



TG/43/8(proj.3)

ORIGINAL: English

DATE: 2023-05-17

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

RASPBERRY; BLACK RASPBERRYUPOV Code(s): RUBUS_IDA;
RUBUS_OCC*Rubus idaeus* L.;
Rubus occidentalis L.**GUIDELINES****FOR THE CONDUCT OF TESTS****FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

*prepared by experts from Germany
to be considered by the
Technical Working Party for Fruit Crops
at its fifty-fourth session, to be held in Nîmes, France,
from 2023-07-03 to 2023-07-07*

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Rubus idaeus</i> L.	Raspberry	Framboisier	Himbeere	Frambueso, Sangüeso
<i>Rubus occidentalis</i> L., <i>Rubus occidentalis</i> L., var. <i>occidentalis</i>	Black Raspberry, Blackcap, Thimbleberry	Frambosier noir, Frambosier de Virginie	Schwarze Himbeere	Frambueso negro

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.

Other associated UPOV documents: TG/37 (Blackberry)

* 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 *Rubus idaeus* L. and *Rubus occidentalis* L. and their hybrids.

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 with a satisfactory number of adventitious buds on the roots.
- 2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:
12 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 two independent growing cycles.
- 3.1.2 The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.
- 3.1.3 In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.
- 3.1.4 The growing cycle is considered to be the duration of a single growing season, beginning with bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds.

(The wording does not fit; ASW3(a) needs being reworded:
The growing cycle is considered to be the duration of a single growing season, beginning with the dormancy period, followed by bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period starts.
- 3.1.5 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 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.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

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) Very young shoot: anthocyanin coloration of apex during rapid growth (characteristic 3)
- (b) Spines: presence (characteristic 10)
- (c) Current year's cane: flowers (characteristic 24)
- (d) Fruit: color (characteristic 32)
- (e) Time of beginning of flowering on current season's cane (characteristic 39)
- (f) Time of beginning of fruit ripening on current season's cane (characteristic 41)

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

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

6.2 *States of Expression and Corresponding Notes*

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

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

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

6.3 *Types of Expression*

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

6.4 *Example Varieties*

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

6.5 Legend

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

- 1 Characteristic number
- 2 (*) Asterisked characteristic – see Chapter 6.1.2
- 3 Type of expression
 QL Qualitative characteristic – see Chapter 6.3
 QN Quantitative characteristic – see Chapter 6.3
 PQ Pseudo-qualitative characteristic – see Chapter 6.3
- 4 Method of observation (and type of plot, if applicable)
 MG, MS, VG, VS – see Chapter 4.1.5
- 5 (+) See Explanations on the Table of Characteristics in Chapter 8.2
- 6 (a)-(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/ Nota
1.	PQ	VG	(+)	(a)				
	Plant: growth habit							
	upright						Maravilla, Ontario	1
	semi-upright						Regina, Schönemann	2
	arching						Meeker, Pearl	3
2. (*)	PQ	VG	(+)	(a)				
	Dormant cane: color							
	brownish grey						NR 7, Schönemann	1
	greyish brown						Meeker, Willamette	2
	brown						Glen Ample, Tulameen	3
	purplish brown						Radiance	4
	brownish purple						Black Jewel, Sanibelle	5
3. (*)	QN	VG						
	Very young shoot: anthocyanin coloration of apex during rapid growth							
	absent or very weak							1
	very weak to weak						Fallgold, Poranna Rosa	2
	weak						Brilliance, Sapphire	3
	weak to medium						Fruatfri, Sugana	4
	medium						Regina, Tulameen	5
	medium to strong						Malling Freya, Maravilla	6
	strong						Polka, Sanibelle	7
	strong to very strong						Royalty	8
	very strong						Glen Moy, Malling Delight	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. (*)	QN	MG/VG	(+)			
	Plant: number of current season's canes					
	very few					1
	very few to few					2
	few				Tulameen	3
	few to medium				Pokusa, Qualicum	4
	medium				Advarberimar, Fruatfri	5
	medium to many				Grandeur, Regina	6
	many				Pearl, Poranna Rosa	7
	many to very many				Cascade Dawn, ma 2920	8
	very many					9
5. (*)	QN	MG/VG	(+)	(b)		
	Cane: length					
	very short					1
	very short to short				NR 7	2
	short					3
	short to medium				Advabertwee, Loganlike	4
	medium				Advarberimar	5
	medium to long				Drirasponse, Radiance	6
	long				Schönemann, Tulameen	7
	long to very long				Meeker, Royalty	8
	very long				Malling Leo	9
6.	QN	MG/VG		(b)		
	Cane: length of internode					
	very short					1
	short				Autumn Treasure, Poranna Rosa	2
	medium				Glen Ample, Holyoke	3
	long				Polka	4
	very long					5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.	QN	MG/VG	(+)	(b)				
	Cane: length of vegetative bud							
	short						Autumn Bliss, Drisraspsix	1
	medium						Driscoll Madonna, Grandeur	2
	long						Schönemann	3
8.	QN	VG		(b)				
	Cane: anthocyanin coloration							
	absent or very weak						Poranna Rosa, Valentina	1
	weak						Cardinal, Vajolet	2
	medium						Holyoke, Rafzaqu	3
	strong						Drisraspfour, Malling Juno	4
	very strong							5
9.	QN	VG		(b)				
	Cane: bloom							
	absent or very weak						Adelita, Lupita	1
	very weak to weak						Bountiful, Diamond Jubilee	2
	weak						Fruatfri, Regina	3
	weak to medium						Meeker, Qualicum	4
	medium						ma 2920, Rafzmach	5
	medium to strong						Lagorai Plus, NR 7	6
	strong						Advabereen, Sanibelle	7
	strong to very strong						Brilliance, Pokusa	8
	very strong						Ontario, Royalty	9
10. (*)	QL	VG		(c)				
	Spines: presence							
	absent						Glen Ample, NR 7	1
	present						Malling Promise, Regina	9
11.	QN	MG/VG		(c)				
	Spines: length							
	very short						Resa	1
	short						Carmelina, Grandeur	2
	medium						Fruatfri, Regina	3
	long						BP 1, Drisrasptwo	4
	very long						Black Jewel, Lowden	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	PQ	VG	(c)			
	Spines: color					
	green				Golden Bliss, Poranna Rosa	1
	brownish green				Brilliance, Holyoke	2
	greenish brown				Advabereen, Radiance	3
	brown				Glen Magna, Rusilva	4
	purplish brown				Cardinal, Fruatfri	5
	brownish purple				Maravilla, Octavia	6
	purple				Polka, Sugana	7
13.	QN	VG	(+)	(c)		
	Spines: size of base					
	very small					1
	very small to small				Gleam	2
	small				Driscoll Pacifica, Rafzmach	3
	small to medium				Octavia, Radiance	4
	medium				Cardinal, Regina	5
	medium to large				Fruatfri, Vajolet	6
	large				BP 1, Dolomia Plus	7
	large to very large				Josephine	8
	very large				Black Jewel, Lowden	9
14. (*)	QN	VG	(c)			
	Spines: density					
	absent or very sparse				Ontario	1
	very sparse to sparse				Festival, Korbfüller	2
	sparse				Valentina	3
	sparse to medium				Maravilla, Tulameen	4
	medium				Lupita, Octavia	5
	medium to dense				ma 2920, Schönemann	6
	dense				Fruatfri, Regina	7
	dense to very dense				Golden Bliss	8
	very dense				Lloyd George	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15. (*)	PQ	VG	(d)			
	Leaf: color of upper side					
	greenish yellow				JDEBOER005	1
	light green				Skeena, Watson	2
	medium green				Autumn Bliss, Isabel	3
	dark green				Dolomia Plus	4
16. (*)	PQ	VG	(d)			
	Leaf: predominant number of leaflets					
	three				Autumn Treasure, Lupita	1
	equally three and five				Fruatfri, Lagorai Plus	2
	five				Ontario, Sanibelle	3
17.	QN	VG	(+)	(d)		
	Leaf: arrangement of leaflets					
	free				Lupita, Regina	1
	touching				Jade, ma 2920	2
	overlapping				Fruatfri	3
18.	QN	MG/VG	(d)			
	Terminal leaflet: length					
	very short					1
	very short to short					2
	short				NR 7	3
	short to medium				JDEBOER005	4
	medium				Glen Carron	5
	medium to long				Advabereen, ma 2920	6
	long				Amaranta, Versailles	7
	long to very long				Dolomia Plus, Polka	8
	very long				Motueka, Tea	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	QN	MG/VG	(d)			
	Terminal leaflet: width					
	very narrow					1
	very narrow to narrow					2
	narrow				Summit	3
	narrow to medium				Caroline	4
	medium				Advabertwee, Drirasponse	5
	medium to broad				Brilliance, Joan J	6
	broad				Fruatfri, Sugana	7
	broad to very broad				Regina	8
	very broad				Malling Sirius, Tea	9
20.	QN	VG	(d)			
	Terminal leaflet: profile in cross section					
	concave				NR 7, Pearl	1
	straight				ma 2920, Versailles	2
	convex				Grandeur, Heritage	3
21 (*)	QN	VG	(+)	(d)		
	Terminal leaflet: folding					
	very weak				Heritage	1
	weak				Gleam	2
	medium				Advarberimar, Pearl	3
	strong				Sugana, Vajolet	4
	very strong				Korbfüller	5

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. (*)	QN	MG/VG				
	Previous year's cane: length of fruiting lateral					
	very short					1
	very short to short				Vene	2
	short				Glen Moy	3
	short to medium				Driscoll Pacifica	4
	medium				Radiance, Sugana	5
	medium to long				Regina, Versailles	6
	long				Glen Ample	7
	long to very long				Malling Leo	8
	very long					9
23.	QN	VG				
	Previous year's cane: attitude of fruiting lateral					
	erect				Advarberimar, NR 7	1
	semi-erect				Bountiful, Sapphire	2
	horizontal to drooping				Malling Freya	3
24. (*)	QL	VG				
	Current year's cane: flowers					
	absent				Glen Ample	1
	present				Autumn Bliss	9
25. (*)	QN	VG	(e)			
	Peduncle: intensity of anthocyanin coloration					
	absent or very weak				Golden Bliss	1
	very weak to weak				Autumn Bliss, Joan J	2
	weak				Fruatfri, Lupita	3
	weak to medium				NR 7	4
	medium				Grandeur, Radiance	5
	medium to strong				Malling Juno, Qualicum	6
	strong				Advabereen, Brilliance	7
	strong to very strong				ABB 122, Glen Doll	8
	very strong				Rafzmach	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26.	QN	MG/VG	(e)			
	Pedice! number of spines					
	absent or very few				Glen Moy, Malling Juno	1
	very few to few				JDEBOER005, Wakefield	2
	few				Bountiful, Lagorai Plus	3
	few to medium				Diamond Jubilee, Drisraspone	4
	medium				Fruatfri, Octavia	5
	medium to many				Maravilla, Sugana	6
	many				Holyoke, Poranna Rosa	7
	many to very many				Autumn Bliss, Satine	8
	very many				Golden Bliss	9
27.	QN	MG/VG	(+)	(e)		
	Flower: diameter					
	very small					1
	very small to small				Trent	2
	small				Bella, Ontario	3
	small to medium				Brilliance, Radiance	4
	medium				ma 2920, Pearl	5
	medium to large				Joan J	6
	large				Evita, Lagorai Plus	7
	large to very large				Amaranta	8
	very large					9
28. (*)	QN	MG/VG	(e), (f)			
	Fruit: length					
	very short					1
	very short to short					2
	short				Golden Queen	3
	short to medium				Golden Bliss	4
	medium				Octavia, Sugana	5
	medium to long				Brilliance, Rafzaqu	6
	long				Driscoll Pacifica, Radiance	7
	long to very long				Lagorai Plus, Maravilla	8
	very long				Evita	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
29. (*)	QN	MG/VG	(e), (f)			
	Fruit: width					
	very narrow					1
	narrow					2
	medium				ma 2920, Rafzmach	3
	broad				Lagorai Plus, Pearl	4
	very broad				Evita	5
30. (*)	PQ	VG	(+)	(e), (f)		
	Fruit: shape in lateral view					
	circular				Black Jewel	1
	broad conical				Autumn Bliss, Glen Ample	2
	conical				Autumn Treasure, Maravilla	3
	trapezoidal				Titan	4
31.	QN	VG	(e), (f)			
	Fruit: size of single drupe					
	very small					1
	small				Jochems Roem	2
	medium				Carmelina, Qualicum	3
	large				Maravilla, Octavia	4
	very large				Pokusa	5
32. (*)	PQ	VG	(e), (f)			
	Fruit: color					
	yellow				Golden Bliss, Sungold	1
	orange				Valentina	2
	light red				Qualicum, Vision	3
	medium red				Diamond Jubilee, Pearl	4
	dark red				Bella, BP 1	5
	purple				Glen Coe, Royalty	6
	blackish				Black Jewel	7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33.	QN	VG	(e), (f)			
	Fruit: glossiness					
	very weak					1
	weak				Glen Magna, Poranna Rosa	2
	medium				Pearl, Sapphire	3
	strong				Advabertwee, Sanibelle	4
	very strong					5
34. (*)	QN	MG/VG	(e), (f)			
	Fruit: firmness					
	very soft					1
	soft				Fallred, Golden Queen	2
	medium				Brilliance, Meeker	3
	firm				Advabereen, Maravilla	4
	very firm					5
35.	PQ	VG	(+)	(e), (f)		
	(Proposal not to take in) Fruit: color of torus at distal end					
	greenish				NR 7	1
	whitish					2
	yellowish white				Driraspthirteen	3
	orange reddish				Driraspsix	4
36. (*)	QN	MG/VG				
	Time of vegetative bud burst					
	very early					1
	ver early to early				Pacific Gema	2
	early				Grandeur	3
	early to medium				Advabertwee, Brilliance	4
	medium				Advarberimar, Lagorai Plus	5
	medium to late				Glen Ample, Vajolet	6
	late				Glen Magna	7
	late to very late				Driraspfour	8
	very late					9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. (*)	QN	MG/VG				
	Time of cane emergence					
	very early					1
	very early to early				Driraspthirteen, Majestic	2
	early				Sungold	3
	early to medium				ma 2920, Maravilla	4
	medium				Lagorai Plus, Sugana	5
	medium to late				Amaranta, Tulameen Plus	6
	late				Glen Fyne	7
	late to very late				Glen Ample	8
	very late				Malling Juno, Valentina	9
38. (*)	QN	MG/VG	(+)			
	Time of beginning of flowering on previous year's cane					
	very early					1
	very early to early				Malling Freya	2
	early				Advabereen, Malling Juno	3
	early to medium				Brilliance, Fruatfri, Glen Fyne	4
	medium				Sapphire	5
	medium to late				Drirasponse, Grandeur	6
	late				Octavia, Tulameen Plus	7
	late to very late				Annamaria	8
	very late					9
39. (*)	QN	MG/VG	(+)			
	Time of beginning of flowering on current season's cane					
	very early					1
	very early to early				Polana	2
	early				Adelita, Polka	3
	early to medium				Brilliance, ma 2920	4
	medium				Rafzaqu, Regina	5
	medium to late				Maravilla, Sugana	6
	late				Advabertwee, Vajolet	7
	late to very late				Drirasponse, Lagorai Plus	8
	very late				Driscoll Madonna, Pearl	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
40. (*)	QN	MG/VG	(+)			
	Time of beginning of fruit ripening on previous year's cane					
	very early					1
	very early to early				ABB 122, Malling Freya	2
	early				Advabereen, Lupita	3
	early to medium				Adelita, Advarberimar	4
	medium				Advabertwee, Radiance	5
	medium to late				Mayfair, Satine	6
	late				Grandeur, Octavia	7
	late to very late				Lowden	8
	very late				Augusta	9
41. (*)	QN	MG/VG	(+)			
	Time of beginning of fruit ripening on current season's cane					
	very early					1
	very early to early				Autumn Bliss	2
	early				Isabel, Sugana	3
	early to medium				Advarberimar, Grandeur	4
	medium				Drirasptwo, NY One	5
	medium to late				Brilliance	6
	late				Advabertwee	7
	late to very late				ABB 122	8
	very late					9

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

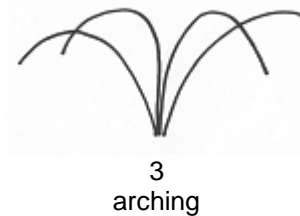
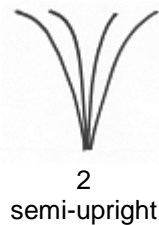
Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

- (a) Observations should be made when the cane is fully developed.
- (b) Observations should be made on current season's canes.
- (c) Observations should be made in the middle third of the cane, when the cane is fully developed.
- (d) Observations should be made on fully developed leaves from the middle third of the cane.
- (e) Observations should be made on canes which flower and fruit first in the vegetation period, either on previous year's canes in summer or on current year's canes in autumn.
- (f) Observations should be made on fruit picked during the second and third harvest.

8.2 *Explanations for individual characteristics*

Ad. 1: Plant: growth habit

Observations should be made on fully developed current season's shoots, before flowering.



Ad. 2: Dormant cane: color

If the canes peel the unpeeled area should be observed.

Ad. 4: Plant: number of current season's canes

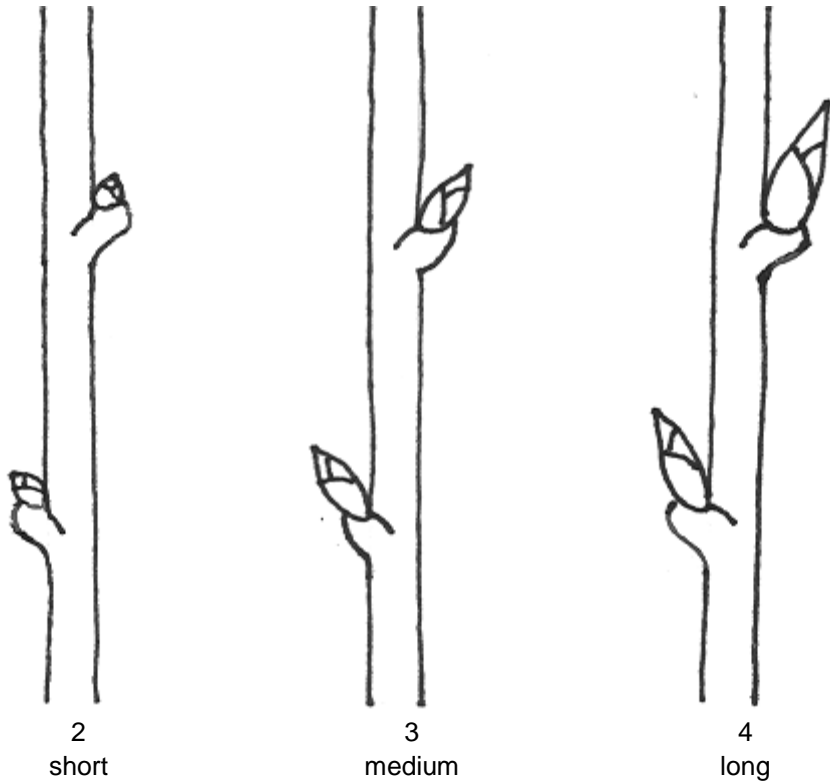
Should be assessed when the canes are about 15 cm long.

Ad. 5: Cane: length

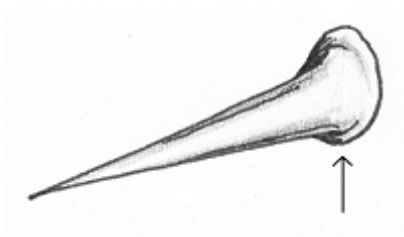
Observations should be made at the end of the vegetation period.

Ad. 7: Cane: length of vegetative bud

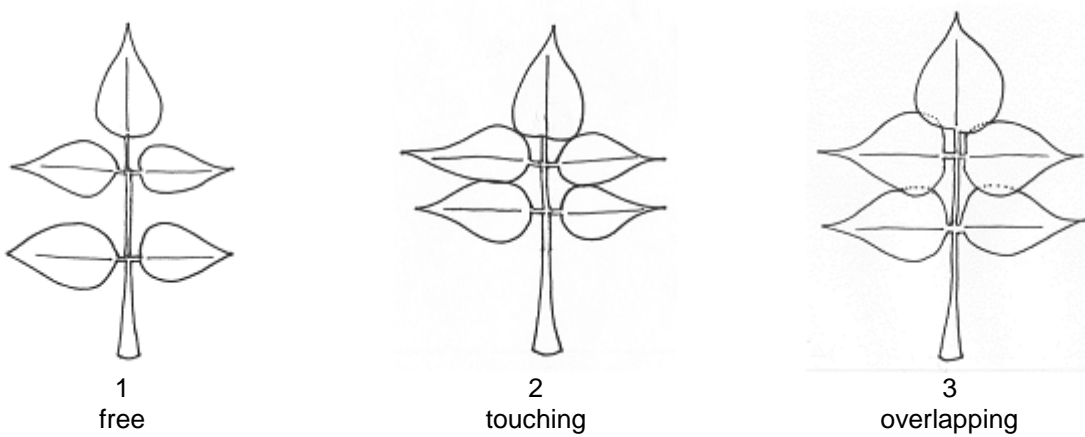
Observations should be made in the middle third of the cane.



Ad. 13: Spines: size of base

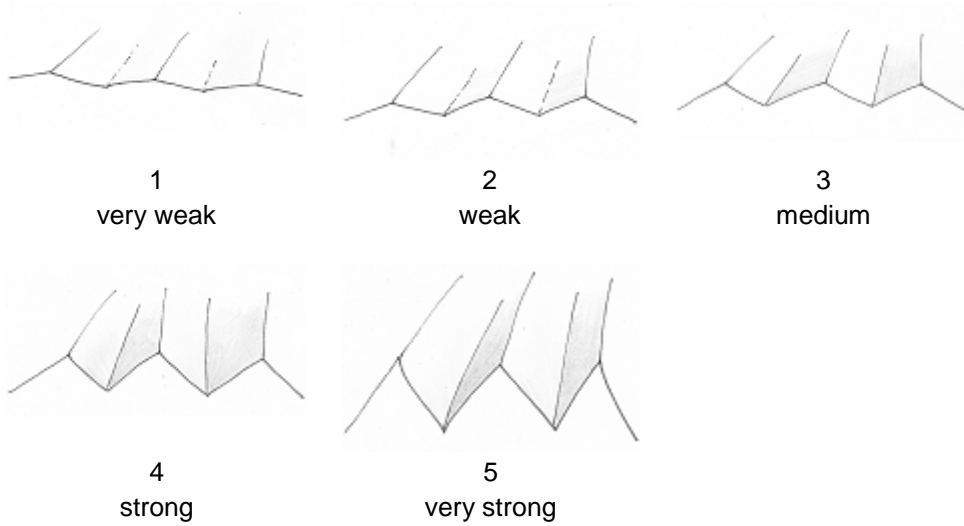


Ad. 17: Leaf: arrangement of leaflets



Ad. 21: Terminal leaflet: folding

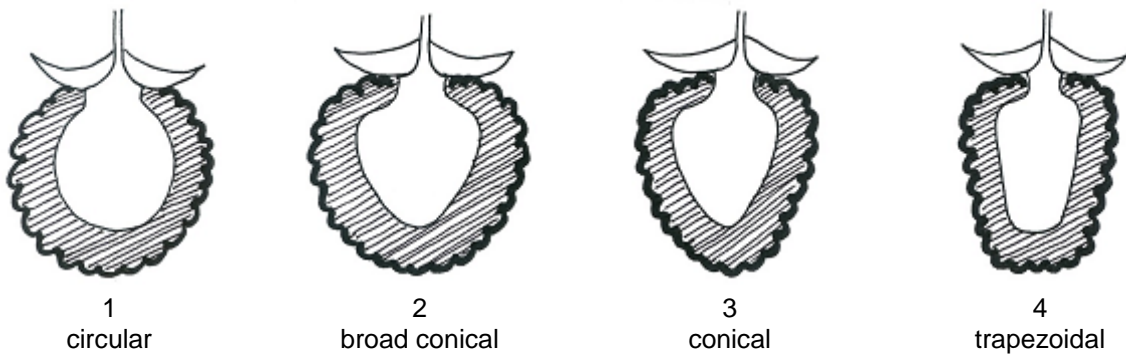
Should be assessed as the folding along / between the lateral veins.



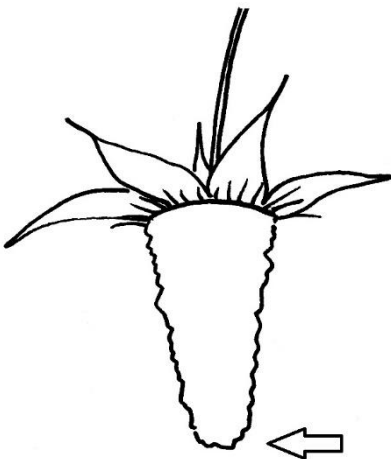
Ad. 27: Flower: diameter

The observation should be made with petals pressed into horizontal position.

Ad. 30: Fruit: shape in lateral view



Ad. 35: (Proposal not to take in) Fruit: color of torus at distal end



Ad. 38: Time of beginning of flowering on previous year's cane

The time of beginning of flowering is reached when 10% of the flowers have opened.

Ad. 39: Time of beginning of flowering on current season's cane

See Ad. 48

Ad. 40: Time of beginning of fruit ripening on previous year's cane

The time of beginning of fruit ripening is reached when the fruit is most easily removed from the torus.

Ad. 41: Time of beginning of fruit ripening on current season's cane

See Ad. 30

9. Literature

Bundessortenamt, 2006: Beschreibende Sortenliste Himbeere, Brombeere, Deutscher Landwirtschaftsverlag GmbH, Hannover, Germany.

Edin, M.; Gaillard, P.; Massardier, P., 1999: Le framboisier. Monographie Ctifl.

Leemans, J.A.; Nannenga, E.T., 1957: A Morphological Classification of Raspberry varieties. Instituut voor de veredeling van tuinbouwgewassen, Wageningen, The Netherlands.

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		
1.1.1 Botanical name	<input style="width: 90%;" type="text" value="Rubus idaeus L."/>	[]
1.1.2 Common name	<input style="width: 90%;" type="text" value="Raspberry"/>	
1.2.1 Botanical name	<input style="width: 90%;" type="text" value="Rubus occidentalis L."/>	[]
1.2.2 Common name	<input style="width: 90%;" type="text" value="Black Raspberry, Blackcap, Thimbleberry"/>	
1.3.1 Botanical name	<input style="width: 90%;" type="text" value="Rubus idaeus L. x Rubus x neglectus Peck"/>	[]
1.3.2 Common name	<input style="width: 90%;" type="text"/>	
1.4.1 Botanical name	<input style="width: 90%;" type="text" value="Rubus idaeus L. x Rubus occidentalis L."/>	[]
1.4.2 Common name	<input style="width: 90%;" type="text"/>	
1.5.1 Botanical name	<input style="width: 90%;" type="text" value="Rubus idaeus L. x Rubus parviflorus L."/>	[]
1.5.2 Common name	<input style="width: 90%;" type="text"/>	
1.6.1 Botanical name	<input style="width: 90%;" type="text" value="Hybrids with other species of Rubus L."/>	[]
1.6.2 Common name	<input style="width: 90%;" type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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2.	Applicant	
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>
3.	Proposed denomination and breeder's reference	
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []

(please state parent variety)

(.....) x (.....)

female parent male parent

(b) partially known cross []

(please state known parent variety(ies))

(.....) x (.....)

female parent male parent

(c) unknown cross []

4.1.2 Mutation []

(please state parent variety)

4.1.3 Discovery and development []

(please state where and when discovered and how developed)

4.1.4 Other []

(Please provide details)

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

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2	Method of propagating the variety	
4.2.1	Vegetative propagation	
(a)	<i>In vitro</i> propagation	[]
(b)	Rhizomes	[]
(c)	Other (state method)	[]
	<input type="text"/>	
4.2.2	Other (Please provide details)	[]
	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Dormant cane: color (2)		
brownish grey	NR 7, Schönemann	1 []
greyish brown	Meeker, Willamette	2 []
brown	Glen Ample, Tulameen	3 []
purplish brown	Radiance	4 []
brownish purple	Black Jewel, Sanibelle	5 []
5.2 Plant: number of current season's canes (4)		
very few		1 []
very few to few		2 []
few	Tulameen	3 []
few to medium	Pokusa, Qualicum	4 []
medium	Advarberimar, Fruatfri	5 []
medium to many	Grandeur, Regina	6 []
many	Pearl, Poranna Rosa	7 []
many to very many	Cascade Dawn, ma 2920	8 []
very many		9 []
5.3 Spines: presence (10)		
absent	Glen Ample, NR 7	1 []
present	Malling Promise, Regina	9 []
5.4 Current year's cane: flowers (24)		
absent	Glen Ample	1 []
present	Autumn Bliss	9 []
5.5 Fruit: shape in lateral view (30)		
circular	Black Jewel	1 []
broad conical	Autumn Bliss, Glen Ample	2 []
conical	Autumn Treasure, Maravilla	3 []
trapezoidal	Titan	4 []

Characteristics	Example Varieties	Note
5.6 Fruit: color (32)		
yellow	Golden Bliss, Sungold	1 []
orange	Valentina	2 []
light red	Qualicum, Vision	3 []
medium red	Diamond Jubilee, Pearl	4 []
dark red	Bella, BP 1	5 []
purple	Glen Coe, Royalty	6 []
blackish	Black Jewel	7 []
5.7 Time of beginning of fruit ripening on previous year's cane (40)		
very early		1 []
very early to early	ABB 122, Malling Freya	2 []
early	Advabereen, Lupita	3 []
early to medium	Adelita, Advarberimar	4 []
medium	Advabertwee, Radiance	5 []
medium to late	Mayfair, Satine	6 []
late	Grandeur, Octavia	7 []
late to very late	Lowden	8 []
very late	Augusta	9 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Fruit: firmness</i>	<i>very soft</i>	<i>firm</i>
Comments:			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes No

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes No

(If yes, please provide details)

7.3 Other information

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (<http://www.upov.int/tgp/en/>).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

Bearing type

mainly on previous year's canes in summer:

both on previous year's canes in summer
and on current season's canes in autumn:

mainly on current season's canes in autumn

Virus status

The variety is free from all known viruses as follows:
(indicate from which viruses)

The plant material is virus tested:
(indicate against which viruses)

The virus status is unknown

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

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