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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR ORNAMENTAL PLANTS AND FOREST TREES

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WORKING PAPER ON DRAFT TEST GUIDELINES FOR DENDROBIUM

Document prepared by experts from Japan

The attached document Dendro(proj.1) already incorporates the standard wording of document TGP/7.2, which was adopted by the Technical Committee at its thirty-eighth session in April 2002, and includes some additional standard wording from document TGP/7.1 Draft 1, also agreed at that session.

[Document Dendro(proj.1) follows]

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Dendro(proj.1)
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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

Dendrobium*

(*Dendrobium* Sw.)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:

Latin	English	French	German	Spanish
Dendrobium Sw.	Dendrobium			

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (hereinafter referred to as the "General Introduction") and its associated "TGP" documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Guidelines

1.1 These Test Guidelines apply to all varieties of sect. *Brachyanthe*, sect. *Callista*, sect. *Calyptochilus*, sect. *Ceratobium*, sect. *Dendrocoryne*, sect. *Eleutheroglossum*, sect. *Eugenanthe*, sect. *Latourea*, sect. *Oxygenianthe* sect. *Oxyglossum*, sect. *Pedilonum*, sect. *Phalaenanthe*, sect. *Stachyobium*, of *Dendrobium* Sw. of the family Orchidaceae and their hybrids.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of two-year old plants.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

15 two-year old plants, which have not previously flowered; each with at least two pseudobulbs.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Duration of Tests

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

3.2 Testing Place

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be seen at that place, the variety may be tested at an additional place.

3.3 Conditions for Conducting the Examination

3.3.1 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.

3.3.2 The tests should be conducted in a greenhouse with the following conditions:

Time of submission of plant material:	First half of February (Northern Hemisphere)
Planting:	February ~ March D. nobile type varieties: medium: substrate: sphagnum moss; size of pot: 10cm D. phalaenopsis type varieties: medium: substrate: bark; size of pot: 7.5cm
Temperature:	D. nobile type varieties: minimum 10°C. D. phalaenopsis type varieties: minimum 20°C.
Shading:	Summer season 30% shading (optimum 50 thousand Lux)
Fertilizing:	April ~ July
Low temperature treatment (flower differentiation):	D. nobile type varieties; 10 ~ 13 °C for one month in November.

3.3.3 Characteristics containing the following notes in the second column of the Table of Characteristics should be examined as indicated below:

(a) All observations on the pseudobulb should be made on the flowering pseudobulb.

(b) All observations on the leaf should be made on the longest leaf of a flowering pseudobulb.

(c) All observations on the inflorescence and the flower should be made at the time when 50% of the flowers on the inflorescence have opened, on the most recently fully opened flower on the inflorescence before the color starts to fade.

(d) All observations on the length and width of the flower and parts of the flower should be made on the unextended organ.

(e) All observations on the color of the sepal, the petal and the lip should be made on the inner side.

(f) All observations on the color of the column should be made on the dorsal side.

3.4 Test Design

3.4.1 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.

3.4.2 Each test should be designed to result in a total of at least 10 plants.

3.5 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, all observations determined by measuring or counting should be made on 10 plants or parts taken from each of 10 plants.

3.6 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 Uniformity

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

The acceptable number of off-types tolerated in a sample size of 10 plants is 1 on the basis of a population standard of 1% and an acceptance probability of 95%.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

The stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: size (characteristic 1)
(b) Inflorescence: position of flowers (characteristic 19)
(c) Flower: length in front view (characteristic 28)
(d) Flower: width in front view (characteristic 29)
(e) Lip: presence of lateral lobe (characteristic 72)
(f) Lip: presence of eye (characteristic 78)
(g) Lip: color pattern (except middle part, eye and throat) (characteristic 81)
(h) Lip: main color (Technical Questionnaire, 5.8i and 5.8ii)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic. So far only few varieties exist; therefore mainly species and only few example varieties are indicated in the Table of Characteristics. All variety denominations are preceded by group names (GREX). General remark: In orchids, a particular grouping on the basis of known parentage, of which the unit is the GREX is in long standing use.

The variety denominations are placed in quotation marks. (Note: Denominations of further example varieties will be indicated as soon as more varieties become available.)

6.5 Legend

(*) Asterisked characteristic – see Section 6.1.2

(QL) Qualitative characteristic – see Section 6.3
(QN) Quantitative characteristic – see Section 6.3
(PQ) Pseudo-Qualitative characteristic – see Section 6.3

(+) See Explanations on the Table of Characteristics in Chapter 8.

(a)–(f) See section 3.3.3

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)		Plant: size					
(QN)		very small				Enobi Komachi 'Shirayu kihime'	1
		small				*Dendrobium kingianum*	3
		medium				Wave King 'Akebono'	5
		large				Lucy Girl 'Emiko'	7
		very large					9
2. (*)	**(a)**	**Pseudobulb: attitude**					
(PQ)		erect					1
		semi-erect					3
		horizontal					5
		semi-drooping					7
		drooping					9
3. (*)	**(a)**	**Pseudobulb: length**					
(QN)		very short				Enobi Komachi 'Shirayu kihime'	1
		short				*Dendrobium kingianum*	3
		medium				Wave King 'Akebono'	5
		long				Snow Cap 'Love Song'	7
		very long					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4. (*)	**(a)**	**Pseudobulb: thickness**					
(QN)		very thin					1
		thin					3
		medium					5
		thick					7
		very thick					9
5. (*)	**(a)**	**Pseudobulb: shape in longitudinal section**					
(PQ)		linear					1
		lanceolate					2
		ovate					3
6.	**(a)**	**Pseudobulb: shape in cross section**					
(PQ)		elliptic					1
		circular				Formidible	2
		angular				*Dendrobium densiflorum*	3
7.		**Plant: age of flowering pseudobulb (principally)**					
(QL)		one year				Formidible	1
		two years or more					2
8. (*)	**(b)**	**Leaf: length**					
(QN)		short				Stardust ’Chiyomi’	3
		medium				Wave King ’Akebono’	5
		long					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. (*)	**(b)**	**Leaf: width**					
(QN)		narrow				Stardust 'Chiyomi'	3
		medium				Wave King 'Akebono'	5
		broad				Snow Cap 'Love Song'	7
10. (*) (+)	**(b)**	**Leaf: shape**					
(PQ)		linear					1
		elliptic					2
		narrow ovate					3
		narrow obovate					4
		spatulate					5
11.	**(b)**	**Leaf: number of colors**					
(QL)		one					1
		two					2
		more than two					3
12.	**(b)**	**Leaf: color**					
(PQ)		light green					3
		green					5
		dark greeen					7
13.	**(b)**	**Leaf: presence of variegation**					
(QL)		absent					1
		present					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. **(+)**	**(b)**	**Leaf: type of variegation**					
(QL)		brindled					1
		spotted					2
		striped					3
		centered					4
		edged					5
15.	**(b)**	**Leaf: color of variegation**					
(QL)		white					1
		yellow					2
		yellow green					3
		white + yellow					4
		white + yellow green					5
		yellow + yellow green					6
16.	**(b)**	**Leaf: presence of pubescence**					
(QL)		absent					1
		present				Formidible	9
17.	**(b)**	**Leaf: color of pubescence**					
(QL)		white					1
		black				Formidible	2
18. **(*)**	**(c)**	**Inflorescence: position of adherence**					
(QL)		alongside whole					1
		at top part					2

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19. (*)	**(c)**	**Inflorescence: position of flowers**					
(QL)		along peduncle					1
		apical					2
20. (*)	**(c)**	**Inflorescence: number of flowers**					
(QN)		few					3
		medium					5
		many					7
21. (*) (+)		**Peduncle: length**					
(QN)		short				Lucy Girl ’Emiko’	3
		medium				Enobi Parade ’Milky Way’	5
		long				Queen Southeast ’Crystal Queen’	7
22. (*)		**Peduncle: thickness**					
(QN)		thin					3
		medium				Lucy Girl ’Emiko’	5
		thick					7
23. (*)		**Peduncle: attitude**					
(PQ)		erect					1
		semi-erect					2
		horizontal					3
		recurving					4

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24. (*) (+)		**Pedicellate-ovary: length**					
(QN)		short				Wave King 'Akebono'	3
		medium				Snow Cap 'Love Song'	5
		long					7
25. (*)		**Pedicellate-ovary: thickness**					
(QN)		thin				Wave King 'Akebono'	3
		medium					5
		thick					7
26. (*)	**(c)**	**Flower: general impression of petals and sepals**					
(PQ)		all incurving					1
		some incurving, some spreading					2
		all spreading					3
		some spreading, some reflexing					4
		all reflexing					5
		some incurving, some reflexing					6
27.	**(d)**	**Flower: length of mentum**					
(QN)		short				*Dendrobium kingianum*	3
		medium				Formidible	5
		long					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28. (*) (+)	**(d)**	**Flower: length in front view**					
(QN)		short				Enobi Komachi 'Shirayu kihime'	3
		medium				Lucy Girl 'Emiko'	5
		long					7
29. (*) (+)	**(d)**	**Flower: width in front view**					
(QN)		narrow				Enobi Komachi 'Shirayu kihime'	3
		medium				Lucy Girl 'Emiko'	5
		broad					7
30.	**(c)**	**Flower: fragrance**					
(QL)		absent					1
		present					9
31. (*)	**(c)**	**Dorsal sepal: curvature of longitudinal axis**					
(PQ)		strongly incurving					1
		moderately incurving					3
		straight					5
		moderately recurving					7
		strongly recurving					9
32. (*)	**(d)**	**Dorsal sepal: length**					
(QN)		short				Enobi Parade 'Milky Way'	3
		medium				Wave King 'Akebono'	5
		long					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33. (*)	**(d)**	**Dorsal sepal: width**					
(QN)		narrow				Enobi Parade 'Milky Way'	3
		medium				Wave King 'Akebono'	5
		broad					7
34. (*) (+)	**(d)**	**Dorsal sepal: shape**					
(PQ)		linear					1
		elliptic					2
		ovate					3
		obovate					4
		spatulate					5
35. (*) (+)	**(c)**	**Dorsal sepal: shape in cross section**					
(PQ)		strongly concave					1
		moderately concave					2
		flat					3
		moderately convex					4
		strongly convex					5
36. (*)	**(c)**	**Dorsal sepal: twisting**					
(PQ)		absent or very weak					1
		weak				Stardust 'Chiyomi'	3
		medium					5
		strong					7
		very strong					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37. (*)	**(c)**	**Dorsal sepal: undulation of margin**					
(PQ)		absent or very weak					1
		weak					3
		medium				Pink Beauty ’Queen’	5
		strong					7
		very strong					9
38. (*)	**(c)**	**Lateral sepal: curvature of longitudinal axis**					
(PQ)		strongly incurving					1
		moderately incurving					3
		straight					5
		moderately recurving					7
		strongly recurving					9
39. (*)	**(d)**	**Lateral sepal: length**					
(QN)		short				Enobi Parade ’Milky Way’	3
		medium				Wave King ’Akebono’	5
		long					7
40. (*)	**(d)**	**Lateral sepal: width**					
(QN)		narrow				Enobi Parade ’Milky Way’	3
		medium				Wave King ’Akebono’	5
		broad					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
41. (*) (+)	**(c)**	**Lateral sepal: shape**					
(PQ)		linear					1
		elliptic					2
		ovate					3
		obovate					4
		spatulate					5
42. (*) (+)	**(c)**	**Lateral sepal: shape in cross section**					
(PQ)		strongly concave					1
		moderately concave					2
		flat					3
		moderately convex					4
		strongly convex					5
43. (*)	**(c)**	**Lateral sepal: twisting**					
(PQ)		absent or very weak					1
		weak				Stardust ’Chiyomi’	3
		medium					5
		strong					7
		very strong					9
44. (*)	**(c)**	**Lateral sepal: undulation of margin**					
(PQ)		absent or very weak					1
		weak				Wave King ’Akebono’	3
		medium				Pink Beauty ’Queen’	5
		strong					7
		very strong					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
45. **(*)**	**(c)** **(e)**	**Sepal: number of colors**					
(QL)		one					1
		two					2
		three					3
		more than three					4
46. **(*)**	**(c)** **(e)**	**Sepal: color pattern**					
(QL)		self-colored					1
		shaded					2
		edged					3
		striped					4
		netted					5
		spotted					6
		shaded + striped					7
		shaded + netted					8
		shaded + spotted					9
47.	**(c)** **(e)**	**Sepal: main color**					
(QL)		RHS Colour Chart (indicate reference number)					
48.	**(c)** **(e)**	**<u>Shaded varieties</u> <u>only:</u> Sepal: extent of shading**					
(QN)		small					3
		medium					5
		large					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
49.	**(c)** **(e)**	**<u>Shaded varieties</u>** **<u>only:</u> Sepal: color of shading**					
(QL)		RHS Colour Chart (indicate reference number)					
50.	**(c)** **(e)**	**<u>Edged varieties</u>** **<u>only:</u> Sepal: color of edging**					
(QL)		RHS Colour Chart (indicate reference number)					
51.	**(c)** **(e)**	**<u>Striped varieties</u>** **<u>only:</u> Sepal: color of stripes**					
(QL)		RHS Colour Chart (indicate reference number)					
52.	**(c)** **(e)**	**<u>Netted varieties</u>** **<u>only:</u> Sepal: color of netting**					
(QL)		RHS Colour Chart (indicate reference number)					
53.	**(c)** **(e)**	**<u>Spotted varieties</u>** **<u>only:</u> Sepal: color of spots**					
(QL)		RHS Colour Chart (indicate reference number)					
54. **(*)**	**(c)**	**Petal: curvature of longitudinal axis**					
(PQ)		strongly incurving					1
		moderately incurving					3
		straight					5
		moderately recurving					7
		strongly recurving					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
55. (*)	**(d)**	**Petal: length**					
(QN)		short				Enobi Parade 'Milky Way'	3
		medium				Wave King 'Akebono'	5
		long					7
56. (*)	**(d)**	**Petal: width**					
(QN)		narrow				Enobi Parade 'Milky Way'	3
		medium				Wave King 'Akebono'	5
		broad					7
57. (*) (+)	**(c)**	**Petal: shape**					
(PQ)		linear					1
		elliptic					2
		ovate					3
		obovate					4
		spatulate					5
58. (*) (+)	**(c)**	**Petal: shape in cross section**					
(PQ)		strongly concave					1
		moderately concave					2
		flat					3
		moderately convex					4
		strongly convex					5

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
59. (*)	**(c)**	**Petal: twisting**					
(PQ)		absent or very weak					1
		weak				Pink Beauty ’Queen’	3
		medium					5
		strong					7
		very strong					9
60. (*)	**(c)**	**Petal: undulation of margin**					
(PQ)		absent or very weak					1
		weak				Stardust ’Chiyomi’	3
		medium				Wave King ’Akebono’	5
		strong				Pink Beauty ’Queen’	7
		very strong					9
61. (*)	**(c) (e)**	**Petal: number of colors**					
(QL)		one					1
		two					2
		three					3
		more than three					4

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
62. **(*)**	**(c)** **(e)**	**Petal: color pattern**					
(QL)		self-colored					1
		shaded					2
		edged					3
		striped					4
		netted					5
		spotted					6
		shaded and striped					7
		shaded and netted					8
		shaded and spotted					9
63.	**(c)** **(e)**	**Petal: main color**					
(QL)		RHS Colour Chart (indicate reference number)					
64.	**(c)**	**<u>Shaded varieties only:</u> Petal: extent of shading**					
(QN)		small					3
		medium					5
		large					7
65.	**(c)** **(e)**	**<u>Shaded varieties only:</u> Petal: color of shading**					
(QL)		RHS Colour Chart (indicate reference number)					
66.	**(c)** **(e)**	**<u>Edged varieties only:</u> Petal: color of edging**					
(QL)		RHS Colour Chart (indicate reference number)					

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
67.	**(c)** **(e)**	**<u>Striped varieties</u> <u>only:</u> Petal: color of stripes**					
(QL)		RHS Colour Chart (indicate reference number)					
68.	**(c)** **(e)**	**<u>Netted varieties</u> <u>only:</u> Petal: color of netting**					
(QL)		RHS Colour Chart (indicate reference number)					
69.	**(c)** **(e)**	**<u>Spotted varieties</u> <u>only:</u> Petal: color of spots**					
(QL)		RHS Colour Chart (indicate reference number)					
70. **(*)**	**(c)** **(d)**	**Lip: length**					
(QN)		short				Enobi Parade ’Milky Way’	3
		medium				Wave King ’Akebono’	5
		long					7
71. **(*)**	**(c)** **(d)**	**Lip: width**					
(QN)		narrow				Enobi Parade ’Milky Way’	3
		medium				Himezakura ’Fujikko’	5
		broad				Wave King ’Akebono’	7
72. **(*)**	**(c)**	**Lip: presence of lateral lobe**					
(QL)		absent					1
		present					9

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
73. **(*)** **(+)**	**(c)**	**<u>Varieties without lateral lobes only:</u>** **Lip: shape**					
(PQ)		elliptic					1
		circular					2
		transverse elliptic					3
74. **(*)** **(+)**	**(c)**	**<u>Varieties without lateral lobes only:</u>** **Lip: overlapping of basal part**					
(QL)		absent					1
		present					9
75. **(*)** **(+)**	**(c)**	**<u>Varieties with lateral lobes only:</u>** **Lip: shape of lateral lobe**					
(PQ)		triangular					1
		ovate					2
		narrow trapezoid					3
		broad trapezoid					5
76. **(*)** **(+)**	**(c)**	**<u>Varieties with lateral lobes only:</u>** **Lip: shape of apical lobe**					
(PQ)		reniform					1
		rhombic					2
		transverse elliptic					3
		elliptic					4

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
77. **(*)** **(+)**	**(c)**	**Lip: type of curving**					
(QL)		type I					1
		type II					2
		type III					3
		type IV					4
		type V					5
		type VI					6
78. **(*)** **(+)**	**(c)**	**Lip: presence of eye**					
(QL)		absent					1
		present					9
79. **(*)** **(+)**	**(c)**	**Lip: shape of eye**					
(QL)		type I					1
		type II					2
		type III					3
		type IV					4
80. **(*)**	**(c)** **(e)**	**Lip: number of colors**					
(QL)		one					1
		two					2
		three					3
		four					4
		five					5
		more than five					6

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
81. **(*)**	**(c)** **(e)**	**Lip: color pattern (except middle part, eye and throat)**					
(QL)		self-colored					1
		shaded					2
		edged					3
		striped					4
		netted					5
		spotted					6
		shaded + striped					7
		shaded + netted					8
		shaded + spotted					9
82.	**(c)** **(e)**	**<u>Shaded varieties only:</u> Lip: extent of shading**					
(QN)		small					3
		medium					5
		large					7
83.	**(c)** **(e)**	**Lip: main color**					
(QL)		RHS Colour Chart (indicate reference number)					
84. **(+)**	**(c)** **(e)**	**Lip: color of middle part**					
(QL)		RHS Colour Chart (indicate reference number)					
85.	**(c)** **(e)**	**<u>Shaded varieties only:</u> Lip : color of shading**					
(QL)		RHS Colour Chart (indicate reference number)					

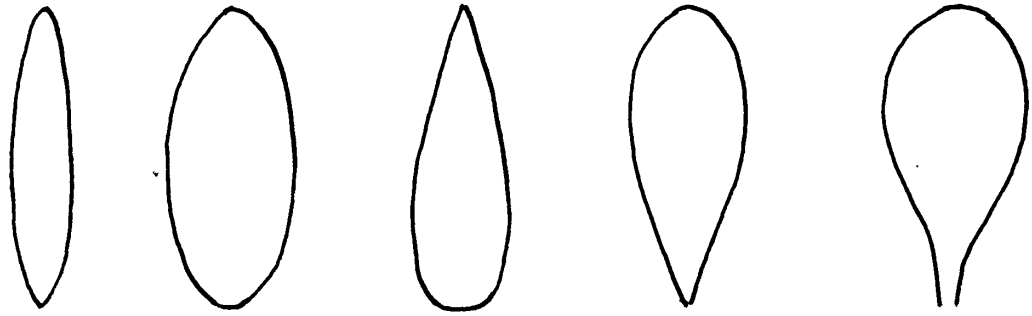
Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
86.	**(c)** **(e)**	**<u>Edged varieties</u> <u>only:</u> Lip: color of edging**					
(QL)		RHS Colour Chart (indicate reference number)					
87.	**(c)** **(e)**	**<u>Striped varieties</u> <u>only:</u> Lip: color of stripes**					
(QL)		RHS Colour Chart (indicate reference number)					
88.	**(c)** **(e)**	**<u>Netted varieties</u> <u>only:</u> Lip: color of netting**					
(QL)		RHS Colour Chart (indicate reference number)					
89.	**(c)** **(e)**	**<u>Spotted varieties</u> <u>only:</u> Lip: color of spots**					
(QL)		RHS Colour Chart (indicate reference number)					
90.	**(c)** **(e)**	**<u>Varieties with eye</u> <u>only</u>: Lip: color of eye**					
(QL)		RHS Colour Chart (indicate reference number)					
91.	**(c)** **(e)**	**<u>Varieties with different colored throat only:</u> Lip: color of throat**					
(QL)		RHS Colour Chart (indicate reference number)					

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
92. (*)	**(c)**	**Lip: twisting**					
(PQ)		absent or very weakly expressed					1
		weakly expressed					2
		strongly expressed					3
93. (*)	**(c)**	**Lip: undulation of margin**					
(PQ)		absent or very weakly expressed				Enobi Parade 'Milky Way'	1
		weakly expressed				Stardust 'Chiyomi'	2
		strongly expressed				Pink Beauty 'Queen'	3
94. (*)	**(c)**	**Lip: fringing of margin**					
(PQ)		absent or very fine					1
		fine					3
		medium					5
		coarse					7
95. (*)	**(c)**	**Lip: callus**					
(QL)		absent					1
		present					9
96. (*)	**(c)**	**Lip: pubescence**					
(PQ)		absent or very weak					1
		weak					2
		strong					3
97. (*)	**(c)**	**Column: length**					
(QN)		short					3
		medium					5
		long					7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
98.	**(f)**	**Column: color of anther cap**					
(QL)		RHS Colour Chart (indicate reference number)					
99. (*)	**(c)**	**Time of flowering**					
(PQ)		early winter					1
		mid winter					2
		spring					3
		summer					4
		autumn					5

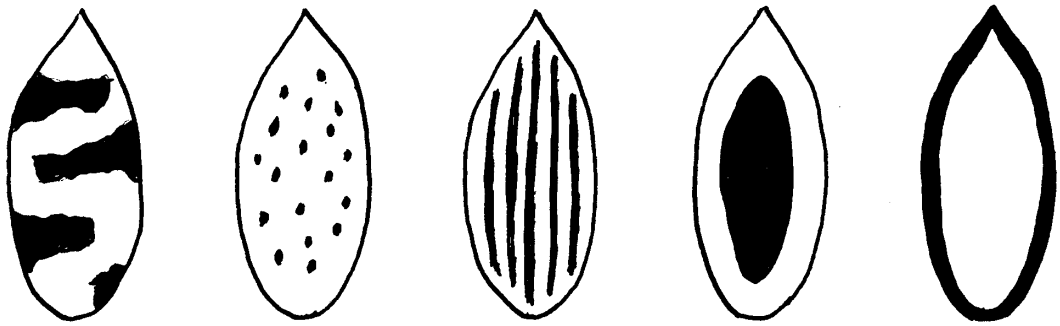
8. Explanations on the Table of Characteristics

Ad. 10: Leaf: shape



1 linear | 2 elliptic | 3 narrow ovate | 4 narrow obovate | 5 spatulate

Ad. 14: Leaf: type of variegation

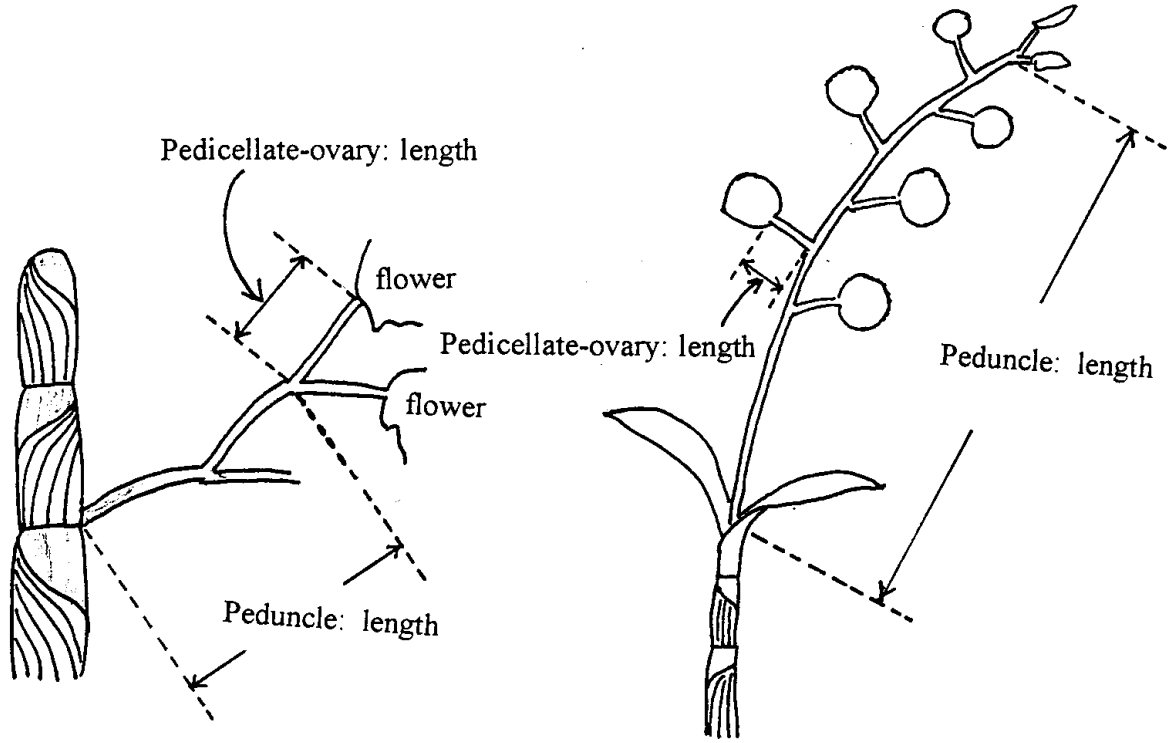


1 brindled | 2 spotted | 3 striped | 4 centered | 5 edged

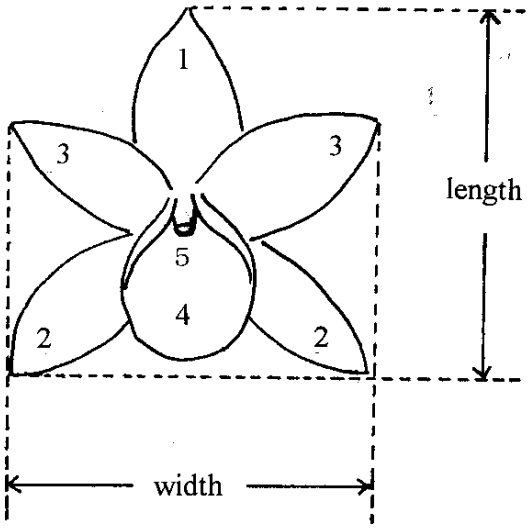
note: main color

secondary color

Ad. 21: Peduncle: length
Ad. 24: Pedicellate-ovary: length

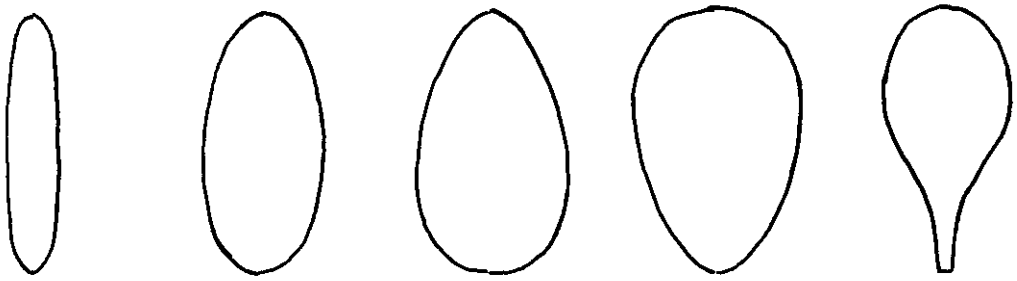


Ad. 28: Flower: length in front view
Ad. 29: Flower: width in front view



1: Dorsal sepal
2: Lateral sepal
3: Petal
4: Lip
5: Column

Ad. 34: Dorsal sepal: shape
Ad. 41: Lateral sepal: shape
Ad. 57: Petal: shape



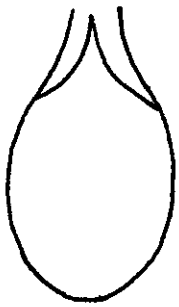
1 linear | 2 elliptic | 3 ovate | 4 obovate | 5 spatulate

Ad. 35: Dorsal sepal: shape in cross section
Ad. 42: Lateral sepal: shape in cross section
Ad. 58: Petal: shape in cross section

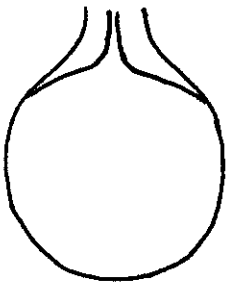
Inner side ↑

1 strongly concave | 2 moderately concave | 3 flat | 4 moderately convex | 5 strongly convex

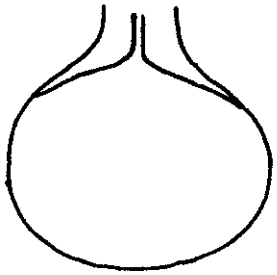
Ad. 73: Varieties without lateral lobes only: Lip: shape



1
elliptic

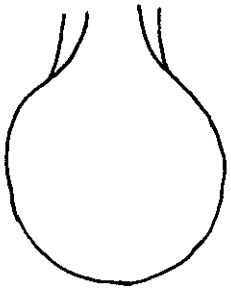


2
circular

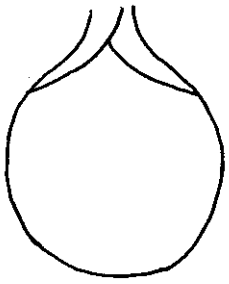


3
transverse elliptic

Ad. 74: Varieties without lateral lobes only: Lip: overlapping of basal part

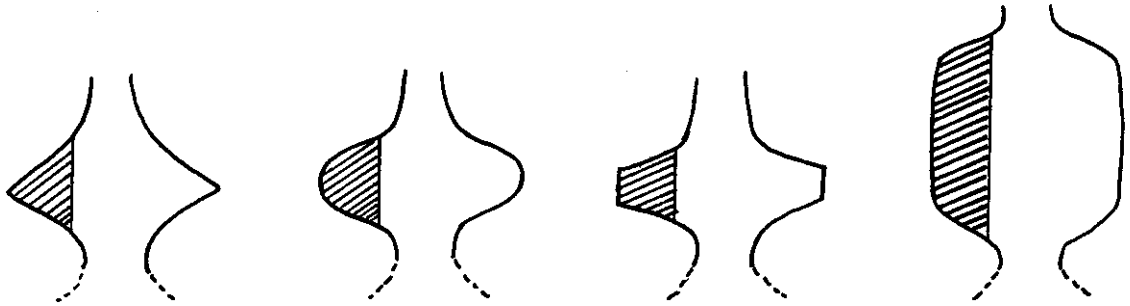


1
absent



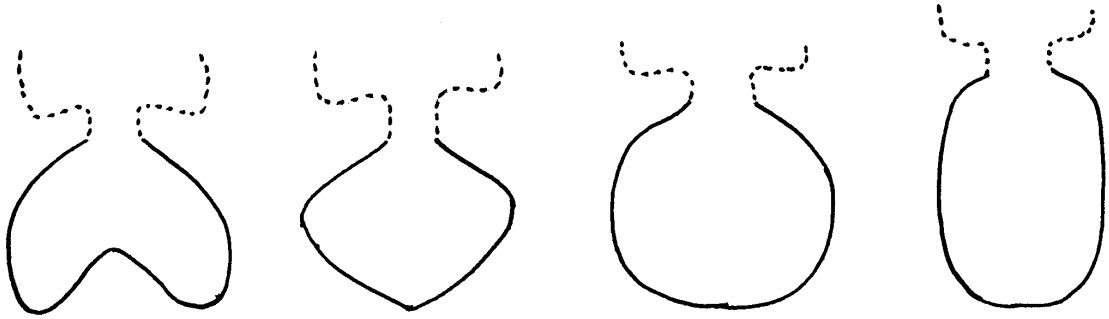
9
present

Ad. 75: Varieties with lateral lobes only: Lip: shape of lateral lobe



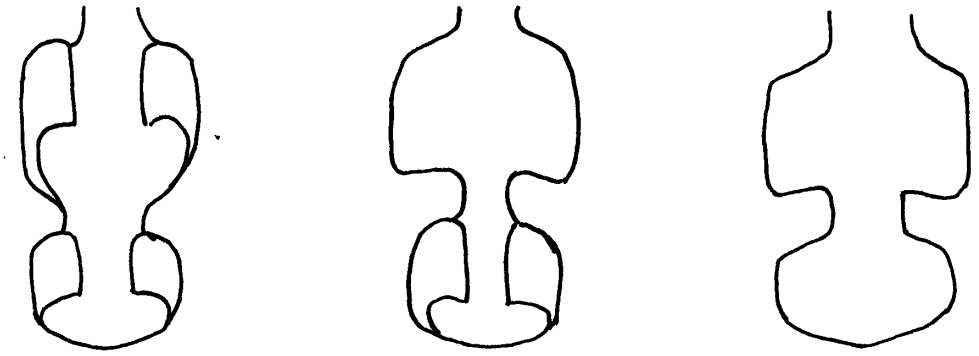
1 triangular | 2 ovate | 3 narrow trapezoid | 4 broad trapezoid

Ad. 76: Varieties with lateral lobes only: Lip: shape of apical lobe



1 reniform | 2 rhombic | 3 transvers elliptic | 4 elliptic

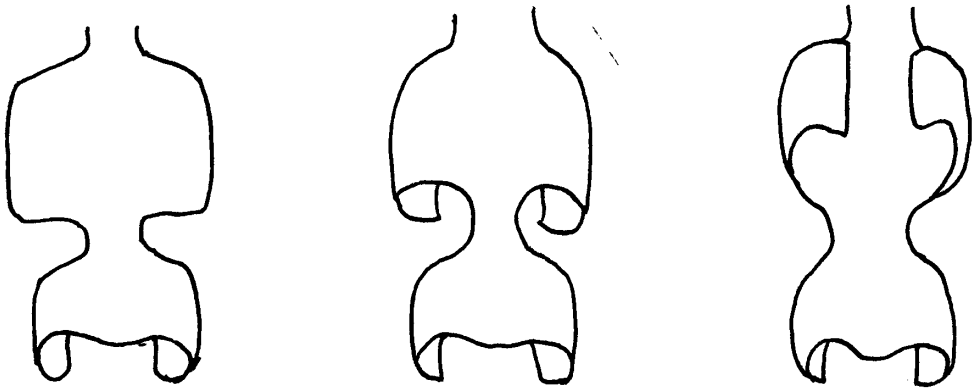
Ad. 77: Lip: type of curving



1
type I

2
type II

3
type III

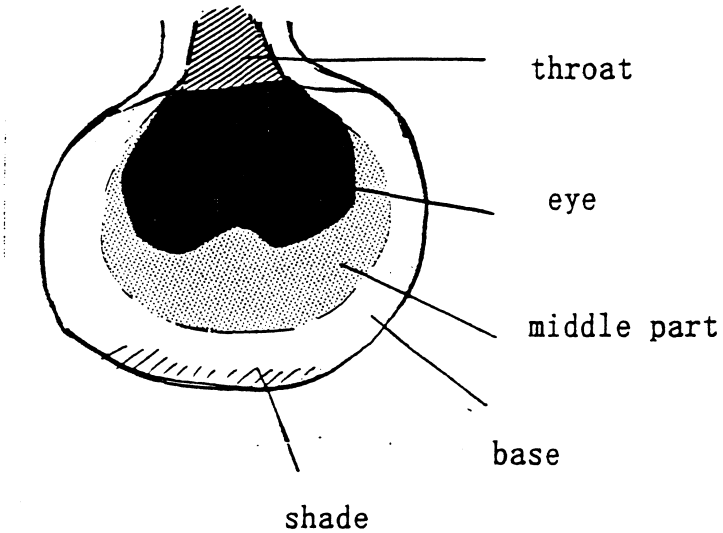


4
type IV

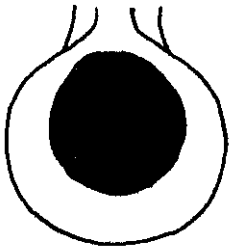
5
type V

6
type VI

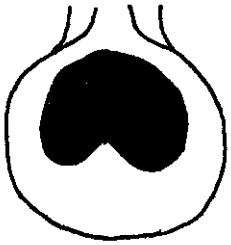
Ad. 78: Lip: presence of eye
Ad. 84: Lip: color of middle part



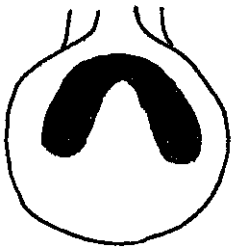
Ad. 79: Lip: shape of eye



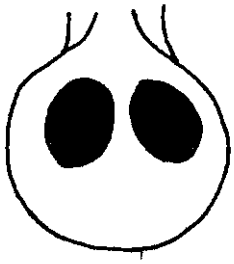
1
type I



2
type II



3
type III



4
type IV

9. Literature

- Encyclopedia of Horticulture, Seibun-Do Shinkosha, Tokyo, Japan (in Japanese), JP.

- Karasawa, K., 1994: “Orchid Atlas”, Vol. 4, Dendrobium, Orchid Atlas Publishing Society, c/o Yasaka Syobo, Inc., Tokyo, Japan, JP.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1 Genus

1.1.1 *Latin Name*	*Dendrobium* Sw.
1.1.2 Common Name	Dendrobium

1.2 Subgenus/species (please complete)

1.2.1 *Latin Name*	
1.2.2 Common Name	

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

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

4.1 Breeding Scheme

4.1.1 Variety resulting from:

(a) controlled cross [ ]
(please state parent varieties)
(b) partially unknown cross [ ]
(please state known parent variety(ies))
(c) totally unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery [ ]
(please state where, when and how developed)

4.1.4 Other [ ]
(please provide details)

4.2 Method of Propagating the Variety

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: size**		
	very small	Enobi Komachi “Shirayuki hime”	1[ ]
	small	*Dendrobium kingianum*	3[ ]
	medium	Wave King “Akebono”	5[ ]
	large	Lucy Cirl “Emiko”	7[ ]
	very large		9[ ]
5.2 (19)	**Inflorescence: position of flowers**		
	along peduncle		1[ ]
	apical		2[ ]
5.3 (28)	**Flower: length in front view**		
	short	Enobi Komachi “Shirayu ki hime”	3[ ]
	medium	Lucy Cirl “Emiko”	5[ ]
	long		7[ ]
5.4 (29)	**Flower: width in front view**		
	narrow	Enobi Komachi “Shirayu ki hime”	3[ ]
	medium	Lucy Cirl “Emiko”	5[ ]
	broad		7[ ]
5.5 (72)	**Lip: presence of lateral lobe**		
	absent		1[ ]
	present		9[ ]
5.6 (78)	**Lip: presence of eye**		
	absent		1[ ]
	present		9[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Characteristics	Example Varieties	Note
5.7 (81)	**Lip: color pattern (except middle part, eye and throat)**		
	self-colored		1[ ]
	shaded		2[ ]
	edged		3[ ]
	striped		4[ ]
	netted		5 [ ]
	spotted		6 [ ]
	shaded + striped		7[ ]
	shaded + netted		8[ ]
	shaded + spotted		9[ ]
5.8i (83)	**Lip: main color**		
	RHS Colour Chart (indicate reference number)		
5.8ii (83)	**Lip: main color**		
	green		1[ ]
	white		2[ ]
	yellow		3[ ]
	pink		4[ ]
	red		5[ ]
	purple		6[ ]
	reddish brown		7[ ]

6. Similar varieties and differences from these varieties

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
(Example)	*Plant: height*	*e.g. note 3*	*note 7*
		e.g. short	*tall*
		e.g. 90 cm	*130 cm*

7. Additional information which may help in the examination of the variety

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

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

7.2.2 If yes, please give details:

7.3 Other information

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

9. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant's name

Signature Date

[End of document]