CPVO · OCVV
Community Plant Variety Office
Office Communautaire des Variétés Végétales

PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Lobelia alsinoides Lam.; *Lobelia erinus* L.; *Lobelia valida* L. Bolus
Hybrids between *Lobelia erinus* and *Lobelia alsinoides*;
Hybrids between *Lobelia erinus* and *Lobelia valida*

LOBELIA

UPOV Code: LOBEL_ALS; LOBEL_ERI; LOBEL_VAL; LOBEL_AER; LOBEL_EVA

Adopted on 21/04/2020

Entry into force on 01/04/2020

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CPVO-TP/293/1 Corr.

1. SUBJECT OF THE PROTOCOL AND REPORTING

1.1 Scope of the technical protocol

This Technical Protocol applies to all varieties of ***Lobelia alsinoides*** **Lam.,** ***Lobelia erinus*** **L.,** ***Lobelia valida*** **L. Bolus, hybrids between** ***Lobelia erinus*** **and** ***Lobelia alsinoides*** **and hybrids between** ***Lobelia erinus*** **and** ***Lobelia valida*****.**

The protocol describes the technical procedures to be followed in order to meet the requirements of Council Regulation 2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on documents agreed by the International Union for the Protection of New Varieties of Plants (UPOV), such as the General Introduction to DUS (UPOV Document TG/1/3 http://www.upov.int/export/sites/upov/resource/en/tg_1_3.pdf), its associated TGP documents (http://www.upov.int/tgp/en/) and the relevant UPOV Test Guideline TG/293/1 Corr. dated 09/01/2019 (https://www.upov.int/edocs/tgdocs/en/tg293.pdf) for the conduct of tests for Distinctness, Uniformity and Stability.

1.2 Entry into Force

The present protocol enters into force on **01.04.2020**. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the 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.

1.3 Reporting between Examination Office and CPVO and Liaison with Applicant

1.3.1 Reporting between Examination Office and CPVO

The Examination Office shall deliver to the CPVO a preliminary report ("the preliminary report") no later than two weeks after the date of the request for technical examination by the CPVO.

The Examination Office shall also deliver to the CPVO a report relating to each growing period ("the interim report") and, when the Examination Office considers the results of the technical examination to be adequate to evaluate the variety or the CPVO so requests, a report relating to the examination ("the final report").

The final report shall state the opinion of the Examination Office on the distinctness, uniformity and stability of the variety. Where it considers those criteria to be satisfied, or where the CPVO so requests, a description of the variety shall be added to the report.

The interim and the final reports shall be delivered to the CPVO as soon as possible and no later than on the deadlines as laid down in the designation agreement.

1.3.2 Informing on problems in the DUS test

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 permanent agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

1.3.3 Sample keeping in case of problems

If the technical examination has resulted in a negative report, the CPVO shall inform the Examination Office as soon as possible in case that a representative sample of any relevant testing material shall be kept.

2. MATERIAL REQUIRED

2.1 Plant material requirements

Information with respect to the agreed closing dates and submission requirements of plant material for the technical examination of varieties can be found on http://cpvo.europa.eu/applications-and-examinations/technical-examinations/submission-of-plant-material-s2-publication in the special issue S2 of the Official Gazette of the Office. General requirements on submission of samples are also to be found following the same link.

2.2 Informing the applicant of plant material requirements

The CPVO informs the applicant that

- he is responsible for ensuring compliance with any customs and plant health requirements.
- the plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.
- 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.

2.3 Informing about problems on the submission of material

The Examination Office shall report to the CPVO immediately in cases where the test material of the candidate variety has not arrived in time or in cases where the material submitted does not fulfil the conditions laid down in the request for material issued by the CPVO.

In cases where the examination office encounters difficulties to obtain plant material of reference varieties the CPVO should be informed.

3. METHOD OF EXAMINATION

3.1 Number of growing cycles

The minimum duration of tests should normally be a single growing cycle.

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" http://www.upov.int/edocs/tgpdocs/en/tgp_9.pdf.

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.

Observation of colour by eye
Because daylight varies, colour determinations made against a colour chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The colour chart and version used should be specified in the variety description.

3.4 Test design

Vegetatively propagated varieties: each test should be designed to result in a total of at least 15 plants.

Seed propagated varieties: each test should be designed to result in a total of at least 30 plants.

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 Special tests for additional characteristics

In accordance with Article 23 of Implementing Rules N° 874/2009 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.

3.6 Constitution and maintenance of a variety collection

The process for the constitution and the maintenance of a variety collection can be summarized as follows:

Step 1: Making an inventory of the varieties of common knowledge

Step 2: Establishing a collection ("variety collection") of varieties of common knowledge which are relevant for the examination of distinctness of candidate varieties

Step 3: Selecting the varieties from the variety collection which need to be included in the growing trial or other tests for the examination of distinctness of a particular candidate variety.

3.6.1 Forms of variety collection

The variety collection shall comprise variety descriptions and may comprise living plant material. The variety description shall be produced by the EO unless special cooperation exists between EOs and the CPVO. The variety collection shall comprise images (e.g. photographs, illustrations or digitalized images) of representative parts of the plants of each variety, produced by the respective EO. The descriptive and pictorial information produced by the EO shall be held and maintained in a form of a database.

3.6.2 Living Plant Material

The EO shall obtain living plant material of reference varieties as and when those varieties need to be included in growing trials or other tests.

3.6.3 Making an inventory of varieties of common knowledge for inclusion in the variety collection

The inventory shall include varieties protected under National and Community PBR, varieties in trade or in commercial registers.

In addition to the above, the inventory shall be extended to the appropriate to

- any commercial document in which varieties are marketed as propagating or harvested material, especially when there is no official registration system;
- any list including varieties which are publicly available within plant collections (varieties included in genetic resource collections, collection of old varieties, etc.);
- information provided by relevant plant experts;
- relevant example varieties referred to in the technical protocols

4. ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY

The prescribed procedure is to assess distinctness, uniformity and stability in a growing trial.

4.1 Distinctness

4.1.1 General recommendations

It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 9 'Examining Distinctness' (http://www.upov.int/edocs/tgpdocs/en/tgp_9.pdf) prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in this Technical Protocol.

Further guidance is provided in documents TGP/9 "Examining Distinctness" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability".

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 Technical Protocols are familiar with the recommendations contained in the UPOV-General Introduction to DUS prior to making decisions regarding distinctness.

4.2 Uniformity

4.2.1 It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 10 'Examining Uniformity' (http://www.upov.int/edocs/tgpdocs/en/tgp_10.pdf) prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in this Technical Protocol:

4.2.2 This Technical Protocol has been developed for the examination of vegetatively propagated and seed propagated self-pollinated varieties. For varieties with other types of propagation the recommendations in the UPOV-General Introduction to DUS and document TGP/13 "Guidance for new types and species", Section 4.5 "Testing Uniformity" should be followed.

For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 15 plants, 1 off-type is allowed.

For the assessment of uniformity of seed-propagated self-pollinated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 30 plants, 1 off-type is allowed.

For varieties with other types of propagation, the assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the UPOV-General Introduction to DUS.

4.3 Stability

4.3.1 It is of particular importance for users of this Technical Protocol to consult the UPOV-General Introduction to DUS (link in chapter 1 of this document) and TGP 11 'Examining Stability' (http://www.upov.int/edocs/tgpdocs/en/tgp_11.pd)

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 further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. GROUPING OF VARIETIES AND ORGANISATION 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 organise the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

a) Plant: attitude of shoots (characteristic 1)

b) Flower: type (characteristic 15)

c) Lower lip: main colour of upper side (excluding white zone) (characteristic 23) with the following groups:

Gr 1: white
Gr 2: light blue
Gr 3: medium/dark blue to violet
Gr 4: red/purple

d) Lower lip: white zone on upper side (characteristic 25)

e) Lower lip: markings (characteristic 27)

5.4 If other characteristics than those from the Technical Protocol are used for the selection of varieties to be included into the growing trial, the EO shall inform the CPVO and seek the prior consent of the CPVO before using these characteristics.

5.5 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the UPOV-General Introduction to DUS and document TGP/9 "Examining Distinctness".

6. INTRODUCTION TO THE TABLE OF CHARACTERISTICS

6.1 Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the table of characteristics. 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 or by specific legislation on plant health. In the latter case, the CPVO should be informed.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation N°874/2009, to insert additional characteristics and their expressions in respect of a variety.

6.2. States of expression and corresponding notes

In the case of qualitative and pseudo-qualitative characteristics, all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	Note
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

Further explanation of the presentation of states of expression and notes is provided in UPOV document TGP/7 "Development of Test Guidelines".

6.3 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.4 Legend

For column 'CPVO N°':

G	Grouping characteristic	-see Chapter 5
QL	Qualitative characteristic	
QN	Quantitative characteristic	
PQ	Pseudo-qualitative characteristic	
(+)	Explanations for individual characteristics	-see Chapter 8.2

For column 'UPOV N°':

The numbering of the characteristics is provided as a reference to the UPOV guideline.

(*)	UPOV Asterisked characteristic	-Characteristics that are important for the international harmonization of variety descriptions.

For column 'Stage, method':

MG, MS, VG, VS		-see Chapter 4.1.5
(a)-(e)	Explanations covering several Characteristics	-see Chapter 8.1

7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
1. (+)	**1. (*)**	**VG**	**Plant: attitude of shoots**		
	QN		upright	Lobetis	1
			semi-upright	Tech Hevio, USLOB13	3
			horizontal	Tec Hewhitt, Wesloti	5
			semi-drooping	Wespinstar	7
G			drooping		9
2. (+)	**2.**	**VG/MS**	**Plant: height**		
	QN		short	GRÜLO 01	3
			medium	Lobmounwi	5
			tall	Tec Travio	7
3.	**3.**	**VG/MS**	**Shoot: length**		
	QN		short	Lobmounwi	3
			medium	Wesstar	5
			tall	Lobmounlila	7
4.	**4.**	**VG/MS**	**Shoot: length of internodes**		
	QN	**(a)**	short	Weslosu	3
			medium	Tech Elebule	5
			tall		7
5.	**5. (*)**	**VG**	**Shoot: thickness**		
	QN	**(a)**	very thin	Loboudtis	1
			thin	Lobmounwi	2
			medium	Weslosu	3
			thick	DANANAB 8	4
			very thick		5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
6.	**6.**	**VG**	**Shoot: intensity of green colour**		
	QN	**(a)**	light	Wesloti	1
			medium	Tec Travio	2
			dark	Loboudtis	3
7.	**7.**	**VG**	**Shoot: anthocyanin coloration**		
	QN	**(b)**	absent or very weak	Weslosu	1
			weak	Tech Elebule	3
			medium	Wespinstar	5
			strong	Wespurstar	7
8.	**8.**	**VG**	**Shoot: pubescence**		
	QN	**(a)**	absent or very sparse		1
			sparse		2
			medium		3
			dense		4
			very dense		5
9.	**9. (*)**	**VG/MS**	**Leaf: length**		
	QN	**(c)**	short		3
			medium	Lobtrawi	5
			long	Tech Heplib	7
10.	**10. (*)**	**VG/MS**	**Leaf: width**		
	QN	**(c)**	narrow		3
			medium	Tech Elebule	5
			broad	Weslowei	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
11.	**11. (*)**	**VG**	**Leaf: incisions of margin**		
	QN	**(c)**	absent or very shallow		1
			shallow	Wespinstar	3
			medium	Tech Hevio	5
			deep	Lobstrahob	7
			very deep		9
12. (+)	**12.**	**VG**	**Leaf: shape**		
	PQ	**(c)**	broad ovate		1
			elliptic		2
			circular		3
			oblanceolate		4
			obovate		5
			spatulate		6
13.	**13.**	**VG**	**Leaf: intensity of green colour on upper side**		
	QN	**(c)**	light	Lobmounlila	1
			medium	Tech Travio	2
			dark	Weslowei	3
14. (+)	**14.**	**VG**	**Leaf: anthocyanin coloration on lower side**		
	QN	**(c)**	absent or very weak	Kirilo-LV63	1
			weak	Lobtramidblu	2
			medium	Tech Heplib	3
			strong	Regatta Midnight Blue	4
15. (+)	**16. (*)**	**VG**	**Flower: type**		
	QL		single	KLELE08621	1
G			double	Kathleen Mallard	2

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
16.	**17.**	**VG/MS**	**<u>Only varieties with flower type: double</u>: Flower: diameter**		
	QN		small		3
			medium		5
			large		7
17.	**18.**	**VG**	**<u>Only varieties with flower type: double</u>: Flower: colour**		
	PQ		RHS Colour Chart (indicate reference number)		
18. (+)	**19. (*)**	**VG/MS**	**Corolla: length**		
	QN	**(d)**	short	Lobmounwi	3
			medium	Tech Elebule	5
			long		7
19.	**21.**	**VG**	**Upper lip: colour of inner side**		
	PQ	**(d)**	RHS Colour Chart (indicate reference number)		
20. (+)	**22. (*)**	**VG/MS**	**Lower lip: length**		
	QN	**(d)**	very short	Loboudtis	1
			short	Lobtrawi	2
			medium		3
			long	Wespurstar	4
			very long	Tech Hewhitt	5
21. (+)	**23. (*)**	**VG/MS**	**Lower lip: width**		
	QN	**(d)**	narrow	Lobmounwi	3
			medium	Tech Elebule	5
			broad	Weslosu	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
22. (+)	**24. (*)**	**VG/MS**	**Lower lip: width of middle lobe**		
	QN	**(d)**	narrow	Loboudtis	1
			medium	Tech Elebule	2
			broad	Tec Hewhitt	3
23. (+)	**25. (*)**	**VG**	**Lower lip: main colour of upper side (excluding white zone)**		
G	**PQ**	**(d)**	RHS Colour Chart (indicate reference number)		
24. (+)	**26.**	**VG**	**Lower lip: secondary colour of upper side (excluding white zone)**		
	PQ	**(d)**	RHS Colour Chart (indicate reference number)		
25. (+)	**27. (*)**	**VG**	**Lower lip: white zone on upper side**		
	QN	**(d)**	absent or very small	Riviera Lilac	1
			small	Loboudtis	3
			medium	Tech Hevio	5
			large	Tech Heplib	7
G			very large		9
26. (+)	**28.**	**VG**	**Lower lip: shape of white zone on upper side**		
	PQ	**(d)**	elongated only		1
			elongated and rounded		2
			rounded only		3
			irregular		4
27. (+)	**29. (*)**	**VG**	**Lower lip: markings**		
	QL	**(d), (e)**	absent	Tech Hepdab	1
G			present	Balwalila	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
28.	**30.**	**VG**	**Lower lip: size of markings**		
	QN	**(d), (e)**	small	Azuro	1
			medium	Lobstrahob	2
			large	LOBZ0001	3
29.	**31.**	**VG**	**Lower lip: colour of lower side**		
	PQ	**(d)**	RHS Colour Chart (indicate reference number)		
30. **(+)**	**32.**	**VG**	**Lower lip: arrangement of lobes**		
	QN	**(d)**	free	KLELE08621	1
			touching	Regatta Sapphire	2
			overlapping	Lobtrawi	3
31.	**33.**	**VG**	**Corolla tube: colour of outer side**		
	PQ	**(d)**	RHS Colour Chart (indicate reference number)		

8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS7

8.1 Explanations covering several characteristics

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

a) Shoot characteristics should be observed on the middle third of the shoot.

b) Anthocyanin coloration on the shoot should be observed on the upper third.

c) Leaf characteristics should be observed on fully developed leaves on the lower third of the shoot just before flowering.

d) Observe for varieties with single flower types only.

e) Markings on the lower lip do not include the white zone or any yellow markings extending from the throat.

8.2 Explanations for individual characteristics

Ad 1: Plant: attitude of shoots

1
upright

3
semi-upright

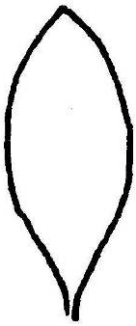
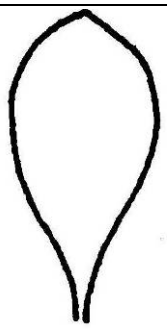
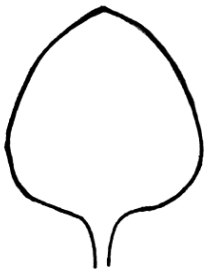
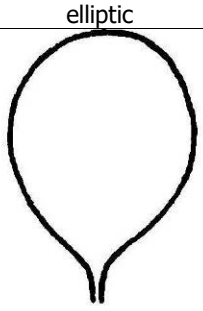
5
horizontal

9
drooping

Ad 2: Plant: height

Plant height should be assessed from the surface of the growing medium.

Ad 12: Leaf: shape

broad (compressed) ← width (ratio length/width) → narrow (elongated)				
			 4 oblanceolate	 6 spatulate
		 2 elliptic	 5 obovate	
	 1 broad ovate	 3 circular		

Ad 14: Leaf: anthocyanin coloration on lower side

1
absent or very weak

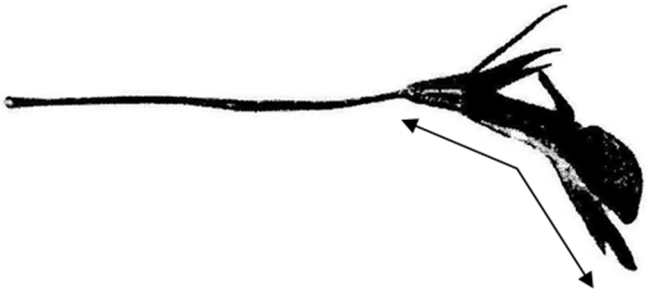
4
strong

Ad 15: Flower: type

1
single
(5 lobes only)

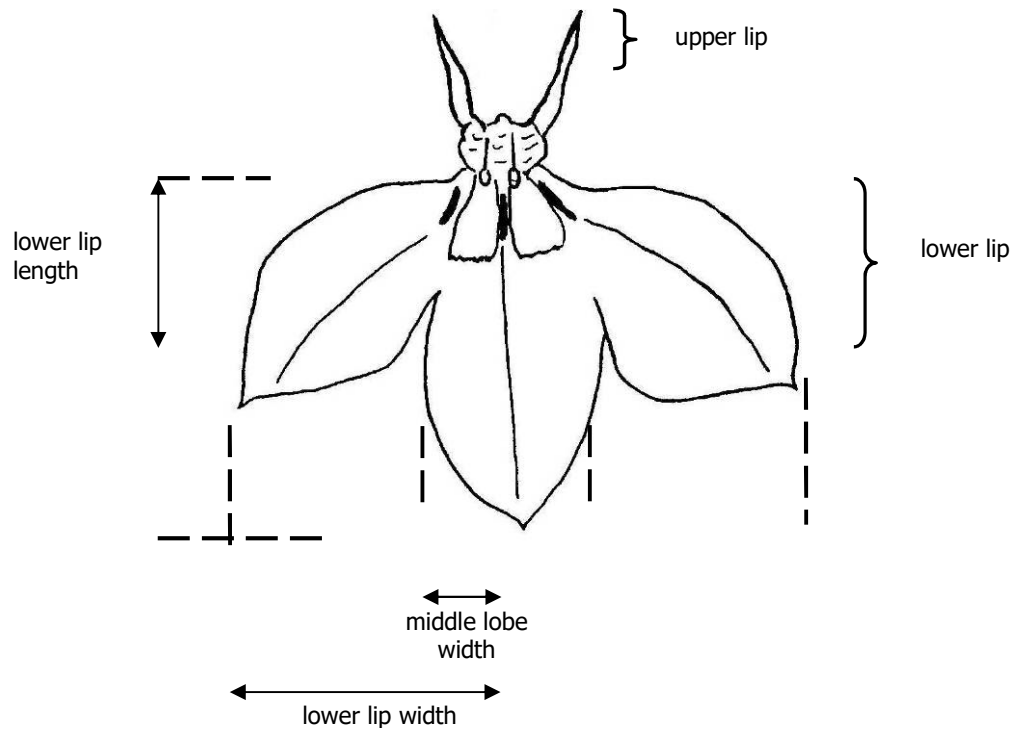
2
double
(more than 5 lobes)

Ad 18: Corolla: length



The length to assess is the real length and not the natural length. Flowers with strong recurvature should be flattened

Ad 20: Lower lip: length
Ad 21: Lower lip: width
Ad 22: Lower lip: width of middle lobe



Ad 23: Lower lip: main colour of upper side (excluding white zone)
Ad 24: Lower lip: secondary colour of upper side (excluding white zone)

The main colour is defined as the colour with the largest surface area, the secondary colour (if present) is the colour with the second largest surface area.

Ad 25: Lower lip: white zone on upper side

absent present

For white varieties, the white zone is recorded as absent.

Ad 26: Lower lip: shape of white zone on upper side

1
elongated only

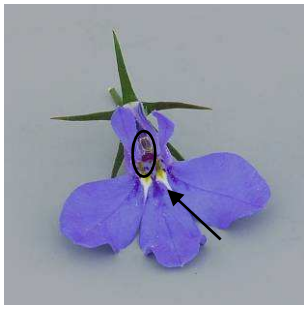
3
rounded only

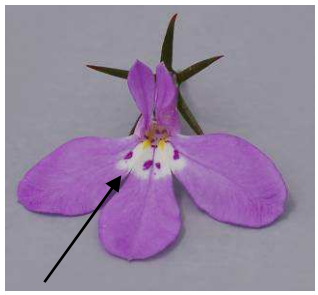
4
irregular

State 2 (elongated and rounded) means that flowers with elongated white zone on lower lip and flowers with rounded white zone on lower lip are both present on the same plant.

Ad 27: Lower lip: markings

1
absent





9
present

Ad 30: Lower lip: arrangement of lobes

Observation should be made on the non fused part between the lateral and middle lobes.

1
free

2
touching

3
overlapping

9. LITERATURE

Huxley, A. (ed.), Griffiths, M. (ed.), Levy, M. (ed.), 1999: The Royal Horticultural Society Dictionary of Gardening. Grove's Dictionaries Inc. New York, New York, US.

10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the CPVO website under the following reference: CPVO-TQ/293/1 Corr.