

UPOV

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

BLACKBERRY

Rubus subgenus *Eubatus*

sect. *Moriferi* & *Ursini* and hybrids

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*to be considered by the
Technical Working Party for Fruit Crops at its thirty-fourth session,
to be held in Niagara Falls, Canada, from September 29 to October 3, 2003*

Alternative Names: *

<i>Latin</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Rubus</i> subgenus <i>Eubatus</i> Focke	Blackberry	Ronce fruitière	Broombeere	Zarza

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 Test Guidelines

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

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:

6 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 *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 observed at that place, the variety may be tested at an additional place.

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 both 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 4 (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 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. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 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 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) Plant: growth habit (characteristic 1)
- (b) Dormant cane: prickles (characteristic 9)
- (c) Time of beginning of fruit ripening (characteristic 40)

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*

(*) Asterisk 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)–(c) 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

MoE ^o	English	français	deutsch	español	Example Varieties Exemples Beispielsorten Variedades ejemplo	Note/ Nota
1. (*)	Plant: growth habit		Pflanze: Wuchsform			
	(a) erect		aufrecht		Wilson's Early	3
	erect to semi-erect		aufrecht bis halb-aufrecht			4
	semi-erect		halbaufrecht		Jersey Black	5
	semi-erect to rambling		halbaufrecht bis breitwüchsig		Tayberry	6
	rambling		breitwüchsig		Himalaya	7
2.	Plant: number of new canes		Pflanze: Anzahl Jahresruten			
	(a) very few		sehr gering		Himalaya	1
	few		gering		Thornfree	3
	medium		mittel		Jersey Black	5
	many		groß		Philadelphia	7
3.	Dormant cane: length		Winterrute: Länge			
	(a) short		kurz		Philadelphia	3
	medium		mittel		Jersey Black	5
	long		lang		Tayberry	7
	very long		sehr lang		Himalaya	9
4.	Dormant cane: diameter (in central third)		Winterrute: Durchmesser (im mittleren Drittel)			
	(a) small		klein		Philadelphia	3
	medium		mittel		Tayberry	5
	large		groß		Himalaya	7
	very large		sehr groß		Jersey Black	9

^o MoE = Method of Examination

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5. (*)	Dormant cane: anthocyanin coloration		Winterrute: Antho- cyanfärbung			
(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 side shoots		Winterrute: Anzahl Seitentriebe			
(a)	small		gering		Himalaya	3
	medium		mittel		Jersey Black	5
	large		groß		Kittatinny	7
DE: To replace "side shoots" by "lateral shoots", for reasons of harmonization between UPOV guidelines.						
7.	Dormant cane: predominant position of side shoots		Winterrute: vor- wiegender Sitz der Seitentriebe			
(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
8. (*) (+)	Dormant cane: shape in cross section		Winterrute: Form im Querschnitt			
(a)	rounded		abgerundet		Sunberry	1
	rounded to angular		abgerundet bis winklig			2
	angular		winklig		Wilson's Early	3
	angular to grooved		winklig bis gerieft			4
	grooved		gerieft		Mammoth	5

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. (*)	Dormant cane: prickles		Winterrute: Stacheln			
	(a)	absent		fehlend	Black Satin	1
		present		vorhanden	Himalaya	9
10.	Dormant cane: number of prickles		Winterrute: Anzahl Stacheln			
	(a)	very few		sehr gering	Philadelphia	1
		few		gering	Wilson's Early	3
		medium		mittel	Himalaya	5
		many		groß	Bedford Giant	7
		very many		sehr groß	Sunberry	9
11. (*)	Prickle: size (on dormant canes)		Stachel: Größe (an Winterruten)			
	(a)	small		klein	Sunberry	3
		medium		mittel	Bedford Giant	5
		large		groß	Himalaya	7
		very large		sehr groß	Jersey Black	9
12. (+)	Prickle: predomi- nant attitude of tip (as for 11)		Stachel: vorwie- gende Stellung der Spitze (wie unter 11)			
	(a)	upwards		nach oben	Kittatinny	3
		horizontal		waagrecht	Jersey Black	5
		downwards		nach unten	Mammoth	7

DE: To have qualitative states with notes 1-2-3.

MoE ^o	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13.	Very young shoot: anthocyanin coloration		Sehr junger Trieb: Anthocyanfärbung			
	absent or very weak		fehlend oder sehr gering		Philadelphia	1
	weak		gering		Black Satin	3
	medium		mittel		Bedford Giant	5
	strong		stark		Tayberry	7
14.	Very young shoot: green color		Sehr junger Trieb: grüne Farbe			
	light		hell		Philadelphia	3
	medium		mittel		Ashton Cross	5
	dark		dunkel		Thornless Evergreen	7
15.	Current year's cane: anthocyanin coloration		Jahresrute: Antho- cyanfärbung			
	(b) absent or very weak		fehlend oder sehr gering		Himalaya	1
	weak		gering		Mersereau	3
	medium		mittel		Kittatinny	5
	strong		stark		Jersey Black	7
16. (new)	One-year-old shoot: position of flower formation		Einjährige Rute: Position der Blütenbildung			
	terminal		endständig		Taylor's Prolific	1
	lateral		lateral		Navaho	2
17. (new)	Terminal leaflet: length		Endfieder: Länge			
	(b) short		kurz		Ashton Cross	3
	medium		mittel		Loch Ness	5
	long		lang		Taylor's Prolific	7

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18. (new)	Terminal leaflet: width		Endfieder: Breite			
(b)	narrow		schmal		Alfred	3
	medium		mittel		Navaho	5
	broad		breit		Douglas	7
19. (new)	Terminal leaflet: shape		Endfieder: Form			
(b)	entire		ungeteilt		Wilson's Early	1
	lacerate		geschlitzt		Thornless Evergreen	2
20. (new)	Terminal leaflet: shape in lateral section		Endfieder: Form im Querschnitt			
(b)	v-shaped		v-förmig		Mammoth	1
	u-shaped		u-förmig		Bedford Giant	2
21. (new)	Terminal leaflet: bulging of margin		Endfieder: Wölbung des Randes			
(b)	absent		fehlend		Black Satin	1
	present		vorhanden		Navaho	9
22. (new)	Leaf: predominant number of leaflets		Blatt: vorwiegende Anzahl Fiederblätter			
(b)	five		fünf		Tayberry	1
	seven		sieben		Karaka Black	2
23. (new)	Terminal leaflet: blistering between veins		Endfieder: Faltung zwischen den Nebenadern			
(b)	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

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24. (new)	Petiole: size of stipules		Blattstiel: Größe der Nebenblätter			
(b)	small		klein		Wilson's Early	3
	medium		mittel		Thornless Hull	5
	large		groß		Loch Ness	7
25. (*)	Leaf: shape		Blatt: Form			
(b)	odd-pinnate		unpaarig gefiedert		Philadelphia	1
	palmate		fingerförmig gefiedert		Thornless Evergreen	2
26.	Leaf: green color of upper side		Blatt: grüne Farbe der Oberseite			
(b)	light		hell		Philadelphia	3
	medium		mittel		Kittatinny	5
	dark		dunkel		Thornless Evergreen	7
27.	Leaf: glossiness of upper side		Blatt: Glanz der Oberseite			
(b)	weak		gering		Thornless Evergreen	3
	medium		mittel		Mammoth	5
	strong		stark		Kittatinny	7
28. (+)	Leaflet: incisions of margin (changed)		Fiederblatt: Randeinschnitte (geändert)			
(b)	serrate		gesägt		Himalaya	1
	double serrate		doppelt gesägt		Thornless Evergreen	2
29. (new)	Leaflet: depth of incisions		Fiederblatt: Tiefe der Randeinschnitte			
(b)	shallow		flach		Philadelphia	3
	medium		mittel		Himalaya	5
	deep		tief		Loch Ness	7

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30. (new)	Flower: diameter		Blüte: Durchmesser			
		small		klein	Tayberry	3
		medium		mittel	Thornfree	5
		large		groß	Himalaya	7
31.	Flower: color of petal		Blüte: Farbe des Blütenblatts			
		white		weiß	Philadelphia	1
		white with violet tinge		weiß mit violetter Anflug	Black Satin	2
32.	Fruiting lateral: length		Fruchttrieb: Länge			
		short		kurz	Mammoth	3
		medium		mittel	Jersey Black	5
		long		lang	Thornless Evergreen	7
33.	Fruit: size		Frucht: Größe			
	(c)	small		klein	Mammoth	3
		medium		mittel	Wilson's Early	5
		large		groß	Jersey Black	7
		very large		sehr groß	Tayberry	9
34. (new)	Fruit: size of single drupe		Frucht: Größe der Einzelfrucht			
	(c)	small		klein	Wilson's Early	3
		medium		mittel	Navaho	5
		large		groß	Douglas	7

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35. (* (+)	Fruit: shape of longitudinal section		Frucht: Form im Längsschnitt			
	(c)	circular		rund	Himalaya	1
		elliptic		elliptisch	Taylor's Prolific	2
		narrow ovate		schmal eiförmig		3
		ovate		eiförmig	Wilson's Early	4
	long conical		lang konisch	Tayberry	5	
36.	Fruit: ratio length/width		Frucht: Verhältnis Länge/Breite			
	(c)	small		klein	Himalaya	3
		medium		mittel	Taylor's Prolific	5
	large		groß	Tayberry	7	
37.	Fruit: color		Frucht: Farbe			
	(c)	reddish		rötlich	Sunberry	1
		reddish black		rötlichschwarz	Alfred	2
		bluish black		bläulichschwarz	Himalaya	3
	black		schwarz	Black Satin	4	
38.	Time of leaf bud burst		Zeitpunkt der Öffnung der Blattknospe			
		early		früh		3
		medium		mittel		5
	late		spät		7	

DE: To add example varieties 'Wilson's Early' (for state 3), 'Black Satin' (5), and 'Jumbo' (7).

MoE	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39. (*) (+)	Time of beginning of flowering		Zeitpunkt des Blühbeginns			
		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	
40. (*) (+)	Time of beginning of fruit ripening		Zeitpunkt des Be- ginnns der Frucht- reife			
		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	
41.	Length of harvest period		Dauer der Ernte- periode			
		short		kurz	Wilson's Early	3
		medium		mittel	Philadelphia	5
	long		lang	Thornfree	7	

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

Characteristics containing the following keys 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 new cane and the leaf should be made during flowering.
- (c) 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. 12: Prickle: predominant attitude of tip (as for 11)

3
upwards

5
horizontal

7
downwards

Ad. 28: Leaflet: incisions of margin (changed)

1
serrate

2
double serrate

Ad. 35: Fruit: shape of longitudinal section

1
circular

2
elliptic

3
narrow ovate

4
ovate

5
long conical

Ad. 39: Time of beginning of flowering

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

Ad. 40: Time of beginning of fruit ripening

9. Literature

{xx}

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page (x) of {y}	Reference Number:
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	Application date: (not to be filled in by the applicant)
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TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 *Latin Name*

1.2 *Common Name*

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:
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4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross []
 (please state parent varieties)

(b) partially known 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

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

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

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

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Fruit: size</i>	<i>small</i>	<i>medium</i>

Comments:

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

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

Yes [] No []

(If yes, please provide details)

7.2 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.

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