



PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Phalaenopsis Blume

PHALAENOPSIS

UPOV Code: PHALE

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CPVO-TP/213/2

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1. SUBJECT OF THE PROTOCOL AND REPORTING

1.1 Scope of the technical protocol

This Technical Protocol applies to all varieties of *Phalaenopsis Blume*.

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/213/2 dated 20/03/2013 (<http://www.upov.int/edocs/tgdocs/en/tg213.pdf>) for the conduct of tests for Distinctness, Uniformity and Stability.

1.2 Entry into Force

The present protocol enters into force on **19.03.2014**. Any on-going 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. If a report is negative the Examination Office shall set out the detailed reasons for its findings.

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 vigour, 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.

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

3.4.1 Each test should be designed to result in a total of at least 9 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 Additional 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, an additional test may be undertaken providing that a technically acceptable test procedure can be devised.

Additional 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 examination office unless special cooperation exists between examination offices and the CPVO. The descriptive and pictorial information produced by the examination office shall be held and maintained in a form of a database.

3.6.2 Living Plant Material

The examination office 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 and 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 for the examination of distinctness.

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.

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.

4.1.4 Number of plants/parts of plants to be examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 8 plants or parts taken from each of 8 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the third column of the Table of Characteristics (see document TGP/9 "Examining Distinctness", Section 4 "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

Type of observation: visual (V) or measurement (M)

"Visual" observation (V) is an observation made on the basis of the expert's judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

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 point is provided for elaboration or emphasis in this Technical Protocol.

Uniformity assessment by off-types

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 9 plants, 1 off-type is allowed.

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.pdf).

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 plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- a) Plant: length (characteristic 1)
- b) Leaf: variegation (characteristic 10)
- c) Leaf: spots on upper side (characteristic 11)
- d) Flower: width in front view (characteristic 22)
- e) Petal: ground colour of upper side (characteristic 58) with the following groups:
 - Gr. 1: white
 - Gr. 2: yellow
 - Gr. 3: green
 - Gr. 4: orange
 - Gr. 5: red
 - Gr. 6: violet
 - Gr. 7: purple red
 - Gr. 8: purple
 - Gr. 9: brown
- f) Petal: over colour (if present) (characteristic 59) with the following groups:
 - Gr. 1: yellow
 - Gr. 2: green
 - Gr. 3: orange
 - Gr. 4: red
 - Gr. 5: violet
 - Gr. 6: purple red
 - Gr. 7: purple
 - Gr. 8: brown
- g) Petal: number of spots (characteristic 61)
- h) Petal: number of stripes (characteristic 64)
- i) Petal: density of netting (characteristic 66)

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

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.

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

6.2 Example Varieties

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

6.3 Legend

For the CPVO N° column:

G	Grouping characteristic	– see Chapter 5
MG, MS, VG, VS		– see Chapter 4.1.5
QL	Qualitative characteristic	
QN	Quantitative characteristic	
PQ	Pseudo-qualitative characteristic	

For the UPOV N° column:

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

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

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

(+) See Explanations on the Table of Characteristics in Chapter 8.2

7. TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
1.	1. (*)	VG/MS	Plant: length		
(+)		(a)	short	Phalboezeq	3
QN			medium	Phalpnizok, Red Eye	5
G			long	Figaro, Puccini	7
2.	2. (*)	VG/MS	Plant: number of inflorescences		
QN		(a)	only one	T-Rex	1
			one or two		2
			only two	Mathilde	3
			two or three		4
			only three	SIO0020	5
			more than three	Phalbuwak	6
3.	3.	VG/MS	Leaf: length		
QN		(a)	short	Phalbexi, SOGO F1384, Taida Black Leopard	3
		(b)	medium	Puccini, Zhen Yu 5707	5
			long	Corneille	7
4.	4.	VG/MS	Leaf: width		
QN		(a)	narrow	SOGO Fairyland	3
		(b)	medium	Mrs Brown, SOGO F-1442	5
			broad	Moonwalker	7
5.	5.	VG	Leaf: shape		
(+)		(a)	slightly elongated	SOGO F2006	1
QN		(b)	moderately elongated	Phalmache	2
			very elongated		3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
6.	6.	VG/MS	Leaf: position of broadest part		
(+)		(a)	towards base		1
QN		(b)	at middle	Aïda	2
			towards apex	Lollypop, Trivium	3
7.	7.	VG	Leaf: shape of apex		
(+)		(a)	acute	SOGO Fairyland, SOGO F-1016	1
PQ		(b)	obtuse	An Ching Green Apple, Mrs Brown	2
			emarginate	Fire Fox, Happy Sheena Kirara'	3
8.	8.	VG/MS	Leaf: symmetry of apex		
QN		(a)	symmetric or slightly asymmetric	Symphony	1
		(b)	moderately asymmetric	SOGO Fairyland, SOGO F-688	2
			strongly asymmetric		3
9.	9.	VG/MS	Leaf: attitude		
QN		(a)	semi-erect	Phalbnizok, SOGO Yukidan,v3'	3
		(b)	horizontal	Pink Butterfly, Symphony	5
			semi-drooping	Moonwalker, N16', Tai Lin Lady	7
10.	10. (*)	VG	Leaf: variegation		
QL		(a)	absent	Symphony	1
G		(b)	present	SOGO F2806	9
11.	11. (*)	VG	Leaf: spots on upper side		
QL		(a)	absent	SOGO Fairyland, Sunrise Beautiful Girl	1
G		(b)	present	Phalnasxu, SOGO F-1320	9
12.	12.	VG	Leaf: main colour of upper side		
(+)		(a)	yellowish green	Phalapek	1
PQ		(b)	light green	King Car Hebe, Vivaldi	2
			medium green	Symphony, Torce N92	3
			dark green	Puccini	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
13.	13.	VG/MS	Leaf: anthocyanin coloration of upper side		
QN		(a)	absent or very weak	Mrs Brown	1
		(b)	weak	Phalcoqeo	3
			medium	Memories	5
			strong	Phalaguc	7
			very strong		9
14.	14. (*)	VG	Inflorescence: type		
(+)		(a)	single flowered		1
QL			raceme	Puccini	2
			panicle	SOGO Fairyland	3
15.	15.	VG/MS	Inflorescence: length of flowering part		
(+)		(a)	short	Mrs Brown	3
QN			medium	Puccini	5
			long	Pinnacle	7
16.	16.	VG/MS	<u>Excluding varieties with inflorescences type: single flowered:</u> Inflorescence: number of flowers		
QN		(a)	few	Puccini	3
			medium	Alabaster	5
			many	SOGO Fairyland	7
17.	17.	VG/MS	Peduncle: length		
QN		(a)	short	SOGO F1567	3
			medium	Phaltulen, SOGO F-2451	5
			long	Puccini	7
18.	18.	VG/MS	Peduncle: thickness		
(+)		(a)	thin	Phaladadel	1
QN			medium	Moonwalker	2
			thick	Queen of Hearts	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
19.	19.	VG	Peduncle: anthocyanin coloration		
QN		(a)	absent or weak	Phaltulen	1
			medium		3
			strong	Mrs Brown	5
20.	20.	VG	Flower: shape in lateral view		
(+)		(c)	concave	SOGO Fairyland	1
PQ			flat	Phalboezeq	2
			convex	Mrs Brown	3
21.	21. (*)	VG/MS	Flower: length in front view		
(+)		(c)	very short		1
QN			short	Mrs Brown	3
			medium	Phaladadel	5
			long	Phalbobol	7
			very long	Cygnus Renaissance	9
22.	22. (*)	VG/MS	Flower: width in front view		
(+)		(c)	very narrow		1
QN			narrow	Mrs Brown	3
			medium	Beauty Sheena Rin Rin	5
			broad	Phaladadel	7
G			very broad	Cygnus Renaissance	9
23.	23.	VG/MS	Flower: arrangement of petals		
(+)		(c)	free	Fire Fox, SOGO Fairyland	1
QN			touching	Paloma	2
			overlapping	Halcyon, Tai Lin Lady, N16'	3
24.	24.	VG/MS	Flower: fragrance		
QN		(c)	absent or weak	Lih Jiang Diamond, SOGO Fairyland	1
			moderate		2
			strong	Sun Passat	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
25. QN	25.	VG/MS (c)	Dorsal sepal: length		
			short	Green Star	3
			medium	Ever Spring Prince 75, Phaladadel	5
			long	Hawaiien Dream, Torce N92	7
26. QN	26.	VG/MS (c)	Dorsal sepal: width		
			narrow	Green Star	3
			medium	Happy Days, SOGO F-977	5
			broad	Paloma, Red Rose	7
27. QN	27.	VG (c)	Dorsal sepal: shape		
			moderately compressed	Starbust	3
			medium	Taisuco Anna	5
			moderately elongated	Phalciny	7
28. QN	28.	VG/MS (c)	Dorsal sepal: position of broadest part		
			towards base	Heavenly	1
			at middle	Phalbipxip	2
			towards apex	Santa Clara	3
29. (+) QN	29.	VG/MS (c)	Dorsal sepal: curvature of longitudinal axis		
			incurving	Cuckoo, SOGO F-1016	1
			straight	Mrs Brown, SOGO F-728	2
			recurving	Paloma, Red Rose	3
30. (+) QN	30.	VG/MS (c)	Dorsal sepal: shape in cross section		
			concave	SOGO Fairyland, SOGO F-1016	1
			straight	Hawaiien Dream, SOGO F-728	2
			convex	Moonwalker, Red Rose	3
31. QL	31.	VG (c)	Dorsal sepal: twisting		
			absent	Red Pearl, SOGO Fairyland	1
			present		9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
32.	32.	VG/MS	Dorsal sepal: undulation of margin		
QN		(c)	absent or weak	Color Butterfly, Phaladadel	1
			moderate	Miss Saigon	2
			strong		3
33.	33. (*)	VG	Dorsal sepal: ground colour of upper side		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		
34.	34. (*)	VG	Dorsal sepal: over colour (if present)		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		
35.	35. (*)	VG/MS	Dorsal sepal: number of spots		
QN		(c)	none	Florina	1
			few	Paraheet	3
			medium	Pebble Beach	5
			many	PROV503GF	7
36.	36.	VG/MS	Dorsal sepal: size of spots		
QN		(c)	small	Phaelbe	3
			medium	Victory Song	5
			large	Troubadour	7
37.	37.	VG	Dorsal sepal: colour of spots		
PQ		(c)	RHS Colour Chart (indicate reference number)		
38.	38. (*)	VG/MS	Dorsal sepal: number of stripes		
QN		(c)	none	Florina	1
			few		3
			medium	Phalopixo	5
			many	Taida Little Zebra	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
39.	39.	VG	Dorsal sepal: colour of stripes		
PQ		(c)	RHS Colour Chart (indicate reference number)		
40.	40. (*)	VG/MS	Dorsal sepal: density of netting		
QN		(c)	none	Florina	1
			low	Vallier	3
			medium	Phalpnizok	5
			high	Happy Days	7
41.	41.	VG	Dorsal sepal: colour of netting		
PQ		(c)	RHS Colour Chart (indicate reference number)		
42.	42.	VG	Lateral sepal: ground colour of upper side		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		
43.	43.	VG	Lateral sepal: over colour (if present)		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		
44.	44.	VG/MS	Lateral sepal: number of spots		
QN		(c)	none	Florina	1
			few	Pacific Point	3
			medium	Feeling Groovy	5
			many	Phalborbol	7
45.	45.	VG	Lateral sepal: colour of spots		
PQ		(c)	RHS Colour Chart (indicate reference number)		
46.	46.	VG/MS	Lateral sepal: number of stripes		
QN		(c)	none	Florina	1
			few	Phalbembu	3
			medium	Phalalodu	5
			many	Taida Little Zebra	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
47.	47.	VG	Lateral sepal: colour of stripes		
PQ		(c)	RHS Colour Chart (indicate reference number)		
48.	48.	VG/MS	Lateral sepal: density of netting		
QN		(c)	none	Florina	1
			low		3
			medium	122530	5
			high	SIO0021	7
49.	49.	VG	Lateral sepal: colour of netting		
PQ		(c)	RHS Colour Chart (indicate reference number)		
50.	50. (*)	VG/MS	Petal: length		
QN		(c)	short	Color Butterfly, SOGO Fairyland	3
			medium	Phaladadel	5
			long	Paloma	7
51.	51. (*)	VG/MS	Petal: width		
QN		(c)	narrow	Mrs Brown, SOGO F-2451	3
			medium	Puccini, SOGO F-982	5
			broad	Paloma	7
52.	52.	VG	Petal: shape		
QN		(c)	moderately compressed	Asian Queen	3
			medium	Phalucops	5
			moderately elongated	Phaljelow	7
53.	53. (*)	VG/MS	Petal: position of broadest part		
QN		(b)	towards base	Phalcamyl	1
			at middle	Phalnasxu	2
			towards apex	Aïda	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
54.	54.	VG/MS	Petal: curvature of longitudinal axis		
(+)		(c)	incurving	SOGO Fairyland, SOGO F-1016	1
QN			straight	Mrs Brown, SOGO F-2451	2
			recurving	Sun Passat	3
55.	55.	VG/MS	Petal: shape in cross section		
(+)		(c)	concave	Figaro, SOGO F-1016	1
QN			straight	Green Star, SOGO F-2451	2
			convex	Puccini	3
56.	56.	VG	Petal: twisting		
QL		(c)	absent	Mrs Brown	1
			present		9
57.	57.	VG/MS	Petal: undulation of margin		
QN		(c)	absent or weak	Phaladadel, SOGO F-1320	1
			moderate	Puccini	2
			strong		3
58.	58. (*)	VG	Petal: ground colour of upper side		
(+) PQ G		(c)	RHS Colour Chart (indicate reference number)		
59.	59. (*)	VG	Petal: over colour (if present)		
(+) PQ G		(c)	RHS Colour Chart (indicate reference number)		
60.	60.	VG/MS	Petal: area of over colour		
(+)		(c)	small	Fushengs Glad Lip Tenshi No Hoho	3
QN			medium	Phalbiqam	5
			large	Pink Honeysplash	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
61.	61. (*)	VG/MS	Petal: number of spots		
QN		(c)	none	Florina	1
			few	P 132	3
			medium		5
G			many	Phalborudo	7
62.	62.	VG/MS	Petal: size of spots		
QN		(c)	small		3
			medium	Phaloqzu	5
			large	Troubadour	7
63.	63.	VG	Petal: colour of spots		
PQ		(c)	RHS Colour Chart (indicate reference number)		
64.	64. (*)	VG/MS	Petal: number of stripes		
QN		(c)	none	Florina	1
			few		3
			medium	Phaljelow	5
G			many	Firelight	7
65.	65.	VG	Petal: colour of stripes		
PQ		(c)	RHS Colour Chart (indicate reference number)		
66.	66. (*)	VG/MS	Petal: density of netting		
QN		(c)	none	Florina	1
			low	Vallier	3
			medium	Phalpnizok	5
G			high	Happy Days	7
67.	67.	VG	Petal: colour of netting		
PQ		(c)	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
68.	68.	VG/MS	Lip: length of apical lobe		
QN		(c)	short	Mrs Brown	3
			medium	Puccini, Red Rose	5
			long		7
69.	69.	VG/MS	Lip: width of apical lobe		
QN		(c)	narrow	Moonwalker	3
			medium	Miss Saigon	5
			broad	Phalmomen	7
70.	70.	VG	Lip: shape of apical lobe		
(+)		(c)	triangular	Paloma	1
PQ			ovate	Puccini	2
			trullate		3
			elliptic		4
			rhombic	Green Star	5
			circular	Phalnasxu	6
			obtrullate	SOGO F-2451, Symphony	7
			obtriangular	Hacyon	8
71.	71.	VG	Lip: whiskers		
	(*)				
QL		(c)	absent	Moonwalker, SOGO F-1016	1
			present	Phalmomen	9
72.	72.	VG/MS	Lip: length of whiskers		
QN		(c)	short	Green Star, SOGO F-982	3
			medium	Cuckoo, SOGO F-1302	5
			long	Jiang Firebird, Snow Tiger	7
73.	73.	VG/MS	Lip: bump and ridge on apical lobe		
(+)		(c)	absent or small	SOGO F1567, Torce N92	1
QN			medium		2
			large	Miss Brown, SOGO F-1016	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
74.	74.	VG	Lip: shape of lateral lobe		
(+)		(c)	type I	SOGO F-728	1
PQ			type II	Amy Lee, LKV13509	2
			type III	Golden Jaquar	3
			type IV	Caroline	4
			type V	SOGO Fairyland, Torce N92	5
75.	75.	VG/MS	Lip: curvature of lateral lobe		
(+)		(c)	weak	SOGO Fairyland, SOGO F-1016	1
QN			medium	Beaugard	2
			strong	Snow Tiger	3
76.	76.	VG/MS	Lip: size of lateral lobe relative to apical lobe		
QN		(c)	much smaller		1
			smaller	Phaladadel	3
			equal	Pucini	5
			larger	Hawaiien Dream, Ruey Hih Beauty	7
			much larger		9
77.	77. (*)	VG	Apical lobe: ground colour		
(+)		(c)	RHS Colour Chart (indicate reference number)		
PQ					
78.	78.	VG	Apical lobe: over colour (if present)		
(+)		(c)	RHS Colour Chart (indicate reference number)		
PQ					
79.	79. (*)	VG/MS	Apical lobe: number of spots		
QN		(c)	none	SIO0037	1
			few		2
			medium	Margarita	3
			large	PROV501GF	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
80.	80.	VG/MS	Apical lobe: size of spots		
QN		(c)	small	Phaelbe	3
			medium	PROV501GF	5
			large		7
81.	81.	VG	Apical lobe: colour of spots		
PQ		(c)	RHS Colour Chart (indicate reference number)		
82.	82. (*)	VG/MS	Apical lobe: number of stripes		
QN		(c)	none	SIO0037	1
			few	Taida Little Zebra	2
			medium	Phalbipxip	3
			many		4
83.	83.	VG	Apical lobe: colour of stripes		
PQ		(c)	RHS Colour Chart (indicate reference number)		
84.	84. (*)	VG/MS	Apical lobe: density of netting		
QN		(c)	none		1
			low	Lollypop	2
			medium		3
			high		4
85.	85.	VG	Apical lobe: colour of netting		
PQ		(c)	RHS Colour Chart (indicate reference number)		
86.	86. (*)	VG	Lateral lobe: ground colour		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		
87.	87.	VG	Lateral lobe: over colour (if present)		
(+) PQ		(c)	RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
88.	88. (*)	VG/MS	Lateral lobe: number of spots		
QN		(c)	none	Baby Seal	1
			few	Margarita	2
			medium	PROV501GF	3
			many	Phalborbol	4
89.	89.	VG	Lateral lobe: colour of spots		
PQ		(c)	RHS Colour Chart (indicate reference number)		
90.	90. (*)	VG/MS	Lateral lobe: number of stripes		
QN		(c)	none	Good Times	1
			few	Sea Breeze	2
			medium	Phalbapfoz	3
			many		4
91.	91.	VG	Lateral lobe: colour of stripes		
PQ		(c)	RHS Colour Chart (indicate reference number)		
92.	92. (*)	VG/MS	Lateral lobe: density of netting		
QN		(c)	none	PROVO005GF	1
			low	SOGO F842	2
			medium	PROVO002GF	3
			high	121821	4
93.	93.	VG	Lateral lobe: colour of netting		
PQ		(c)	RHS Colour Chart (indicate reference number)		
94.	94.	VG/MS	Lip: Callus		
(+)		(c)	flat or slightly raised	Stage Girl	1
QN			moderately raised	PROV507GF	2
			strongly raised	Mrs Brown	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
95.	95.	VG/MS	Callus: colour		
PQ		(c)	RHS Colour Chart (indicate reference number)		
96.	96.	VG	Callus: pubescence		
QL		(c)	absent	Mrs Brown	1
			present	Zuma's Pixie 'Malibu'	9
97.	97.	VG	Column: colour		
PQ		(c)	RHS Colour Chart (indicate reference number)		

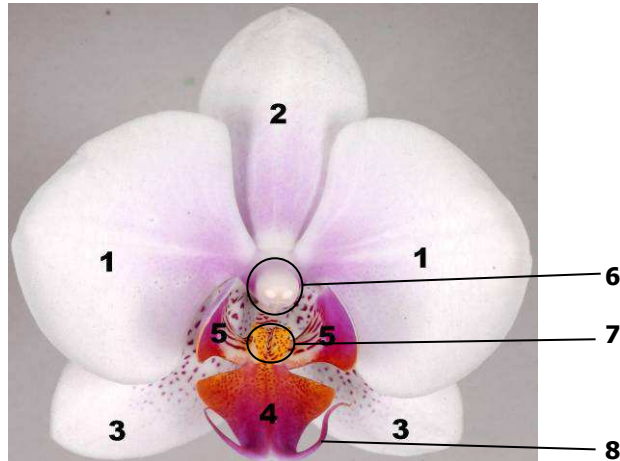
8. EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

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) Observations on the plant and the stem should be made when 50 % of flowers have opened on the first inflorescence.
- (b) Observations on the leaves should be made on the largest fully expanded leaf.
- (c) Observations on the flowers should be made on fully expanded flowers when 50 % of the flowers have opened

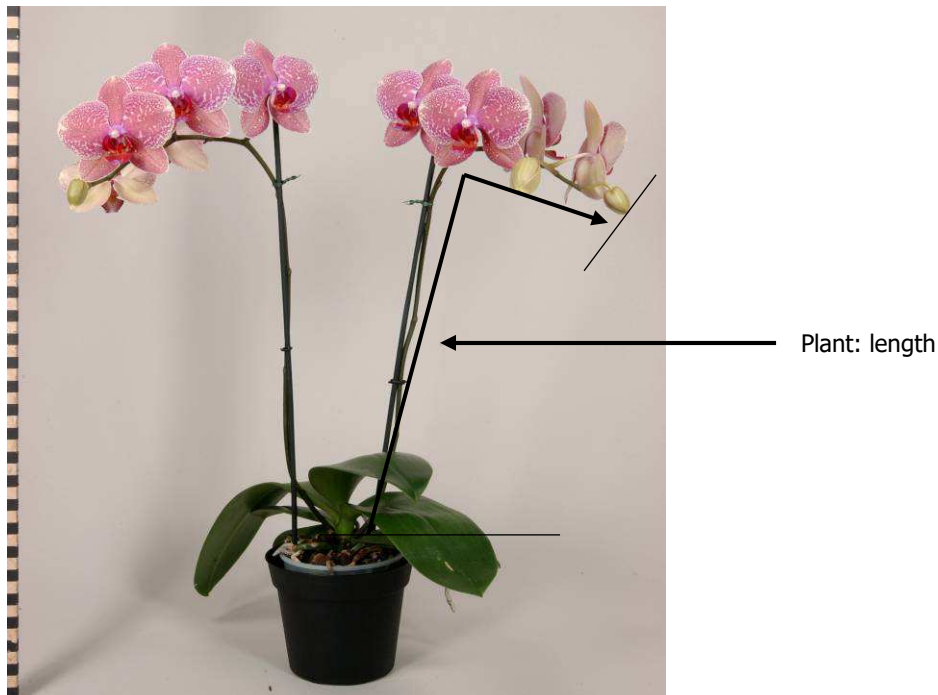
- 1: petal
- 2: dorsal sepal
- 3: lateral sepal
- 4: apical lobe
- 5: lateral lobe
- 6: column
- 7: callus
- 8: whiskers



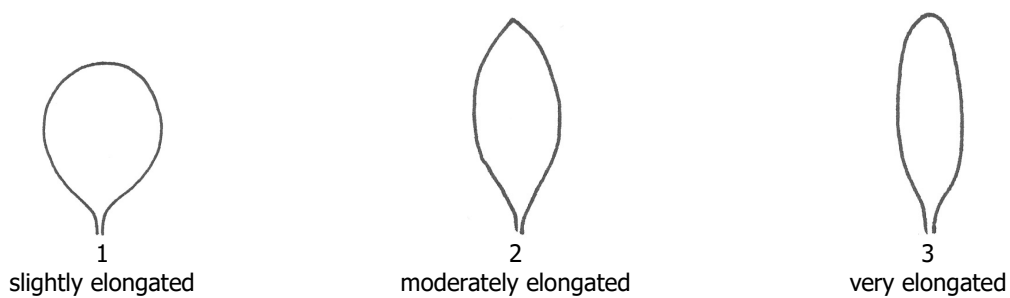
8.2 Explanations for individual characteristics

Ad. 1: Plant: length

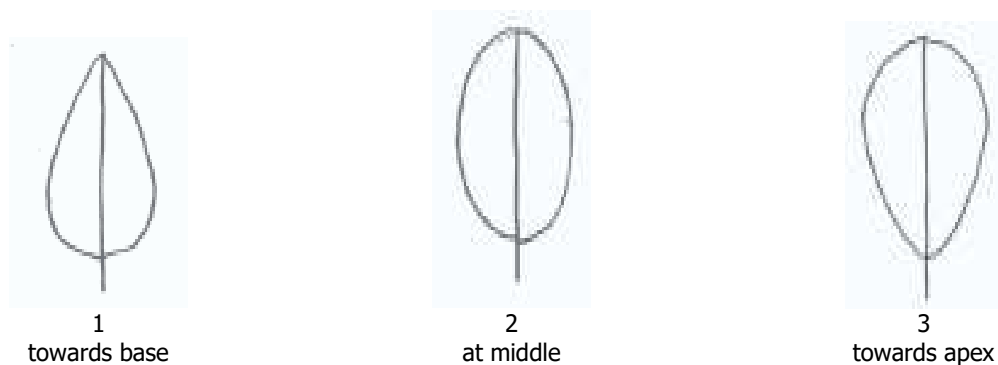
Plant should be observed from soil level to the end of the plant including the flowers.



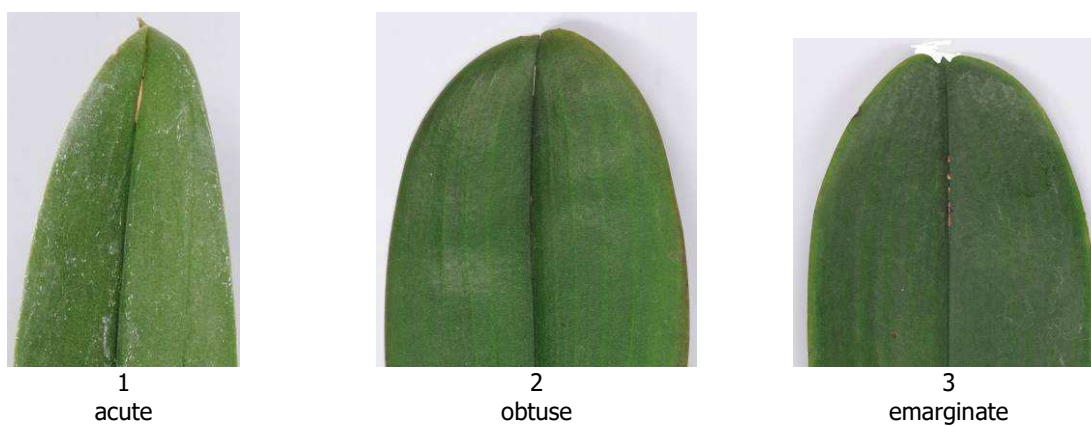
Ad. 5: Leaf: shape



Ad. 6: Leaf: position of broadest part



Ad. 7: Leaf: shape of apex



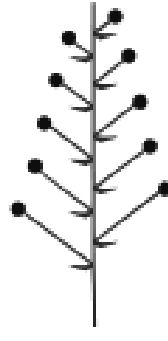
Ad. 12: Leaf: main colour of upper side

The main colour is the colour with the largest surface area. In cases where the areas of the main and secondary colour are too similar to reliably decide which colour has the largest area, the darkest colour is considered to be the main colour.

Ad. 14: Inflorescence: type



1
single flowered



2
raceme



3
panicle

Ad. 15: Inflorescence: length of flowering part



Inflorescence: length of
flowering part

Ad. 18: Peduncle: thickness

The thickness of the peduncle must be observed at the centre part of the lower third of the peduncle.

Ad. 20: Flower: shape in lateral view



1
concave



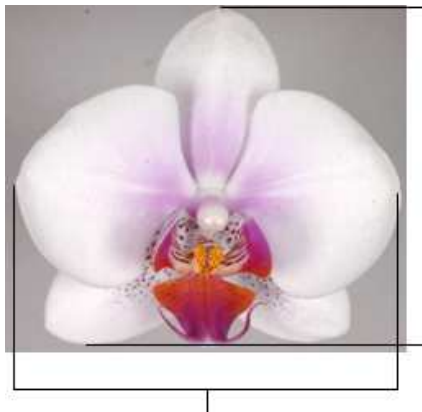
2
flat



3
convex

Ad. 21: Flower: length in front view

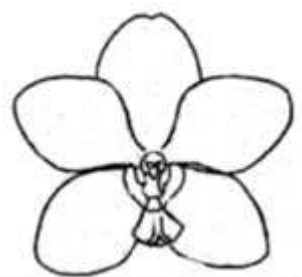
Ad. 22: Flower: width in front view



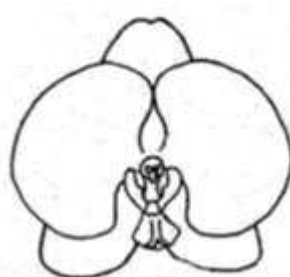
Flower: length

Flower: width

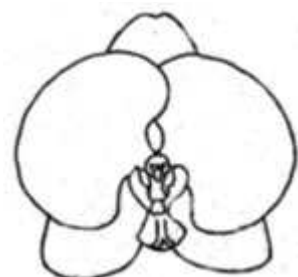
Ad. 23: Flower: arrangement of petals



1
free



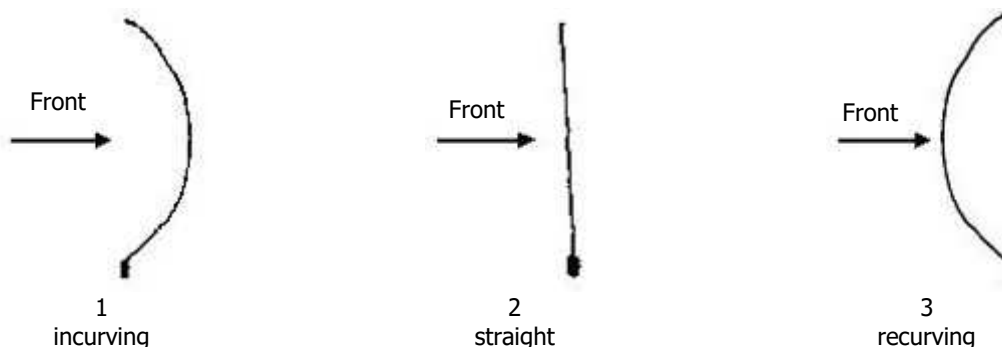
2
touching



3
overlapping

Ad. 29: Dorsal sepal: curvature of longitudinal axis

Ad. 54: Petal: curvature of longitudinal axis



Ad. 30: Dorsal sepal: shape in cross section

Ad. 54: Petal: shape in cross section



Ad. 33: Dorsal sepal: ground colour of upper side

Ad. 42: Lateral sepal: ground colour of upper side

Ad. 58: Petal: ground colour of upper side

Ad. 77: Apical lobe: ground colour

Ad. 86: Lateral lobe: ground colour

When a colour on the upper side is the same as the colour on the lower side this will be the ground colour. The other colours on the upper side belong to the pattern.

Ad. 34: Dorsal sepal: over colour (if present)

Ad. 43: Lateral sepal: over colour (if present)

Ad. 59: Petal: over colour (if present)

Ad. 78: Apical lobe: over colour (if present)

Ad. 87: Lateral lobe: over colour (if present)

In the case of a plant part which has a ground colour upon which a second colour such as a flush develops over time, the flush is considered the over colour. The over colour is not always the colour occupying the smallest surface area of the plant part concerned.

Ad. 60: Petal: area of over colour



3
small



5
medium



7
large

Ad. 70: Lip: shape of apical lobe

		←————— broadest part —————→					
		(below middle)	at middle	at middle	(above middle)	(above middle)	(above middle)
narrow (high) → width (ratio length/width) ←	 1 triangular	 2 ovate	 3 trullate	 4 elliptic	 5 rhombic	 7 obtrullate	 8 obtriangular
	broad (low) ←			 6 circular			

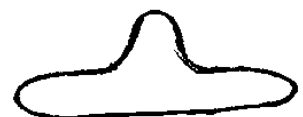
Ad. 73: Lip: bump and ridge on apical lobe



1
absent or small

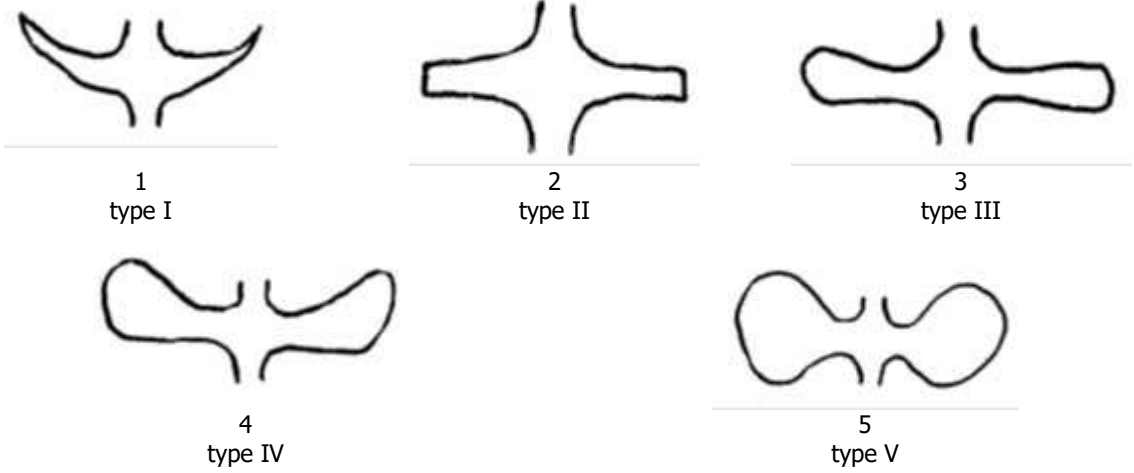


2
medium

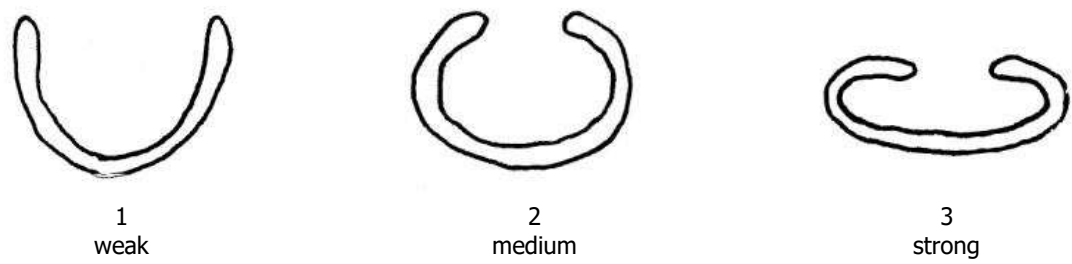


3
large

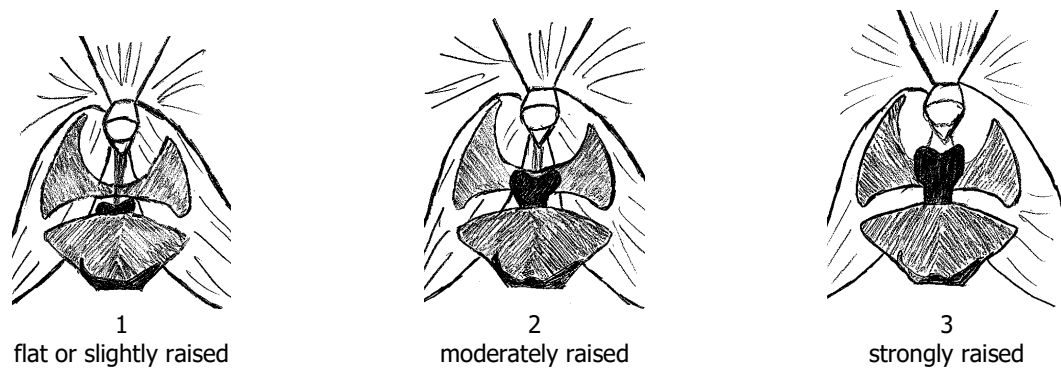
Ad. 74: Lip: shape of lateral lobe



Ad. 75: Lip: curvature of lateral lobe



Ad. 94: Lip: callus



9. LITERATURE

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10. TECHNICAL QUESTIONNAIRE

The Technical Questionnaire is available on the CPVO website under the following reference: CPVO-TQ/213/2