CPVO-TP/73/1 Final
English
Date: 15/11/2006

European Union
Community Plant Variety Office

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

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

BLACKBERRY

UPOV Species Code: RUBUS_EUB

Adopted on 15/11/2006

I SUBJECT OF THE PROTOCOL

The protocol describes the technical procedures to be followed in order to meet the Council Regulation 2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on general UPOV Document TG/1/3 and UPOV Guideline TG/73/7 dated 05/04/2006 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies for all varieties of *Rubus* subgenus *Eubatus* sect. Moriferi & Ursini and hybrids.

II SUBMISSION OF SEED AND OTHER PLANT MATERIAL

1. The Community Plant Variety Office (CPVO) is responsible for informing the applicant of

   - the closing date for the receipt of plant material;
   - the minimum amount and quality of plant material required;
   - the examination office to which material is to be sent.

   A sub-sample of the material submitted for test will be held in the variety collection as the definitive sample of the candidate variety.

   The applicant is responsible for ensuring compliance with any customs and plant health requirements.

2. Final dates for receipt of documentation and material by the Examination Office

   The final dates for receipt of requests, technical questionnaires and the final date or submission period for plant material will be decided by the CPVO and each Examination Office chosen.

   The Examination Office is responsible for immediately acknowledging the receipt of requests for testing, and technical questionnaires. Immediately after the closing date for the receipt of plant material the Examination Office should inform the CPVO whether acceptable plant material has been received or not. However if unsatisfactory plant material is submitted the CPVO should be informed as soon as possible.

3. Plant material requirements

   The current quality and quantity requirements as well as the final dates for submission of the plant material are available on the CPVO website (www.cpvo.europa.eu) and are published in the CPVO gazette ‘S2’.

Quality of plants: Should not be less than the standards laid down in Council Directive 2000/29/EC and its amendments concerning quarantine organisms, and Council Directive 92/34/EEC and Commission Directive 93/48/EEC and their amendments concerning organisms impairing quality, at the date of adoption of this protocol; please refer to "Eur-Lex" for the full text and in case of any subsequent amendments to the four aforesaid Directives .

Quarantine organism (Directive 2000/29/EC). The plant material must be free from:

Insects, mites and nematodes at all stages of their development

- *Acleris* spp. (non-European)
- *Amauromyza maculosa*
- *Anomala orientalis*
- *Anoplophora chinensis*
- *Anoplophora malasiaca*
- *Arrhenodes minutus*
- *Bemisia tabaci* (non-European populations)
- *Carposina niponensis*
- *Choristoneura* spp. (non-European)
- *Cicadellidae* (non-European)
- *Conotrachelus nenuphar*
- *Enarmonia prunivora*
- *Enarmonia packardi*
- *Globodera pallida*
- *Globodera rostochiensis*
- *Grapholita inopinata*
- *Heliothis armigera*
- *Heliothis zea*
- *Liriomyza bryoniae*
- *Liriomyza huidobrensis*
- *Liriomyza trifolii*
- *Liriomyza sativae*
- *Longidorus diadecturus*
- *Monochamus* spp. (non-European)
- *Myndus crudus*
- *Nacobbus aberrans*
- *Opogona sacchari*
- *Popilia japonica*
- *Premnotrypes* spp. (non-European)
- *Pseudopityophthorus minutissimus*
- *Pseudopityophthorus pruinosus*
- *Scaphoideus luteolus*
- *Spodoptera eridania*
- *Spodoptera frugiperda*
- *Spodoptera littoralis*

- *Spodoptera litura*
- *Tephritidae* (non-European)
- *Trachypterellus quadrigibbus*
- *Thrips palmi*
- *Xiphinema americanum* (non-European populations)
- *Xiphinema californicum*

Bacteria
- *Clavibacter michiganensis*
- *Erwinia amylovora*
- *Pseudonomas solanacearum*
- *Xylella fastidiosa*

Fungi
- *Alternaria alternata*
- *Ceratocystis fagacearum*
- *Chrysomixa arctostaphyli*
- *Cronartium* spp. (non-European)
- *Endocronartium* spp. (non-European)
- *Guignardia laricina*
- *Guignardia piricola*
- *Gymnosporangium* spp. (non-European)
- *Inonotus weirii*
- *Melampsora medusae*
- *Melampsora farlowii*
- *Monilinia fructicola*
- *Mycosphaerella larici-leptolepis*
- *Mycosphaerella populorum*
- *Phoma andina*
- *Phyllosticta solitaria*
- *Septoria lycopersici*
- *Synchytrium endobioticum*
- *Thecaphora solani*
- *Trechispora brinkmannii*

Viruses and virus-like organisms

1. Elm phlöem mycoplasm
2. Potato viruses and virus-like organisms such as:
   - Andean potato latent virus
   - Andean potato mottle virus
   - Arracha virus B, oca strain
   - Potato black ringspot virus
   - Potato spindle tuber viroid
   - Potato virus T
   - Non-European isolates of potato viruses A, M, S, V, X and Y (including Yo, Yn and Yc) and Potato leafroll virus
3. Tobacco ringspot virus
4. Tomato ringspot virus

5. Viruses and virus-like organisms of *Cydonia* Mill., *Fragaria* L., *Malus* Mill., *Prunus* L., *Pyrus* L., *Ribes* L., *Rubus* L., and *Vitis* L., such as:
- Apple proliferation mycoplasm
- Apricot chlorotic leafroll mycoplasm
- Blueberry leaf mottle virus
- Cherry rasp leaf mottle virus (American)
- Peach mosaic virus (American)
- Peach phony rickettsia
- Peach rosette mosaic virus
- Peach rosette mycoplasm
- Peach-X disease mycoplasm
- Peach yellows mycoplasm
- Pear decline mycoplasm
- Plum line pattern virus (American)
- Raspberry leaf curl virus (American)
- Strawberry latent "C" virus
- Strawberry vein banding virus
- Strawberry witches' broom mycoplasm
- Non-European viruses and virus-like organisms of *Cydonia* Mill., *Fragaria* L., *Malus* Mill., *Prunus* L., *Pyrus* L., *Ribes* L., *Rubus* L., and *Vitis* L.,

6. Viruses transmitted by *Bemisia tabaci* Genn, such as:
- Bean golden mosaic virus
- Cowpea mild mottle virus
- Lettuce infectious yellows virus
- Pepper mild tigré virus
- Squash leaf curl virus
- Euphorbia mosaic virus
- Florida tomato virus

Parasitic plants
- *Arceuthobium* spp. (non-European)

Organisms impairing quality (Directive 92/34/EEC and 93/48/EEC. The plant material must, at least on visual inspection, be substantially free from any harmful organisms and diseases impairing quality or any signs or symptoms thereof and in particular be free from:

Insects, mites and nematodes at all stages of their development
- *Aceria essigi*

Bacteria
- *Agrobacterium rhyzogenes*
- *Agrobacterium tumefaciens*
- *Rhodococcus fascians*

Fungi
- *Armillariella mellea*
- *Didymelia applanata*
- *Peronospora rubi*
- *Phytophthora fragaria* var. *rubi*
- *Verticillium* spp.

Viruses and virus-like organisms
- Raspberry bushy dwarf virus
- Raspberry leaf curl virus

Chemical treatment: The plant material must not have undergone any treatment unless the CPVO and the examination office allow or request such treatment. If it has been treated, full details of the treatment must be given.

Labelling of individual plants in sample:
- Species
- File number of the application allocated by the CPVO
- Breeder's reference
- Examination office's reference (if known)
- Name of applicant
- The phrase "On request of the CPVO"

III CONDUCT OF TESTS

1. Variety collection

A variety collection will be maintained for the purpose of establishing distinctness of the candidate varieties in test. A variety collection may contain both living material and descriptive information. A variety will be included in a variety collection only if plant material is available to make a technical examination.

Pursuant to Article 7 of Council Regulation No. 2100/94, the basis for a collection should be the following:

- varieties listed or protected at the EU level or at least in one of the EEA Member States;
- varieties protected in other UPOV Member States;
- any other variety in common knowledge.

The composition of the variety collection in each Examination Office depends on the environmental conditions in which the Examination Office is located.

Variety collections will be held under conditions which ensure the long term maintenance of each accession. It is the responsibility of Examination Offices to replace reference material which has deteriorated or become depleted. Replacement material can only be introduced if appropriate tests confirm conformity with the existing reference material. If any difficulties arise for the replacement of reference material, Examination Offices must inform the CPVO. If authentic plant material of a variety cannot be supplied to an Examination Office the variety will be removed from the variety collection.

2. Material to be examined

Candidate varieties will be directly compared with other candidates for Community plant variety rights tested at the same Examination Office, and with appropriate varieties in the variety collection. When necessary an Examination Office may also include other candidates and varieties. Examination Offices should therefore make efforts to co-ordinate the work with other Offices involved in DUS testing of blackberry. There should be at least an exchange of technical questionnaires for each candidate variety, and during the test period, Examination Offices should notify each other and the CPVO of candidate varieties which are likely to present problems in establishing distinctness. In order to solve particular problems Examination Offices may exchange plant material.

3. Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the Annex 1. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental conditions under which the test is conducted. In the latter case, the CPVO should be informed. In addition the existence of some other regulation e.g. plant health, may make the observation of the characteristic impossible.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation N° 1239/95, to insert additional characteristics and their expression in respect of a variety.

4. Grouping of varieties

The varieties and candidates to be compared will be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states of expression are fairly evenly distributed throughout the collection. In the case of continuous grouping characteristics overlapping states of expression between adjacent groups is required to reduce the risks of incorrect allocation of candidates to groups. The characters used for grouping could be the following:

a) Plant: growth habit (characteristic 1)

b) Dormant cane: spines (characteristic 9)

c) Leaf: predominant number of leaflets (characteristic 24)

d) Leaf: type (characteristic 25)

e) Time of beginning of flowering on previous year's cane (characteristic 41)

f) Time of beginning of fruit ripening on previous year's cane (characteristic 43)

5. Trial designs and growing conditions

The minimum duration of tests (independent growing cycles) will normally include at least two satisfactory crops of fruit. Tests will be carried out under conditions ensuring normal growth. The size of the plots will be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period.

The test design is as follows

Each test should include 5 plants.

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.

Plant/Dormant cane: Unless otherwise stated, all observations on the plant and the dormant cane should be made during winter dormancy.

Young shoot: Unless otherwise stated, all observations on the young shoot should be made during rapid growth and before flowering.

New cane/leaf: Unless otherwise stated, all observations on the new cane and the leaf should be made during flowering.

Fruit: Unless otherwise stated, all observations on the fruit should be made on fruits collected during the second, third and/or fourth picking.

6. Special tests

In accordance with Article 83(3) of Council Regulation No. 2100/94 an applicant may claim either in the Technical Questionnaire or during the test that a candidate has a characteristic which would be helpful in establishing distinctness. If such a claim is made and is supported by reliable technical data, a special test may be undertaken providing that a technically acceptable test procedure can be devised.

Special tests will be undertaken, with the agreement of the President of CPVO, where distinctness is unlikely to be shown using the characters listed in the protocol.

7. Standards for decisions

a) **Distinctness**

A candidate variety will be considered to be distinct if it meets the requirements of Article 7 of Council Regulation No. 2100/94.

b) **Uniformity**

A candidate will be considered to be sufficiently uniform if the number of off-types does not exceed the number of plants as indicated in the table below. A population standard of 1% and an acceptance probability of 95% should be applied.

Table of maximum numbers of off-types allowed for uniformity standards.

Number of plants	off-types allowed
≤ 5	0

c) **Stability**

A candidate will be considered to be sufficiently stable when there is no evidence to indicate that it lacks uniformity.

IV REPORTING OF RESULTS

After each recording season the results will be summarised and reported to the CPVO in the form of a UPOV model interim report in which any problems will be indicated under the headings distinctness, uniformity and stability. Candidates may meet the DUS standards after two fruiting periods but in some cases three fruiting periods may be required. When tests are completed the results will be sent by the Examination Office to the CPVO in the form of a UPOV model final report.

If it is considered that the candidate complies with the DUS standards, the final report will be accompanied by a variety description in the format recommended by UPOV. If not the reasons for failure and a summary of the test results will be included with the final report.

The CPVO must receive interim reports and final reports by the date agreed between the CPVO and the examination office.

Interim reports and final examination reports shall be signed by the responsible member of the staff of the Examination Office and shall expressly acknowledge the exclusive rights of disposal of CPVO.

V LIAISON WITH THE APPLICANT

If problems arise during the course of the test the CPVO should be informed immediately so that the information can be passed on to the applicant. Subject to prior agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

The interim report as well as the final report shall be sent by the Examination Office to the CPVO.

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ANNEXES TO FOLLOW

ANNEX I

PAGE

Legend:

(+) See explanations on the Table of characteristics
QL Qualitative characteristic
QN Quantitative characteristic
PQ Pseudo-qualitative characteristic

ANNEX II

ANNEX I

TABLE OF CHARACTERISTICS TO BE USED IN DUS-TEST AND PREPARATION OF DESCRIPTIONS

CPVO N°	UPOV N°	Characteristics		Examples	Note
1.	**1.**	**Plant: growth habit**			
(+)	**(+)**		upright	Wilson's Early, Arapaho	1
	(*)		upright to semi-upright	Kiowa	2
PQ	**PQ**		semi-upright	Jersey Black	3
			semi-upright to spreading	Tayberry	4
			spreading	Himalaya, Aurora	5
2.	**2.**	**Plant: number of new canes**			
			very few	Himalaya	1
QN	**QN**		few	Thornfree	3
			medium	Jersey Black	5
			many	Philadelphia	7
3.	**3.**	**Dormant cane: length**	short	Philadelphia	3
QN	**QN**		medium	Jersey Black	5
			long	Tayberry	7
			very long	Ranui, Marahau	9
4.	**4.**	**Dormant cane: diameter (in central third)**	very small	Aurora	1
QN	**QN**		small	Philadelphia	3
			medium	Tayberry	5
			large	Himalaya	7
			very large	Jersey Black	9

CPVO N°	UPOV N°	Characteristics		Examples	Note
5.	**5. (*)**	**Dormant cane: anthocyanin coloration**	absent or very weak	Taylor's Prolific	1
QN	**QN**		weak	Black Satin	3
			medium	Alfred	5
			strong	Wilson's Early	7
6.	**6.**	**Dormant cane: number of branches**	few	Himalaya	3
QN	**QN**		medium	Jersey Black	5
			many	Kittatinny	7
7.	**7.**	**Dormant cane: predominant distribution of branches**	only on upper third	Mammoth	1
PQ	**PQ**		only on upper half	Taylor's Profilic	2
			over whole length	Himalaya	3
8. (+)	**8. (+)**	**Dormant cane: cross section**	rounded	Sunberry	1
	(*)		rounded to regular	Douglas	2
PQ	**PQ**		angular	Wilson's Early	3
			angular to grooved	Kiowa	4
			grooved	Mammoth	5
9.	**9. (*)**	**Dormant cane: spines**	absent	Loch Ness	1
QL	**QL**		present	Himalaya	9
10.	**10.**	**Dormant cane: number of spines**	very few	Philadelphia	1
QN	**QN**		few	Wilson's Early	3
			medium	Himalaya	5
			many	Bedford Giant	7
			very many	Sunberry	9

CPVO N°	UPOV N°	Characteristics		Examples	Note
11.	**11. (*)**	**Spine: size**			
			small	Sunberry	3
QN	**QN**		medium	Bedford Giant	5
			large	Himalaya	7
			very large	Jersey Black	9
12.	**12. (+)**	**Spine: attitude of apex in relation to cane**	upwards	Kittatinny	1
QN	**QN**		outwards	Jersey Black	2
			downwards	Mammoth	3
13.	**13.**	**Young shoot: anthocyanin coloration (during rapid growth)**	absent or very weak	Philadelphia	1
QN	**QN**		weak	Black Satin	3
			medium	Bedford Giant	5
			strong	Tayberry	7
14.	**14.**	**Young shoot: intensity of green colour**	light	Philadelphia	3
QN	**QN**		medium	Ashton Cross	5
			dark	Thornless Evergreen	7
15. (+)	**15. (+)**	**Young shoot: number of glandular hairs**	absent or few	Silvan	1
QN	**QN**		medium	Navaho	2
			many	Karaka Black	3
16.	**16.**	**Terminal leaflet: length**	short	Ashton Cross	3
QN	**QN**		medium	Loch Ness	5
			long	Taylor’s Prolific	7
17.	**17.**	**Terminal leaflet: width**	narrow	Alfred	3
QN	**QN**		medium	Navaho	5
			broad	Douglas	7

CPVO N°	UPOV N°	Characteristics		Examples	Note
18. (+)	**18. (+)**	**Terminal leaflet: lobbing**	absent	Wilson's Early	1
QL	**QN**		present	Thornless Evergreen	9
19.	**19.**	**Terminal leaflet: shape in cross-section**	u-shaped	Bedford Giant	1
QL	**QL**		v-shaped	Mammoth	2
20.	**20.**	**Terminal leaflet: undulation of margin**	absent or very weak	Hull Thornless	1
QN	**QN**		weak	Loch Ness, Thornfree	2
			strong	Navaho	3
21.	**21.**	**Terminal leaflet: blistering between veins**	very weak	Himalaya	1
QN	**QN**		weak	Jersey Black	3
			medium	Thornfree	5
			strong	Philadelphia	7
			very strong	Tayberry	9
22. (+)	**22. (+)**	**Leaflet: type of incision of margin**	serrate	Himalaya	1
QL	**QL**		bi-serrate	Thornless Evergreen	2
23.	**23.**	**Leaflet: depth of incisions**	shallow	Philadelphia	3
QN	**QN**		medium	Himalaya	5
			deep	Loch Ness	7
			very deep	Thornless Evergreen	9
24.	**24. (*)**	**Leaf: predominant number of leaflets**	three	Marionberry	1
PQ	**PQ**		five	Himalaya	2
			seven	Karaka Black	3
25. (+)	**25. (+)**	**Leaf: type**	odd-pinnate	Philadelphia	1
	(*)		intermediate	Karaka Black	2
QL	**QL**		palmate	Thornless Evergreen	3

CPVO N°	UPOV N°	Characteristics		Examples	Note
26.	**26.**	**Leaf: intensity of green colour of upper side**	light	Philadelphia	3
QN	**QN**		medium	Kittatinny	5
			dark	Thornless Evergreen	7
27.	**27.**	**Leaf: glossiness of upper side**	weak	Thornless Evergreen	3
QN	**QN**		medium	Mammoth	5
			strong	Kittatinny	7
28.	**28.**	**Petiole: size of stipules**	small	Wilson's Early	3
QN	**QN**		medium	Thornless Hull	5
			large	Loch Ness	7
29.	**29.**	**Flower: diameter**	very small	Dyke	1
QN	**QN**		small	Tayberry	3
			medium	Thornfree	5
			large	Himalaya	7
			very large	Silvan, Marionberry	9
30.	**30.**	**Flower: colour of petal**	white	Philadelphia	1
PQ	**PQ**		white with violet tinge	Black Satin	2
			pinkish	Dirksen Thornless, Theodor Reimers	3
31.	**31.**	**Fruiting lateral: length**	short	Mammoth	3
QN	**QN**		medium	Jersey Black	5
			long	Thornless Evergreen	7
			very long	Tayberry	9
32.	**32.**	**Fruit: length**	short	Himalaya	3
QN	**QN**		medium	Taylor's Prolific	5
			long		7
			very long	Tayberry	9

CPVO N°	UPOV N°	Characteristics		Examples	Note
33.	**33.**	**Fruit: width**	narrow	Tayberry	3
QN	**QN**		medium	Loch Ness	5
			broad		7
			very broad	Douglas	9
34.	**34.**	**Fruit: ratio length/width**	small	Himalaya	3
QN	**QN**		medium	Taylor's Prolific	5
			large	Tayberry	7
			very large	Karaka Black	9
35.	**35.**	**Fruit: number of drupelets**	few	Marionberry	3
QN	**QN**		medium	Himalaya	5
			many	Tayberry	7
			very many	Karaka Black	9
36.	**36.**	**Fruit: size of drupelet**	very small	Waldo, Siskiyou	1
QN	**QN**		small	Wilson's Early, Siskiypu	3
			medium	Navaho	5
			large	Douglas	7
37. (+)	**37. (+)**	**Fruit: shape in longitudinal section**	circular	Himalaya	1
	(*)		elliptic	Taylor's Prolific	2
PQ	**PQ**		narrow ovate		3
			medium ovate	Wilson's Early	4
			long conical	Tayberry	5
			oblong	Karaka Black	6
38.	**38.**	**Fruit: colour**	red	Sunberry	1
PQ	**PQ**		reddish purple	Tayberry	2
			reddish black	Alfred	3
			bluish black	Himalaya	4
			black	Black Satin	5

CPVO N°	UPOV N°	Characteristics		Examples	Note
39.	**39.**	**Time of leaf bud burst**	very early	Ranui	1
QN	**QN**		early	Wilson's Early	3
			medium	Black Satin	5
			late	Jumbo	7
40.	**40. (*)**	**Fruiting on current year's cane**	absent	Navaho	1
QL	**QL**		present	Taylor's Prolific	9
41. (+)	**41. (+)**	**Time of beginning of flowering <u>on previous year's cane</u>**	very early	Wilson's Early	1
	(*)		early	Taylor's Prolific	3
QN	**QN**		medium	Himalaya	5
			late	Thornfree	7
			very late	Thornless Evergreen	9
42. (+)	**42 (+)**	**<u>Only varieties which fruit on current year's cane:</u> Time of beginning of flowering <u>on current year's cane</u>**	very early		1
QN	**QN**		early		3
			medium		5
			late		7
			very late		9
43. (+)	**43. (+)**	**Time of beginning of fruit ripening <u>on previous year's cane</u>**	very early	Loch Tay, Ranui	1
	(*)		early	Taylor's Prolific, Karaka Black, Sunberry	3
QN	**QN**		medium	Himalaya, Marionberry	5
			late	Thornfree	7
			very late	Thornless Evergreen	9

CPVO N°	UPOV N°	Characteristics	Examples	Note
44. (+)	**44. (+)**	**<u>Only varieties which fruit on current year's cane:</u> Time of beginning of fruit ripening <u>on current year's cane</u>**		
			very early	1
QN	**QN**		early	3
			medium	5
			late	7
			very late	9

EXPLANATIONS AND METHODS

Ad. 1: Plant: growth habit

1
upright

2
upright to semi-upright

3
semi-upright

4
semi-upright to spreading

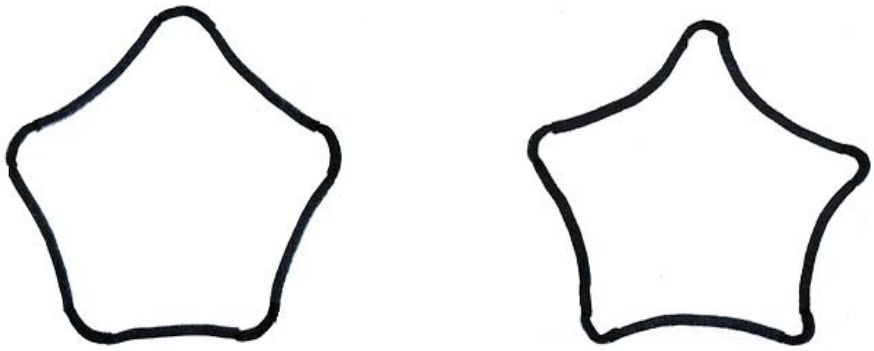
5
spreading

Ad. 8: Dormant cane: cross section

1
rounded

2
rounded to angular

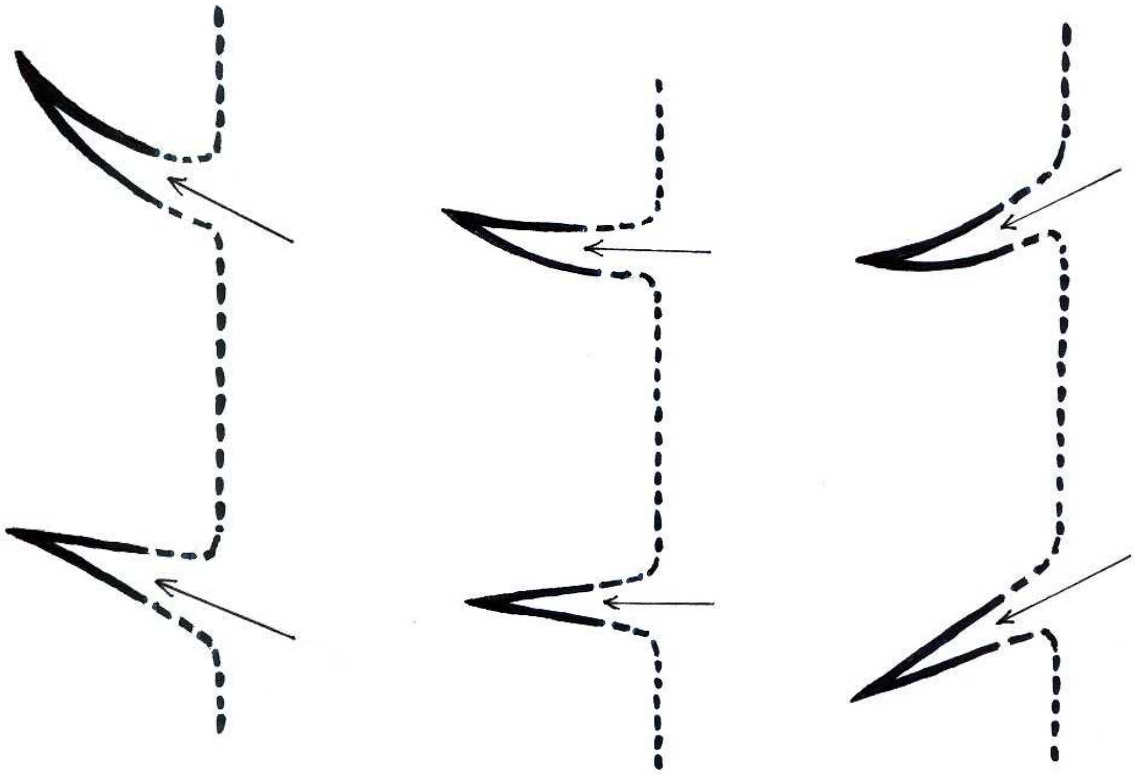
3
angular



4
angular to grooved

5
grooved

Ad. 12: Spine: attitude of apex in relation to cane



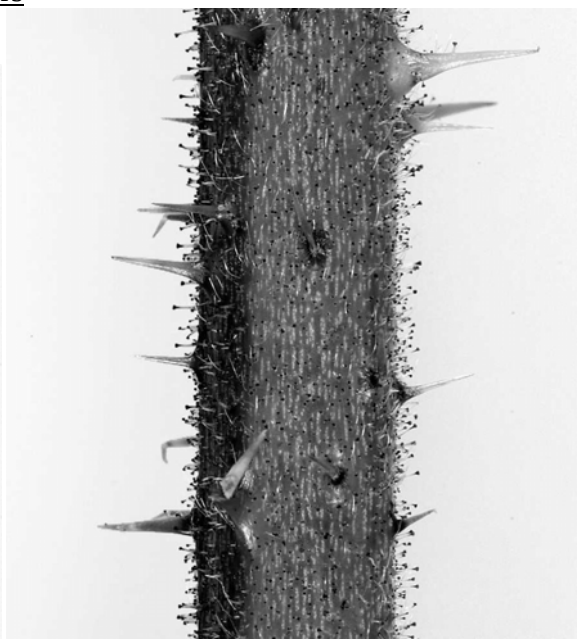
1
upwards

2
outwards

3
downwards

Ad. 15: Young shoot: number of glandular hairs

1
absent of few



3
many

Ad. 18: Terminal leaflet: lobing

1
absent

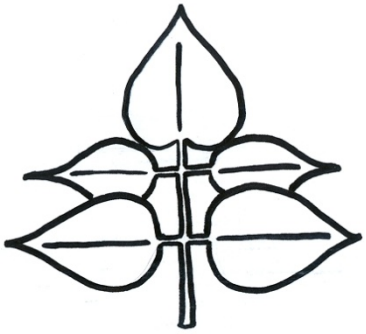
9
present

Ad. 22: Leaflet: type of incision of margin

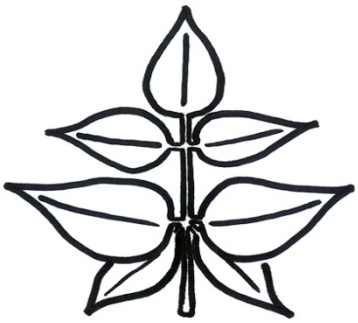
1
serrate

2
bi-serrate

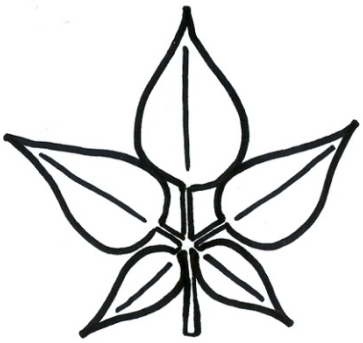
Ad. 25: Leaf: type



1
odd-pinnated

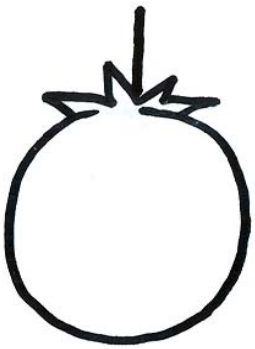


2
intermediate

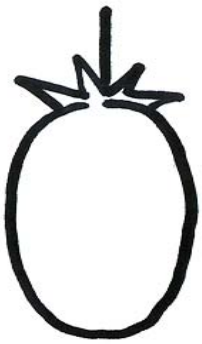


3
palmate

Ad. 37: Fruit: shape in longitudinal section

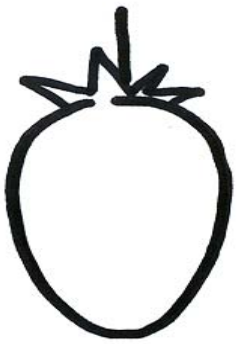


1
circular



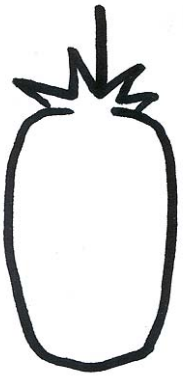
2
elliptic

3
narrow ovate



4
medium ovate

5
long conical



6
oblong

Ad. 41: Time of beginning of flowering on previous year’s cane

Ad. 42: Only varieties which fruit 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. 43: Time of beginning of fruit ripening on previous year’s cane

Ad. 44: Only varieties which fruit on current year's cane: Time of beginning of fruit ripening on current year's cane

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

LITERATURE

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Jennings, D.L. 1988: Raspberries and Blackberries: Their breeding, diseases and growth, Academic Press. London, United Kingdom.

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ANNEX II

European Union
Community Plant Variety Office

TECHNICAL QUESTIONNAIRE

to be completed in connection with an application for Community Plant Variety Rights
Please answer all questions. A question without any answer will lead to a non-attribution of an application date. In cases where a field / question is not applicable, please state so.

1. **Botanical taxon:** Name of the genus, species or sub-species to which the variety belongs and common name (please tick only one of the corresponding boxes)

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

[ ] BLACKBERRY

[ ] HYBRID (please specify below)

…….

2. **Applicant(s):** Name(s) and address(es), phone and fax number(s), Email address, and where appropriate name and address of the procedural representative

3. **Variety denomination**

a) Where appropriate proposal for a variety denomination:

b) Provisional designation (breeder's reference):

4. Information on origin, maintenance and reproduction 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 know parent variety) .....[ ]

(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 propagation

4.2.1 Vegetative propagation

(a) budding or grafting ..... [ ]

(b) other (state method) ..... [ ]

4.2.2 Other (please provide details) ..... [ ]

4.3 Geographical origin of the variety: the region and the country in which the variety was bred or discovered and developed

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in the CPVO Protocol; please mark the state of expression which best corresponds).

Characteristics		Example varieties	Note
5.1 (1)	**Plant: growth habit**		
	upright	Wilson's Early, Arapaho	1 [ ]
	upright to semi-upright	Kiowa	2 [ ]
	semi-upright	Jersey Black	3 [ ]
	semi-upright to spreading	Tayberry	4 [ ]
	spreading	Himalaya, Aurora	5 [ ]
5.2 (9)	**Dormant cane: spines**		
	absent	Loch Ness	1 [ ]
	present	Himalaya	9 [ ]

	Characteristics	Example varieties	Note
5.3 (24)	**Leaf: predominant number of leaflets**		
	three	Marionberry	1 [ ]
	five	Himalaya	2 [ ]
	seven	Karaka Black	3 [ ]
5.4 (25)	**Leaf: type**		
	odd-pinnate	Philadelphia	1 [ ]
	intermediate	Karaka Black	2 [ ]
	palmate	Thornless Evergreen	3 [ ]
5.5 (40)	**Fruiting on current year's cane**		
	absent	Navaho	1 [ ]
	present	Taylor's Prolific	9 [ ]
5.6 (41)	**Time of beginning of flowering <u>on previous year's cane</u>**		
	very early	Wilson's Early	1 [ ]
	early	Taylor's Prolific	3 [ ]
	medium	Himalaya	5 [ ]
	late	Thornfree	7 [ ]
	very late	Thornless Evergreen	9 [ ]
5.7 (43)	**Time of beginning of fruit ripening <u>on previous year's cane</u>**		
	very early	Loch Tay, Ranui	1 [ ]
	early	Taylor's Prolific, Karaka Black, Sunberry	3 [ ]
	medium	Himalaya, Marionberry	5 [ ]
	late	Thornfree	7 [ ]
	very late	Thornless Evergreen	9 [ ]

6. Similar varieties and differences from these varieties:

Denomination of similar variety	Characteristic in which the similar variety is different[1)]	State of expression of similar variety	State of expression of candidate variety

[1)] In the case of identical states of expressions of both varieties, please indicate the size of the difference

7. Additional information which may help to distinguish the variety

A representative printed-out colour photo of the variety **must** be added to the Technical Questionnaire.

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

[ ] YES, please specify

[ ] NO

7.3 Other information

[ ] YES, please specify

[ ] NO

8. GMO-information required

The variety represents a Genetically Modified Organism within the meaning of Article 2(2) of Council Directive EC/2001/18 of 12/03/2001.

[ ] YES [ ] NO

If yes, please add a copy of the written attestation of the responsible authorities stating that a technical examination of the variety under Articles 55 and 56 of the Basic Regulation does not pose risks to the environment according to the norms of the above-mentioned Directive.

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”:

I/we hereby declare that to the best of my/our knowledge the information given in this form is complete and correct.

Date	Signature	Name

[End of document]