E

TG/68/4(proj.4)
ORIGINAL: English
DATE: 2021-04-28

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-third session, to be held in Roelofarendsveen, Netherlands,
from 2021-06-07 to 2021-06-11

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
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.]

TABLE OF CONTENTS PAGE

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Berberis* L. and their hybrids excluding: *Mahonia* Nutt. (*Odostemon*), *Berberis aquifolium* Pursh, *Berberis bealei* Fortune, *Berberis japonica* (Thunb.) Spreng., *Berberis napaulensis* (DC.) Spreng. *Berberis oiwakensis* (Hayata) Laferr., *Berberis pumila* Greene, *Berberis repens* Lindl. and hybrids between these species and other Berberis species.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of plants capable of flowering and expressing all relevant 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

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 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 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 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 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: type (characteristic 1)
(b) Plant: growth habit (characteristic 2)
(c) Plant: height in relation to width (characteristic 4)
(d) Stem: type of spine (characteristic 8)
(e) Leaf blade: main color (characteristic 16)
(f) Leaf blade: secondary color (characteristic 17)
(g) Floral type (characteristic 24)
(h) Fruit: shape (characteristic 29)

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

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

6.2 States of Expression and Corresponding Notes

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

6.2.2 All relevant states of expression are presented in the characteristic.

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

6.3 Types of Expression

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

6.4 Example Varieties

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

6.5 Legend

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

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

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

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

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

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

7 Not applicable

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
1.	**(*)**	**PQ VG**					
		Plant: type					
		deciduous				Helmond Pillar	1
		semi-evergreen				Parkjuweel	2
		evergreen				Tottenham	3
2.	**(*)**	**QN VG**	**(+)**				
		Plant: growth habit					
		fastigiated				Helmond Pillar, Redtorch	1
		bushy				Electra, Orange Dream, STARBUST	2
		rounded				Admiration, Lutin Rouge, Tiny Gold	3
		spreading				Green Ornament	4
3.	**(*)**	**QN MG/MS/VG**		**(a)**			
		Plant: height					
		very short				Fireball	1
		very short to short					2
		short				Admiration	3
		short to medium					4
		medium				Orange Rocket	5
		medium to tall					6
		tall				Fireflame	7
		tall to very tall					8
		very tall				Decora	9
4.	**(*)**	**QN VG**		**(a)**			
		Plant: height in relation to width					
		taller than broad				Helmond Pillar, Redtorch	1
		as tall as broad				Electra, Orange Dream, STARBUST	2
		broader than tall				Admiration, Green Ornament, Lutin Rouge, Tiny Gold	3

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
5.	**(*)**	**QN**	**VG**	**(+)**	**(a)**				
		Branch: attitude							
		erect						Helmond Pillar, Lutin Rouge, Redtorch, Tiny Gold	1
		semi-erect						Admiration	2
		horizontal						Electra, Green Ornament, STARBUST	3
		drooping						Autumnalis, Orange Dream	4
6.	**(*)**	**PQ**	**VG**		**(b)**				
		Young shoot: stem color							
		green						Graciella	1
		yellow						Golden Rocket	2
		orange						Tiny Gold	3
		red						Lutin Rouge	4
		purple						Decora	5
7.	**(*)**	**PQ**	**VG**		**(b)**				
		Young shoot: leaf color							
		green						Graciella	1
		yellow						Golden Rocket	2
		orange						Orange Ice	3
		red						Lutin Rouge	4
		pink							5
		purple						Redtorch	6
8.	**(*)**	**QL**	**VG**	**(+)**	**(c)**				
		Stem: type of spine							
		simple						Redtorch	1
		trifid						Lombarts purple, Red Tears	2
9.	**(*)**	**QN**	**VG**		**(c)**				
		Stem: spine length							
		short						Golden Torch	1
		short to medium							2
		medium						Tottenham	3
		medium to long							4
		long						Dart's Superb	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
10	**(*)**	**QN** **MG**	**(d)**				
		Stem: leaves per node					
		one to three				Golden Rocket	1
		four to six				Electra	2
		more than six				Dart's Superb	3
11	**(*)**	**QN** **MG/MS/VG**	**(d)**				
		Leaf: length					
		very short				Crawley Gem	1
		very short to short					2
		short				Lutin Rouge	3
		short to medium					4
		medium				Select	5
		medium to long					6
		long				Decora	7
		long to very long					8
		very long				Dart's Superb	9
12	**(*)**	**QN** **MG/MS/VG**	**(d)**				
		Leaf: width					
		very narrow				Irwinii	1
		very narrow to narrow					2
		narrow				Tiny Gold	3
		narrow to medium					4
		medium				Forescate	5
		medium to broad					6
		broad				Decora	7
		broad to very broad					8
		very broad				Red Tears	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
13 **(*)**	**PQ** **VG**	**(+)** **(d)**				
	Leaf: shape					
	ovate					1
	circular					2
	broad elliptic					3
	narrow elliptic					4
	linear					5
	obovate					6
	oblanceolate					7
	spatulate					8
14 **(*)**	**PQ** **VG**	**(+)** **(d)**				
	Leaf: spine					
	absent				Golden Rocket	1
	only on apex				Suzanne	2
	on apex and margin				Red Tears	3
15 **(*)**	**PQ** **VG**	**(+)** **(d)**				
	Leaf: shape of apex					
	acute				Dart's Superb, Irwinii	1
	obtuse				Suzanne	2
	rounded				Golden Rocket	3
16 **(*)**	**PQ** **VG**	**(d), (e)**				
	Leaf blade: main color					
	RHS Colour Chart (indicate reference number)					
17 **(*)**	**PQ** **VG**	**(d), (e)**				
	Leaf blade: secondary color					
	none					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/
18	**(*)**	**PQ**	**VG**	**(+)**	**(d), (e)**				
		Leaf blade: distribution of the secondary color							
		on margin						Admiration	1
		irregular						Hoho 1, Silver Pillar	2
19	**(*)**	**PQ**	**VG**		**(d), (e)**				
		Leaf blade: tertiary color							
		none							1
		whitish							2
		green							3
		yellow							4
		orange							5
		pink							6
		red							7
		purple							8
20	**(*)**	**PQ**	**VG**		**(d), (e)**				
		Leaf blade: quaternary color							
		none							1
		whitish							2
		green							3
		yellow							4
		orange							5
		pink							6
		red							7
		purple							8
21		**QN**	**VG**		**(d)**				
		Leaf blade: glossiness							
		absent or weak						Fireball	1
		medium						Dart's Improvement	2
		strong						Lutin Rouge	3

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
22	**(*)**	**PQ**	**VG**	**(+)**	**(d)**				
		Leaf: profile in cross-section							
		flat or weakly convex						Golden Rocket	1
		moderately convex						Latifolia	2
		revolute						Irwinii	3
23	**(*)**	**QN**	**VG**		**(d)**				
		Leaf: undulation on margin							
		absent or very weak						Golden Rocket	1
		very weak to weak							2
		weak						Parkjuweel	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
24	**(*)**	**QL**	**VG**	**(+)**					
		Floral type							
		solitary						Crawley Gem	1
		umbel						Red Rocket	2
		raceme						Red Tears	3
		panicle						Barbarossa	4
25	**(*)**	**PQ**	**VG**	**(+)**					
		Flower bud: color							
		light yellow							1
		dark yellow							2
		orange							3
		red							4

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/
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	**(*)**	**QN** **VG**	**(f)**				
		Plant: fruit formation					
		absent or few					1
		medium					2
		many					3
29	**(*)**	**PQ** **VG**	**(+)** **(f)**				
		Fruit: shape					
		ovate				Sibbertoft Coral	1
		circular				Irwinii	2
		elliptic				Orange Rocket	3
		oblong				Dart's Superb	4
30		**QN** **VG**	**(f)**				
		Fruit: bloom of skin					
		absent or weak					1
		medium				Bunch of Grapes	2
		strong				Dart's Improvement	3
31	**(*)**	**PQ** **VG**	**(+)** **(f)**				
		Fruit: color of skin					
		RHS Colour Chart (indicate reference number)					

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) Observations on plant should be made just before flowering.

(b) Observations on young shoots and leaves should be made on current year's shoots.

(c) Observations should be made on fully expanded spines from the middle third of the stem.

(d) Observations should be made on the upper side of 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 secondary colors are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color. The same classification rules should be used for the secondary, tertiary, and the quaternary colors.

(f) Observations on fruits should be made on fully developed fruits from the middle third of the stem.

8.2 Explanations for individual characteristics

Ad. 2: Plant: growth habit

1
fastigiated

2
bushy

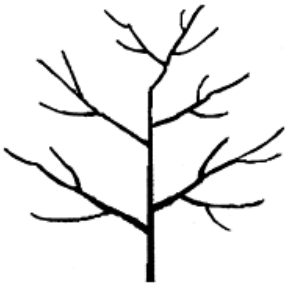
3
rounded

4
spreading

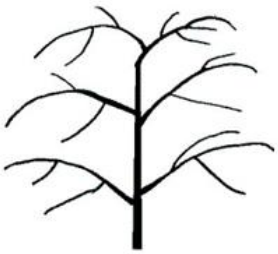
Ad. 5: Branch: attitude

1
erect

2
semi-erect



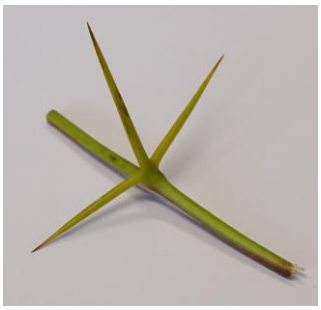
3
horizontal



4
drooping

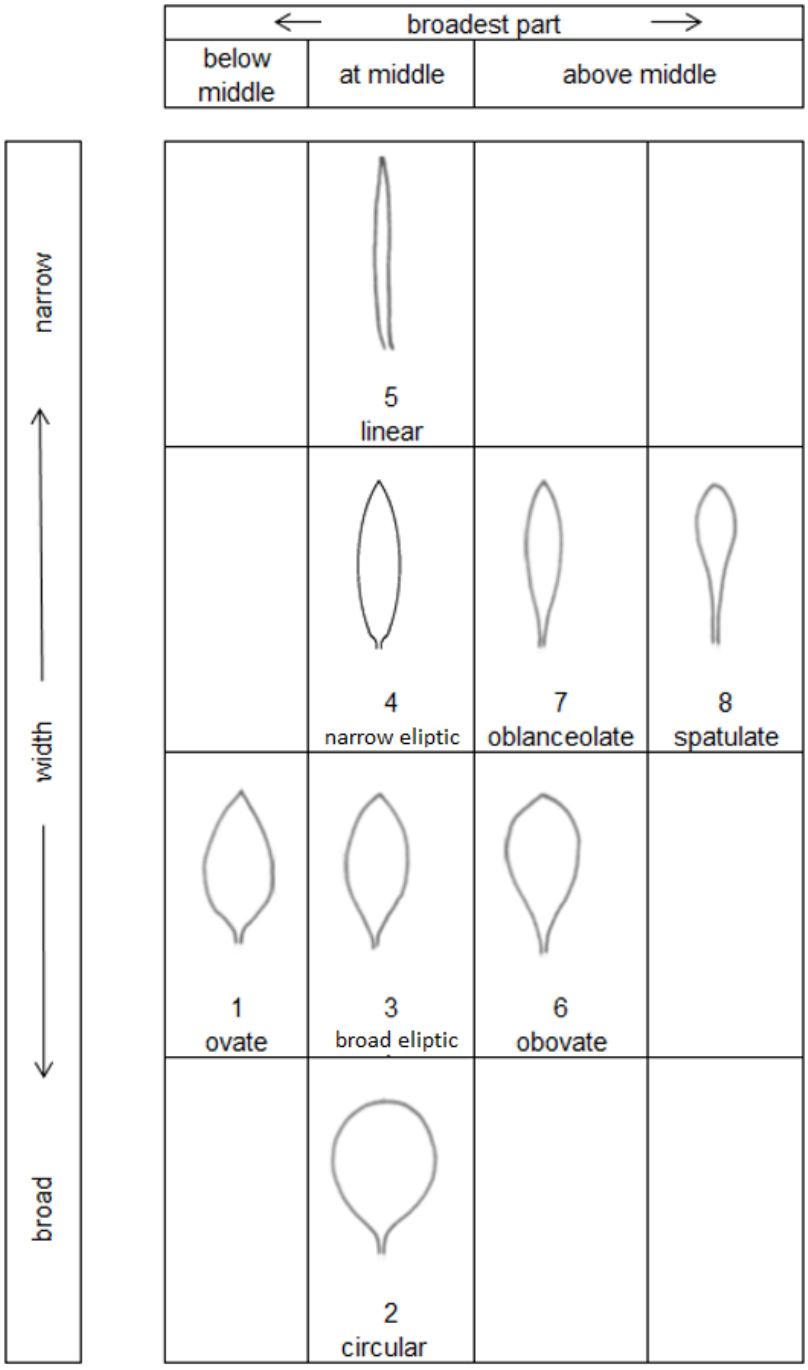
Ad. 8: Stem: type of spine

1
simple



2
trifid

Ad. 13: Leaf: shape



Ad. 14: Leaf: spine

1
absent

2
only on apex

3
on apex and 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: profile in cross-section

1
absent or slightly curved

2
moderately curved

3
revolute

Ad. 24: Floral type

1
solitary

2
umbel

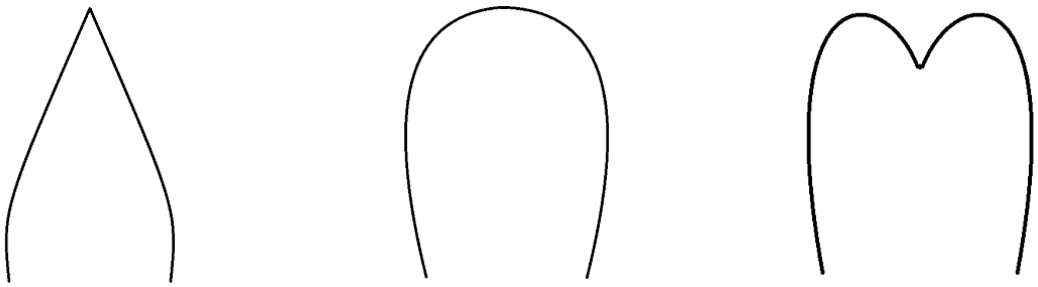
3
raceme

4
panicule

Ad. 25: Flower bud: color

Observation on flower bud should be made just before flower opening on the middle third of the stem.

Ad. 27: Petal: shape of apex



1
pointed

2
rounded

3
emarginated

Ad. 29: Fruit: shape

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

Ad. 31: Fruit: color of skin

Observations should be made after removal of bloom 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 variety)

(……..……..…) x (……..……..…)

female parent male parent

(b) partially known cross [ ]

(please state known parent variety(ies))

(……..……..…) x (……..……..…)

female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery and development [ ]
(please state where and when discovered and how developed)

4.1.4 Other [ ]
(Please provide details)

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

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

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) Cuttings [ ]
(b) *In vitro* propagation [ ]
(c) Other (state method) [ ]

4.2.2 Other [ ]
(Please provide details)

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

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

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: type**		
	deciduous	Helmond Pillar	1 [ ]
	semi-evergreen	Parkjuweel	2 [ ]
	evergreen	Tottenham	3 [ ]
5.2 (2)	**Plant: growth habit**		
	fastigiated	Helmond Pillar, Redtorch	1 [ ]
	bushy	Electra, Orange Dream, STARBUST	2 [ ]
	rounded	Admiration, Lutin Rouge, Tiny Gold	3 [ ]
	spreading	Green Ornament	4 [ ]
5.3 (3)	**Plant: height**		
	very short	Fireball	1 [ ]
	very short to short		2 [ ]
	short	Admiration	3 [ ]
	short to medium		4 [ ]
	medium	Orange Rocket	5 [ ]
	medium to tall		6 [ ]
	tall	Fireflame	7 [ ]
	tall to very tall		8 [ ]
	very tall	Decora	9 [ ]
5.4 (4)	**Plant: height in relation to width**		
	taller than broad	Helmond Pillar, Redtorch	1 [ ]
	as tall as broad	Electra, Orange Dream, STARBUST	2 [ ]
	broader than tall	Admiration, Green Ornament, Lutin Rouge, Tiny Gold	3 [ ]
5.5 (8)	**Stem: type of spine**		
	simple	Redtorch	1 [ ]
	trifid	Lombarts purple, Red Tears	2 [ ]

	Characteristics	Example Varieties	Note
5.6(i) (16)	**Leaf blade: main color**		
	RHS Colour Chart (indicate reference number)		
5.6(ii) (16)	**Leaf blade: main color**		
	green		1 [ ]
	yellow		2 [ ]
	red		3 [ ]
5.7 (17)	**Leaf blade: secondary color**		
	none		1 [ ]
	whitish		2 [ ]
	green		3 [ ]
	yellow		4 [ ]
	orange		5 [ ]
	pink		6 [ ]
	red		7 [ ]
	purple		8 [ ]
5.8 (24)	**Floral type**		
	solitary	Crawley Gem	1 [ ]
	umbel	Red Rocket	2 [ ]
	raceme	Red Tears	3 [ ]
	panicle	Barbarossa	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 [ ]
	medium yellow		2 [ ]
	dark yellow		3 [ ]
	orange		4 [ ]
	pink		5 [ ]
5.10 (28)	**Plant: fruit formation**		
	absent or few		1 [ ]
	medium		2 [ ]
	many		3 [ ]

	Characteristics	Example Varieties	Note
5.11 (29)	**Fruit: shape**		
	ovate	Sibbertoft Coral	1 [ ]
	circular	Irwinii	2 [ ]
	elliptic	Orange Rocket	3 [ ]
	oblong	Dart's Superb	4 [ ]
5.12 (31)	**Fruit: color of skin**		
	RHS Colour Chart (indicate reference number)		

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

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]