TG/68/4(proj.2)
ORIGINAL: English
DATE: 2019-01-04

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

BERBERIS *

UPOV Code(s):

BERBE

Berberis L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from France
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fifty-first session, to be held in Christchurch, New Zealand,
from 2019-02-18 to 2019-02-22

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Berberis L.	Barberry, Berberis	Berberis, Épine-vinette	Berberitze	Bérbero

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 *Berberis* 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 plants capable of flowering and expressing all revelant characteristics of the variety during the first growing cycle.

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

6 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

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

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 6 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 6 plants or parts of plants taken from each of 6 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 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 6 plants, 1 off-type is allowed.

4.3 Stability

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

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

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Plante: type (characteristic 1)
(b) Plant: growth habit (characteristic 2)
(c) Plant: height in relation to width (characteristic 5)
(d) Stem: type of spine (characteristic 8)
(e) Leaf: undulation on margin (characteristic 23)
(f) Inflorescence: type (characteristic 24)
(g) Fruit: shape (characteristic 30)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	*Note*
small	3
medium	5
large	7

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

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

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

6.3 Types of Expression

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

6.4 Example Varieties

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

6.5 Legend

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

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

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

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

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

6 (a)-(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.	**(*)**	**QN** **VG**					
		Plante: type					
		deciduous				Helmon Pillar	1
		semi-evergreen				Parkjuwell	2
		evergreen				Tottenham	3
2.	**(*)**	**QN** **VG**	**(+)**				
		Plant: growth habit					
		fastigiated				Helmon Pillar, Red Torch	1
		bushy				Bokratin	2
		rounded				Lutin Rouge	3
		spreaded				Green Ornament	4
3.		**QN** **VG**	**(+)** **(a)**				
		Plant: branch attitude					
		erect				Red Torch	1
		semi-erect				Berval 1	2
		horizontal				Electra	3
		drooping				Autumnalis	4
4.	**(*)**	**QN** **MG**	**(a)**				
		Plant : height					
		very short				Berval 7	1
		short				Berval 1	3
		medium				Berval 6	5
		tall				Fire Flame	7
		very tall				Decora	9
5.	**(*)**	**QN** **VG**	**(a)**				
		Plant: height in relation to width					
		taller than broad				Helmon Pillar	1
		as tall as broad				Berval 8	2
		broader than tall				Berval 2	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.		**PQ VG**	**(b)**				
		Young shoot: stem color					
		green				Graciella	1
		yellow				Berval 3	2
		orange				Berval 2	3
		red				Lutin Rouge	4
		purple				Decora	5
7.		**PQ VG**	**(b)**				
		Young shoot: leaf color					
		green				Graciella	1
		yellow				Berval 3	2
		orange				Orange Ice	3
		red				Lutin Rouge	4
		pink				Berval 1	5
		purple				Red Torch	6
8.	**(*)**	**QL VG**	**(+)** **(c)**				
		Stem: type of spine					
		simple				Red Torch	1
		trifid				Bokratin	2
9.		**QN VG**	**(c)**				
		Stem: spine length					
		short				Golden Torch	1
		medium				Tottenham	3
		long				Dart's Superb	5
10.		**QN MG**	**(d)**				
		Stem: leaves per node					
		one to three				Berval 3	1
		four to six				Electra	2
		more than six				Dart's Superb	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN MG/MS**	**(d)**				
		Leaf: length					
		very short				Grawley Gem	1
		short				Lutin Rouge	3
		medium				Select	5
		long				Decora	7
		very long				Dart's Superb	9
12.		**QN MG/MS**	**(d)**				
		Leaf: width					
		very narrow				Irwinii	1
		narrow				Berval 2	3
		medium				Forescate	5
		broad				Decora	7
		very broad				Red Tears	9
13.	**(*)**	**PQ VG**	**(+) (d)**				
		Leaf: shape					
		ovate					1
		circular					2
		elliptic					3
		lanceolate					4
		linear					5
		obovate					6
		oblanceolate					7
		spatulate					8
14.		**QL VG**	**(+) (d)**				
		Leaf: spine					
		absent				Berval 3	1
		only on apex				Suzanne	2
		on apex and on margin				Red Tears	3
15.		**PQ VG**	**(+) (d)**				
		Leaf: shape of apex					
		acute				Dart's Superb, Irwinii	1
		obtuse				Suzanne	2
		rounded				Berval 3	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.	**(*)**	**PQ** **VG**	**(d), (e)**				
		Leaf blade: main color					
		RHS Colour Chart (indicate reference number)					
17.		**PQ** **VG**	**(d), (e)**				
		Leaf blade: secondary color					
		absent					1
		whitish					2
		green					3
		yellow					4
		orange					5
		pink					6
		red					7
		purple					8
18.		**PQ** **VG**	**(+)** **(d), (e)**				
		Leaf blade: distribution of the secondary color					
		on margin				Berval 1	1
		irregular				Hoho 1, Silver Pillar	2
19.		**PQ** **VG**	**(d), (e)**				
		Leaf blade: tertiary color					
		absent					1
		whitish					2
		green					3
		yellow					4
		orange					5
		pink					6
		red					7
		purple					8

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.		**PQ VG**	**(d), (e)**				
		Leaf blade: quaternary color					
		absent					1
		whitish					2
		green					3
		yellow					4
		orange					5
		pink					6
		red					7
		purple					8
21.		**QL VG**	**(d)**				
		Leaf blade: glossiness					
		absent				Fireball	1
		present				Lutin Rouge	9
22.		**PQ VG**	**(+) (d)**				
		Leaf: curvature					
		absent or slightly curved				Berval 3	1
		moderately curved				Latifolia	2
		revolute				Irwinii	3
23.	**(*)**	**QN VG**	**(d)**				
		Leaf: undulation on margin					
		absent or very weak				Berval 3	1
		weak				Parkjuwell	3
		medium				Dart's Improvement	5
		strong				Terra Nova	7
		very strong				Thunderbolt	9
24.	**(*)**	**QL VG**	**(+)**				
		Inflorescence: type					
		solitary				Grawley Gem	1
		umbel				Red Rocket	2
		raceme				Red Tears	3
		panicule				Barborossa	4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		**PQ** **VG**					
		Flower bud: color					
		light yellow					1
		dark yellow					2
		orange					3
		red					4
26.	**(*)**	**PQ** **VG**					
		Petal: color of inner side					
		RHS Colour Chart (indicate reference number)					
27.		**PQ** **VG**	**(+)**				
		Petal: shape of apex					
		pointed					1
		rounded					2
		emarginated					3
28.		**QL** **VG**					
		Number of flowering periods					
		one				Berval 1	1
		two				Irwinii	2
		continuous				Barborossa	3
29.	**(*)**	**QL** **VG**					
		Fruit					
		absent					1
		present					9
30.	**(*)**	**PQ** **VG**	**(+)**				
		Fruit: shape					
		oblong				Dart's Superb	1
		elliptic				Orange Rocket	2
		circular				Irwinii	3
		cordate				Sibbertoft Coral	4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31.		**QN VS**					
		Fruit: waxiness					
		absent or weak				Berval 1	1
		medium				Bunch of Grapes	2
		strong				Dart's Improvement	3
32.	**(*)**	**PQ VS**	**(+)**				
		Fruit: color of skin					
		RHS Colour Chart (indicate reference number)					
33.		**PQ VS**					
		Fruit: shape of apex					
		pointed				Berval 3	1
		rounded				Grawley Gem	2

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:

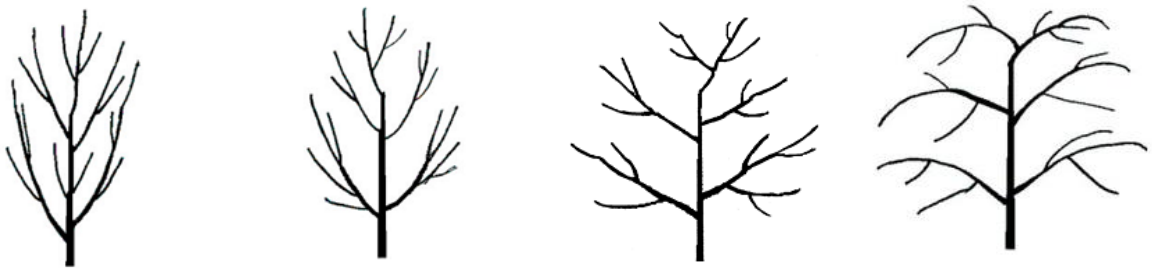
(a) Observations should be made just before flowering.
(b) Observations on shoots and leaves should be made on current year shoots.
(c) Observations should be made on fully expanded spines from the middle third of the stem.
(d) Observations should be made on fully expanded leaves from the middle third of the stem.
(e) The ranking of the leaves colors should be assessed as follow : the main color is the color with the largest surface area. In cases where the areas of the main and other colors are too similar to reliably decide which color has the largest area, the darkest color is considered to be the main color. The same clasification rules should be used for the secondary, tertiary, and the quaternary colors.

8.2 Explanations for individual characteristics

Ad. 2: Plant: growth habit

1 fastigiated | 2 bushy | 3 rounded | 4 spreaded

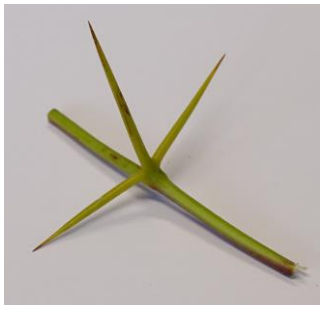
Ad. 3: Plant: branch attitude



1 erect | 2 semi-erect | 2 horizontal | 4 drooping

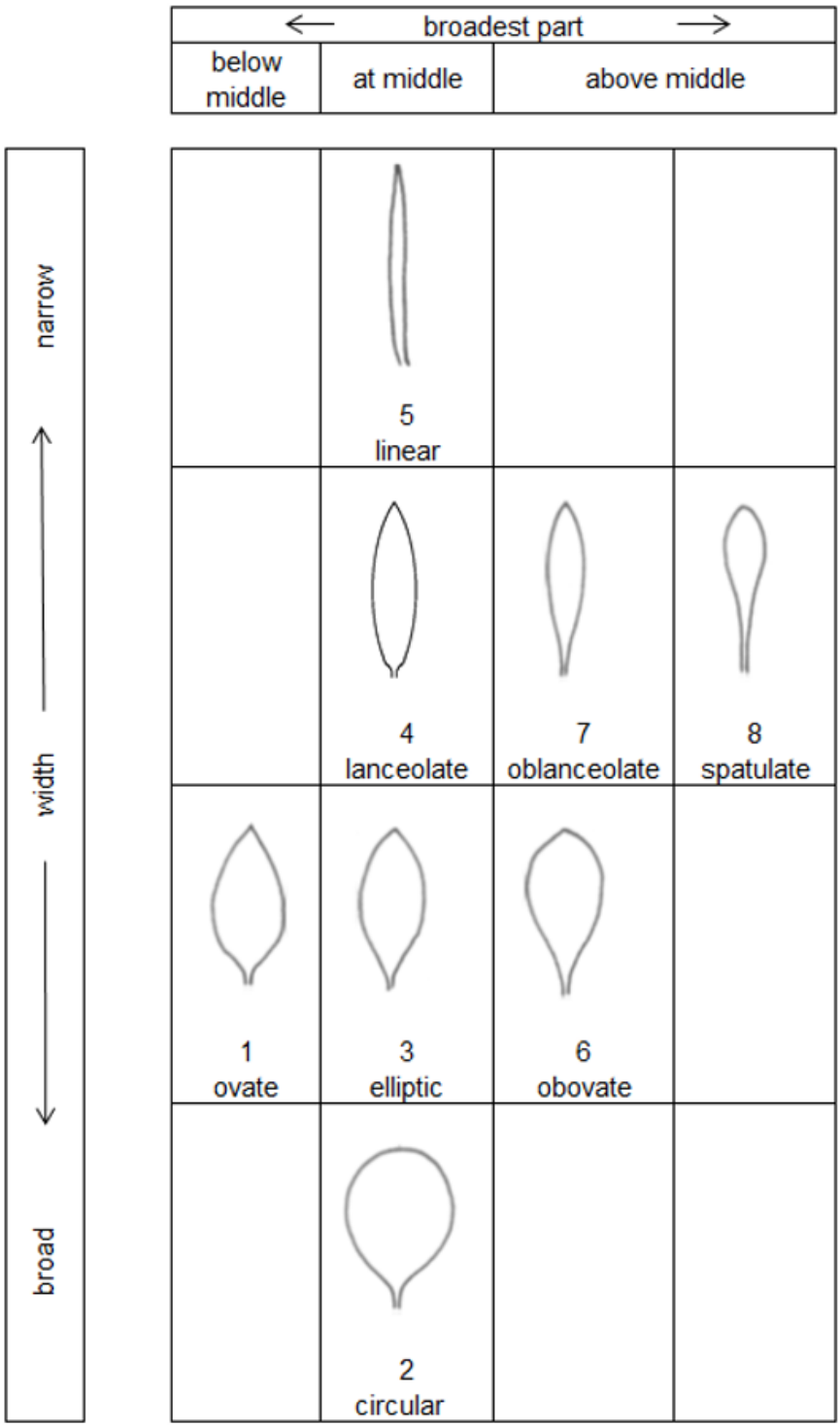
Ad. 8: Stem: type of spine

1
simple



2
trifid

Ad. 13: Leaf: shape



Ad. 14: Leaf: spine

1
absent

2
only on apex

3
on apex and on margin

Ad. 15: Leaf: shape of apex

1
acute

2
obtuse

3
rounded

Ad. 18: Leaf blade: distribution of the secondary color

1
on margin

2
irregular

Ad. 22: Leaf: curvature

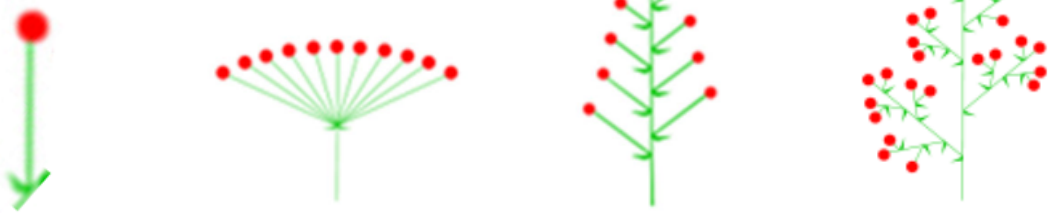
Cross sectional view

1
absent or slightly curved

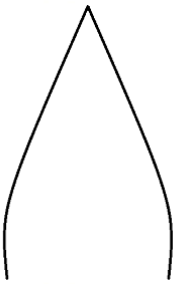
2
moderately curved

3
revolute

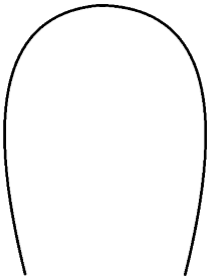
Ad. 24: Inflorescence: type



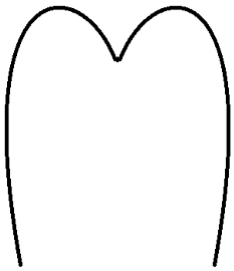
Ad. 27: Petal: shape of apex



1
pointed



2
rounded



3
emarginated

Ad. 30: Fruit: shape

ratio length/width	← broadest part →		
	below middle	at middle	above middle
high		 1 oblong	
medium		 2 elliptic	 4 cordate
low		 3 circular	

Ad. 32: Fruit: color of skin

Observations should be made after removing wax on fruit.

9. Literature

Caduc Alain, « Berberis à feuillage pourpre : son origine ». *Jardin de France,* n°618- Le Japon : influences et confluences, Juillet-Aout 2012.

Caduc Alain, « Inflorescences des Berberis, une diversité de formes ». *Jardin de France,* n°647-La ville en vert et avec tous, Septembre-Novembre 2017.

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	*Berberis* L.
1.2	Common name	Barberry, Berberis

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 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 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)	**Plante: type**		
	deciduous	Helmon Pillar	1 [ ]
	semi-evergreen	Parkjuwell	2 [ ]
	evergreen	Tottenham	3 [ ]
5.2 (2)	**Plant: growth habit**		
	fastigiated	Helmon Pillar, Red Torch	1 [ ]
	bushy	Bokratin	2 [ ]
	rounded	Lutin Rouge	3 [ ]
	spreaded	Green Ornament	4 [ ]
5.3 (4)	**Plant : height**		
	very short	Berval 7	1 [ ]
	very short to short		2 [ ]
	short	Berval 1	3 [ ]
	short to medium		4 [ ]
	medium	Berval 6	5 [ ]
	medium to tall		6 [ ]
	tall	Fire Flame	7 [ ]
	tall to very tall		8 [ ]
	very tall	Decora	9 [ ]
			[ ]
5.4 (5)	**Plant: height in relation to width**		
	taller than broad	Helmon Pillar	1 [ ]
	as tall as broad	Berval 8	2 [ ]
	broader than tall	Berval 2	3 [ ]
5.5 (8)	**Stem: type of spine**		
	simple	Red Torch	1 [ ]
	trifid	Bokratin	2 [ ]
5.6 (16)	**Leaf blade: main color**		
	RHS Colour Chart (indicate reference number)		

	Characteristics	Example Varieties	Note
5.7 (23)	**Leaf: undulation on margin**		
	absent or very weak	Berval 3	1 [ ]
	absent or very weak to weak		2 [ ]
	weak	Parkjuwell	3 [ ]
	weak to medium		4 [ ]
	medium	Dart's Improvement	5 [ ]
	medium to strong		6 [ ]
	strong	Terra Nova	7 [ ]
	strong to very strong		8 [ ]
	very strong	Thunderbolt	9 [ ]
5.8 (24)	**Inflorescence: type**		
	solitary	Grawley Gem	1 [ ]
	umbel	Red Rocket	2 [ ]
	raceme	Red Tears	3 [ ]
	panicule	Barborossa	4 [ ]
5.9(i) (26)	**Petal: color of inner side**		
	RHS Colour Chart (indicate reference number)		
5.9(ii) (26)	**Petal: color of inner side**		
	light yellow		1 [ ]
	yellow		2 [ ]
	dark yellow		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
5.10 (29)	**Fruit**		
	absent		1 [ ]
	present		9 [ ]
5.11 (30)	**Fruit: shape**		
	oblong	Dart's Superb	1 [ ]
	elliptic	Orange Rocket	2 [ ]
	circular	Irwinii	3 [ ]
	cordate	Sibbertoft Coral	4 [ ]

	Characteristics	Example Varieties	Note
5.12(i) (32)	**Fruit: color of skin**		
	RHS Colour Chart (indicate reference number)		
5.12(ii) (32)	**Fruit: color of skin**		
	orange		1 [ ]
	pink		2 [ ]
	red		3 [ ]
	purple		4 [ ]
	dark purple		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	*Fruit: shape*	*oblong*	*circular*

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

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]