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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR FRUIT CROPS

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DRAFT TEST GUIDELINES FOR RASPBERRY
(*Rubus idaeus* L.)

Document prepared by experts from Germany

The attached document TG/43/7(proj.1) already incorporates the standard wording of document TGP/7.2, which was adopted by the Technical Committee at its thirty-eighth session in April 2002, and includes some additional standard wording from document TGP/7.1 Draft 1, also agreed at that session.

[Document TG/43/7(proj.1) follows]

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GENEVA

RASPBERRY*

(*Rubus idaeus* L.)*

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Latin	English	French	German	Spanish
Rubus idaeus L.	Raspberry	Framboisier	Himbeere	Frambueso

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Guidelines

These Test Guidelines apply to all varieties of *Rubus idaeus* L. and their hybrids as far as they are morphologically similar to *Rubus idaeus* L.

2. Material Required

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

2.2 The material is to be supplied in the form of plants.

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. The plants supplied should have good root formation, with a satisfactory number of adventitious buds on the roots. If they have been produced by *in vitro* propagation this fact has to be stated by the applicant.

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 Duration of Tests

The minimum duration of tests should normally be two independent growing cycles.

3.2 Testing Place

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

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 Information for conducting the examination of particular characteristics.

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

a Very young shoot: The number of very young shoots 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. All observations on the very young shoot should be made when the shoots are about 15 cm long.

b Current season's cane: All 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 Canes: All characteristics of the canes should be observed when the canes are dormant. If the canes peel, the dominant color should be the color of the bark in an unpeeled area. All observations on the vegetative bud should be made in the middle third of the cane.

d Spine: All 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.

e Leaf: All observations on the leaf should be made on fully developed leaves from the middle third of the shoot.

f Fruit: Unless otherwise stated all observations on the fruit should be made on fruit picked during the second and third harvest.

g Flower/fruit/length of the fruiting period: All observations on the flower and the fruit, as well as the length of the fruiting period, should be recorded from the summer harvest 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.

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. In particular, the plants must produce a satisfactory crop of fruit in each of the two growing cycles.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations determined by measuring or counting should be made on 10 plants or one part taken from each of 10 plants. All observations on the fruit should be made on a minimum of 10 typical fruits, one from each of 10 plants.

3.6 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 minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

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.

4.2 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.

4.2.2 The acceptable number of off-types tolerated in a sample size of 10 plants is 1 on the basis of a population standard of 1% and an acceptance probability of 95%.

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 tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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 is 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 (characteristic 3)

(b) Spines: presence (characteristic 11)

(c) Fruit: main bearing type (characteristic 37)

(d) Only varieties whose main fruiting is on previous year's cane in summer:
Time of beginning of fruit ripening on previous year's canes (characteristic 41a)
or
Only varieties whose main fruiting is on the current season's cane in autumn:
Time of beginning of fruit ripening on current year's canes (characteristic 41b).

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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

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.

6.3 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

(*) Asterisked characteristic – see Section 6.1.2

(QL) Qualitative characteristic – see Section 6.3
(QN) Quantitative characteristic – see Section 6.3
(PQ) Pseudo-Qualitative characteristic – see Section 6.3

(+) See Explanations on the Table of Characteristics in Chapter 8.

a to g Method of Examination - see Section 3.3.1

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

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.		**Plant: habit**		**Pflanze: Wuchs**			
(+)							
		upright		aufrecht		Ontario, Watson	1
		semi-upright		halbaufrecht		Preußen, Schönemann, Autumn Bliss	2
		arching		hängend		Meeker, Malling Joy, Joan Squire	3
2. **(*)**		**Plant: number of current season's shoots**		**Pflanze: Anzahl diesjähriger Ruten**			
		few		wenig		Rubaca, Rucami	3
		medium		mittel		Multiraspa, Glen Ample, Rumiloba	5
		many		viele		Glen Clova, Skeena	7
		very many		sehr viele		Sumner	9
3. **(*)**		**Very young shoot: anthocyanin coloration of apex**		**Sehr junger Trieb: Anthocyanfärbung der Spitze**			
	a	absent		fehlend		Gelbe Antwerpener	1
		present		vorhanden		Malling Promise	9
4. **(*)**		**Very young shoot: intesity of anthocyanin coloration (below apex)**		**Sehr junger Trieb: Intensität der Anthocyanfärbung (unterhalb der Spitze)**			
	a	weak		gering		Rusilva, Rumiloba	3
		medium		mittel		Veten, Rucami, Cola 1	5
		strong		stark		Malling Joy, Rubaca	7

° MoE = Method of Examination

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.		**Current season's cane: intensity of bloom**		**Diesjährige Rute: Intensität der Bereifung**			
	b	absent or very weak		fehlend oder sehr gering		Heritage, Willamette	1
		weak		gering		Malling Promise, Zefa 2	3
		medium		mittel		Malling Delight	5
		strong		stark		September, Glen Ample	7
		very strong		sehr stark		Ontario	9
6.		**Current season's cane: intesity of anthocyanin coloration**		**Diesjährige Rute: Intensität der Anthocyanfärbung**			
	b	absent or very weak		fehlend oder sehr gering		Chiliwak, Golden Bliss	1
		weak		gering		Tulameen, Malling Leo	3
		medium		mittel		Malling Orion	5
		strong		stark		Rubaca, Rode Radboud	7
7.		**Current season's cane: length of internode**		**Diesjährige Rute: Internodienlänge**			
	b	short		kurz		Gevalo, Sirius, Baronne de Wavre	3
		medium		mittel		Schönemann, Preußen	5
		long		lang		Caliber, Malling Joy	7
8.		**Current season's cane: length of vegetative bud**		**Diesjährige Rute: Länge der vegetativen Knospe**			
(+)	**b**	short		kurz		Wilkran	3
		medium		mittel		Malling Admiral	5
		long		lang		Phyllis King, Baronne de Wavre	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9a. **(*)**		**Only varieties whose main fruiting is on previous year's cane in summer:** **Dormant cane: length**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen:** **Winterrute: Länge**			
	c	short		kurz		Loganlike	3
		medium		mittel		Zefa 2	5
		long		lang		Meeker, Schönemann	7
9b. **(*)**		**Only varieties whose main fruiting is on current season's cane in autumn:** **Current season's cane: length**		**Nur Sorten, die ihre Haupternte an der Jahresrute im Herbst erbringen:** **Jahresrute: Länge**			
	c	short		kurz		Orange Marie	3
		medium		mittel		Dinkum	5
		long		lang		Watson	7
10. **(*)**		**Only varieties whose main fruiting is on previous year's cane in summer:** **Dormant cane: color**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen:** **Winterrute: Farbe**			
	c	brownish grey		bräunlichgrau		Malling Leo, Schönemann	1
		greyish brown		graubraun		Willamette	2
		brown		braun		Caliber, Rusilva	3
		purplish brown		purpurbraun		Festival, Malling, Landmark	4
		brownish purple		bräunlichpurpur		**Royalty, Titan**	5
11. **(*)**		**Spines: presence**		**Stacheln: Vorhandensein**			
	d	absent		fehlend		Glen Moy	1
		present		vorhanden		Malling Promise	9

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12. **(*)**		**(If present:) Spines: density**		**(Wenn vorhanden:) Stacheln: Dichte**			
	d	sparse		locker		Spica, Malling Orion, Rafzmach	3
		medium		mittel		Multiraspa, Zefa 2	5
		dense		dicht		Malling Exploit, Autumn Bliss	7
13.		**(If present:) Spine: size of base**		**(Wenn vorhanden:) Stachel: Größe der Basis**			
	d	very small		sehr klein		Reveille	1
		small		klein		Pujallup, Resa	3
		medium		mittel		Malling Exploit, Gevalo	5
		large		groß		Köstliche Selita, Autumn Bliss	7
		very large		sehr groß		Malling Landmark, Matterhorn	9
14.		**(If present:) Spine: length**		**(Wenn vorhanden:) Stachel: Länge**			
	d	short		kurz		Veten, Malling Delight, Rucami	3
		medium		mittel		Malling Leo	5
		long		lang		Malling Exploit, Meeker	7

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.		**(If present:) Spine: color**		**(Wenn vorhanden:) Stachel: Farbe**			
	d	green		grün		Golden Bliss, Malling Delight	1
		brownish green		bräunlichgrün		Malling Landmark	2
		greenish brown		grünlichbraun		Watson	3
		brown		braun		Malling Orion, Spica	4
		purplish brown		purpurbraun		Malling Leo, Pujallup	5
		brownish purple		bräunlichpurpur		Resa, Tulameen	6
		purple		purpur		Zefa 3, Pechts Herbstfreude, Veten	7
16. (*)		**Leaf: green color of upper side**		**Blatt: Grünfärbung der Oberseite**			
	e	light		hell		Watson, Skeena	3
		medium		mittel		Malling Orion	5
		dark		dunkel		Malling Landmark, Rubaca, Resa	7
17. (*)		**Leaf: predominant number of leaflets**		**Blatt: vorwiegende Anzahl Fiederblätter**			
	e	three		drei		Zefa 3, Veten	1
		eaqually three and five		gleichenteils drei und fünf		Sirius, Multiraspa, Malling Exploit	2
		five		fünf		Ontario, Pujallup, Rusilva	3
18.		**Leaf: profile of leaflets in cross section**		**Blatt: Profil der Fiederblättchen im Querschnitt**			
	e	concave		konkav		Glen Moy, Glen Clova	1
		straight		eben		Gevalo	2
		convex		konvex		Gigant	3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. **(*)**		**Leaf: blistering between veins**		**Blatt: Faltung zwischen den Nebenadern**			
	e	very weak		sehr gering		Heritage, Watson	1
		weak		gering		Rusilva	3
		medium		mittel		Caliber, Malling Landmark, Pujallup	5
		strong		stark		Spica, Malling Exploit	7
		very strong		sehr stark		Korbfüller	9
		To check the wording: "blistering", or better "rugosity"?					
20. **(+)**		**Leaf: relative position of lateral leaflets**		**Blatt: Relative Stellung der seitlichen Fiederblättchen**			
	e	free		freistehend		Willamette	1
		touching		einander berührend		Malling Orion	2
		overlapping		überlappend		Gigant, Rumiloba, Resa	3
21.		**Terminal leaflet: length**		**Endfieder: Länge**			
		short		kurz		Royalty	3
		medium		mittel		Norfolk Giant, Wilkran	5
		long		lang		Malling Joy	7
22.		**Pedicel: number of spines**		**Blütenstiel: Anzahl Stacheln**			
		absent or very vew		fehlend oder sehr gering		Glen Ample	1
		vew		gering		Multiraspa, Pechts Gigant	3
		medium		mittel		Glen Clova, Malling Leo	5
		many		hoch		Malling Joy, Orange Marie	7
		very many		sehr hoch		Ariadne	9

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. **(*)**		**Pedicel: presence of anthocyanin coloration**		**Blütenstiel: Vorhandensein von Anthocyanfärbung**			
		absent		fehlend		Gelbe Antwerpener	1
		present		vorhanden		Willamette	9
24. **(*)**		**Pedicel: intensity of anthocyanin coloration (if present)**		**Blütenstiel: Intensität der Anthocyanfärbung (wenn vorhanden)**			
		very weak		sehr gering		Schönemann, Rumilo	1
		weak		gering		Joan Squire, Malling Delight	3
		medium		mittel		Gevalo, Pujallup	5
		strong		stark		Willamette, Loganlike	7
		very strong		sehr stark		Rafzmach	9
25.		**Flower: size**		**Blüte: Größe**			
	f	small		klein		Ontario	3
	g	medium		mittel		Spica, Rucami	5
		large		groß		Schönemann, Gevalo	7
26.		**Only varieties whose main fruiting is on the previous year's cane in summer: Fruiting lateral: attitude**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen: Fruchtender Trieb: Haltung**			
		erect		aufrecht		Malling Landmark, Ontario	1
		semi-erect		halbaufrecht		Schönemann	2
		spreading		breitwüchsig		Rucami	3

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
27. **(*)**		**Only varieties whose main fruiting is on the previous year's cane in summer:** **Fruiting lateral: length**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen:** **Fruchtender Trieb: Länge**			
		very short		sehr kurz		Glen Moy, Galante	1
		short		kurz		Rafzmach, Malling Orion	3
		medium		mittel		Tulameen, Gradina	5
		long		lang		Meeker	7
		very long		sehr lang		Malling Joy, Malling Leo	9
28. **(*)**		**Fruit: length**		**Frucht: Länge**			
	f	short		kurz		Ontario	3
	g	medium		mittel		**Rafzmach**	5
		long		lang		**Malling Delight**	7
29. **(*)**		**Fruit: width**		**Frucht: Breite**			
	f	narrow		schmal		Haida	3
	g	medium		mittel		**Schönemann**	5
		broad		breit		**Glen Ample**	7
30. **(*)**		**Fruit: ratio length/ width**		**Frucht: Verhältnis Länge/Breite**			
	f	small		klein		Caliber, Zefa 2	3
	g	medium		mittel		**Glen Clova**	5
		large		breit		**Malling Delight, Tulameen**	7

DE: To check whether the wording for the states of expression should be kept as they are, or better changed back to the one of TG/43/11 (1986): 1 - as long as broad (Zefa 2, to add: Caliber), 2 – longer than broad (Glen Clova), 3 – much longer than broad (Malling Delight, to add: Tulameen). If so, it should be considered whether char. 28 and 29 should be kept, or deleted.

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. **(*)** **(+)**		**Fruit: general shape in lateral view**		**Frucht: allgemeine Form in der Seitenansicht**			
	f	circular		rund		Malling Landmark, Ontario	1
	g	cordate		herzförmig		Malling Orion, Meeker	2
		conical		konisch		Annamaria, Rafzmach	3
		almost rectangular		fast rechteckig		Gradina	4
PL: To have the states 1 - circular (example varieties: Marlboro, Latham, September), 2 - trapezoidal (Malling Jewel, Stuttgart, Rubin) and 3 - conical (Malling Seedling, Malling Promise, Canby, Lloyd George)							
32.		**Fruit: size of single drupe**		**Frucht: Größe der Einzelsteinfrucht**			
	f	small		klein		Malling Admiral, Polana	3
	g	medium		mittel		Autumn Bliss, Malling Orionn	5
		large		groß		Festival, Dinkum, Rafzeter	7
33.		**Fruit: color**		**Frucht: Farbe**			
	f	yellow		gelb		Gelbe Antwerpener, Golden Bliss	1
	g	orange		orange		Orange Marie	2
		light red		hellrot		Malling Delight	3
		medium red		mittelrot		Glen Clova, Malling Orion	4
		dark red		dunkelrot		Gigant, Schönemann, Zefa 2	5
		purple		purpur		Royalty	6
		black purple		schwarzpurpur		Deep Purple	7
34.		**Fruit: glossiness**		**Frucht: Glanz**			
	f	weak		gering		Gigant, Rumilo	3
	g	medium		mittel		Comox	5
		strong		stark		Tulameen, Rafzmach	7
		very strong		sehr stark		Resa	9

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35. **(*)**		**Fruit: firmness**		**Frucht: Festigkeit**			
	f	very soft		sehr weich		Malling Delight, Caliber	1
	g	soft		weich		Malling Landmark, Gigant	3
		medium		mittel		Malling Promise, Glen Clova	5
		firm		fest		Tulameen	7
		very firm		sehr fest		Glen Prosen	9
36.		**Fruit: adherence to plug**		**Frucht: Haften am Zapfen**			
	f	very weak		sehr gering		Nootka	1
	g	weak		gering		Rumilo, Zefa 2	3
		medium		mittel		Glen Clova, Meeker	5
		strong		stark		Malling Delight	7
		very strong		sehr stark		Jochems Roem, September	9
37. **(*)**		**Fruit: main bearing type**		**Frucht: Haupternte**			
	f	on previous year's cane in summer		an der Vorjahresrute im Sommer		Malling Promise	1
	g	on current year's cane in autumn		an der Jahresrute im Herbst		Autumn Bliss	2
38. **(*)**		**<u>Only varieties whose main fruiting is on previous year's cane in summer:</u> Plant: time of vegetative bud burst**		**<u>Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen:</u> Pflanze: Zeitpunkt des Aufbruchs der vegetativen Knospe**			
		early		früh		Glen Moy, Malling Promise	3
		medium		mittel		Glen Clova	5
		late		spät		Malling Orion, Multiraspa	7
		very late		sehr spät		Malling Joy	9

	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39. **(*)**		**Only varieties whose main fruiting is on current year's cane in autumn: Time of cane emergence**		**Nur Sorten, die ihre Haupternte an der Jahresrute im Herbst erbringen: Beginn des Triebwachstums**			
		early		früh		Polana	3
		medium		mittel		Autumn Bliss	5
		late		spät		Watson	7
40a. **(*)** **(+)**		**Only varieties whose main fruiting is on previous year's cane in summer: Time of beginning of flowering on previous year's cane**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen: Zeitpunkt des Blühbeginns an Vorjahresruten**			
		very early		sehr früh		Glen Moy, Rafzmach	1
		early		früh		Willamette, Gevalo	3
		medium		mittel		Skeena, Rumiloba	5
		late		spät		Glen Prosen	7
		very late		sehr spät		Malling Leo, Malling Joy	9
40b. **(*)** **(+)**		**Only varieties whose main fruiting is on the current season's cane in autumn: Time of beginning of flowering on current season's cane**		**Nur Sorten, die ihre Haupternte an der Jahresrute im Herbst erbringen: Zeitpunkt des Blühbeginns an der Jahresrute**			
		very early		sehr früh		Ariadne	1
		early		früh		Autumn Bliss	3
		medium		mittel		Orange Marie	5
		late		spät		Watson	7
		very late		sehr spät		September	9

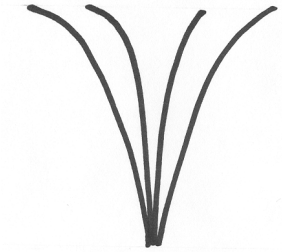
	MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
41a. **(*)** **(+)**		**Only varieties whose main fruiting is on previous year's cane in summer: Time of beginning of fruit ripening on previous year's canes**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen: Zeitpunkt des Beginns der Fruchtreife an Vorjahresruten**			
		very early		sehr früh			1
		early		früh		Glen Clova, Glen Moy, Rafzmach	3
		medium		mittel		Rusilva, Willamette	5
		late		spät		Malling Landmark, Schönemann	7
		very late		sehr spät		Malling Leo	9
41b. **(*)** **(+)**		**Only varieties whose main fruiting is on the current season's cane in autumn:Time of beginning of fruit ripening on current year's canes**		**Nur Sorten, die ihre Haupternte an der Jahresrute im Herbst erbringen: Zeitpunkt des Beginns der Fruchtreife an Jahresruten**			
		very early		sehr früh		Ariadne	1
		early		früh		Polana	3
		medium		mittel		Orange Marie, Watson	5
		late		spät		Korbfüller	7
		very late		sehr spät		Baronne de Wavre	9
42a.		**Only varieties whose main fruiting is on previous year's cane in summer: Length of fruiting period on previous year's canes**		**Nur Sorten, die ihre Haupternte an der Vorjahresrute im Sommer erbringen: Dauer der Ernteperiode an Vorjahresruten**			
	g	short		kurz		Glen Moy	3
		medium		mittel		Glen Clova	5
		long		lang		Schönemann	7

	MoE°	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42b.		**Only varieties whose main fruiting is on the current season's cane in autumn: Length of fruiting period on current year's canes**		**Nur Sorten, die ihre Haupternte an der Jahresrute im Herbst erbringen: Dauer der Ernteperiode an Jahresruten**			
	g	short		kurz		Zefa 3	3
		medium		mittel		Heritage	5
		long		lang		Korbfüller	7

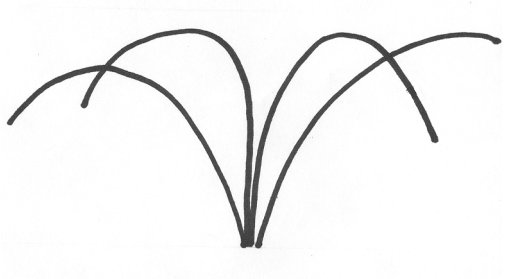
8. Explanations on the Table of Characteristics

Ad 1: Plant: habit

1
upright



2
semi-upright



3
arching

Ad 2: Number of current season's shoots:

The number of very young shoots 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.

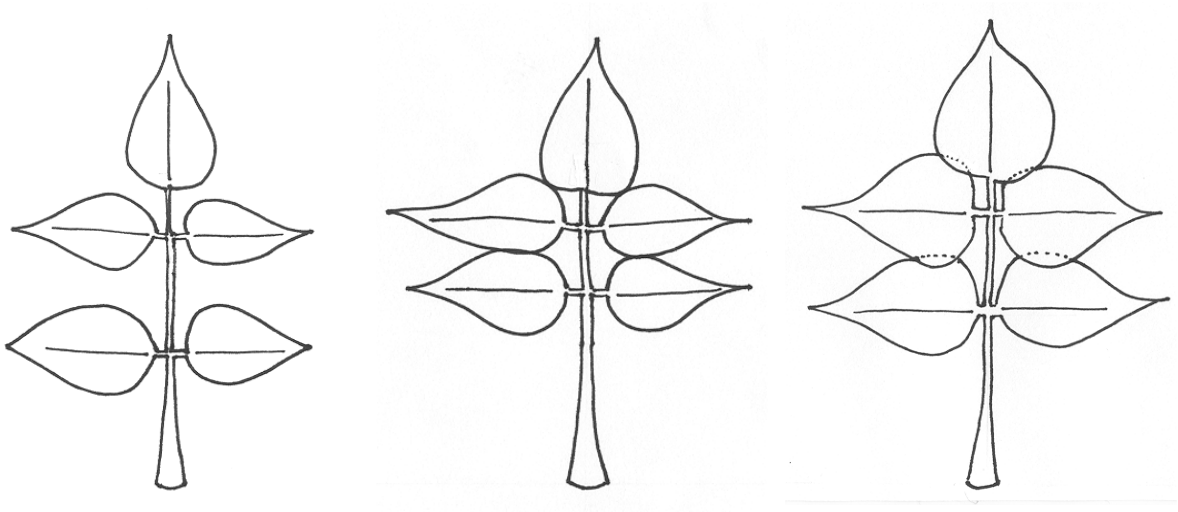
Ad 8: Current season's cane: length of vegetative bud

3
short

5
medium

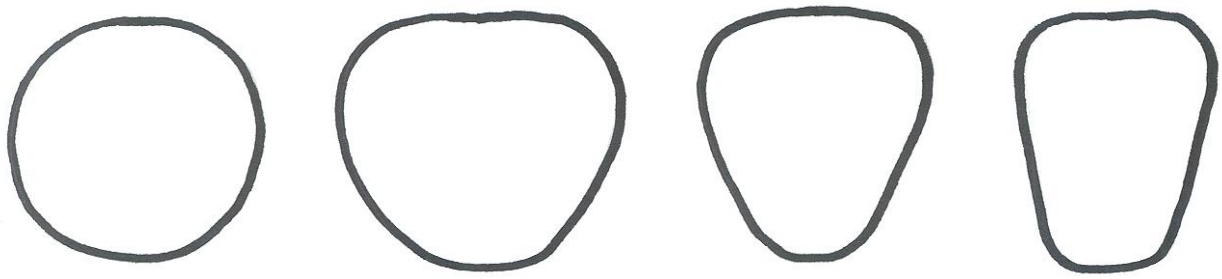
7
long

Ad 20: Leaf: relative position of lateral leaflets



1	2	3
free	touching	overlapping

Ad 31: Fruit: general shape in lateral view



1	2	3	4
circular	cordate	conical	almost rectangular

Ad 40: Time of beginning of flowering

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 fruit ripening

The time of fruit ripening should be considered as the time of eating ripeness, when the fruit is most easily removed from the plug.

9. Literature

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Bundessortenamt, 1995: Beschreibende Sortenliste Beerenobst – Erdbeere, Himbeere, Brombeere, Stachelbeere, Landbuch Verlagsgesellschaft, Hannover, DE.

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Leemans, I.A., Nannenga, E.T., 1957: "Raspberry Varieties", Instituut voor de Veredeling van Tuinbouwgewasswn (IVT), Wageningen, NL.

Sorge, P., 1984: "Beerenobstsorten", Verlag J. Neumann-Neudamm, Melsungen, DE.

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 *Latin 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

4.1.1 Variety resulting from:

(a) controlled cross [ ]
(please state parent varieties)
(b) partially unknown cross [ ]
(please state known parent variety(ies))
(c) totally unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

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

4.1.4 Other [ ]
(please provide details)

4.2 Method of Propagating the Variety

4.2 Method of Propagating the Variety

4.2.1 *In vitro* propagation
The plant material of the candidate variety has been obtained by *in vitro* propagation yes [ ]
no [ ]

4.2.2 Other type of multiplication
(seed, leaf cutting, hardwood cutting, layer)

4.3 Virus status

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

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

4.3.1 The virus status is unknown
.....

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 shoots**		
	few	Rubaca, Rucami	3[ ]
	medium	Glen Ample, Multiraspa, Rumiloba	5[ ]
	many	Glen Clova, Skeena	7[ ]
	very many	Sumner	9[ ]
5.2 (3)	**Very young shoot: anthocyanin coloration of apex**		
	absent	Gelbe Antwerpener	1
	present	Malling Promise	9
5.3 (10)	**Only varieties whose main fruiting is on previous year's cane in summer: Dormant cane: color**		
	greyish brown	Malling Leo, Schönemann	1[ ]
	greyish brown to brown	Willamette	2[ ]
	brown	Caliber, Rucami	3[ ]
	brown to purple brown	Festival, Malling Landmark	4[ ]
	purple brown	Royalty, Titan	5[ ]
5.4 (11)	**Spines: presence**		
	absent	Glen Moy	1
	present	Malling Promise	9
5.6 (30)	**Fruit: ratio length/width**		
	small	Caliber, Zefa 2	3[ ]
	medium	Glen Clova	5[ ]
	large	Malling Delight, Tulameen	7[ ]

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

5.5 (31)	**Fruit: general shape in lateral view**		
	circular	Malling Landmark, Ontario	1[ ]
	cordate	Malling Orion, Meeker	2[ ]
	conical	Annamaria, Rafzmach	3[ ]
	almost rectangular	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[ ]
	black purple	Deep Purple	7[ ]
5.8 (37)	**Fruit: main bearing type**		
	on previous year's cane in summer	Malling Promise	1[ ]
	on current year's cane in autumn	Autumn Bliss	2[ ]
5.9 (41a)	**<u>Only varieties whose main fruiting is on previous year's cane in summer</u>: Time of beginning of fruit ripening on previous year's canes**		
	early	Glen Clova, Glen Moy, Rafzmach	3[ ]
	medium	Rusilva, Willamette	5[ ]
	late	Malling Landmark, Schönemann	7[ ]
	very late	Malling Leo	9[ ]

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

5.10 (41b) **<u>Only varieties whose main fruitig is on the current season's cane in autumn</u>: Time of beginning of fruit ripening on current year's canes**

very early	Ariadne	1[ ]
early	Polana	3[ ]
medium	Orange Marie, Watson	5[ ]
late	Korbfüller	7[ ]
very late	Baronne de Wavre	9[ ]

6. Similar varieties and differences from these varieties

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)	*Plant: height*	*e.g. note 3*	*note 7*
		e.g. short	*tall*
		e.g. 90 cm	*130 cm*

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 Special conditions for the examination of the variety

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

Yes [ ] No [ ]

7.2.2 If yes, please give details:

7.3 Other information

A representative color photograph of the variety should accompany the Technical Questionnaire.

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. 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]