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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

RASPBERRY*

UPOV Code(s): RUBUS_IDA

Rubus idaeus 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-second session, to be held in Zhengzhou, China,
from 2021-07-12 to 2021-07-16

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Rubus idaeus L.	Raspberry	Framboisier	Himbeere	Frambueso, Sangüeso

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/37/7 Corr. (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 its 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 good root formation and 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:

10 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.

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 10 plants or parts of plants taken from each of 10 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 1.

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) (New) Flower: presence on current year's cane (characteristic 22)
(d) Fruit: color (characteristic 33)
(e) Time of beginning of flowering on current season’s cane (characteristic 41)
(f) Time of beginning of fruit ripening on previous year’s cane (characteristic 42)

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 8.1

6 Not applicable

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**	**(+)**				
		Plant: habit					
		upright				Ontario, Watson	1
		semi-upright				Autumn Bliss, Preußen, Schönemann	2
		arching				Joan Squire, Malling Joy, Meeker	3
2.	**(*)**	**QN MG/VG**	**(+)**				
		Plant: number of current season's canes					
		very few					1
		very few to few					2
		few				Rubaca, Rucami	3
		few to medium					4
		medium				Glen Ample, Multiraspa, Rumiloba	5
		medium to many					6
		many				Glen Clova, Skeena	7
		many to very many					8
		very many					9
3.	**(*)**	**QN VG**					
		Very young shoot: anthocyanin coloration of apex during rapid growth					
		absent or very weak				Gelbe Antwerpener	1
		very weak to weak					2
		weak				Rumiloba, Rusilva	3
		weak to medium					4
		medium				Cola 1, Rucami, Veten	5
		medium to strong					6
		strong				Malling Joy, Rubaca	7
		strong to very strong					8
		very strong					9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	**QN** **VG**					
	Current season's cane: bloom					
	absent or very weak				Heritage, Willamette	1
	very weak to weak					2
	weak				Malling Promise, Zefa 2	3
	weak to medium					4
	medium				Malling Delight	5
	medium to strong					6
	strong				Glen Ample, September	7
	strong to very strong					8
	very strong				Ontario	9
5.	**QN** **VG**					
	Current season's cane: anthocyanin coloration					
	absent or very weak				Chiliwak, Golden Bliss	1
	very weak to weak					2
	weak				Malling Leo, Tulameen	3
	weak to medium					4
	medium				Malling Orion	5
	medium to strong					6
	strong				Rode Radboud, Rubaca	7
	strong to very strong					8
	very strong					9
6.	**QN** **MG/VG**					
	Current season's cane: length of internode					
	very short					1
	very short to short					2
	short				Zefa 3	3
	short to medium					4
	medium				Rusilva, Zefa 2	5
	medium to long					6
	long				Caliber, Malling Joy	7
	long to very long					8
	very long					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.		**QN MG/VG**	**(+)**				
		Current season's cane: length of vegetative bud					
		very short					1
		short				Wilkran	2
		medium				Veten	3
		long				Baronne de Wavre, Phyllis King	4
		very long					5
8.	**(*)**	**QN MG/VG**					
		Cane: length					
		very short					1
		very short to short					2
		short				Loganlike	3
		short to medium					4
		medium				Zefa 2	5
		medium to long					6
		long				Meeker, Schönemann	7
		long to very long					8
		very long					9
9.	**(*)**	**PQ VG**	**(+)**				
		Dormant cane: color					
		brownish grey				Malling Leo, Schönemann	1
		greyish brown				Malling Orion	2
		brown				Caliber, Glen Clova	3
		purplish brown				Festival , Malling Landmark	4
		brownish purple				Royalty, Titan	5
10	**(*)**	**QL VG**					
		Spines: presence					
		absent				Glen Moy	1
		present				Malling Promise	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11	**(*)**	**QN** **VG**					
		<u>Varieties with spines present only</u>: Spines: density					
		very sparse					1
		very sparse to sparse					2
		sparse				Malling Orion, Rafzmach, Spica	3
		sparse to medium					4
		medium				Multiraspa, Zefa 2	5
		medium to dense					6
		dense				Autumn Bliss, Malling Exploit	7
		dense to very dense					8
		very dense					9
12		**QN** **VG**					
		<u>Varieties with spines present only</u>: Spines: size of base					
		very small				Reveille	1
		very small to small					2
		small				Pujallup, Resa	3
		small to medium					4
		medium				Gevalo, Malling Exploit	5
		medium to large					6
		large				Autumn Bliss, Köstliche Selita	7
		large to very large					8
		very large				Malling Landmark, Matterhorn	9
13		**QN** **MG/VG**					
		<u>Varieties with spines present only</u>: Spines: length					
		very short					1
		short				Gigant, Malling Delight, Veten	2
		medium				Malling Leo	3
		long				Malling Exploit, Meeker	4
		very long					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14		**PQ** **VG**					
		<u>Varieties with spines present only</u>: Spines: color					
		green				Golden Bliss, Malling Delight	1
		brownish green				Malling Landmark	2
		greenish brown				Rode Radboud, Watson	3
		brown				Malling Orion, Spica	4
		purplish brown				Malling Leo, Pujallup	5
		brownish purple				Resa, Tulameen	6
		purple				Sirius, Veten, Zefa 3	7
15	**(*)**	**QN** **VG**					
		Leaf: green color of upper side					
		very light					1
		light				Skeena, Watson	2
		medium				Malling Orion	3
		dark				Malling Landmark, Resa, Rubaca	4
		very dark					5
16	**(*)**	**PQ** **VG**					
		Leaf: predominant number of leaflets					
		three				Veten, Zefa 3	1
		equally three and five				Malling Exploit, Multiraspa, Sirius	2
		five				Ontario, Pujallup, Rusilva	3
17		**QN** **VG**					
		Leaf: profile of leaflets in cross section					
		concave				Glen Clova, Glen Moy	1
		straight				Gevalo	2
		convex				Gigant	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18	**(*)**	**QN** **VG**					
		Leaf: rugosity					
		very weak				Heritage, Watson	1
		weak				Rusilva	2
		medium				Caliber, Malling Landmark, Pujallup	3
		strong				Malling Exploit, Spica	4
		very strong				Korbfüller	5
19		**QN** **VG**	**(+)**				
		Leaf: relative position of lateral leaflets					
		free				Willamette	1
		touching				Malling Orion	2
		overlapping				Gigant, Resa, Rumiloba	3
20		**QN** **MG/VG**					
		Terminal leaflet: length					
		very short					1
		very short to short					2
		short				Royalty	3
		short to medium					4
		medium				Norfolk Giant, Wilkran	5
		medium to long					6
		long				Malling Joy	7
		long to very long					8
		very long					9
21		**QN** **MG/VG**					
		Terminal leaflet: width					
		very narrow					1
		very narrow to narrow					2
		narrow				Rusilva	3
		narrow to medium					4
		medium				Zefa 2	5
		medium to broad					6
		broad				Glen Ample	7
		broad to very broad					8
		very broad					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22	**(*)**	**QL** **VG**					
		(New) Flower: presence on current year's cane					
		absent					1
		present					9
23		**QN** **MG/VG**					
		Pedicel: number of spines					
		absent or very few				Glen Ample	1
		very few to few					2
		few				Multiraspa, Pechts Gigant	3
		few to medium					4
		medium				Glen Clova, Malling Leo	5
		medium to many					6
		many				Malling Joy, Orange Marie	7
		many to very many					8
		very many				Ariadne, Golden Bliss	9
24	**(*)**	**QN** **VG**					
		Peduncle: anthocyanin coloration					
		absent or very weak				Golden Bliss, Julia, Rumilo	1
		very weak to weak					2
		weak				Joan Squire, Malling Delight	3
		weak to medium					4
		medium				Gevalo, Pujallup	5
		medium to strong					6
		strong				Loganlike, Willamette	7
		strong to very strong					8
		very strong				Rafzmach	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25		**QN** **MG/VG**					
		Flower: size					
		very small					1
		very small to small					2
		small				Ontario	3
		small to medium					4
		medium				Rucami, Spica	5
		medium to large					6
		large				Gevalo, Isabel	7
		large to very large					8
		very large					9
26		**QN** **VG**					
		<u>Varieties which fruit on previous year's cane in summer</u>: Fruiting lateral: attitude					
		erect				Malling Landmark, Ontario	1
		semi-erect				Schönemann	2
		horizontal to drooping				Rucami	3
27	**(*)**	**QN** **MG/VG**					
		<u>Varieties which fruit on previous year's cane in summer</u>: Fruiting lateral: length					
		very short				Galante, Glen Moy	1
		very short to short					2
		short				Multiraspa, Rafzmach	3
		short to medium					4
		medium				Gradina, Tulameen	5
		medium to long					6
		long				Meeker	7
		long to very long					8
		very long				Malling Joy, Malling Leo	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28	**(*)**	**QN MG/VG**					
		Fruit: length					
		very short					1
		very short to short					2
		short				Malling Promise, Ontario	3
		short to medium					4
		medium				Rafzmach	5
		medium to long					6
		long				Malling Delight	7
		long to very long					8
		very long					9
29	**(*)**	**QN MG/VG**					
		Fruit: width					
		very narrow					1
		very narrow to narrow					2
		narrow				Haida	3
		narrow to medium					4
		medium				Meeker, Schönemann	5
		medium to broad					6
		broad				Glen Ample	7
		broad to very broad					8
		very broad					9
30	**(*)**	**QN MG/VG**					
		Fruit: ratio length/ width					
		very small					1
		very small to small					2
		small				Caliber, Zefa 2	3
		small to medium					4
		medium				Glen Clova , Rafzeter	5
		medium to large					6
		large				Malling Delight, Tulameen	7
		large to very large					8
		very large					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31	**(*)**	**PQ VG**	**(+)**				
		Fruit: general shape in lateral view					
		circular				Malling Landmark, Ontario	1
		broad conical				Malling Orion, Meeker	2
		conical				Annamaria, Rafzmach	3
		trapezoidal				Gradina	4
32		**QN VG**					
		Fruit: size of single drupe					
		very small					1
		small				Malling Admiral, Polana	2
		medium				Autumn Bliss, Malling Orion	3
		large				Dinkum, Festival , Rafzeter	4
		very large					5
33	**(*)**	**PQ VG**					
		Fruit: color					
		yellow				Gelbe Antwerpener, Golden Bliss	1
		orange				Orange Marie	2
		light red				Malling Delight	3
		medium red				Glen Clova, Malling Orion	4
		dark red				Gigant, Schönemann, Zefa 2	5
		purple				Royalty	6
		dark purple				Deep Purple	7
34		**QN VG**					
		Fruit: glossiness					
		very weak					1
		weak				Gigant, Rumilo	2
		medium				Comox	3
		strong				Rafzmach, Tulameen	4
		very strong				Resa	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35	**(*)**	**QN** **MG/VG**					
		Fruit: firmness					
		very soft				Caliber, Malling Delight	1
		soft				Gigant, Malling Landmark	2
		medium				Glen Clova, Malling Promise	3
		firm				Tulameen	4
		very firm				Glen Prosen	5
36		**PQ** **VG**					
		Fruit: color of torus at distal end					
		greenish				NR 7	1
		whitish					2
		yellowish white				Drisraspthirteen	3
		orange reddish				Drisraspsix	4
37	**(*)**	**PQ** **VG**					
		Fruit: main bearing type					
		only on previous year's cane in summer				Malling Promise	1
		both on previous year's cane in summer and on current year's cane in autumn				Isabel	2
		only on current year's cane in autumn				Autumn Bliss	3
38	**(*)**	**QN** **MG/VG**					
		Time of vegetative bud burst					
		very early					1
		ver early to early					2
		early				Glen Moy, Malling Promise	3
		early to medium					4
		medium				Delmes, Glen Clova	5
		medium to late					6
		late				Malling Orion, Multiraspa	7
		late to very late					8
		very late				Malling Joy	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39	**(*)**	**QN MG/VG**					
		Time of cane emergence					
		very early					1
		very early to early					2
		early				Polana	3
		early to medium					4
		medium				Autumn Bliss	5
		medium to late					6
		late				Watson	7
		late to very late					8
		very late					9
40	**(*)**	**QN MG/VG**	**(+)**				
		Time of beginning of flowering on previous year's cane					
		very early				Glen Moy, Rafzmach	1
		very early to early					2
		early				Gevalo, Willamette	3
		early to medium					4
		medium				Rumiloba, Skeena	5
		medium to late					6
		late				Glen Prosen	7
		late to very late					8
		very late				Malling Joy, Malling Leo	9
41	**(*)**	**QN MG/VG**	**(+)**				
		Time of beginning of flowering on current season's cane					
		very early				Ariadne	1
		very early to early					2
		early				Autumn Bliss	3
		early to medium					4
		medium				Orange Marie	5
		medium to late					6
		late				Watson	7
		late to very late					8
		very late				September	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42	**(*)**	**QN MG/VG**	**(+)**				
		Time of beginning of fruit ripening on previous year's cane					
		very early				Vene	1
		very early to early					2
		early				Glen Clova, Glen Moy, Rafzmach	3
		early to medium					4
		medium				Rusilva, Willamette	5
		medium to late					6
		late				Malling Landmark, Schönemann	7
		late to very late					8
		very late					9
43	**(*)**	**QN MG/VG**	**(+)**				
		Time of beginning of fruit ripening on current year's cane					
		very early				Ariadne	1
		very early to early					2
		early				Polana	3
		early to medium					4
		medium				Orange Marie, Watson	5
		medium to late					6
		late				Korbfüller	7
		late to very late					8
		very late				Baronne de Wavre	9

8.1 Explanations for individual characteristics

Ad. 1: Plant: habit

1
upright

2
semi-upright

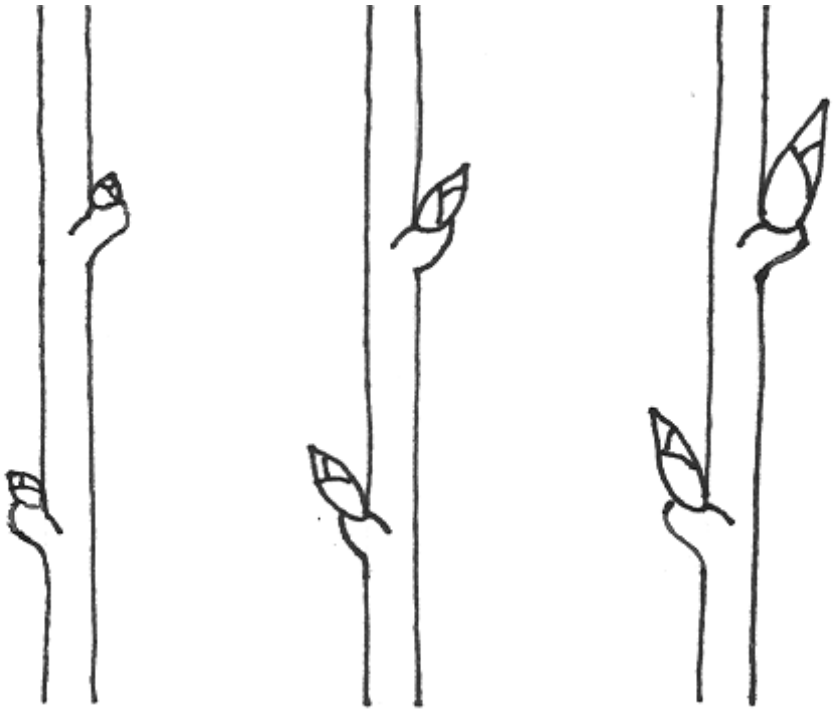
3
arching

Ad. 2: Plant: number of current season's canes

The number of current season's canes should be considered as the number per meter length of the row before thinning, for the first time observed in the beginning of the second year.

Ad. 7: Current season's cane: length of vegetative bud

Observations on the vegetative bud should be made in the middle third of the cane.



2
short

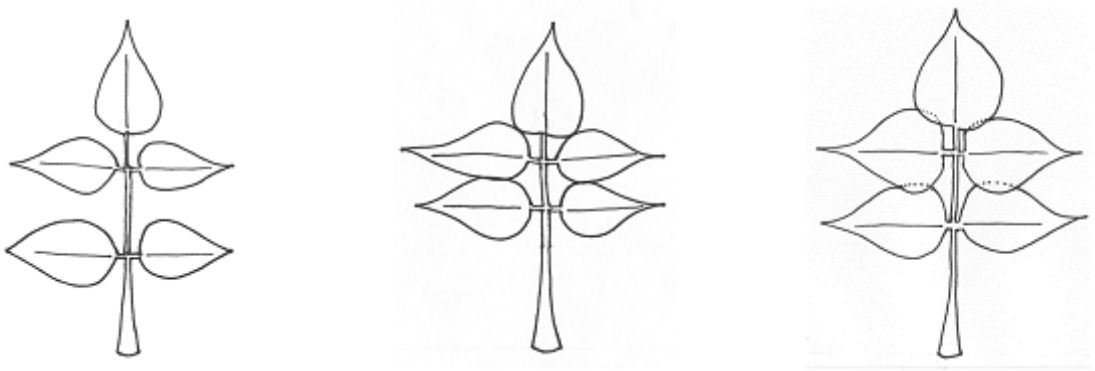
3
medium

4
long

Ad. 9: Dormant cane: color

If the canes peel, the dominant color should be the color of the bark in an unpeeled area.

Ad. 19: Leaf: relative position of lateral leaflets



1
free

2
touching

3
overlapping

Ad. 31: Fruit: general shape in lateral view

1
circular

2
broad conical

3
conical

4
trapezoidal

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

The time of beginning of flowering should be considered as the time when 10% of the flowers have opened.

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

See Ad. 41

Ad. 42: Time of beginning of fruit ripening on previous year's cane

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

Ad. 43: Time of beginning of fruit ripening on current year's cane

See Ad. 42

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

(a) Very young shoot: Observations on the very young shoot should be made when the shoots are about 15 cm long.

(b) Current season’s cane: Observations on the current season’s cane should be made when the cane is about 1 m to 1.50 m long. For summer bearing varieties, these observations should be made just after harvest, for autumn bearing ones just before or at harvest. The bloom of the current season’s cane should only be observed when fully grown.

(c) Spine: Observations on spines should be made in the middle third of the current season’s cane, when the cane is about 1 m to 1.50 m long.

(d) Leaf: Observations on the leaf should be made on fully developed leaves from the middle third of the current season's cane.

(e) Fruit: Observations on the fruit should be made on fruit picked during the second and third harvest.

(f) Flower and fruit: Observations on the flower and the fruit should be recorded from the summer harvest at the fruiting laterals only, except for varieties whose main fruiting is on the current year’s cane in autumn. For these varieties, observations should be made during the autumn fruiting period.

9. Literature

Bordeianu, T.; Constantinescu, N.; Stefan, N., 1968: “Pomologia, Bd. VII”, Editura Academiei Republicii Socialiste Romania, Bukarest, Romania.

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

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	*Rubus idaeus* L.
1.2	Common name	Raspberry

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) *In vitro* propagation [ ]
(b) Rhizomes [ ]
(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 (2)	**Plant: number of current season's canes**		
	very few		1 [ ]
	very few to few		2 [ ]
	few	Rubaca, Rucami	3 [ ]
	few to medium		4 [ ]
	medium	Glen Ample, Multiraspa, Rumiloba	5 [ ]
	medium to many		6 [ ]
	many	Glen Clova, Skeena	7 [ ]
	many to very many		8 [ ]
	very many		9 [ ]
5.2 (9)	**Dormant cane: color**		
	brownish grey	Malling Leo, Schönemann	1 [ ]
	greyish brown	Malling Orion	2 [ ]
	brown	Caliber, Glen Clova	3 [ ]
	purplish brown	Festival , Malling Landmark	4 [ ]
	brownish purple	Royalty, Titan	5 [ ]
5.3 (10)	**Spines: presence**		
	absent	Glen Moy	1 [ ]
	present	Malling Promise	9 [ ]
5.4 (22)	**(New) Flower: presence on current year's cane**		
	absent		1 [ ]
	present		9 [ ]

	Characteristics	Example Varieties	Note
5.5 (30)	**Fruit: ratio length/ width**		
	very small		1 [ ]
	very small to small		2 [ ]
	small	Caliber, Zefa 2	3 [ ]
	small to medium		4 [ ]
	medium	Glen Clova , Rafzeter	5 [ ]
	medium to large		6 [ ]
	large	Malling Delight, Tulameen	7 [ ]
	large to very large		8 [ ]
	very large		9 [ ]
5.6 (31)	**Fruit: general shape in lateral view**		
	circular	Malling Landmark, Ontario	1 [ ]
	broad conical	Malling Orion, Meeker	2 [ ]
	conical	Annamaria, Rafzmach	3 [ ]
	trapezoidal	Gradina	4 [ ]
5.7 (33)	**Fruit: color**		
	yellow	Gelbe Antwerpener, Golden Bliss	1 [ ]
	orange	Orange Marie	2 [ ]
	light red	Malling Delight	3 [ ]
	medium red	Glen Clova , Malling Orion	4 [ ]
	dark red	Gigant, Schönemann, Zefa 2	5 [ ]
	purple	Royalty	6 [ ]
	dark purple	Deep Purple	7 [ ]
5.8 (37)	**(Delete from ToC and move to TQ) Fruit: main bearing type**		
	only on previous year's cane in summer	Malling Promise	1 [ ]
	both on previous year's cane in summer and on current year's cane in autumn	Isabel	2 [ ]
	only on current year's cane in autumn	Autumn Bliss	3 [ ]

	Characteristics	Example Varieties	Note
5.9 (42)	**Time of beginning of fruit ripening on previous year's cane**		
	very early	Vene	1 [ ]
	very early to early		2 [ ]
	early	Glen Clova, Glen Moy, Rafzmach	3 [ ]
	early to medium		4 [ ]
	medium	Rusilva, Willamette	5 [ ]
	medium to late		6 [ ]
	late	Malling Landmark, Schönemann	7 [ ]
	late to very late		8 [ ]
	very late		9 [ ]

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			

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.]

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:

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]