	verde amarronado	Zorina		7	
	yellow orange	orange-jaune	gelborange	naranja amarillento			8	
	yellow pink	rose-jaune	gelbrosa	rosa amarillento	Red Lake		9	
	red	rouge	rot	rojo			10	
10. (*)	PQ	VG		(d)				
	Leaf: main color on sunny side in autumn	Feuille: couleur principale du côté ensoleillé en automne	Blatt: Hauptfarbe auf der Sonnenseite im Herbst	Hoja: color principal en el lado expuesto al sol en otoño				
	yellow	jaune	gelb	amarillo	Zipi		1	
	yellow green	vert-jaune	gelbgrün	verde amarillento	Sydney		2	
	light green	vert clair	hellgrün	verde claro	Zelena		3	
	medium green	vert moyen	mittelgrün	verde medio	Zelia		4	
	dark green	vert foncé	dunkelgrün	verde oscuro	Stockholm		5	
	grey green	vert-gris	graugrün	verde grisáceo	Cologne, Zilly		6	
	black green	vert-noir	schwarzgrün	negro verde	Havanna, Zalina		7	
	orange green	vert-orange	orangegrün	verde anaranjado	Dallas, Las Vegas		8	
	orange red	rouge-orange	orangerot	rojo anaranjado	Zoe		9	
	pink red	rouge-rose	rosarot	rojo rosado			10	
	red	rouge	rot	rojo			11	
	brown	brun	braun	marrón	Pretoria, Zorina		12	

	English		français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
11. (*)	PQ	VG	(c), (d)				
	Only varieties with Plant: flowering type: irregular; Leaf: main color on sunny side in winter		Seulement variétés avec Plante: type de floraison: irrégulier; Feuille: couleur principale du côté ensoleillé en hiver	Nur Sorten mit Pflanze: Blühtyp: unregelmäßig; Blatt: Hauptfarbe auf der Sonnenseite im Winter	Solo variedades con Planta: tipo de floración: irregular; Hoja: color principal en el lado expuesto al sol en invierno		
	yellow		jaune	gelb	amarillo	Zipi	1
	yellow green		vert-jaune	gelbgrün	verde amarillento	Barcelona	2
	light green		vert clair	hellgrün	verde claro	Zelena	3
	medium green		vert moyen	mittelgrün	verde medio	Zelia	4
	dark green		vert foncé	dunkelgrün	verde oscuro		5
	grey green		vert-gris	graugrün	verde grisáceo	Zilly	6
	green brown		brun-vert	grünbraun	marrón verdoso	Stockholm	7
	red		rouge	rot	rojo	Zoe	8
	brown red		rouge-brun	braunrot	rojo amarronado	Zorina	9
	black purple		pourpre- noir	schwarzpurpurn	negro púrpura	Havanna	10
12. (*)	PQ	VG	(+)	(a)			
	Only varieties with Plant: flowering type: regular; Inflorescence: arrangement of flowers		Seulement variétés avec Plante: type de floraison: régulier; Inflorescence: disposition des fleurs	Nur Sorten mit Pflanze: Blühtyp: regelmäßig; Blütenstand: Anordnung der Blüten	Solo variedades con Planta: tipo de floración: regular; Inflorescencia: disposición de las flores		
	solitary		solitaire	einzel	aislada	Lisbeth	1
	whorl		verticille	Quirl	verticilo	Angie	2
	at lateral shoots		sur les rameaux latéraux	an Seitentrieben	en las ramas laterales	Sabella	3
13.	QN	VG	(+)	(a)			
	Only varieties with Plant: flowering type: regular; Inflorescence: density of flowers		Seulement variétés avec Plante: type de floraison: régulier; Inflorescence: densité de fleurs	Nur Sorten mit Pflanze: Blühtyp: regelmäßig; Blütenstand: Dichte der Blüten	Solo variedades con Planta: tipo de floración: regular; Inflorescencia: densidad de las flores		
	very sparse		très lâche	sehr locker	muy laxa		1
	very sparse to sparse		très lâche à lâche	sehr locker bis locker	muy laxa a laxa		2
	sparse		lâche	locker	laxa	Lisbeth	3
	sparse to medium		lâche à moyenne	locker bis mittel	laxa a media		4
	medium		moyenne	mittel	media	Lisann	5
	medium to dense		moyenne à dense	mittel bis dicht	media a densa		6
	dense		dense	dicht	densa	Rote Janina	7
	dense to very dense		dense à très dense	dicht bis sehr dicht	densa a muy densa		8
	very dense		très dense	sehr dicht	muy densa		9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. (*)	QL	VG	(+)				
	Flower: opening of bud		Fleur: ouverture du bourgeon	Blüte: Öffnen der Knospe	Flor: apertura de la yema		
	absent		absente	fehlend	ausente	Laurentine	1
	present		présente	vorhanden	presente	Dark Beauty	9
15. (*)	QL	VG	(+)				
	<u>Only varieties with Flower: opening of bud: present:</u> Flower: type		<u>Seulement variétés avec Fleur: ouverture du bourgeon: présente:</u> Fleur: type	<u>Nur Sorten mit Blüte: Öffnen der Knospe: vorhanden:</u> Blüte: Typ	<u>Solo variedades con Flor: apertura de la yema: presente:</u> Flor: tipo		
	single		simple	einfach	simple	Grizabella	1
	double		double	gefüllt	doble	Dark Beauty	2
16. (*)	QN	VG					
	<u>Only varieties with Flower: opening of bud: present:</u> Flower: size		<u>Seulement variétés avec Fleur: ouverture du bourgeon: présente:</u> Fleur: taille	<u>Nur Sorten mit Blüte: Öffnen der Knospe: vorhanden:</u> Blüte: Größe	<u>Solo variedades con Flor: apertura de la yema: presente:</u> Flor: tamaño		
	small		petite	klein	pequeño	Dark Beauty	1
	medium		moyenne	mittel	medio	Flamenco	2
	large		grande	groß	grande	Annemarie	3
17. (*)	QN	VG					
	<u>Only varieties with Flower: opening of bud: absent:</u> Flower: length		<u>Seulement variétés avec Fleur: ouverture du bourgeon: absente:</u> Fleur: longueur	<u>Nur Sorten mit Blüte: Öffnen der Knospe: fehlend:</u> Blüte: Länge	<u>Solo variedades con Flor: apertura de la yema: ausente:</u> Flor: longitud		
	very short		très courte	sehr kurz	muy corta	Zalina	1
	very short to short		très courte à courte	sehr kurz bis kurz	muy corta a corta		2
	short		courte	kurz	corta	Moulin Rouge	3
	short to medium		courte à moyenne	kurz bis mittel	corta a media		4
	medium		moyenne	mittel	media	Valeska	5
	medium to long		moyenne à longue	mittel bis lang	media a larga		6
	long		longue	lang	larga	Rita	7
	long to very long		longue à très longue	lang bis sehr lang	larga a muy larga	Pink Madonna	8
	very long		très longue	sehr lang	muy larga		9

	English		français		deutsch		español		Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
18. (*)	QN	VG	(+)							
	Only varieties with Flower: opening of bud: absent: Flower: width		Seulement variétés avec Fleur: ouverture du bourgeon: absente: Fleur: largeur		Nur Sorten mit Blüte: Öffnen der Knospe: fehlend: Blüte: Breite		Solo variedades con Flor: apertura de la yema: ausente: Flor: anchura			
	very narrow		très étroite		sehr schmal		muy estrecha		Angie, Ini	1
	narrow		étroite		schmal		estrecha		Linda, Vaika	2
	medium		moyenne		mittel		media		Franca, Lisann	3
	broad		large		breit		ancha		Bettina, Maggy	4
	very broad		très large		sehr breit		muy ancha		Mary Ann	5
19. (*)	PQ	VG	(+)							
	Only varieties with Flower: opening of bud: present: Flower: color of outer side of sepal		Seulement variétés avec Fleur: ouverture du bourgeon: présente: Fleur: couleur de la face externe du sépale		Nur Sorten mit Blüte: Öffnen der Knospe: vorhanden: Blüte: Farbe der Außenseite des Kelchblattes		Solo variedades con Flor: apertura de la yema: presente: Flor: color de la cara externa del sépalo			
	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)			
20. (*)	PQ	VG	(+)							
	Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering		Seulement variétés avec Fleur: ouverture du bourgeon: présente: Fleur: couleur de la face externe du pétale au début de la floraison		Nur Sorten mit Blüte: Öffnen der Knospe: vorhanden: Blüte: Farbe der Außenseite des Blütenblattes bei Blühbeginn		Solo variedades con Flor: apertura de la yema: presente: Flor: color de la cara externa del pétalo al inicio de la floración			
	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)			
21. (*)	PQ	VG	(+)	(e)						
	Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at the end of flowering		Seulement variétés avec Fleur: ouverture du bourgeon: présente: Fleur: couleur de la face externe du pétale à la fin de la floraison		Nur Sorten mit Blüte: Öffnen der Knospe: vorhanden: Blüte: Farbe der Außenseite des Blütenblattes bei Blühende		Solo variedades con Flor: apertura de la yema: presente: Flor: color de la cara externa del pétalo al final de la floración			
	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)			
22. (*)	PQ	VG								
	Only varieties with Flower: opening of bud: absent: Flower: main color at the beginning of flowering		Seulement variétés avec Fleur: ouverture du bourgeon: absente: Fleur: couleur principale au début de la floraison		Nur Sorten mit Blüte: Öffnen der Knospe: fehlend: Blüte: Hauptfarbe bei Blühbeginn		Solo variedades con Flor: apertura de la yema: ausente: Flor: color principal al inicio de la floración			
	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
23. (*)	PQ	VG	(e)			
	<u>Only varieties with Flower: opening of bud: absent: Flower: main color at the end of flowering</u>	<u>Seulement variétés avec Fleur: ouverture du bourgeon: absente: Fleur: couleur principale à la fin de la floraison</u>	<u>Nur Sorten mit Blüte: Öffnen der Knospe: fehlend: Blüte: Hauptfarbe bei Blühende</u>	<u>Solo variedades con Flor: apertura de la yema: ausente: Flor: color principal al final de la floración</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				
	Time of beginning of flowering	Époque du début de la floraison	Zeitpunkt des Blühbeginns	Época de inicio de la floración		
	very early	très précoce	sehr früh	muy temprana	Martina	1
	very early to early	très précoce à précoce	sehr früh bis früh	muy temprana a temprana		2
	early	précoce	früh	temprana	Pink Madonna	3
	early to medium	précoce à moyenne	früh bis mittel	temprana a media		4
	medium	moyenne	mittel	media	Amethyst	5
	medium to late	moyenne à tardive	mittel bis spät	de media a tardía		6
	late	tardive	spät	tardía	Moulin Rouge	7
	late to very late	tardive à très tardive	spät bis sehr spät	de tardía a muy tardía		8
	very late	très tardive	sehr spät	muy tardía	Ronja	9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Unless otherwise indicated, observations on varieties with Plant: flowering type: regular should be made at the beginning of flowering when one third of the flowers are fully developed on 50% of the plants. Observations on varieties with Plant: flowering type: irregular should be made in the middle of autumn.

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

- (a) Observations should be made in the middle third of a shoot.
- (b) Observations should be made on the shaded side.
- (c) Observations should be made after a few days with temperatures below zero degrees Celsius.
- (d) Observations should be made based on the general impression of the leaves.
- (e) Observations 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. Varieties with Plant: flowering type: irregular do not flower on the majority of shoots and if flowering does occur the number of flowers are few.

Ad. 2: Plant: growth habit



1
narrow upright



2
broad upright



3
broad upright to
spreading



4
spreading



5
weeping

Ad. 3: Plant: density



3
sparse



5
medium



7
dense

Ad. 4: Plant: height



Observations should be made from the surface of the growing medium to the top of the plant.

Ad. 6: Only varieties with Plant: flowering type: regular: Leaf on shoot tip: color



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

Ad. 8: Leaf: main color

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

Ad. 12: Only varieties with Plant: flowering type: regular: Inflorescence: arrangement of flowers



1
solitary



2
whorl



3
at lateral shoots

Ad. 13: Only varieties with Plant: flowering type: regular: Inflorescence: density of flowers



3
sparse



5
medium



7
dense

Ad. 14: Flower: opening of bud



1
absent



9
present

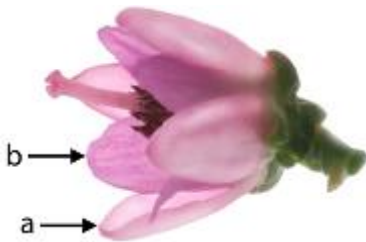
Ad. 15: Only varieties with Flower: opening of bud: present: Flower: type

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

Ad. 18: Only varieties with Flower: opening of bud: absent: Flower: width

Observations should be made in the upper third of the flowering shoots.

Ad. 19: Only varieties with Flower: opening of bud: present: Flower: color of outer side of sepal



a = sepal (characteristic 19)
b = petal (characteristics 20 and 21)

Ad. 20: Only varieties with Flower: opening of bud: present: Flower: color of outer side of petal at beginning of flowering

See Ad. 19

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

See Ad. 19

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:
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	Application date: (not to be filled in by the applicant)
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TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire	
1.1 Botanical name	<input type="text" value="Calluna vulgaris (L.) Hull"/>
1.2 Common name	<input type="text" value="Heather, Ling, Scots Heather"/>
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)	Cuttings	[]
(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: flowering type (1)		
regular	Laurentine	1 []
irregular	Cologne	2 []
5.2 Plant: growth habit (2)		
narrow upright	Linda	1 []
broad upright	Laurentine	2 []
broad upright to spreading	Angie	3 []
spreading	Vaika	4 []
weeping	Nelly	5 []
5.3 Leaf: main color on sunny side in autumn (10)		
yellow	Zipi	1 []
yellow green	Sydney	2 []
light green	Zelena	3 []
medium green	Zelia	4 []
dark green	Stockholm	5 []
grey green	Cologne, Zilly	6 []
black green	Havanna, Zalina	7 []
orange green	Dallas, Las Vegas	8 []
orange red	Zoe	9 []
pink red		10 []
red		11 []
brown	Pretoria, Zorina	12 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.4 <u>Only varieties with Plant: flowering type: irregular:</u> Leaf: main color on sunny side in winter (11)		
yellow	Zipi	1 []
yellow green	Barcelona	2 []
light green	Zelena	3 []
medium green	Zelia	4 []
dark green		5 []
grey green	Zilly	6 []
green brown	Stockholm	7 []
red	Zoe	8 []
brown red	Zorina	9 []
black purple	Havanna	10 []
5.5 Flower: opening of bud (14)		
absent	Laurentine	1 []
present	Dark Beauty	9 []
5.6 <u>Only varieties with Flower: opening of bud: absent:</u> Flower: length (17)		
very short	Zalina	1 []
very short to short		2 []
short	Moulin Rouge	3 []
short to medium		4 []
medium	Valeska	5 []
medium to long		6 []
long	Rita	7 []
long to very long	Pink Madonna	8 []
very long		9 []
5.7 <u>Only varieties with Flower: opening of bud: absent:</u> Flower: width (18)		
very narrow	Angie, Ini	1 []
narrow	Linda, Vaika	2 []
medium	Franca, Lisann	3 []
broad	Bettina, Maggy	4 []
very broad	Mary Ann	5 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8(i) <u>Only varieties with Flower: opening of bud: present:</u> Flower: (20) color of outer side of petal at <u>beginning of flowering</u> RHS Colour Chart (indicate reference number)		
5.8(ii) <u>Only varieties with Flower: opening of bud: present:</u> Flower: (20) color of outer side of petal at <u>beginning of flowering</u>		
white		1 []
pink		2 []
red		3 []
purple red		4 []
blue violet		5 []
other (please indicate)		[]
5.9(i) <u>Only varieties with Flower: opening of bud: absent:</u> Flower: (22) main color <u>at the beginning of flowering</u> RHS Colour Chart (indicate reference number)		
5.9(ii) <u>Only varieties with Flower: opening of bud: absent:</u> Flower: (22) main color <u>at the beginning of flowering</u>		
white		1 []
pink		2 []
red		3 []
purple red		4 []
blue violet		5 []
other (please indicate)		[]

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>Leaf: main color</i>	<i>light green</i>	<i>dark green</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]