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TG/73/7(proj.2)
ORIGINAL: English
DATE: June 18, 2004

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

BLACKBERRY

UPOV Code: RUBUS_EUB

Rubus subgenus *Eubatus*
sect. Moriferi & Ursini and hybrids

*

NZ: Would prefer Blackberry and Hybrid berry

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Germany

to be considered by the
Technical Working Party for Fruit Crops at its thirty-fifth session,
to be held in Marquardt (Potsdam), Germany, from July 19 to 23, 2004

Alternative Names:*

Latin	*English*	*French*	*German*	*Spanish*
Rubus subgenus *Eubatus* sect. Moriferi & Ursini	Blackberry	Ronce fruitière	Brombeere	Mora
Rubus fruticosus L.	**NZ: under Englsh name to suggest Brambles as well.**			Zarza

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 guidelines ("Test 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 Test Guidelines

1.1 These Test Guidelines apply to all varieties of *Rubus* subgenus *Eubatus* sect. Moriferi & Ursini of the family *Rosaceae* and their hybrids as far as they are morphologically similar.

1.2 In the case of hybrids between species within the genus *Rubus* L., the Test Guidelines to be used should be those for which the overall appearance of fruit is most suited. However, if the variety cannot be clearly distinguished from all varieties covered by other Test Guidelines, those other Test Guidelines should also be used to examine the variety.

1.3 In the case of hybrids between species within the genus *Rubus* L., even where the variety is clearly distinguishable from all other varieties covered by other Test Guidelines, it may still be necessary to use additional characteristics to examine the variety. In these circumstances the characteristics from the Test Guidelines covering the parent species may be particularly useful.

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 one-year-old plants.

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

5 one-year-old plants.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Number of Growing Cycles

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

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

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. In particular, it is essential that there is a satisfactory crop of fruit in each of the two growing cycles.

3.3.1 Stage of development for the assessment

The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8.

3.3.2 Type of observation – visual or measurement

The recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 5 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 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations should be made on 5 plants or parts taken from each of 5 plants. In the case of parts of plants, the number to be taken from each of the plants should be 3.

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 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.

4.2 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.x [For the assessment of uniformity of seed-propagated varieties, the recommendations in the General Introduction for cross-pollinated varieties should be followed, as appropriate.]~~

4.2.2 For the assessment of uniformity, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 5 plants, no off-types are 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 tested, either by growing a further generation, or by testing a new 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 are aided by the use of grouping characteristics.

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: growth habit (characteristic 1);
(b) Dormant cane: prickles (characteristic 9);
(c) Leaf: predominant number of leaflets (characteristic 24);
(d) Leaf: shape (characteristic 27);
(e) Time of beginning of flowering on previous year's cane (characteristic 43);
(f) Only varieties which flower on current year's cane: Time of beginning of flowering on current year's cane (characteristic 44);
(g) Time of beginning of fruit ripening (characteristic 46).

NZ: To be considered. Char. 17, number of Glandular hairs, to include as a grouping character.

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

(a)–(d) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8, Section 8.2

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. **(*)**		**Plant: growth habit**		**Pflanze: Wuchsform**			
PQ	**(a)**	upright		aufrecht		Wilson's Early	1
		upright to semi upright		aufrecht bis halbaufrecht		Kiowa	2
		semi upright		halbaufrecht		Jersey Black	3
		semi upright to spreading		halbaufrecht bis breitwüchsig		Tayberry	4
		spreading		breitwüchsig		Himalaya	5
NZ: Suggest `Arapaho' for 1 We have a variety Aurora, which is prostrate; spreading may be sufficient to cover this.							
2.		**Plant: number of new canes**		**Pflanze: Anzahl neuer Ruten**			
QN	**(a)**	very few		sehr wenig		Himalaya	1
		few		wenig		Thornfree	3
		medium		mittel		Jersey Black	5
		many		viele		Philadelphia	7
3.		**Dormant cane: length**		**Winterrute: Länge**			
QN	**(a)**	short		kurz		Philadelphia	3
		medium		mittel		Jersey Black	5
		long		lang		Tayberry	7
		very long		sehr lang		Himalaya	9
NZ: We have Boysenberry varieties longer than Himalaya.							

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.		**Dormant cane: diameter (in central third)**		**Winterrute: Durchmesser (im mittleren Drittel)**			
QN	**(a)**	small		klein		Philadelphia	3
		medium		mittel		Tayberry	5
		large		groß		Himalaya	7
		very large		sehr groß		Jersey Black	9
NZ: Suggest very small Aurora 1.							
5. **(*)**		**Dormant cane: anthocyanin coloration**		**Winterrute: Anthocyanfärbung**			
QN	**(a)**	absent or very weak		fehlend oder sehr gering		Taylor's Prolific	1
		weak		gering		Black Satin	3
		medium		mittel		Alfred	5
		strong		stark		Wilson's Early	7
6.		**Dormant cane: number of branches**		**Winterrute: Anzahl Seitentriebe**			
QN	**(a)**	few		wenig		Himalaya	3
		medium		mittel		Jersey Black	5
		many		viele		Kittatinny	7
7.		**Dormant cane: predominant position of branches**		**Winterrute: vorwiegender Sitz der Seitentriebe**			
PQ	**(a)**	on upper third		am oberen Drittel		Mammoth	1
		on upper half		an der oberen Hälfte		Taylor's Prolific	2
		over whole length		auf der gesamten Länge		Himalaya	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8. **(*)** **(+)**		**Dormant cane: shape in cross section**		**Winterrute: Form im Querschnitt**			
PQ	**(a)**	rounded		abgerundet		Sunberry	1
		rounded to angular		abgerundet bis winklig		Douglas	2
		angular		winklig		Wilson’s Early	3
		angular to grooved		winklig bis gerieft		Kiowa	4
		grooved		gerieft		Mammoth	5
NZ: to delete shape, and to read Cane: cross section (not all the states are shapes).							
9. **(*)**		**Dormant cane: prickles**		**Winterrute: Stacheln**			
QL	**(a)**	absent		fehlend		Black Satin	1
		present		vorhanden		Himalaya	9
(character 913) NZ: prefer spine to prickle							
10.		**Dormant cane: number of prickles**		**Winterrute: Anzahl Stacheln**			
QN	**(a)**	very few		sehr wenig		Philadelphia	1
		few		wenig		Wilson’s Early	3
		medium		mittel		Himalaya	5
		many		viele		Bedford Giant	7
		very many		sehr viele		Sunberry	9
NZ: Problem with (in central third) There are varieties that only have spines at the cane base e.g. `Waldo’ These are not covered. Prefer spine to prickle							
11. **(*)**		**Prickle: size (on dormant canes)**		**Stachel: Größe (an Winterruten)**			
QN	**(a)**	small		klein		Sunberry	3
		medium		mittel		Bedford Giant	5
		large		groß		Himalaya	7
		very large		sehr groß		Jersey Black	9
NZ: Suggest very small Karaka Black 1. Prefer spine to prickle.							

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.		**Prickle: shape in lateral view**		**Stachel: Form in der Seitenansicht**			
PQ	**(a)**						

DE: If this charcteristic should be included suitable states and example varieties must be listed.
NZ: There are differences, but still developing. Hopefully have some by the meeting. Not sure who suggested this character. Prefer spine to prickle.
HU: We do not need this characteristic.

13. **(+)**		**Prickle: attitude of tip in relation to cane**		**Stachel: Stellung der Spitze im Verhältnis zur Rute**			
QN	**(a)**	upwards		aufwärts		Kittatinny	3
		horizontal		waagerecht		Jersey Black	5
		downwards		abwärts		Mammoth	7

NZ: (character 913): prefer spine to prickle

14.		**Young shoot: anthocyanin coloration (during rapid growth)**		**Junger Trieb: Anthocyanfärbung (während des schnellen Wachstums)**			
QN	**(b)**	absent or very weak		fehlend oder sehr gering		Philadelphia	1
		weak		gering		Black Satin	3
		medium		mittel		Bedford Giant	5
		strong		stark		Tayberry	7
15.		**Young shoot: intensity of green color**		**Junger Trieb: Intensität der Grün färbung**			
QN	**(b)**	light		hell		Philadelphia	3
		medium		mittel		Ashton Cross	5
		dark		dunkel		Thornless Evergreen	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16.		**Young shoot: glandular hair on surface**		**Junger Trieb: Drüsenhaare auf der Oberseite**			
QL	**(b)**	absent		fehlend		Tayberry	1
		present		vorhanden		Karaka Black	9
		NZ: to be deleted.					
17.		**Young shoot: number of glandular hairs**		**Junger Trieb: Anzahl der Drüsenhaare**			
QN	**(b)**	very few		sehr wenig		Silvan	1
		few		wenig			3
		medium		mittel		Navaho	5
		many		viele		Wilson’s Early	7
		very many		sehr viele		Karaka Black	9
		DE: Charac. 16. and 17.: To ask for explanation of "glandular". Proposal: To combine the characteristics into a single one with a condensed range of expressions absent or very few (1), few (2) and many (3). NZ: new states absent or very few Lincoln; few Silvan, Tayberry, Marionberry; medium Navaho, Jenner; many Karaka Black, Wilson’s Early. A glandular hair is a hair like structure with a gland at the apex that looks like a little drop of liquid. HU (character 16 and 17): agree with the remark from DE.					
18.		**Young shoot: length of glandular hairs**		**Junger Trieb: Länge der Drüsenhaare**			
QN	**(b)**	very short		sehr kurz		Silvan	1
		short		kurz			3
		medium		mittel			5
		long		lang		Wilson’s Early	7
		very long		sehr lang		Karaka Black	9
		Proposal DE: It seems too much complicated to assess this characteristics by a 19 scale. NZ: 19 is possible, a condensed form could possibly work. short Silvan, medium Jenner, Cascade, long Karaka Black. HU: Do we realy need this character? The character about ‘number of glandular hairs’ is very good.					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.		**Terminal leaflet: length**		**Endfieder: Länge**			
QN	**(c)**	short		kurz		Ashton Cross	3
		medium		mittel		Loch Ness	5
		long		lang		Taylor's Prolific	7
20.		**Terminal leaflet: width**		**Endfieder: Breite**			
QN	**(c)**	narrow		schmal		Alfred	3
		medium		mittel		Navaho	5
		broad		breit		Douglas	7
21.		**Terminal leaflet: form**		**Endfieder: Form**			
QL	**(c)**	entire		ungeteilt		Wilson's Early	1
		lacerate		geschlitzt		Thornless Evergreen	2
22.		**Terminal leaflet: shape in crosssection**		**Endfieder: Form im Querschnitt**			
QL	**(c)**	vshaped		vförmig		Mammoth	1
		ushaped		uförmig		Bedford Giant	2
23.		**Terminal leaflet: bulging of margin**		**Endfieder: Wölbung des Randes**			
QL	**(c)**	absent		fehlend		Black Satin	1
		present		vorhanden		Navaho	9
		TWF (see TWF/34/7): To check if "revolute" would be an appropiate term.					
24.		**Leaf: predominant number of leaflets**		**Blatt: vorwiegende Anzahl Fiederblätter**			
PQ	**(c)**	three		drei		Marionberry, Jumbo	1
		five		fünf		Himalaya	2
		seven		sieben		Karaka Black	3
		HU: On the cane'Jumbo' has 5 leaflets only.					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		**Terminal leaflet: blistering between veins**		**Endfieder: Faltung zwischen den Nebenadern**			
QN	**(c)**	very weak		sehr gering		Himalaya	1
		weak		gering		Jersey Black	3
		medium		mittel		Thornfree	5
		strong		stark		Philadelphia	7
		very strong		sehr stark		Tayberry	9
26.		**Petiole: size of stipules**		**Blattstiel: Größe der Nebenblätter**			
QN	**(c)**	small		klein		Wilson’s Early	3
		medium		mittel		Thurnless Hull	5
		large		groß		Loch Ness	7

NZ: mean length here, but length suggest measuring. Suggest very large `Marahau’. Boysenberry variety stipules are larger (longer) than `Loch Ness’. Also have no possibility for the absence of stipules, as in `Silvan’. Suggest a new character Petiole: presence of stipule absent present

changed: **27.** **(*)** **(+)**		**Leaf: shape**		**Blatt: Form**			
QL	**(c)**	odd pinnate		unpaarig gefiedert		Philadelphia	1
		intermediate		intermediär		Marionberry	2
		palmate		fingerförmig gefiedert		Thornless Evergreen	3

NZ: Suggest using form rather than shape. ‘Marionberry’ is not intermediate, `Karaka Black’ would be better.

28.		**Leaf: intensity of green color of upper side**		**Blatt: Intensität der Grünfärbung der Oberseite**			
QN	**(c)**	light		hell		Philadelphia	3
		medium		mittel		Kittatinny	5
		dark		dunkel		Thornless Evergreen	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
29.		**Leaf: glossiness of upper side**		**Blatt: Glanz der Oberseite**			
QN	**(c)**	weak		gering		Thornless Evergreen	3
		medium		mittel		Mammoth	5
		strong		stark		Kittatinny	7
30. **(+)**		**Leaflet: incisions of margin**		**Fiederblatt: Randeinschnitte (geändert)**			
QL	**(c)**	serrate		gesägt		Himalaya	1
		bi-serrate		doppelt gesägt		Thornless Evergreen	2
31.		**Leaflet: depth of incisions**		**Fiederblatt: Tiefe der Randeinschnitte**			
QN	**(c)**	shallow		flach		Philadelphia	3
		medium		mittel		Himalaya	5
		deep		tief		Loch Ness	7
NZ: Suggest very deep `Thornless Evergreen'.							
32.		**Flower: diameter**		**Blüte: Durchmesser**			
QN		small		klein		Tayberry	3
		medium		mittel		Thornfree	5
		large		groß		Himalaya	7
NZ: Suggest very small `Dyke' and very large `Silvan', `Marionberry'.							
33.		**Flower: color of petal**		**Blüte: Farbe des Blütenblatts**			
PQ		white		weiß		Philadelphia	1
		white with violet tinge		weiß mit violettem Anflug		Black Satin	2
		pinkish		rosafarben			3
DE: To seek for a suitable example variety for state 3 (pinkish). NZ: Suggest pinkish `Dirksen Thornless'.							

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
34. (new)	**Fruiting lateral: presence**		**Fruchttrieb: Vorhandensein**			
PQ	absent		fehlend			1
	partly present		teilweise vorhanden			2
	fully present		vollständig vohanden			3

NZ: Cannot have partly present!!! Suggest sometimes present 2, always present3. Is presence what we want to ask or number? Can there be varieties with no fruiting laterals? To propose Fruiting lateral: number per node one 1, two 2, more than two 3.

35.		**Fruting lateral: length**	**Fruchttrieb: Länge**			
QN		short	kurz		Mammoth	3
		medium	mittel		Jersey Black	5
		long	lang		Thornless Evergreen	7
36.		**Fruit: size**	**Frucht: Größe**			
QN	**(d)**	small	klein		Mammoth	3
		medium	mittel		Wilson’s Early	5
		large	groß		Jersey Black	7

NZ: `Mammoth’ is perhaps not a good example for small, it is narrow but not short. Suggest `Cherokee’or `Ashton Cross’ would be better. Current breeding is producing larger fruit than `Tayberry’.

37.		**Fruit: number of drupelets**	**Frucht: Anzahl der Einzelsteinfrüchte**			
QN	**(d)**	very few	sehr wenig			1
		few	wenig		Marionberry	3
		medium	mittel		Himalaya	5
		many	viele		Karaka Black	7
		very many	sehr viele			9

NZ: Suggest `Karaka Black’ would be very many 9.

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
38.		**Fruit: size of drupelet**		**Frucht: Größe der Einzelsteinfrucht**			
QN	**(d)**	small		klein		Wilson’s Early	3
		medium		mittel		Navaho	5
		large		groß		Douglas	7
NZ: Suggest very small `Waldo’ `Siskiyou’. A boysenberry variety would fit for very large.							
39. **(*)** **(+)**		**Fruit: shape in longitudinal section**		**Frucht: Form im Längsschnitt**			
PQ	**(d)**	circular		rund		Himalaya	1
		elliptic		elliptisch		Taylor’s Prolific	2
		narrow ovate		schmal eiförmig			3
		medium ovate		eiförmig		Wilson’s Early	4
		long conical		lang konisch		Tayberry	5
NZ: Do not think long conical would really fit, these varieties are more cylindric. Suggest oblong for a planar shape. This is not exact as there is slight tapering but closer than long conical.							
40.		**Fruit: ratio length/width**		**Frucht: Verhältnis Länge/Breite**			
QN	**(d)**	small		klein		Himalaya	3
		medium		mittel		Taylor’s Prolific	5
		large		groß		Tayberry	7
NZ: `Mammoth’ or `Karaka Black’ would fit very large 9.							
41.		**Fruit: color**		**Frucht: Farbe**			
PQ	**(d)**	reddish		rötlich		Sunberry	1
		reddish black		rötlichschwarz		Alfred	2
		bluish black		bläulichschwarz		Himalaya	3
		black		schwarz		Black Satin	4
NZ: Suggest new states; red `Sunberry’ Loganberry types 1 reddish purple `Tayberry’ Boysenberry types 2 reddish black `Alfred’ 3 bluish black `Himalaya’ 4 black `Black Satin’ 5.							

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42.	**Time of leaf bud burst**		**Zeitpunkt des Öffnens der Blattknospe**			
QN	early		früh		Wilson’s Early	3
	medium		mittel		Black Satin	5
	late		spät		Jumbo	7
(Char. 42) NZ: To have a very early variety `Ranui’.						
43. **(*)**	**Time of beginning of flowering on previous year’s cane**		**Zeitpunkt des Blühbeginns an der Vorjahresrute**			
QN	very early		sehr früh		Wilson’s Early	1
	early		früh		Taylor’s Prolific	3
	medium		mittel		Himalaya	5
	late		spät		Thornfree	7
	very late		sehr spät		Thornless Evergreen	9
44. **(+)**	**Only varieties which flower on current year’s cane: Time of beginning of flowering on current year’s cane**		**Nur Sorten, die an der diesjährigen Rute blühen: Zeitpunkt des Blühbeginns an der diesjährigen Rute**			
QN	very early		sehr früh			1
	early		früh			3
	medium		mittel			5
	late		spät			7
	very late		sehr spät			9
DE: Suitable example varieties to be chosen. HU: How frequent is the primocane fruiting among the blackberry varieties?						

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
45.	**Flowering: habit**		**Blüte: Typ**			
QL	both on previous year's cane and current year's cane		sowohl an der Vorjahresrute als auch an der diesjährigen Rute		Taylor's Prolific	1
	on previous year's only		nur an der Vorjahresrute		Navaho	2
46. **(*)** **(+)**	**Time of beginning of fruit ripening**		**Zeitpunkt des Beginns der Fruchtreife**			
QN	very early		sehr früh		Wilson's Early, Tayberry	1
	early		früh		Taylor's Prolific, Karaka Black, Sunberry	3
	medium		mittel		Himalaya, Marionberry	5
	late		spät		Thornfree	7
	very late		sehr spät		Thornless Evergreen	9

NZ: The variety `Ranui' is earlier than `Tayberry' in our climate. To question the use of `Wilson's Early' and `Philadelphia' as example varieties because they are very old and disappearing from cultivation.

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

(a) All observations on the plant and the dormant cane should be made during winter dormancy.

(b) All observations on the young shoot should be made during rapid growth and before flowering.

(c) All observations on the new cane and the leaf should be made during flowering.

(d) All observations on the fruit should be made on fruits collected during the 2nd , 3rd and/or 4th picking.

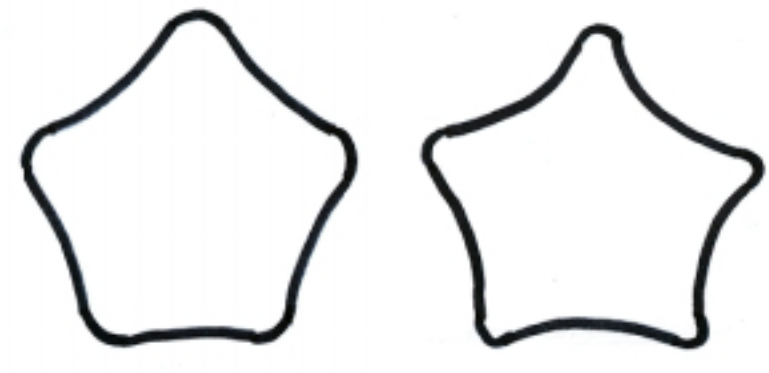
8.2 Explanations for individual characteristics

Ad. 8: Dormant cane: shape in cross section

1
rounded

2
rounded to angular

3
angular



4
angular to grooved

5
grooved

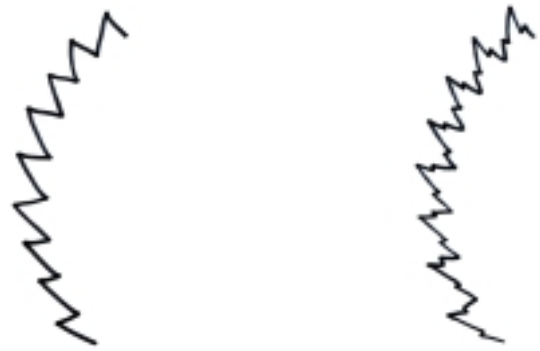
Ad. 13: Prickle: attitude of tip in relation to cane

3	5	7
upwards	horizontal	downwards

Ad. 27: Leaf: shape

1	2	3
odd pinnate	intermediate	palmate

Ad. 30: Leaflet: incisions of margin



1	2
serrate	bi-serrate

Ad. 39: Fruit: shape in longitudinal section

1
circular

2
elliptic

3
narrow ovate

4
medium ovate

5
long conical

Ad. 43: Time of beginning of flowering on previous year's cane
Ad. 44: Only varieties which flower on current year's cane: Time of beginning of flowering on current year's cane

The time of beginning of flowering is reached when 10% of the flower buds are open.

Ad. 46: Time of beginning of fruit ripening

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

9. Literature

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

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

Hedrick, U.P., 1925: The small fruits of New York, Stae of New York – Department of Farms and Markets, Thirty-third Annual Report, Part II, Albany, J.B. Lyon Company.

“Internordic Index of Ribes and Rubus Cultivars”, AVD för Fruktoch Bärodling, Alnarp, Sweden.

Jennings, D.L. 1988: Raspberries and Blackberries: Their breeding, diseases and growth Academic Press.
DE: To add the publication place.

Sorge, P., 1984: “Beerenobstsorten”, Verlag J. Neumann-Neudamm, Melsungen, 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* subgenus *Eubatus* ~~Focke~~ sect. Moriferi & Ursini and hybrids
1.2 Common name	BLACKBERRY

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

[#]4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

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

4.2 Method of propagating the variety

4.2.1 Vegetative propagation
(a) cuttings
(b) other (state method)

4.2.2 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:

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

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: growth habit**		
	upright	Wilson's Early	1[ ]
	upright to semi upright	Kiowa	2[ ]
	semi upright	Jersey Black	3[ ]
	semi upright to spreading	Tayberry	4[ ]
	spreading	Himalaya	5[ ]
5.2 (9)	**Dormant cane: prickles**		
	absent	Black Satin	1[ ]
	present	Himalaya	9[ ]
5.3 (24)	**Leaf: predominant number of leaflets**		
	three	Marionberry, Jumbo	1[ ]
	five	Himalaya	2[ ]
	seven	Karaka Black	3[ ]
5.4 (27)	**Leaf: shape**		
	odd pinnate	Philadelphia	1[ ]
	intermediate	Marionberry	2[ ]
	palmate	Thornless Evergreen	3[ ]

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

	Characteristics	Example Varieties	Note
5.5 (43)	**Time of beginning of flowering on previous year's cane**		
	very early	Wilson's Early	1[ ]
	early	Taylor's Prolific	3[ ]
	medium	Himalaya	5[ ]
	late	Thornfree	7[ ]
	very late	Thornless Evergreen	9[ ]
5.6 (44)	**<u>Only varieties which flower on current year's cane</u>: Time of beginning of flowering on current year's cane**		
	very early		1[ ]
	early		3[ ]
	medium		5[ ]
	late		7[ ]
	very late		9[ ]
5.7 (46)	**Time of beginning of fruit ripening**		
	very early	Wilson's Early, Tayberry	1[ ]
	early	Taylor's Prolific, Karaka Black, Sunberry	3[ ]
	medium	Himalaya, Marionberry	5[ ]
	late	Thornfree	7[ ]
	very late	Thornless Evergreen	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 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.

[#] 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:

9. Information on plant material to be examined.

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 or pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details of 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]