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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

*

BLACKCURRANT

UPOV Code: RIBES_NIG

(*Ribes nigrum* L.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from New Zealand

to be considered by the Technical Working Party for Fruit Crops at its thirty-sixth session, to be held in Kôfu, Japan, from September 5 to 9, 2005

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Ribes nigrum L.; *Ribes dikuscha* Fisch. ex Turcz.; *Ribes ussuriense* Jancz.	Blackcurrant; Black Currant	Cassis	Schwarze Johannisbeere	Grosellero negro; Casis

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

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

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Ribes nigrum* L., of the family *Saxifragaceae*.

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 hardwood cuttings (with or without roots), or in the form of plants with at least three shoots.

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

15 hardwood cuttings (without roots),
10 rooted hardwood cuttings, or
10 plants with a least three shoots

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 growing cycle is considered to be the duration of a single growing season, beginning with vegetative bud burst, flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds.

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 the plants produce a satisfactory crop of fruit in each of the two growing cycles.

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

VG: visual assessment by a single observation of a group of 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 ten 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 10 plants or parts taken from each of 10 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.

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:

4.2.2 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 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 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) One-year-old shoot: color of wood (characteristic 4)

(b) Vegetative bud: position in relation to shoot (characteristic 5)

(c) Vegetative bud: shape of apex (characteristic 7)

(d) Young shoot: intensity of anthocyanin coloration (characteristic 10)

(e) Time of fruit harvest (characteristic 30)

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 Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3
QN: Quantitative characteristic – see Chapter 6.3
PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG: single measurement of a group of plants or parts of plants – see Chapter 3.3.1
VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.1

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

(+) See Explanations on the Table of Characteristics in Chapter 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. (*)	**VG/ MG**	**Plant: height**					
QN	**(a)**	short					3
		medium				Baldwin	5
		tall				Goliath	7
2. (*) (+)	**VG**	**Plant: growth habit**					
PQ	**(a)**	upright				Magnus	1
		semi-upright				Baldwin	2
		spreading				Wellington	3
3.	**VG/ MG**	**Plant: number of basal shoots**					
QN	**(a)**	few					3
		medium				Ben Lomond	5
		many					7
4. (*) (+)	**VG**	**One-year old shoot: color of wood**					
PQ	**(a)**	yellow brown					1
		red brown					2
		brown				Hatton Black	3
		greyish				Cotswold Cross	4
5. (*) (+)	**VG**	**Vegetative bud: position in relation to shoot**					
QN	**(a)**	adpressed					1
		slightly held out				Hatton Black	2
		markedly held out				Baldwin	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6. (*) (+)	**MG/ VG**	**Vegetative bud: length**					
QN	**(a)**	short					3
		medium				Hatton Black	5
		long				Laxton's Tinker	7
7. (*) (+)	**VG**	**Vegetative bud: shape of apex**					
PQ	**(a)**	acute				Baldwin	1
		obtuse				Wellington	2
		rounded					3
8. (*)	**VG**	**Vegtative bud: anthocyanin coloration**					
QN	**(a)**	absent or very weak					1
		weak				Wellington	3
		medium					5
		strong				Cotswold Cross	7
9.	**VG**	**Vegetative bud: bloom**					
QN	**(a)**	weak					3
		medium					5
		strong					7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
10 (*).	**VG**	**Young shoot: anthocyanin coloration**					
QN	**(b)**	absent or very weak				Goliath	1
		weak					3
		medium				Hatton Black	5
		strong				Wellington	7
		very strong				Ben Lomond	9
11.	**MG**	**Leaf blade: length m**					
QN	**(b)**	short					3
		medium				Hatton Black	5
		long				Goliath	7
12.	**MG**	**Leaf blade: width**					
QN	**(b)**	narrow					3
		medium					5
		broad				Goliath	7
13.	**VG**	**Leaf blade: amount of lobing**					
QN	**(b)**	absent or very weak					1
		weak					3
		medium				Hatton Black	5
		strong					7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
14. (+).	**VG**	**Leaf blade: form of base of blade**					
QN	**(b)**	straight					1
		slightly open					2
		broadly open					3
		touching				Wellington	4
		overlapping					5
15.	**VG**	**Leaf blade: intensity of green color (upper side)**					
QN	**(b)**	light					3
		medium				Hatton Black	5
		strong				Laxton's Tinker	7
16. (*).	**VG**	**Petiole: intensity of anthocyanin coloration**					
QN	**(b)**	absent or very weak				Goliath	1
		weak				Laxton's Tinker	3
		medium				Baldwin	5
		strong					7
17. (*).	**VG**	**Petiole: distribution of anthocyanin**					
QL	**(b)**	base only					1
		entire					2
		at base and distal only					3
		distal only				Cotswold Cross	4
18.	**VG**	**Inflorescence: attitude in relation to shoot**					
QL	**(c)**	outwards				Goliath	1
		downwards					2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
19.	**VG/ MG**	**Inflorescence: predominant number per bud**					
QN	**(c)**	few					3
		medium				Baldwin	5
		many					7
20. (*) (+)	**VG/ MG**	**Inflorescence: length**					
QN	**(c)**	short				Cotswold Cross	3
		medium				Baldwin	5
		long				Wellington	7
21.	**VG/ MG**	**Inflorescence: number of flowers**					
QN	**(c)**	few				Magnus	3
		medium					5
		many				Wellington	7
22. (*).	**VG**	**Sepal: anthocyanin coloration**					
QN	**(c)**	absent or very weak					1
		weak				Hatton Black	3
		medium				Baldwin	5
		strong					7
23. (*).	**VG**	**Ovary: anthocyanin coloration**					
QN	**(c)**	absent or very weak				Cotswold Cross	1
		weak				Baldwin	3
		medium				Wellington	5
		strong				Laxton’s Tinker	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24.	**MG**	**Fruit: size**					
(+).							
QN	**(d)**	small					3
		medium				Wellington	5
		large					7
25.	**VG**	**Fruit: degree of variability in berry size**					
(+).							
QN	**(d)**	small					3
		medium					5
		large					7
26.	**VG**	**Fruit: color**					
(+).							
PQ	**(d)**	green				Stuart's Green	1
		brownish black					2
		black					3
27.	**VG**	**Fruit: glossiness**					
(+).							
QN	**(d)**	weak				Golubka	3
		medium					5
		strong					7
28.	**VG**	**Time of beginning of vegetative budburst**					
(+).							
QN	**(d)**	early				Cotswold Cross	3
		medium				Laxton's Tinker	5
		late					7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
29. (+).	**VG**	**Time of beginning of flowering**					
QN	**(d)**	early					3
		medium				Goliath	5
		late					7
		very late				Jet	9
30. (*) (+).	**VG**	**Time of fruit harvest**					
QN	**(d)**	early					3
		medium					5
		late					7
		very late				Jet	9

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) Plant, one year old shoot and vegetative bud: All observations should be made on dormant bushes in winter after at least one growing season. Vegetative bud: All observations should be made in the middle third of one year old shoots, before bud burst.

(b) Young shoot, leaf blade, petiole: All observations should be made in summer. For leaf blade and petiole, mature leaves from the middle third of one year old shoots from the outside of the bush.

(c) Inflorescence, sepal, ovary: All observations should be made at full flowering.

(d) Fruit: Unless otherwise stated, all observations are made on berries, just before harvest.

8.2 Explanations for individual characteristics

Ad. 2: Plant: growth habit

Diagram (to be considered)

Ad. 4: One year old shoot: color of wood.

Observations should be made on the middle third of a shoot on the outside of the bush.

Ad. 5: Vegetative bud: position in relation to shoot.

Diagram (to be considered)

Ad. 7: Vegetative bud: shape of apex

Diagram (to be considered)

Ad. 14: Leaf blade: form of base of blade

Diagram (to be considered)

Ad. 20: Inflorescence: length

The length of the inflorescence including the peduncle.

Ad. 24: Fruit size

Fruit size is determined by the weight of 100 berries. Sufficient berries should be harvested from the 10 plants and combined in a single container. The 100 berry sample is then randomly taken from the combined sample.

Ad. 25: Fruit: degree of variability of berry size

The degree of size variability is determined by observing the range in berry sizes on a single inflorescence.

Ad. 28: Time of beginning of vegetative bud burst

Time of beginning of vegetative bud burst is when the first green leaves on a bud are just visible.

Ad. 29: Time of beginning of flowering

Time of beginning of flowering is when 20% of flowers are fully open.

Ad. 30: Time of fruit harvest

Time of fruit harvest is when at least 90% of fruits have achieved full color.

9. Literature

Todd, J.C. 1962: Black Currant Varieties: Their Classification and Identification, Technical Bulletin No. 11, Ministry of Agriculture, Fisheries and Food, Her Majesty's Stationary Office, London, United Kingdom

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	*Ribes nigrum* L.
1.2 Common name	BLACKCURRANT

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) *in vitro* propagation [ ]

(c) 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 (2)	**Plant: growth habit**		
	upright	Magnus	1[ ]
	semi-upright	Baldwin	2[ ]
	spreading	Wellington	3[ ]
5.2 (4)	**One-year old shoot: color of wood**		
	yellow brown		1[ ]
	red brown		2[ ]
	brown	Hatton Black	3[ ]
	grey	Cotswold Cross	4[ ]
5.3 (5)	**Vegetative bud: position in relation to shoot**		
	adpressed		1[ ]
	slightly held out	Hatton Black	2[ ]
	markedly held out	Baldwin	3[ ]
5.4 (7)	**Vegetative bud: shape of apex**		
	acute	Baldwin	1[ ]
	obtuse	Wellington	2[ ]
	rounded		3[ ]

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

	Characteristics	Example Varieties	Note
5.5 (10)	**Young shoot: intensity of anthocyanin coloration**		
	absent or very weak	Goliath	1[ ]
	weak		3[ ]
	medium	Hatton Black	5[ ]
	strong	Wellington	7[ ]
	very strong	Ben Lomond	9[ ]
5.6 (30)	**Time of fruit harvest**		
	early		3[ ]
	medium		5[ ]
	late		7[ ]
	very late	Jet	9[ ]

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	*Plant: growth habit*	*semi upright*	*upright*

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 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 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".

……

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]

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]