

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

Lonicera caerulea L.

BLUE HONEYSUCKLE, HONEYBERRY, HASKAP

UPOV Code: LONIC_CAE

Adopted on 28/11/2012

Entry into force on 01/01/2012

I **SUBJECT OF THE PROTOCOL**

The protocol describes the technical procedures to be followed in order to meet the Council Regulation (EC) N°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 Guidelines TG/277/1 dated 28/03/2012 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all fruit varieties of *Lonicera caerulea* L.

II **SUBMISSION OF 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 final dates for request of technical examination and sending of Technical Questionnaire by the CPVO as well as submission date, quantity and quality of plant material by the applicant can be found on the CPVO website (www.cpvo.europa.eu) in the S2 Gazette.

Quality of plants: Should not be less than the standards laid down in Council Directive 2000/29/EC and its implementing measures.

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 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 (EC) 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 blue honeysuckle. 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 (EC) No. 874/2009, 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: vigour (characteristic 1)
- b) Plant: habit (characteristic 2)

- c) Leaf blade: shape of apex (characteristic 14)
- d) Time of beginning of fruit ripening (characteristic 36)

5. Trial designs and growing conditions

The minimum duration of tests 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 2.

6. Special tests

In accordance with Article 83(3) of Council Regulation (EC) 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 (EC) No. 2100/94.

b) **Uniformity**

For the assessment of uniformity a population standard of 1% and an acceptance probability of 95% should be applied.

For a sample size of 5 plants, no off-types are allowed.

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.

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

VI ENTRY INTO FORCE

The present protocol enters into force on **01/01/2012**. This protocol will apply to all varieties tested as from this date. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the partially revised Technical Protocol. Technical examinations of candidate varieties are carried out according to the TP in force when the DUS test starts. The starting date of a DUS examination is considered to be the due date for submitting of plant material for the first test period.

In cases where the Office requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process to be carried out at the moment of this request, such report can only be accepted if the technical examination has been carried out according to the CPVO TP which was in force at the moment when the technical examination started.

ANNEXES TO FOLLOW

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Legend:

(*)	UPOV asterisked characteristic
(+)	See Explanation on the Table of Characteristics
(a)-(d)	See Explanations on the Table of Characteristics
G	Grouping characteristics

Types of expression of characteristics:

QL	Qualitative characteristic
QN	Quantitative characteristic
PQ	Pseudo-qualitative characteristic

Type of observation 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

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ANNEX I

TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
1.	1.	VG	Plant: vigour		
	(*)	(a)	weak	88/6	3
	(+)	(+)	medium	Amur	5
QNG	QN		strong	Altai	7
2.	2.	VG	Plant: habit		
	(*)	(a)	upright	Amur, L-Kola 1	1
	QNG	QN	semi-upright	Altai, L-Kola 28	2
			spreading	88/7	3
3.	3.	VG	Plant: branching		
	(+)	(+)	(a) weak	L-Kola 1	3
	QNG	QN	medium	L-Kola 28	5
			strong	88/6	7
4.	4.	VG	One-year-old shoot: lenticels		
	(*)	(a)	absent		1
QL	QL		present		9
5.	5.	VG	One-year-old shoot: pubescence		
	(*)	(a)	absent or very weak	Amur	1
	QNG	QN	weak	Altai	3
			medium		5
			strong	88/6	7
6.	6.	VG	One-year-old shoot: colour of bark		
	(*)	(a)	yellow brown		1
	PQ	PQ	light brown		2
			dark brown		3
			red brown		4

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
7.	7.	VG (*) (a)	One-year-old shoot: development of adventitious buds		
			weak		1
			medium	L-Kola 28	3
QN	QN		strong	L-Kola 1	5
8.	8.	VG (*) (a)	Shoot: pubescence of tip		
			absent or weak	L-Kola 28	1
			medium		3
QN	QN		strong	88/6, 88/7	5
9.	9.	VG (*) (a)	Shoot: glossiness of bark of tip		
			absent or weak	88/6, 88/7	1
			medium		3
QN	QN		strong	L-Kola 1, L-Kola 28	5
10.	10.	VG (*) (a)	Shoot: anthocyanin coloration of tip		
			absent or very weak	88/7	1
			weak	Altai, L-Kola 28	2
			medium		3
			strong	Amur	4
QN	QN		very strong		5
11.	11.	VG/MS (*) (d)	Leaf blade: length		
			short		3
			medium		5
QN	QN		long		7
12.	12.	VG/MS (*) (d)	Leaf blade: width		
			narrow		3
			medium		5
QN	QN		broad		7

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
13.	13.	VG/MS (* (d)	Leaf blade: length/width ratio		
			moderately elongated		1
			medium		2
QN	QN		moderately compressed		3
14.	14. (* (+)	VG (b)	Leaf blade: shape of apex		
			acute	Altai, L-Kola 28	1
			obtuse		2
			rounded	Amur, 88/7	3
PQ	PQ				
G					
15.	15.	VG (b)	Leaf blade: pubescence of lower side		
			absent or very weak	Amur, L-Kola 1, L-Kola 28	1
			very weak		3
			medium	Altai, 88/6	5
			strong	88/7	7
very strong		9			
16.	16.	VG (b)	Leaf blade: green colour of upper side		
			light		1
			medium	88/7	3
QN	QN		dark	88/6	5
17.	17.	VG (b)	Stem-clasping leaf: size		
			small	Altai	1
			medium	L-Kola 28	3
QN	QN		large	Amur	5
18.	18.	VG (b)	Stem-clasping leaf: pubescence		
			absent		1
QL	QL		present	L-Kola 1	9

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
19.	19.	VG	Flower: pubescence of corolla tube		
(+)	(+)	(c)	weak	L-Kola 1	1
QN	QN		medium	L-Kola 28	3
			strong	Amur	5
20.	20.	VG	Flower: attitude		
(+)	(+)	(c)	upwards		1
QN	QN		horizontal		3
			downwards		5
21.	21.	VG	Flower: style length relative to anther length		
(+)	(+)	(c)	shorter		1
QN	QN		equal		3
			longer		5
22.	22.	VG	Sepal: length		
	(*)	(c)	short		1
QN	QN		medium	Amur	3
			long	Altai	5
23.	23.	VG/MS	Fruit: length		
	(*)	(d)	short		1
(+)	(+)		medium	Amur	3
QN	QN		large	Altai	5
24.	24.	VG/MS	Fruit: width		
	(*)	(d)	narrow	Jaltská, Maistar, Sinoglaska	1
(+)	(+)		medium	Amur, Morena, Viola	3
QN	QN		broad	Amfora, Fialka	5
25.	25.	VG	Fruit: shape in cross section		
	(*)	(d)	narrow elliptic		1
(+)	(+)		broad elliptic		2
QN	QN		circular		3

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note	
26.	26.	VG	Fruit: shape in lateral view			
			(*)	ovate		1
			(+)	narrow oblong		2
			PQ	broad oblong		3
				obovate		4
			campanulate		5	
27.	27.	VG	Fruit: shape at calyx end			
			(+)	acute		1
			PQ	rounded		2
			truncate		3	
28.	28.	VG	Fruit: tip			
			QL	absent		1
			present		9	
29.	29.	VG	Fruit: size of eye opening			
			(+)	small		1
			QN	medium		3
			large		5	
30.	30.	VG	Fruit: surface			
			(+)	smooth	Amur, L-Kola 1	1
			QN	medium	Altai	2
			rough	L-Kola 28	3	
31.	31.	VG	Fruit: bloom of skin			
			(+)	weak		1
			QN	medium		3
			strong	Altai, Amur	5	

CPVO N°	UPOV N°	Stage, method	Characteristics	Examples	Note
32.	32.	VG	Fruit: intensity of blue colour of skin		
(+)	(+)	(d)	light	Amfora, Fialka, Morena	1
QN	QN		medium	Roksana, Zoluška	3
			dark	Altai, Amur	5
33.	33.	VG	Fruit: tufts of hairs at apex		
QL	QL	(d)	absent	Amur, L-Kola 1	1
			present	Altai, 88/7	9
34.	34.	VG/MG	Time of bud burst		
	(*)		early	L-Kola 28	3
(+)	(+)		medium	L-Kola 1	5
QN	QN		late	88/6, 88/7	7
35.	35.	VG/MG	Time of beginning of flowering		
	(*)		early	Altai, L-Kola 28	3
(+)	(+)		medium	Amur, L-Kola 1	5
QN	QN		late		7
36.	36.	VG/MG	Time of beginning of fruit ripening		
	(*)				
(+)	(+)		early	Altai, L-Kola 1, L-Kola 28	3
QN	QN		medium	Amur, 88/6, 88/7	5
G			late		7

EXPLANATIONS AND METHODS

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 should be made on unpruned bushes in the dormant season.
- b) All observations on the leaf should be made at the stage of fully developed leaves at fruit maturity on the upper third of typical one-year-old shoots.
- c) All observations on the flower should be made at the time of full flowering.
- d) All observations on the fruit should be made at the time when the fruit is ready to be picked.

Explanations for individual characteristics

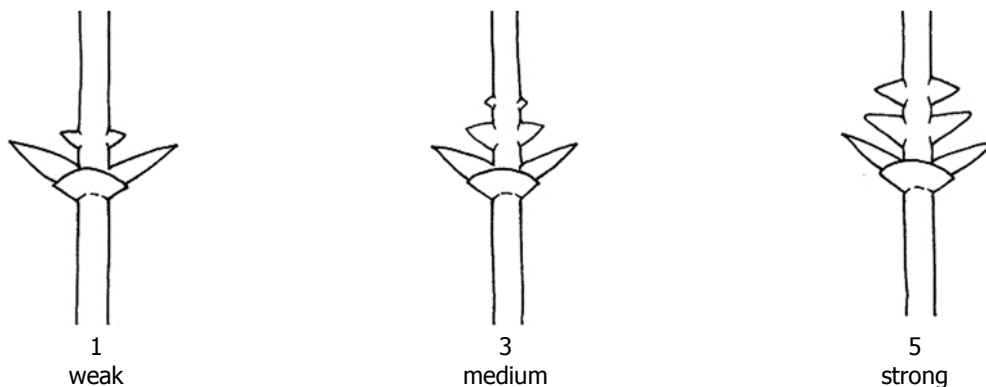
Ad. 1: Plant: vigour

The vigour of the plant should be considered as the overall abundance of vegetative growth.

Ad. 3: Plant: branching

The branching of the plant is considered to be the number of branches and the amount of lateral shoots.

Ad. 7: One-year-old shoot: development of adventitious buds



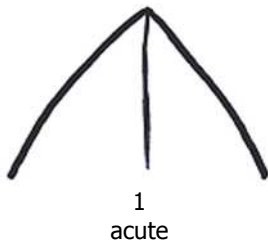
Ad. 8: Shoot: pubescence of tip

Ad. 9: Shoot: glossiness of bark of tip

Ad. 10: Shoot: anthocyanin coloration of tip

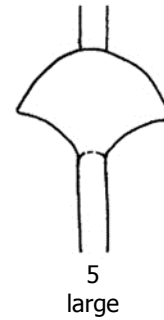
To be observed during rapid growth.

Ad. 14: Leaf blade: shape of apex



Ad. 17: Stem-clasping leaf: size

Ad. 18: Stem-clasping leaf: pubescence

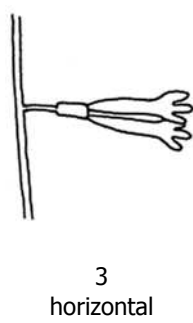
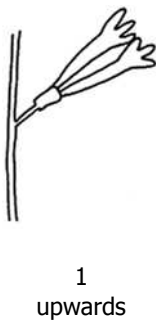


Ad. 19: Flower: pubescence of corolla tube

The pubescence is to be observed at the base of the corolla of a single flower.



Ad. 20: Flower: attitude



Ad. 21: Flower: style length relative to anther length



1
shorter



2
equal

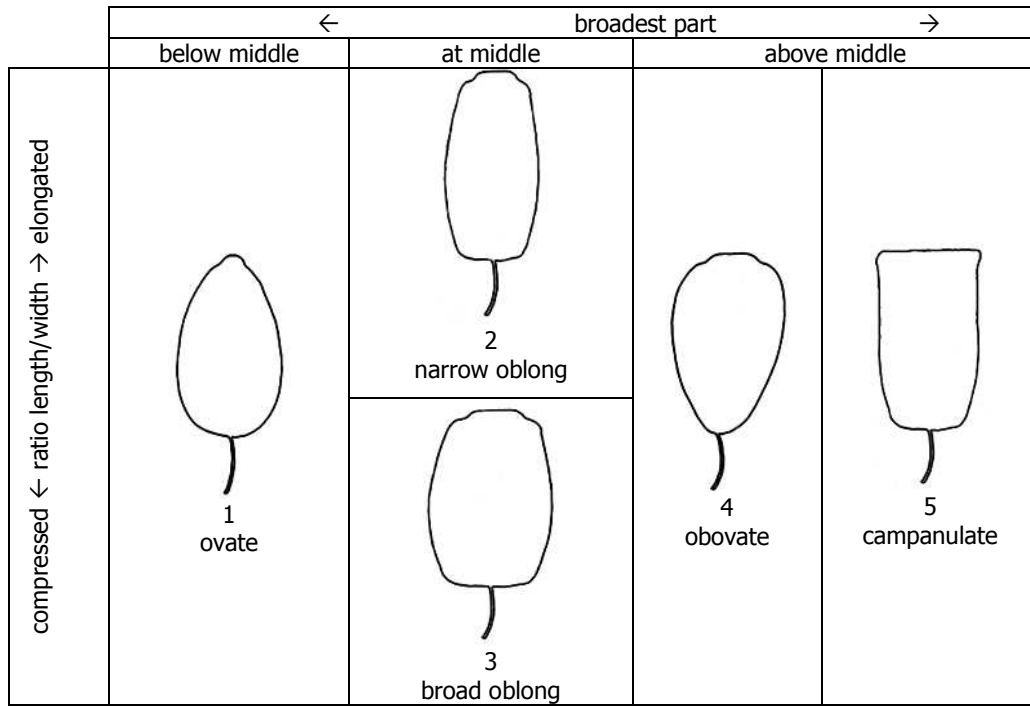


3
longer

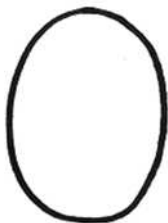
Ad. 23: Fruit: length

Ad. 24: Fruit: width

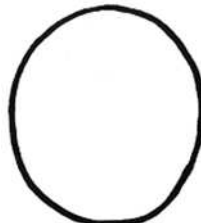
Ad. 26: Fruit: shape in lateral view



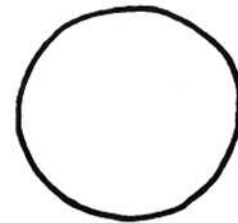
Ad. 25: Fruit: shape in cross section



1
narrow elliptic

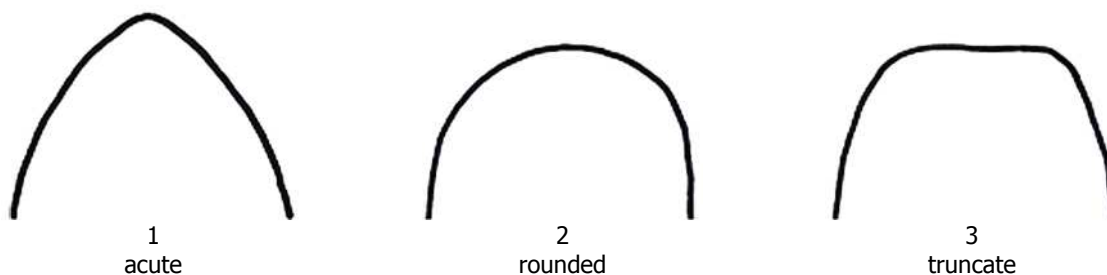


2
broad elliptic

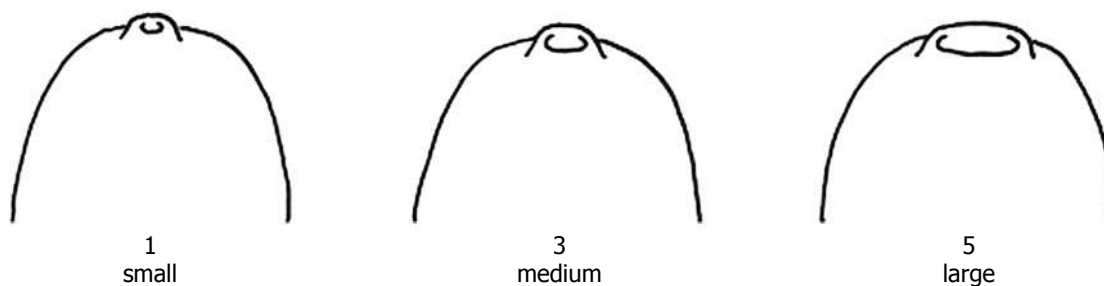


3
circular

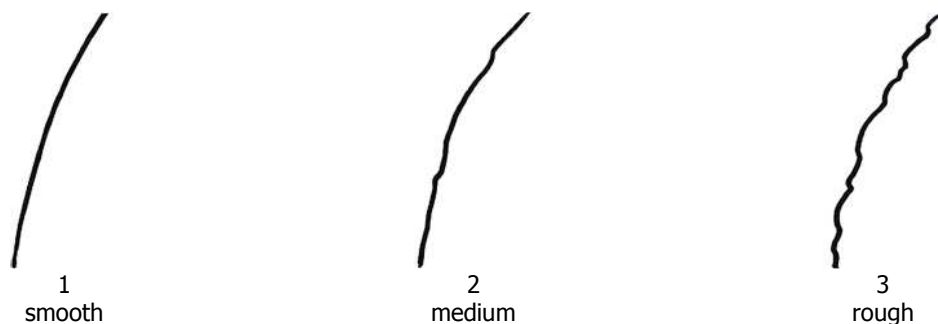
Ad. 27: Fruit: shape at calyx end



Ad. 29: Fruit: size of eye opening



Ad. 30: Fruit: surface



Ad. 31: Fruit: bloom of skin

The bloom of the fruit is considered as the waxy layer on the fruit skin, which forms part of the cuticle. It is also known as "glaucosity" and can be removed by rubbing.

Ad. 32: Fruit: intensity of blue colour of skin

The blue colour of skin should be assessed after the removal of bloom.

Ad. 34: Time of bud burst

The time of bud burst is when 10% of the buds show opening of the bud scales.

Ad. 35: Time of beginning of flowering

The time of beginning of flowering is when 10% of the flowers start opening.

Ad. 36: Time of beginning of fruit ripening

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

LITERATURE

Hummer, K.E., 2006: Blue Honeysuckle: A New Berry Crop for North America. Journal of the American Pomological Society 60(1): pp. 3-8

Paprštein, F. a kol., 2009: Technologie pěstování zimolezu (*Lonicera* sp.), Výzkumný a šlechtitelský ústav ovocnářský Holovousy s.r.o., Mendelova zemědělská a lesnická univerzita v Brně, Výzkumný ústav rostlinné výroby v.v.i. Praha Ruzyně, CZ, 36 pp.

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Smolik M., Ochmian I., Grajkowski J., 2010: Genetic variability of Polish and Russian accessions of cultivated blue honeysuckle (*Lonicera caerulea*). Genetika 46(8): pp. 1079-85

ANNEX II



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

Species *Lonicera caerulea* L.

BLUE HONEYSUCKLE, HONEYBERRY

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, maintenance and reproduction of the variety

Please indicate breeding scheme, parents and other relevant information

Variety resulting from:

4.1.1 Crossing

a) controlled cross (indicate parent varieties) []

b) partially known cross (indicate known parent variety(ies))..... []

c) unknown cross..... []

4.1.2 Mutation..... []
(indicate parent variety)

4.1.3 Discovery and development..... []
(indicate when and where discovered and how developed)

4.1.4 Other []
(please provide details)

4.2 Method of propagation

4.2.1 Vegetative propagation

a) cuttings..... []

b) *in vitro* propagation..... []

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

4.2.2 Seed []

4.2.3 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: vigour		
very weak		1 []
very weak to weak		2 []
weak	88/6	3 []
weak to medium		4 []
medium	Amur	5 []
medium to strong		6 []
strong	Altai	7 []
strong to very strong		8 []
very strong		9 []
5.2 (2) Plant: habit		
upright	Amur, L-Kola 1	1 []
semi-upright	Altai, L-Kola 28	2 []
spreading	88/7	3 []
5.3 (14) Leaf blade: shape of apex		
acute	Altai, L-Kola 28	1 []
obtuse		2 []
rounded	Amur, 88/7	3 []

Characteristics		Example varieties	Note
5.5 (36)	Time of beginning of fruit ripening		
	very early		1 []
	very early to early		2 []
	early	Altai, L-Kola 1, L-Kola 28	3 []
	early to medium		4 []
	medium	Amur, 88/6, 88/7	5 []
	medium to late		6 []
	late		7 []
	late to very late		8 []
very late		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			
<input type="checkbox"/> YES, please specify			
<input type="checkbox"/> NO			

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) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (b) Chemical treatment (e.g. growth retardant or pesticide) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (c) Tissue culture | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (d) Other factors | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Please provide details of where you have indicated "Yes":

10. Possible place of the technical examination

In case the CPVO needs to arrange a technical examination for this candidate variety, there might be more than one examination office entrusted by the CPVO suitable to grow your variety. In this case, the Office will decide on the place of the technical examination but you might wish to express here a preference in respect of an examination office. The available entrusted examination offices for that species can be found in the S2 Gazette under:

<http://www.cpvo.europa.eu/main/en/home/documents-and-publications/s2-gazette>

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]