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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

HELLEBORE *

UPOV Code(s): HELLE

Helleborus L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from the Netherlands (Kingdom of the)

to be considered by the

Technical Working Party for Ornamental Plants and Forest Trees at its fifty-eighth session, to be held virtually from 2026-07-06 to 2026-07-09

Disclaimer: this document does not represent UPOV policies or guidance

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Helleborus L.	Christmas Rose, Hellebore, Lenten Rose	Hellébore, Rose de Noël	Christrose, Nieswurz, Schneerose	Eléboro

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 vegetatively propagated varieties of *Helleborus* L.

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 young plants.

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

10 young plants

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

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

3. Method of Examination

3.1 Number of Growing Cycles

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

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

3.2 Testing Place

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

3.3 Conditions for Conducting the Examination

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The color chart and version used should be specified in the variety description.

3.4 Test Design

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

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

3.5 Additional Tests

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

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

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

4.1.2 Consistent Differences

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

4.1.3 Clear Differences

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

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 9 plants or parts taken from each of 9 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

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

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

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

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

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

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

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

4.2 Uniformity

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

4.2.2 These Test Guidelines have been developed for the examination of vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

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

4.3 Stability

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

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new 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) Terminal leaflet: color (characteristic 8)
(b) Terminal leaflet: area of marbling (characteristic 10)
(c) Terminal leaflet: variegation (characteristic 11)
(d) Flowering stem: length (characteristic 16)
(e) Flower: type (characteristic 25)
(f) Flower: width (characteristic 27)
(g) Sepal: ground color (characteristic 33) with the following groups:
    Gr. 1: white
    Gr. 2: green
    Gr. 3: yellow
    Gr. 4: pink
    Gr. 5: purple red
(h) Sepal: over color (characteristic 35) with the following groups:
    Gr. 1: white
    Gr. 2: green
    Gr. 3: yellow
    Gr. 4: pink
    Gr. 5: purple red
(i) Sepal: number of spots (characteristic 38)

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 (*) sterisked 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)-(g) See Explanations on the Table of Characteristics in Chapter 8.1

7 Not applicable

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

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.		**QN**	**MG/VG**	**(+)**	**(a)**				
		Petiole: length							
		very short						COSEH 1000	1
		short						JHE00325	2
		medium						ET EPB 1717	3
		long						HLR 210	4
		very long						JHE00209	5
2.		**QN**	**VG**	**(+)**	**(a)**				
		Petiole: anthocyanin coloration							
		absent or very weak						HLR 150	1
		weak						Winter Passion	2
		medium						HL 1044	3
		strong						EPB 30	4
		very strong						ET EPB 1717	5
3.		**QN**	**VG**	**(+)**	**(a)**				
		Petiolule: anthocyanin coloration							
		absent or very weak						HLR 150	1
		weak						Winter Passion	2
		medium						COSEH 1000	3
		strong						COSEH 4100	4
		very strong						ET EPB 1717	5
4.		**QN**	**MG/VG**	**(+)**	**(a)**				
		Leaf: width							
		very narrow						JHE00325	1
		narrow						42NB	2
		medium						HL 1024	3
		broad						HF 1116	4
		very broad						HG 1410	5
5.		**QN**	**MG/VG**	**(+)**	**(a)**				
		Leaf: number of leaflets							
		few						EPB 29	1
		medium						HLR 210	2
		many						Painted Bunting	3

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.		**QN**	**MG/VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: length							
		very short						JHE00325	1
		short						ET EPB 716	2
		medium						HL 1024	3
		long						HG 1412	4
		very long						HG 1410	5
7.		**QN**	**MG/VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: width							
		very narrow						JHE00325	1
		narrow						JHE00091	2
		medium						HL 1024	3
		broad						HG 1410	4
		very broad						ET EPB 716	5
8.	**(*)**	**PQ**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: color							
		light green						HLR 150	1
		medium green						JHE00091	2
		dark green						JHE00325	3
		grey green						Diego Ice	4
9.		**QL**	**VG**	**(+)**	**(a), (b)**				
		Young terminal leaflet: marbling							
		absent						COSEH 4200	1
		present						JHE00316	9
10.	**(*)**	**QN**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: area of marbling							
		absent or very small						COSEH 4200	1
		small						EPB 31	2
		medium						EPBRD01	3
		large						EPB 30	4
		very large						EPB 29	5
11.	**(*)**	**QL**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: variegation							
		absent						COSEH 750	1
		present						COSEH 900	9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.		**QN**	**VG**		**(a), (b)**				
		Terminal leaflet: glossiness							
		absent or weak						Diego Ice	1
		medium						HLR 150	2
		strong						HG 1412	3
13.	**(*)**	**QN**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: density of incisions							
		absent or very sparse							1
		very sparse to sparse							2
		sparse						COSEH 1000	3
		sparse to medium							4
		medium						HG 1426	5
		medium to dense							6
		dense						COSEH 4200	7
		dense to very dense							8
		very dense						JHE00291	9
14.	**(*)**	**QN**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: depth of incisions							
		absent or very shallow						Winter Princess	1
		very shallow to shallow							2
		shallow						JHE00291	3
		shallow to medium							4
		medium						COSEH 4200	5
		medium to deep							6
		deep						Winter Passion	7
		deep to very deep							8
		very deep						HG 1414	9
15.		**QN**	**VG**	**(+)**	**(a), (b)**				
		Terminal leaflet: undulation							
		absent or weak						Winter Passion	1
		medium						COSEH 4100	2
		strong						HG 1426	3

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**(*)**	**QN**	**MG/MS/VG**	**(+)**					
		Flowering stem: length							
		very short						COSEH 900	1
		very short to short							2
		short						HG 1426	3
		short to medium							4
		medium						HL 1044	5
		medium to long							6
		long						HM 1212	7
		long to very long						HL 1028	8
		very long						HG 1410	9
17.	**(*)**	**QN**	**MG/VG**	**(+)**					
		Flowering stem: diameter							
		very small						HLR 210	1
		small						HLR 150	2
		medium						COSEH 6200	3
		large						ET EPB 1717	4
		very large						JHE00316	5
18.		**QN**	**VG**	**(+)**					
		Flowering stem: anthocyanin coloration							
		absent or very weak						HLR 210	1
		weak						HF 1116	2
		medium						HL 1028	3
		strong						ET EPB 716	4
		very strong						ET EPB 1717	5
19.	**(*)**	**QN**	**VG**	**(+)**					
		Inflorescence: attitude							
		erect						HG 1412	1
		semi-erect						COSEH 7700	2
		horizontal						Pirouette	3
		semi-drooping						JHE00221	4
		drooping						JHE00208	5

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.	**(*)**	**QN**	**VG**	**(+)**	**(c)**				
		Flower bud: conspicuousness of veins							
		absent or weak						EPB 29	1
		medium						ET EPB 728	2
		strong						RD06	3
21.	**(*)**	**PQ**	**VG**		**(c), (g)**				
		Flower bud: ground color							
		RHS Colour Chart (indicate reference number)							
22.	**(*)**	**PQ**	**VG**	**(+)**	**(c), (g)**				
		Flower bud: over color							
		RHS Colour Chart (indicate reference number)							
23.	**(*)**	**QN**	**VG**	**(+)**	**(d)**				
		Flower: attitude							
		erect						JHE00091	1
		semi-erect						COSEH 900	2
		horizontal						HLR 150	3
		semi-drooping						EPB 29	4
		drooping						HLR 210	5
24.	**(*)**	**QN**	**VG**	**(+)**	**(d)**				
		Flower: shape in lateral view							
		flat or slightly concave						COSEH 750	1
		moderately concave						ET EPB 716	2
		strongly concave						ET EPB 728	3
25.	**(*)**	**QL**	**VG**	**(+)**	**(d)**				
		Flower: type							
		single						EPB 31	1
		anemone						Tutu	2
		double						HLR 210	3

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26.	**(*)**	**QN**	**VG**	**(+)**	**(d)**				
		<u>Only varieties with Flower: type: double:</u> Flower: density							
		very sparse						HL 1036	1
		sparse						HLR 210	2
		medium							3
		dense						Prima Dress Moon	4
		very dense							5
27.	**(*)**	**QN**	**MG/MS/VG**	**(+)**	**(d)**				
		Flower: width							
		very small						COSEH 900	1
		very small to small							2
		small						HG 1414	3
		small to medium							4
		medium						COSEH 750	5
		medium to large							6
		large						HM 1212	7
		large to very large						HL 1028	8
		very large							9
28.	**(*)**	**QN**	**VG**	**(+)**	**(d)**				
		<u>Only varieties with Flower: type: single and anemone:</u> Flower: overlapping of sepals							
		absent or weak						Winter Passion	1
		medium						HLR 150	2
		strong						JHE00316	3
29.		**QN**	**MG/MS/VG**	**(+)**	**(d), (e)**				
		Sepal: length							
		very short						COSEH 900	1
		very short to short							2
		short						JHE00209	3
		short to medium							4
		medium						EPBRD01	5
		medium to long							6
		long						HM 1212	7
		long to very long						HL 1028	8
		very long							9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.		**QN**	**MG/MS/VG**	**(+)**	**(d), (e)**				
		Sepal: width							
		very narrow						COSEH 900	1
		very narrow to narrow							2
		narrow						COSEH 710	3
		narrow to medium							4
		medium						HON 1610	5
		medium to broad							6
		broad							7
		broad to very broad							8
		very broad						HL 1028	9
31.		**PQ**	**VG**	**(+)**	**(d), (e)**				
		Sepal: shape							
		broad ovate						EPB 30	1
		medium ovate						COSEH 710	2
		narrow ovate						JHE00325	3
		broad elliptic						ET EPB 731	4
		medium elliptic						HON 1610	5
		narrow elliptic						COSEH 960	6
32.		**PQ**	**VG**	**(+)**	**(d), (e)**				
		Sepal: shape of apex							
		acuminate						HLR 150	1
		obtuse						Frozen Kristof	2
		rounded						ET EPB 1717	3
33.	**(*)**	**PQ**	**VG**	**(+)**	**(d), (e), (g)**				
		Sepal: ground color							
		RHS Colour Chart (indicate reference number)							
34.		**QN**	**VG**		**(d), (e), (g)**				
		Sepal: area of over color							
		absent or very small						HL 1038	1
		small						HM 1212	2
		medium							3
		large						COSEH 900	4
		very large						EPB 29	5

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35.	**(*)**	**PQ**	**VG**	**(+)**	**(d), (e), (g)**				
		Sepal: over color							
		RHS Colour Chart (indicate reference number)							
36.	**(*)**	**PQ**	**VG**	**(+)**	**(d), (e)**				
		Sepal: color of veins							
		RHS Colour Chart (indicate reference number)							
37.	**(*)**	**PQ**	**VG**	**(+)**	**(d), (e)**				
		Sepal: color of margin							
		RHS Colour Chart (indicate reference number)							
38.	**(*)**	**QN**	**VG**	**(+)**	**(d), (e)**				
		Sepal: number of spots							
		absent or very few						Winter Passion	1
		few						HG 1412	2
		medium						HLR 150	3
		many						Frozen Kristof	4
		very many						JHE00209	5
39.	**(*)**	**PQ**	**VG**		**(d), (e)**				
		Sepal: color of spots							
		RHS Colour Chart (indicate reference number)							
40.		**PQ**	**VG**	**(+)**	**(d), (e)**				
		Sepal: color of basal spot							
		RHS Colour Chart (indicate reference number)							
41.		**QN**	**VG**	**(+)**	**(d), (e)**				
		Sepal: undulation							
		absent or weak						Frozen Kristof	1
		medium						HLR 150	2
		strong						Painted Bunting	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42.	**QN** **VG**	**(+)** **(f)**					
	<u>Only varieties with Flower: type: single:</u>Nectary: anthocyanin coloration at basal half						
	absent or very weak					JHE00325	1
	weak					COSEH 4100	2
	medium						3
	strong						4
	very strong					HL 1044	5
43.	**QN** **VG**	**(+)** **(f)**					
	<u>Only varieties with Flower: type: single:</u> Nectary: anthocyanin coloration at distal half						
	absent or very weak					HL 1038	1
	weak						2
	medium					ET EPB 716	3
	strong					ET EPB 731	4
	very strong					Painted Bunting	5
44.	**PQ** **VG**	**(+)** **(f)**					
	<u>Only varieties with Flower: type: single and Nectary: anthocyanin coloration at distal half: absent or very weak:</u> Nectary: color of distal half						
	whitish					HL 1024	1
	yellowish					HL 1038	2
	greenish					Frozen Kristof	3
45.	**QN** **MG/MS/VG**		**(d), (f)**				
	Filament: length						
	very short					HLR 210	1
	short					JHE00221	2
	medium					HL 1038	3
	long					ET EPB 731	4
	very long					HL 1024	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
46.	**QN** **VG**		**(d), (f)**				
	Filament: anthocyanin coloration						
	absent or very weak					HL 1038	1
	weak					JHE00300	2
	medium					COSEH 5300	3
	strong					COSEH 4100	4
	very strong						5
47.	**PQ** **VG**	**(+)**	**(d), (f)**				
	Only varieties with Filament: anthocyanin coloration: absent or very weak to medium: Filament: color						
	whitish					42NB	1
	yellowish					HL 1038	2
	greenish					COSEH 6200	3
48.	**QN** **VG**		**(d), (f)**				
	Style: anthocyanin coloration						
	absent or very weak					COSEH 7700	1
	weak						2
	medium					COSEH 960	3
	strong					COSEH 6200	4
	very strong					HL 1024	5
49.	**PQ** **VG**	**(+)**	**(d), (f)**				
	Only varieties with Style: anthocyanin coloration: absent or very weak to medium: Style: color						
	whitish					COSEH 7700	1
	yellowish						2
	greenish					Painted Bunting	3
50.	**QN** **VG**		**(d), (f)**				
	Ovary: anthocyanin coloration						
	absent or very weak					COSEH 7700	1
	weak					COSEH 4200	2
	medium					ET EPB 728	3
	strong					EPB 30	4
	very strong					COSEH 5300	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
51.	**QN** **VG**	**(+)**				
	<u>Only varieties with Sepal: ground color: white, yellow or green:</u> Flower: pink or red coloration at aging					
	absent or weak				COSEH 750	1
	medium				42NB	2
	strong				COSEH 7700	3

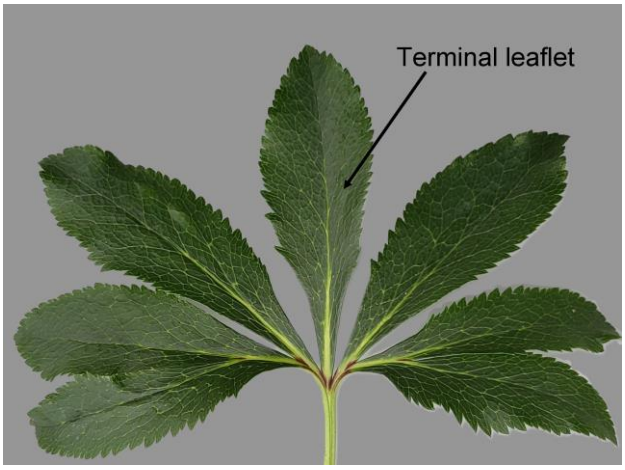
8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Observations should be made on the general impression of the fully developed leaves at the end of the flowering period.

(b) Observations should be made on terminal leaflets that are free and not fused together.



(c) Observations should be made on flower buds just before opening, taken from just above the level of the foliage.

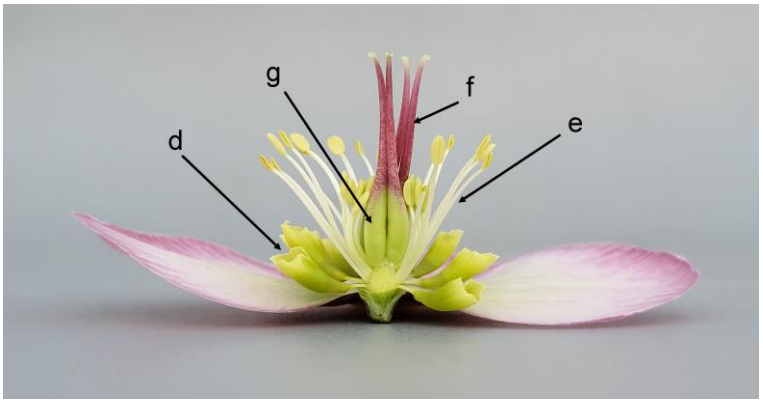
(d) Observations should be made on the second flower of a primary inflorescence when the first 10-30% of the filaments are fully grown. Where flowering stems occur without a sufficiently developed second flower, observations should be made on the first flower.

a = First flower
b = Second flower

(e) Observations should be made on the inner sepals.

a = Outer sepals
b = Intermediate sepal
c = Inner sepals

(f) d = Nectary
e = Filament
f = Style
g = Ovary

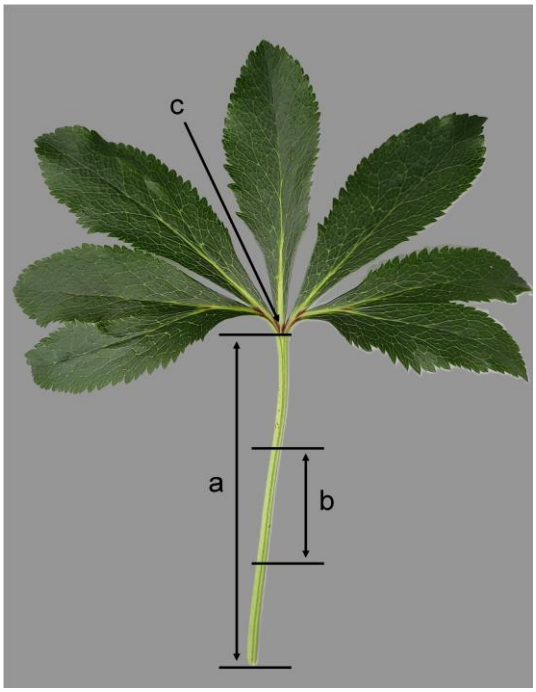


(g) The ground color is the color that is evenly and continuously distributed across the surface. It is not necessarily the color that covers the largest surface area. When a second color, such as a flush, develops on top of the ground color over time, this second color is considered the over color. The over color is not always the color that covers the smaller surface area.

8.2 Explanations for individual characteristics

Ad. 1: Petiole: length

a = Petiole: length
b = Petiole: anthocyanin coloration
c = Petiolule: anthocyanin coloration



Ad. 2: Petiole: anthocyanin coloration

See Ad. 1

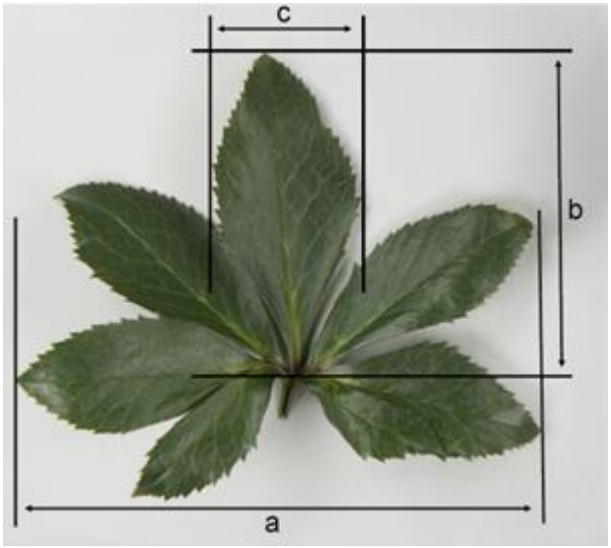
Observations should be made on the middle third of the petiole.

Ad. 3: Petiolule: anthocyanin coloration

See Ad. 1

Ad. 4: Leaf: width

a = Leaf: width
b = Terminal leaflet: length
c = Terminal leaflet: width



Ad. 5: Leaf: number of leaflets

A true leaflet is identified by the presence of a clearly visible midrib on the underside of the leaf.

1
few
5 or less leaflets

2
medium
6-8 leaflets

3
many
9 or more leaflets

Ad. 6: Terminal leaflet: length

Observations should be made including the petiolule.

See Ad. 4

Ad. 7: Terminal leaflet: width

See Ad. 4

Ad. 8: Terminal leaflet: color

Observations should be made excluding marbling and variegation.

Ad. 9: Young terminal leaflet: marbling

Marbling refers to the appearance of different colors that are consistently present along the veins. Young leaves are generally lighter in color and more pliable than full grown leaves.

Ad. 10: Terminal leaflet: area of marbling

Marbling refers to the appearance of different colors that are consistently present along the veins.

1	2	3	4	5
absent or very small	small	medium	large	very large

Ad. 11: Terminal leaflet: variegation

1

absent

9

present

Ad. 13: Terminal leaflet: density of incisions

Observations should be made on the distal three quarters of the terminal leaflet.

1	3	5	7	9
absent or very sparse	sparse	medium	dense	very dense

Ad. 14: Terminal leaflet: depth of incisions

Observations should be made on the distal three quarters of the terminal leaflet.

1	3	5	7	9
absent or very shallow	shallow	medium	deep	very deep

Ad. 15: Terminal leaflet: undulation

1
absent or weak

2
medium

3
strong

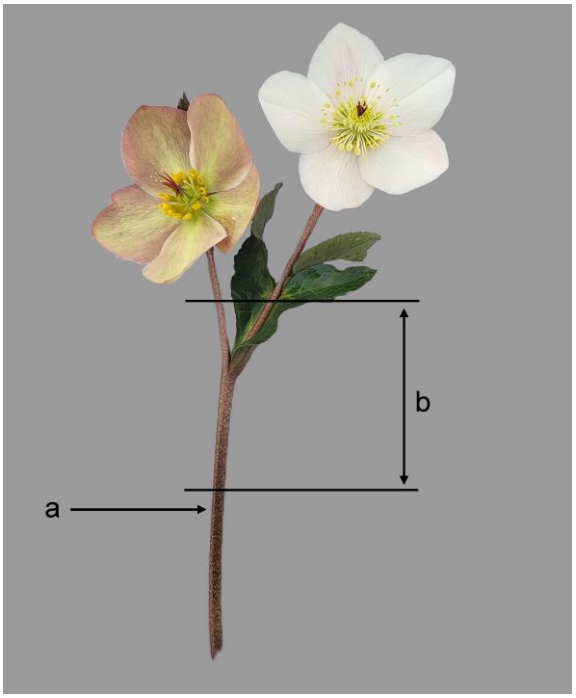
Ad. 16: Flowering stem: length

Observations should be made at the end of the flowering period on the longest flowering stem, measured from the soil level to the end of the stem, excluding the final flower.

Ad. 17: Flowering stem: diameter

Observations should be made on the middle third of the flowering stem, below the point where lateral branches begin to develop, and at the same time as the flower observations.

a = Flowering stem: diameter
b = Flowering stem: anthocyanin coloration



Ad. 18: Flowering stem: anthocyanin coloration

Observations should be made on the middle third of the flowering stem.

Ad. 19: Inflorescence: attitude

1
erect

2
semi-erect

3
horizontal

4
semi-drooping

5
drooping

Ad. 20: Flower bud: conspicuousness of veins

The conspicuousness is determined by the color contrast and the number of contrasting veins.

1
absent or weak

2
medium

3
strong

Ad. 22: Flower bud: over color

Observations should be made excluding the veins.

Ad. 23: Flower: attitude

1
erect

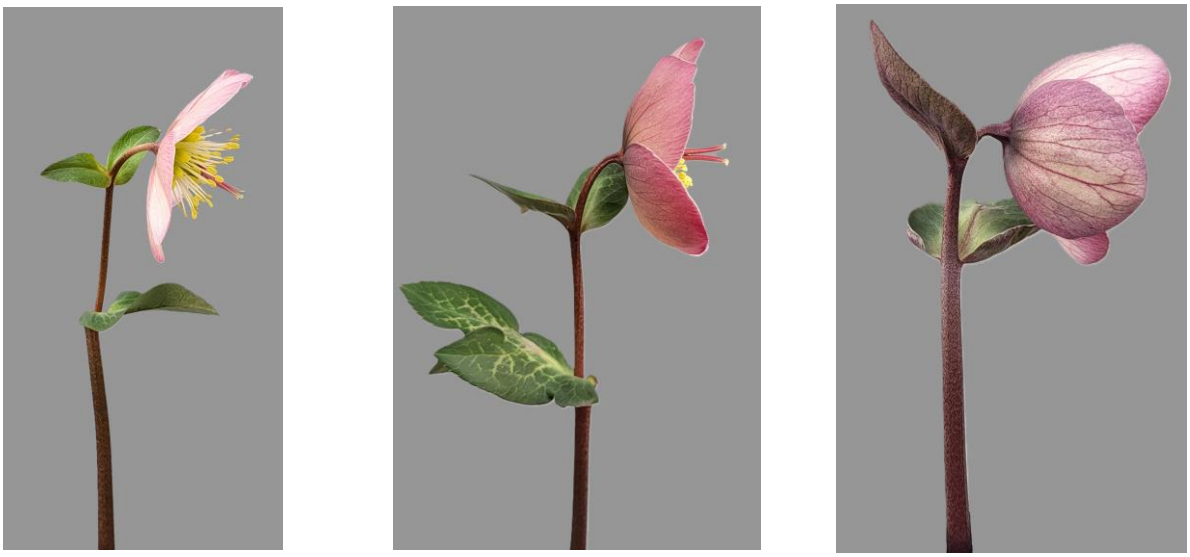
2
semi-erect

3
horizontal

4
semi-drooping

5
drooping

Ad. 24: Flower: shape in lateral view



1
flat or slightly concave

2
moderately concave

3
strongly concave

Ad. 25: Flower: type

1. Single: in single flowers, the true petals are reduced and develop into short, tubular nectaries.

2. Anemone: in anemone-type flowers, the nectaries become petaloid while retaining their tubular form.

3. Double: in double flowers, the nectaries lose their tubular shape and develop into flat, petaloid structures. In addition, some of the stamens also develop into flat, petaloid structures.

1

single

2

anemone

3

double

Ad. 26: Only varieties with Flower: type: double: Flower: density

Helleborus flowers become denser, fuller and more layered when an increased number of stamens develop into flat, petaloid structures.

1
very sparse

2
sparse

3
medium

4
dense

5
very dense

Ad. 27: Flower: width

Observations should be made on the broadest part of the flower.

Ad. 28: Only varieties with Flower: type: single and anemone: Flower: overlapping of sepals

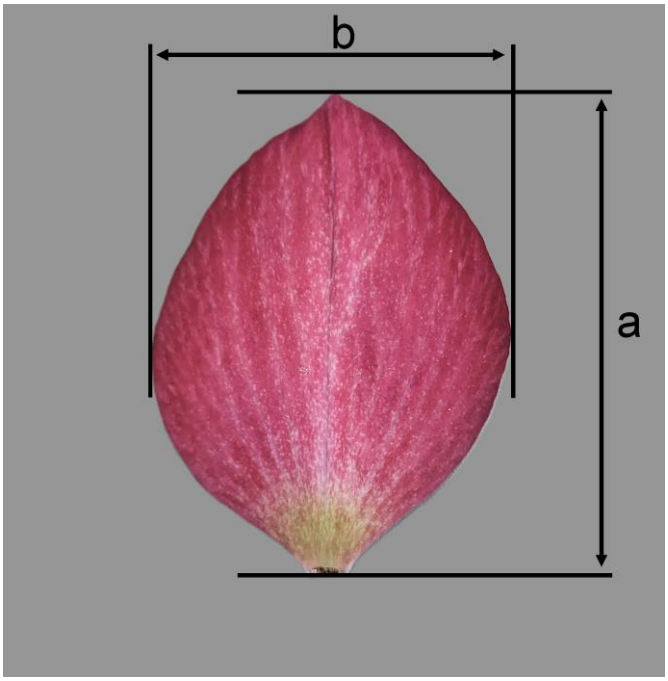
1
absent or weak

2
medium

3
strong

Ad. 29: Sepal: length

a = Sepal: length
b = Sepal: width



Ad. 30: Sepal: width

See Ad. 19

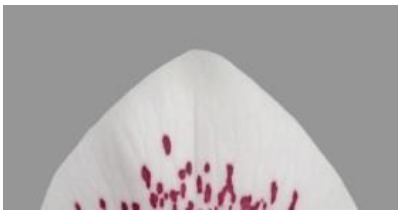
Ad. 31: Sepal: shape

width (ratio length/width)	broadest part: (below middle)	broadest part: at middle
narrow (elongated)	 3 narrow ovate	 6 narrow elliptic
↑ ↓	 2 medium ovate	 5 medium elliptic
broad (compressed)	 1 broad ovate	 4 broad elliptic

Ad. 32: Sepal: shape of apex

1

acuminate



2

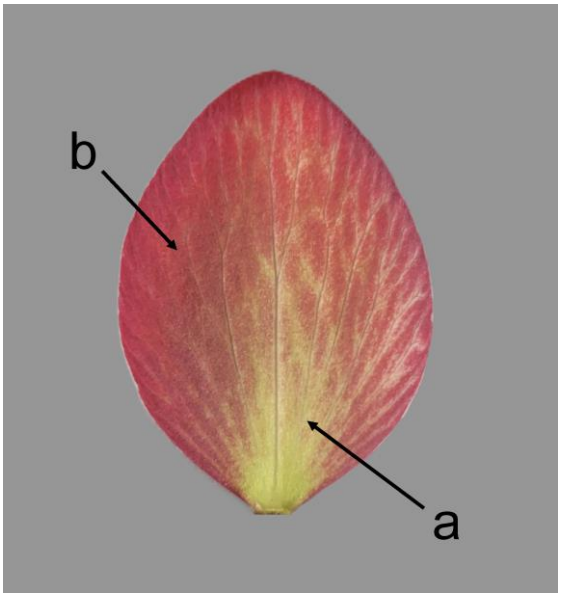
obtuse

3

rounded

Ad. 33: Sepal: ground color

a = ground color
b = over color

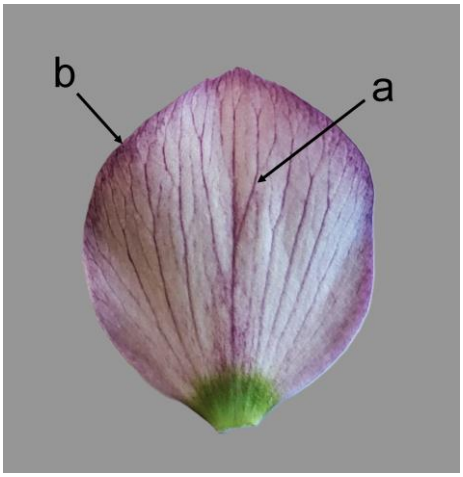


Ad. 35: Sepal: over color

See Ad. 23

Ad. 36: Sepal: color of veins

a = Sepal: color of veins
b = Sepal: color of margin



Ad. 37: Sepal: color of margin

See Ad. 26

Ad. 38: Sepal: number of spots

1
absent or very few

2
few

3
medium

4
many

5
very many

Ad. 40: Sepal: color of basal spot

Ad. 41: Sepal: undulation

1
absent or weak

2
medium

3
strong

Ad. 42: Only varieties with Flower: type: single:Nectary: anthocyanin coloration at basal half

Observations should be made after the flower bud has opened, but before the first 10% of the filaments are fully grown.

Ad. 43: Only varieties with Flower: type: single: Nectary: anthocyanin coloration at distal half

See Ad. 42

Ad. 44: Only varieties with Flower: type: single and Nectary: anthocyanin coloration at distal half: absent or very weak: Nectary: color of distal half

See Ad. 42

Ad. 47: Only varieties with Filament: anthocyanin coloration: absent or very weak to medium: Filament: color

Observations should be made only on varieties with: Filament: anthocyanin coloration: absent or very weak (1), weak (2) and medium (3).

Ad. 49: Only varieties with Style: anthocyanin coloration: absent or very weak to medium: Style: color

Observations should be made only on varieties with: Style: anthocyanin coloration: absent or very weak (1), weak (2) and medium (3).

Ad. 51: Only varieties with Sepal: ground color: white, yellow or green: Flower: pink or red coloration at aging

Observations should be made when the flower has shed approximately 90% of its filaments, but before all filaments have been shed.

9. Literature

Bavcon, J., Eler, K., Susek, A., 2012: Helleborus (Helleborus L.) in Slovenia. University Botanic Gardens Ljubljana, SI

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Thomsen, M., 2022: Lenzrosen, Die Wildarten – Schönheiten für jeden Garten. Haupt Verlag, DE

Yokoyama, N., 2023: Christmas Roses: New Edition. Seibundo Shinkosha, JP

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	*Helleborus* L.
1.2 Common name	Christmas Rose, Hellebore, Lenten Rose

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

[#]4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]

(please state parent varieties)

(……..……..…) x (……..……..…)

female parent male parent

(b) partially known cross [ ]

(please state known parent variety(ies))

(……..……..…) x (……..……..…)

female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation
(please state parent varieties)

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) Other (Please provide details) [ ]

4.2.2 Vegetative propagation

(a) *In vitro* propagation [ ]
(b) 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 (8)	**Terminal leaflet: color**		
	light green	HLR 150	1 [ ]
	medium green	JHE00091	2 [ ]
	dark green	JHE00325	3 [ ]
	grey green	Diego Ice	4 [ ]
5.2 (10)	**Terminal leaflet: area of marbling**		
	absent or very small	COSEH 4200	1 [ ]
	small	EPB 31	2 [ ]
	medium	EPBRD01	3 [ ]
	large	EPB 30	4 [ ]
	very large	EPB 29	5 [ ]
5.3 (11)	**Terminal leaflet: variegation**		
	absent	COSEH 750	1 [ ]
	present	COSEH 900	9 [ ]
5.4 (16)	**Flowering stem: length**		
	very short	COSEH 900	1 [ ]
	very short to short		2 [ ]
	short	HG 1426	3 [ ]
	short to medium		4 [ ]
	medium	HL 1044	5 [ ]
	medium to long		6 [ ]
	long	HM 1212	7 [ ]
	long to very long	HL 1028	8 [ ]
	very long	HG 1410	9 [ ]
5.5 (25)	**Flower: type**		
	single	EPB 31	1 [ ]
	anemone	Tutu	2 [ ]
	double	HLR 210	3 [ ]

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

	Characteristics	Example Varieties	Note
5.6 (27)	**Flower: width**		
	very small	COSEH 900	1 [ ]
	very small to small		2 [ ]
	small	HG 1414	3 [ ]
	small to medium		4 [ ]
	medium	COSEH 750	5 [ ]
	medium to large		6 [ ]
	large	HM 1212	7 [ ]
	large to very large	HL 1028	8 [ ]
	very large		9 [ ]
5.7 (i) (33)	**Sepal: ground color**		
	RHS Colour Chart (indicate reference number)		
5.7 (ii) (33)	**Sepal: ground color**		
	white		1 [ ]
	green		2 [ ]
	yellow		3 [ ]
	pink		4 [ ]
	purple red		5 [ ]
	violet		6 [ ]
5.8 (i) (35)	**Sepal: over color**		
	RHS Colour Chart (indicate reference number)		
5.8 (ii) (35)	**Sepal: over color**		
	white		1 [ ]
	green		2 [ ]
	yellow		3 [ ]
	pink		4 [ ]
	purple red		5 [ ]
	violet		6 [ ]

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

	Characteristics	Example Varieties	Note
5.9 (38)	**Sepal: number of spots**		
	absent or very few	Winter Passion	1 [ ]
	few	HG 1412	2 [ ]
	medium	HLR 150	3 [ ]
	many	Frozen Kristof	4 [ ]
	very many	JHE00209	5 [ ]

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	*Flowering stem: length*	*very 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]