TG/MOKARA(proj.3)
ORIGINAL: English
DATE: 2008-05-23

UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

MOKARA *

UPOV Code: MOKAR

Mokara

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Singapore

to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its forty-first session, to be held in Wageningen, Netherlands, from June 9 to 13, 2008

*Alternative Names: **

Botanical name	*English*	*French*	*German*	*Spanish*
Mokara Please note the below combinations for genus *Mokara* *Arachnis* x *Ascocentrum* x *Vanda;* *Ascocenda* (*Ascocentrum* x *Vanda*) x *Arachnis;* *Aranda* (*Arachnis* x *Vanda*) x *Ascocentrum;* *Ascorachnis* (*Ascocentrum* x *Arachnis*) x *Vanda;* *Ascocenda* x *Aranda; Ascocenda* x *Ascorachnis;* *Aranda* x *Ascorachnis* Selfing or sibing of *Mokara* *Mokara* x *Arachnis; Mokara* x *Ascocentrum;* *Mokara* x *Vanda; Mokara* x *Ascocenda;* *Mokara* x *Aranda; Mokara* x *Ascorachnis*	*Mokara*			

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with 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.]

TABLE OF CONTENTS PAGE

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of artificial hybrid genus *Mokara*, of the family *Orchidaceae*. The genus *Mokara* is a manmade genus that consists of 3 natural genus combinations of (*Arachnis* x *Ascocentrum* x *Vanda*) in the parental background. *Mokara* can also have the combination make-up of following genera:

Ascocenda (*Ascocentrum* x *Vanda*) x *Arachnis*
Aranda (*Arachnis* x *Vanda*) x *Ascocentrum*
Ascorachnis (*Ascocentrum* x *Arachnis*) x *Vanda*
Ascocenda x *Aranda*
Ascocenda x *Ascorachnis*
Aranda x *Ascorachnis*
Mokara x *Arachnis*
Mokara x *Ascocentrum*
Mokara x *Vanda*
Mokara x *Ascocenda*
Mokara x *Aranda*
Mokara x *Ascorachnis*

Progeny resulting in the selfing or sibing of *Mokara* also applies to this test guideline. Selfings refers to a population resulting from the self pollination of the *Mokara* flowers of the same plant, while Siblings refers to a population resulting from the cross pollination of 2 different *Mokara* flowers of different or the same varieties.

GREX INFORMATION**:** For example, in the case of *Mokara* Chark Kuan 'Orange', the generic name is *Mokara*, the grex epithet is Chark Kuan, and the cultivar epithet is 'Orange'. The grex epithet can be the name of a person; many orchids are named after the breeder, or other prominent people. Such a cultivar is the individual plant and all its vegetatively propagated progeny that are identical to it.

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 young plants (clones) that have produced the 1st inflorescence.

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

10 plants.

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 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”.

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 optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described at the end of Chapter 8.

3.3.3 The recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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

3.3.4 Because daylight varies, color determinations made against a color 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.

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 10 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 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations 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 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 Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.2 Uniformity

4.2.1 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:

4.2.2 For the assessment of uniformity, a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, 1 off-type is allowed.

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 plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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: width (natural leaf spread excluding inflorescence) (characteristic 1)
(b) Inflorescence: number of flowers (characteristic 9)
(c) Flower: length (characteristic 13)
(d) Flower: width (characteristic 14)
(e) Dorsal sepal: main color (background color) (characteristic 23)
(f) Lateral sepal: main color (background color) (characteristic 35)
(g) Petal: main color (background color) (characteristic 47)
(h) Apical lobe of lip: main color (background color) (characteristic 58)
(i) Only varieties with different colored throat: color of throat (characteristic 70)

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.

6.5 Legend

(*) Asterisked characteristic – see Chapter 6.1.2

QL: Qualitative characteristic – see Chapter 6.3
QN: Quantitative characteristic – see Chapter 6.3
PQ: Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS: See Chapter 3.3.3

(a)-(d) 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/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
1. **(*)**	**VG**	**Plant: width (natural leaf spread excluding inflorescence)**					
QN		narrow				Bangkok Gold	3
		medium				Chark Kuan 'Pink'	5
		broad				Dear Heart	7
2. **(+)**	**VG**	**Leaf: attitude**					
QL	**(a)**	semi-erect				Sunkist	1
		horizontal				Chark Kuan 'Pink'	2
		semi-pendulous				Dear Heart	3
3. **(*)**	**VG/ MS**	**Leaf: length**					
QN	**(a)**	short				Bangkok Gold	3
		medium				Khaw Phaik Suan	5
		long				Dear Heart	7
4. **(*)** **(+)**	**VG/ MS**	**Leaf: width**					
QN	**(a)**	narrow				Bangkok Gold	3
		medium				Sunkist	5
		broad				Dear Heart	7
5. **(+)**	**VG**	**Leaf: emarginated tip**					
QL	**(a)**	absent				Dinah Shore	1
		present				Bangkok Gold	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6. (*) (+)	**VG**	**Leaf: folding**					
QN	**(a)**	weak				Chark Kuan 'Pink'	3
		medium				Five Friendships Gold	5
		strong				Chao Praya Gold	7
7.	**VG**	**Leaf: intensity of green color on upper side**					
QN	**(a)**	light				Singa Gold	3
		medium				Mak Chin On	5
		dark				Dinah Shore	7
8. (*) (+)	**VG/ MS**	**Inflorescence: length**					
QN	**(b)**	short				Lions Gold	3
		medium				Chao Praya Gold	5
		long				Dear Heart	7
9. (*)	**VG**	**Inflorescence: number of flowers**					
QN	**(b)**	few				Lions Gold	3
		medium				Luenberger Gold, Singa Gold	5
		many				Dear Heart, Dinah Shore	7
10.	**VG**	**Inflorescence: branching**					
QL	**(b)**	absent				Five Friendships Gold	1
		present				Dear Heart	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
11. (*) (+)	**VG/ MS**	**Peduncle: length**					
QN	**(b)**	short				Margaret Thatcher	3
		medium				Khaw Phaik Suan	5
		long				Dear Heart	7
12. (*) (+)	**VG/ MS**	**Pedicel: length**					
QN	**(b)**	short				Margaret Thatcher	3
	(c)	medium				Bangkok Gold	5
		long				Mak Chin On	7
13. (*) (+)	**VG/ MS**	**Flower: length**					
QN	**(b)**	short				Margaret Thatcher	3
	(c)	medium				Bangkok Gold	5
		long				Mak Chin On	7
14. (*) (+)	**VG/ MS**	**Flower: width**					
QN	**(b)**	narrow				Margaret Thatcher	3
	(c)	medium				Khaw Phaik Suan	5
		broad				Chark Kuan ‘Pink’	7
15.	**VG**	**Flower: fragrance**					
QL	**(b)**	absent				Singa Gold	1
		present				Lions Gold	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
16. **(+)**	**VG**	**Dorsal sepal: curvature of longitudinal axis**					
QL	**(b)**	strongly concave				Willie How	1
		weakly concave				Sunkist	3
		flat				Singa Gold	5
		weakly convex				Red	7
		strongly convex					9
17. **(+)**	**VG**	**Dorsal sepal: curvature in cross section**					
QL	**(b)**	strongly concave					1
		weakly concave					3
		flat				Chao Praya Gold	5
		weakly convex				Red	7
		strongly convex				Khaw Phaik Suan	9
18. **(*)** **(+)**	**VG/ MS**	**Dorsal sepal: length**					
QN	**(b)**	short				Margaret Thatcher	3
	(c)	medium				Khaw Phaik Suan	5
		long				Chark Kuan ‘Pink’	7
19. **(*)** **(+)**	**VG/ MS**	**Dorsal sepal: width**					
QN	**(b)**	narrow				Margaret Thatcher	3
	(c)	medium				Khaw Phaik Suan	5
		broad				Chark Kuan ‘Pink’	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
20. (*) (+)	**VG**	**Dorsal sepal: shape**					
PQ	**(b)**	narrow obovate				Luenberger Gold	1
		medium obovate				Dinah Shore	2
		broad obovate				Five Friendships Gold	3
		spatulate				Red	4
21. (*)	**VG**	**Dorsal sepal: number of colors**					
QL	**(b)**	one				Chao Praya Gold	1
	(d)	two				Lions Gold	2
		more than two				Five Friendships Gold	3
22. (*)	**VG**	**Only varieties with more than one color on dorsal sepal: Dorsal sepal: color pattern**					
QL	**(b)**	shaded only				Dickson How	1
	(d)	edged					2
		striped					3
		netted only				Sumalee	4
		spotted only				Khaw Phaik Suan	5
		shaded and netted				Mak Chin On	6
		shaded and spotted				Sunkist	7
23. (*)	**VG/ MS**	**Dorsal sepal: main color (background color)**					
PQ	**(b) (d)**	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
24. **(*)**	**VG/ MS**	**Dorsal sepal: secondary color (color of pattern)**					
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)					
25.	**VG/ MS**	**Dorsal sepal: tertiary color (color of pattern)**					
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)					
26.	**VG**	**Only varieties with shaded dorsal sepal: Dorsal sepal: extent of shading**					
QN	**(b)**	small				Sunkist	3
	(d)	medium				Lions Gold	5
		large					7
27.	**VG**	**Only varieties with spotted dorsal sepal: Dorsal sepal: size of spots**					
QN	**(b)**	small				Sunkist	3
	(d)	medium				Chark Kuan 'Pink'	5
		large				Margaret Thatcher	7
28. **(+)**	**VG**	**Lateral Sepal: curvature of longitudinal axis**					
QL	**(b)**	strongly concave				Willie How	1
		weakly concave				Dear Heart	3
		flat				Dinah Shore	5
		weakly convex					7
		strongly convex					9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
29. **(+)**	**VG**	**Lateral sepal: curvature in cross section**					
QL	(b)	strongly concave					1
		weakly concave					3
		flat					5
		weakly convex				Dinah Shore	7
		strongly convex				Red	9
30. **(*)** **(+)**	**VG/ MS**	**Lateral sepal: length**					
QN	**(c)**	short				Margaret Thatcher	3
	(d)	medium				Mak Chin On	5
		long				Chark Kuan 'Pink'	7
31. **(*)** **(+)**	**VG/ MS**	**Lateral sepal: width**					
QN	**(b)**	narrow				Margaret Thatcher	3
	(c)	medium				Mak Chin On	5
		broad				Chark Kuan 'Pink'	7
32. **(*)** **(+)**	**VG**	**Lateral sepal: shape**					
PQ	**(b)**	narrow ovate					1
		medium ovate				Singa Gold	2
		broad ovate				Five Friendships Gold	3
		elliptical					4
33. **(*)**	**VG**	**Lateral sepal: number of colors**					
QL	**(b)**	one				Chao Praya Gold	1
	(d)	two				Lions Gold	2
		more than two					3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
34. (*)	**VG**	**<u>Only varieties with more than one color on lateral sepal:</u> Lateral sepal: color pattern**					
QL	**(b)**	shaded only				Dickson How	1
	(d)	edged					2
		striped					3
		netted only				Sumalee	4
		spotted only				Khaw Phaik Suan	5
		shaded and netted				Mak Chin On	6
		shaded and spotted				Luenberger Gold	7
35. (*)	**MG**	**Lateral sepal: main color (background color)**					
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)					
36. (*)	**MG**	**Lateral sepal: secondary color (color of pattern)**					
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)					
37.	**MG**	**Lateral sepal: tertiary color (color of pattern)**					
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)					
38.	**VG**	**<u>Only varieties with shaded lateral sepals</u>: Lateral sepal: extent of shading**					
QN	**(b)**	small				Chark Kuan ‘Pink’	3
	(d)	medium				Lions Gold	5
		large				Margaret Thatcher	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
39.	**VG**	**<u>Only varieties with spotted lateral sepals</u>: Lateral sepal: size of spots**					
QN	**(b)**	small				Sunkist	3
	(d)	medium				Chark Kuan 'Pink'	5
		large				Margaret Thatcher	7
40. **(+)**	**VG**	**Petal: curvature of longitudinal axis**					
QL	**(b)**	strongly concave					1
		weakly concave				Sunkist	3
		flat				Singa Gold	5
		weakly convex				Dinah Shore	7
		strongly convex					9
41. **(+)**	**VG**	**Petal: curvature in cross section**					
QL	**(b)**	strongly concave					1
		weakly concave					3
		flat				Singa Gold	5
		weakly convex				Dinah Shore	7
		strongly convex					9
42. **(*)** **(+)**	**VG/ MS**	**Petal: length**					
QN	**(b)**	short				Margaret Thatcher	3
	(d)	medium				Luenberger Gold	5
		long				Chark Kuan 'Pink'	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
43. (*) (+)	**VG/ MS**	**Petal: width**					
QN		narrow				Margaret Thatcher	3
		medium				Luenberger Gold	5
		broad				Chark Kuan 'Pink'	7
44. (*) (+)	**VG**	**Petal: shape**					
PQ	**(b)**	narrow obovate					1
		medium obovate				Chark Kuan 'Pink'	2
		broad obovate				Five Friendships Gold	3
		spatulate				Lions Gold	4
45. (*)	**VG**	**Petal: number of colors**					
QL	**(b)**	one				Chao Praya Gold	1
	(d)	two				Lions Gold	2
		more than two				Five Friendships Gold	3
46. (*)	**VG**	**Only varieties with more than one color on petal: Petal: color pattern**					
QL	**(b)**	shaded only				Lions Gold	1
	(d)	edged				Sunkist	2
		striped					3
		netted only				Sumalee	4
		spotted only				Khaw Phaik Suan	5
		shaded and netted				Mak Chin On	6
		shaded and spotted				Dear Heart	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
47. (*)	**MG**	**Petal: main color (background color)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
48. (*)	**MG**	**Petal: secondary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
49.	**MG**	**Petal: tertiary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
50.	**VG**	**<u>Only varieties with shaded petals</u>: Petal: extent of shading**					
QN	**(b)**	small					3
	(d)	medium				Lions Gold	5
		large				Margaret Thatcher	7
51.	**VG**	**<u>Only varieties with spotted petals:</u> Petal: size of spots**					
QN	**(b)**	small				Sunkist	3
	(d)	medium				Chark Kuan ‘Pink’	5
		large				Margaret Thatcher	7
52. (*) (+)	**VG/ MS**	**Apical lobe of lip: length**					
QN	**(b)**	short				Dinah Shore	3
	(c)	medium				Khaw Phaik Suan	5
		long				Chark Kuan ‘Pink’	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
53. (*) (+)	**VG/ MS**	**Apical lobe of lip: width**					
QN	**(b)**	narrow				Singa Gold	3
	(c)	medium				Chark Kuan 'Pink'	5
		broad				Lions Gold	7
54. (*) (+)	**VG**	**Apical lobe of lip: lobing of apex**					
QL	**(b)**	absent				Dinah Shore	1
		present				Chark Kuan 'Pink'	9
55. (+)	**VG**	**Apical lobe of lip: protrusion on ventral side**					
QN	**(b)**	absent or very weak				Khaw Phaik Suan	1
		weak				Dinah Shore	2
		strong				Chark Kuan 'Pink'	3
56. (*)	**VG**	**Apical lobe of lip: number of colors**					
QL	**(b)**	one				Bangkok Gold	1
	(d)	two				Dinah Shore	2
		more than two				Sunkist	3
57. (*)	**VG**	**Only varieties with more than one color on apical lobe of lip: Apical lobe of lip: color pattern**					
QL	**(b)**	shaded only					1
	(d)	edged					2
		striped				Dinah Shore	3
		netted only					4
		spotted only					5
		shaded and striped				Margaret Thatcher	6

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
58. (*)	**MG**	**Apical lobe of lip: main color (background color)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
59. (*)	**MG**	**Apical lobe of lip: secondary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
60.	**MG**	**Apical lobe of lip: tertiary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
61. (*)	**VG**	**Lateral lobe of lip: number of colors**					
QL	**(b)**	one				Bangkok Gold	1
	(d)	two				Dinah Shore	2
		more than two				Five Friendships Gold	3
62. (*)	**VG**	**Only varieties with more than one color on lateral lobe of lip: Lateral lobe of lip: color pattern**					
QL	**(b)**	shaded only					1
	(d)	edged					2
		striped					3
		netted only					4
		spotted only				Sunkist	5
		shaded and spotted				Five Friendships Gold	6

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
63. (*)	**MG**	**Lateral lobe of lip: main color (background color)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
64. (*)	**MG**	**Lateral lobe of lip: secondary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
65.	**MG**	**Lateral lobe of lip: tertiary color (color of pattern)**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
66.	**VG**	**Column: number of colors on upper side**					
QL	**(b)**	one				Bangkok Gold	1
	(d)	two				Lions Gold	2
		more than two					3
67. (+)	**VG**	**Column: color pattern on upper side**					
QL	**(b)**	evenly colored				Chao Praya Gold	1
		shaded				Sunkist	2
		spotted				Lions Gold	3
68.	**MG**	**Column: main color on upper side (background color)**					
PQ	**(b)**	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
69.	**MG**	**Column: secondary color (color of pattern)**					
PQ	**(b)**	RHS Colour chart (indicate reference number)					
70.	**MG**	**<u>Only varieties with different colored throat:</u> color of throat**					
PQ	**(b)**	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 second column of the Table of Characteristics should be examined as indicated below:

(a) Observations on the leaf should be made on the longest leaf of a flowering plant. Width of the leaf is observed by its natural spread (not by opening and flattening of the folded leaf.) Folding of leaf is observed at the mid point of the leaf length. Length of the leaf is measured following the natural curvature of the leaf.
(b) Observations on the inflorescence should be made at the time when 50% of the flowers on the inflorescence have opened. Observations on the flowers should be made on the most recently fully opened flower before the color starts to fade.
(c) Observations on the length and width of the flower and parts of the flower should be made on the unextended organ.
(d) Observations on the color of the sepal, the petal and the lip should be made on the inner (front) side.

8.2 Explanations for individual characteristics

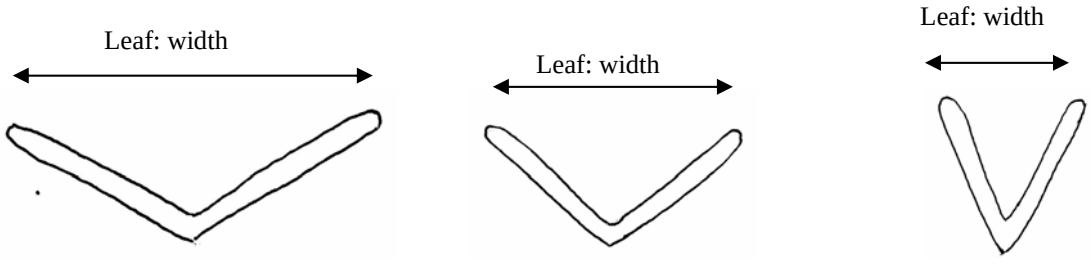
Ad. 2: Leaf: attitude

1
semi-erect

2
horizontal

3
semi-pendulous

Ad. 4: Leaf: width
Ad. 6: Leaf: folding

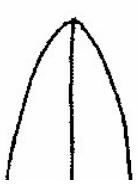


3
weak

5
medium

7
strong

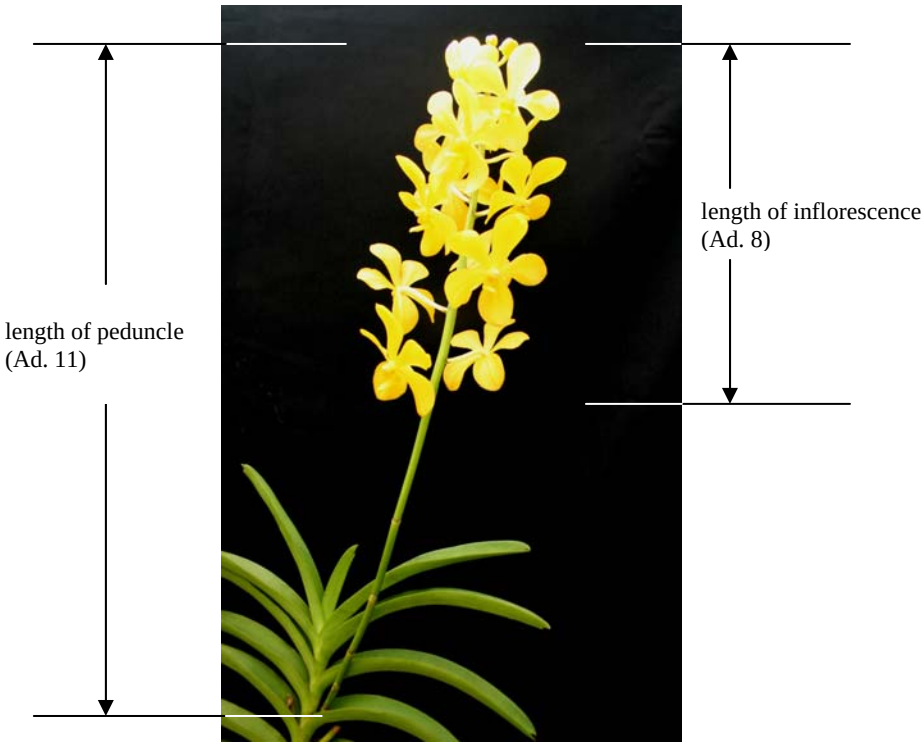
Ad. 5: Leaf: emarginated tip



1
absent

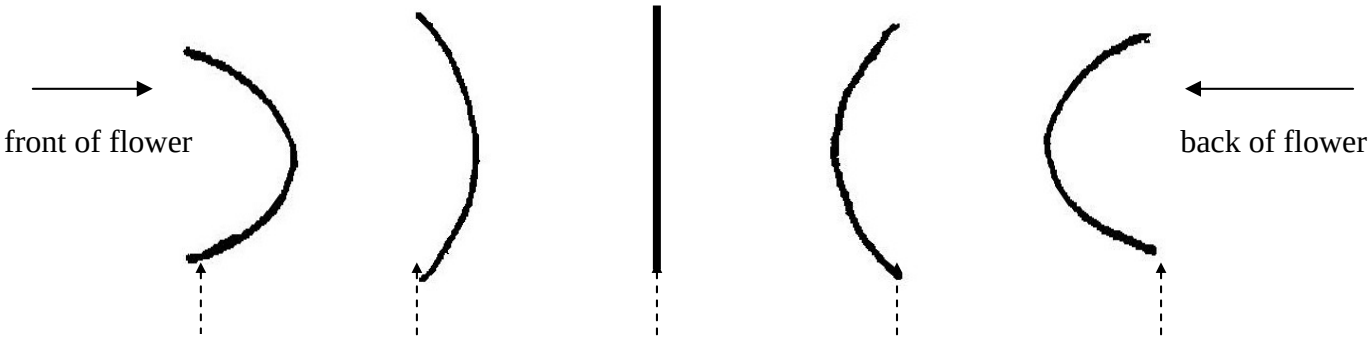
9
present

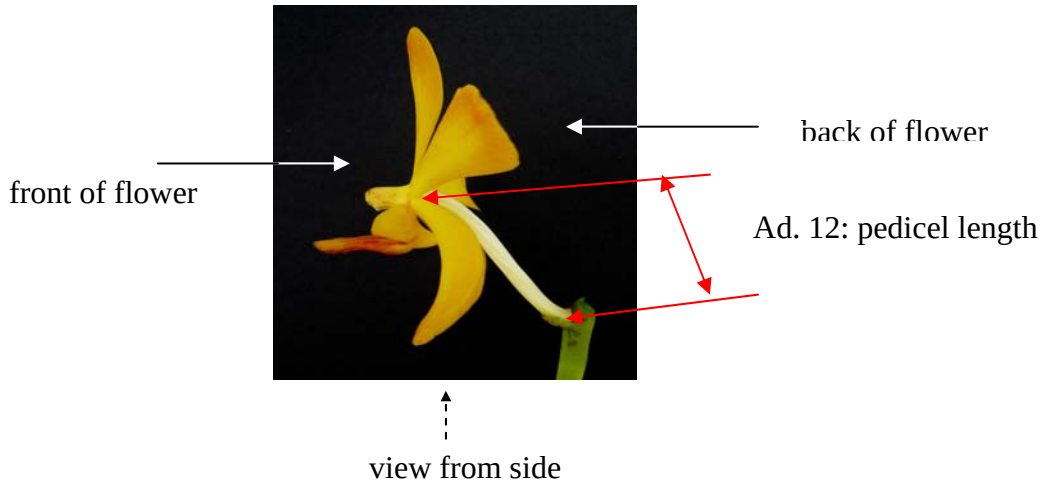
Ad. 8: Inflorescence: length
Ad. 11: Peduncle: length



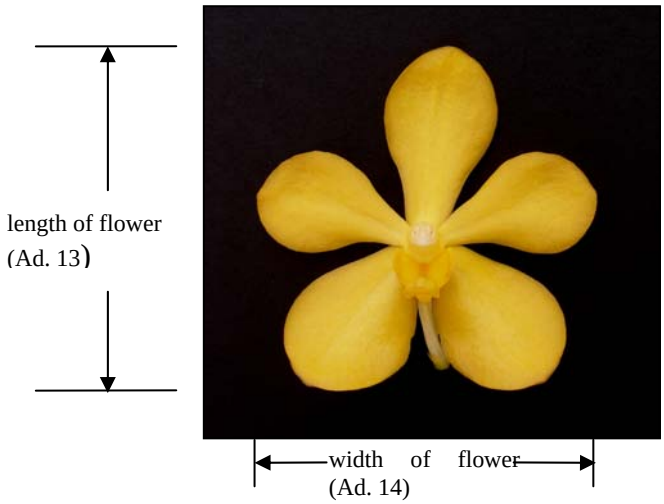
Ad 12: Pedicel: length
Ad 16: Dorsal sepal: curvature of longitudinal axis
Ad 28: Lateral sepal: curvature of longitudinal axis
Ad 40: Petal: curvature of longitudinal axis

1	3	5	7	9
strongly concave	weakly concave	flat	weakly convex	strongly convex



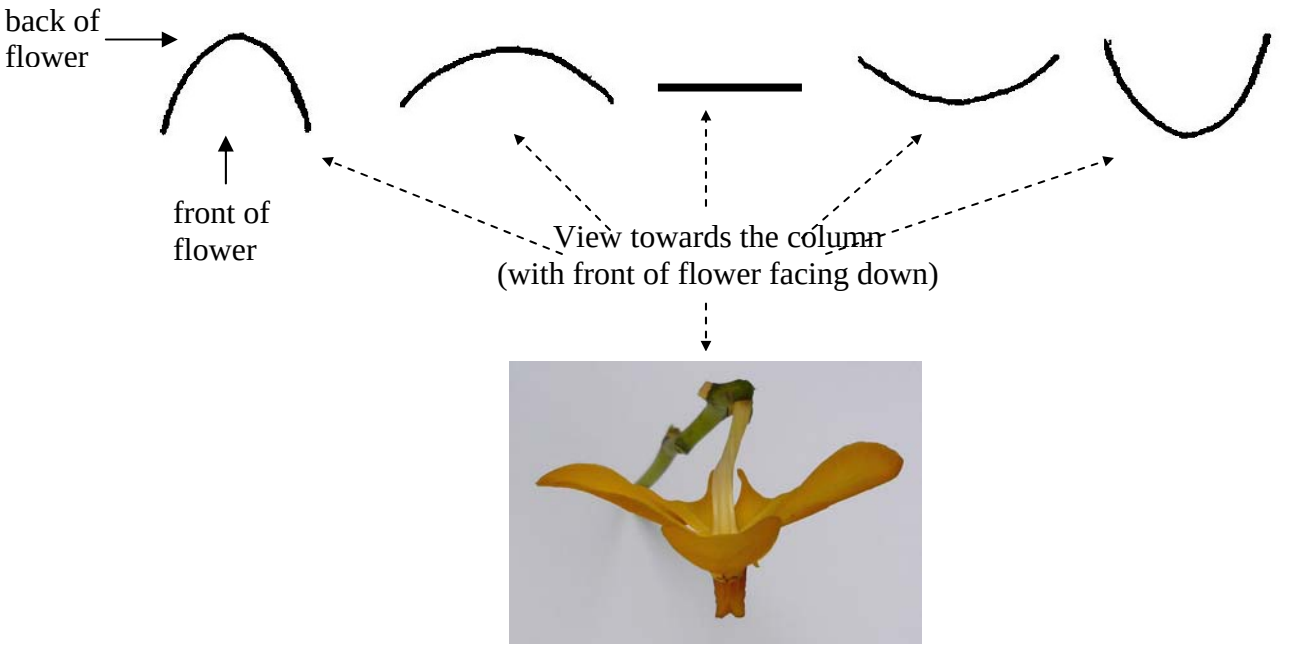


Ad. 13: Flower: length
Ad. 14: Flower: width



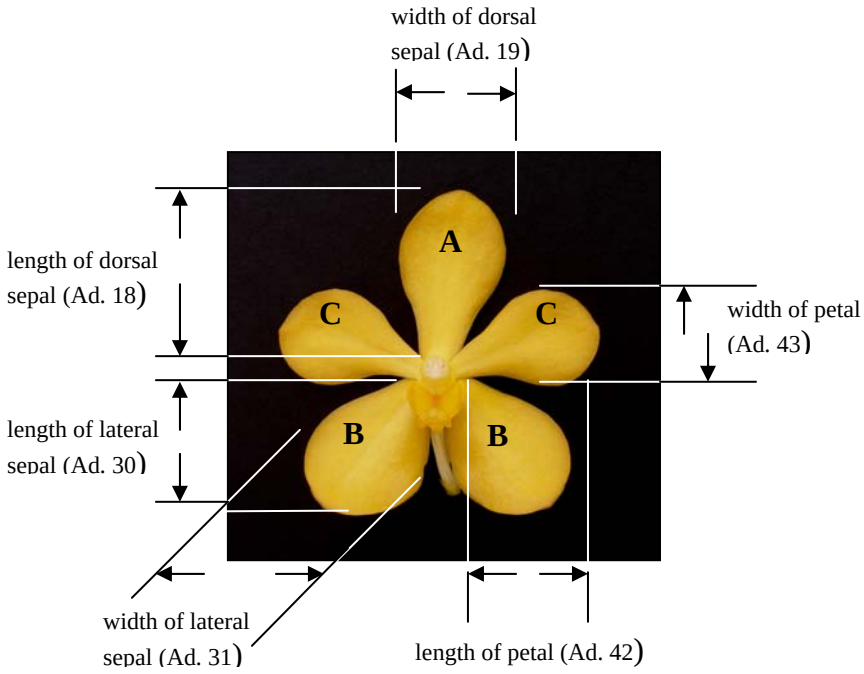
Ad 17: Dorsal sepal: curvature in cross section
Ad 29: Lateral sepal: curvature in cross section
Ad 41: Petal: curvature in cross section

1	3	5	7	9
strongly concave	weakly concave	flat	weakly convex	strongly convex

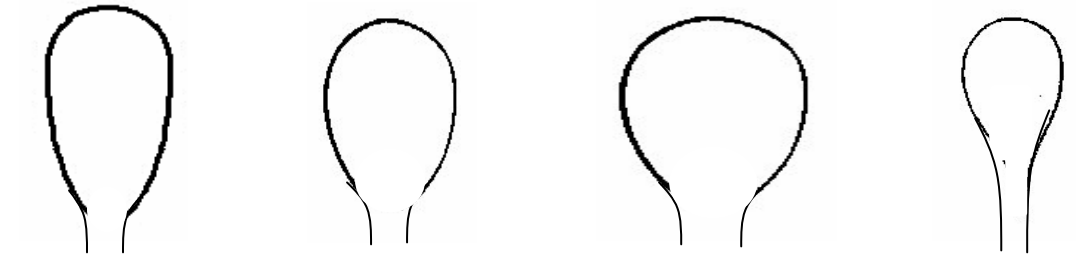


Ad. 18: Dorsal sepal: length
Ad. 19: Dorsal sepal: width
Ad. 30: Lateral sepal: length
Ad. 31: Lateral sepal: width
Ad. 42: Petal: length
Ad. 43: Petal: width

A: Dorsal sepal
B: Lateral sepal
C: Petal

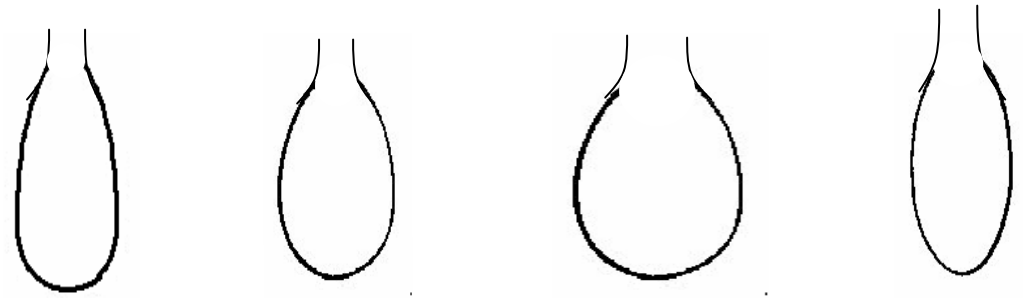


Ad. 20: Dorsal sepal: shape
Ad. 44: Petal: shape



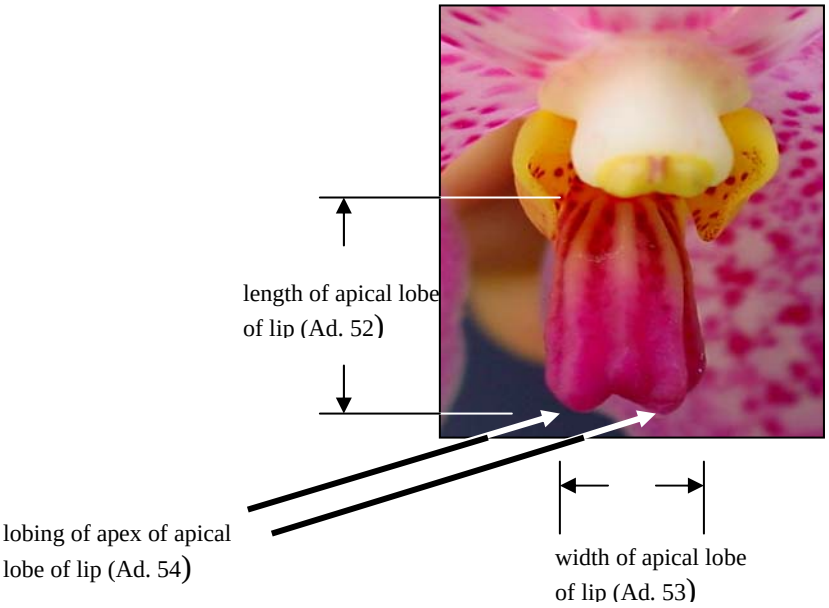
1	2	3	4
narrow obovate	medium obovate	broad obovate	spatulate

Ad. 32: Lateral sepal: shape

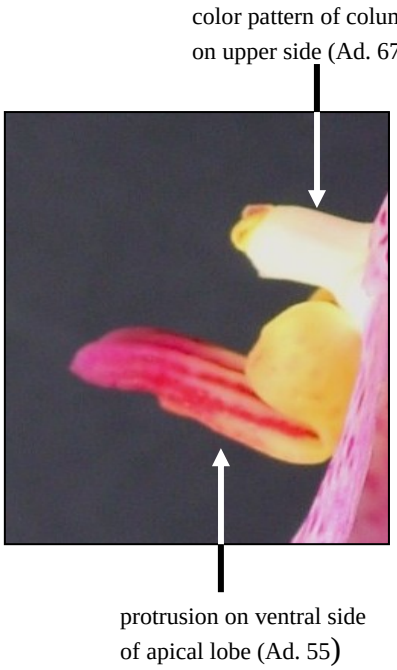


1 narrow ovate | 2 medium ovate | 3 broad ovate | 4 elliptical

Ad. 52: Apical lobe of lip: length
Ad. 53: Apical lobe of lip: width
Ad. 54: Apical lobe of lip: lobing of apex



Ad. 55: Apical lobe of lip: protrusion on ventral side
Ad. 67: Column: color pattern on upper side



9. Literature

Yam, T.W., 1986: Orchids of the Singapore Botanic Gardens. Singapore.

Yam, T.W., and Aung, T, 1998: Fascinating Mokaras. Malayan Orchid Review. Vol 32, pp. 39-44.

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 Botanical name	*Mokara*
1.2 Common name	Mokara

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

Variety resulting from:

4.1.1 Crossing

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

4.1.2 Mutation [ ]
(please state parent variety)

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

4.1.4 Other [ ]
(please provide details)

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) cuttings [ ]
(b) *in vitro* propagation [ ]
(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 Other [ ]
(please provide details)

4.3 The region and country in which the variety was bred or discovered and developed

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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: width (natural leaf spread excluding inflorescence)**		
	narrow	Bangkok Gold	3 [ ]
	medium	Chark Kuan 'Pink'	5 [ ]
	broad	Dear Heart	7 [ ]
5.2 (9)	**Inflorescence: number of flowers**		
	few	Lions Gold	3 [ ]
	medium	Luenberger Gold, Singa Gold	5 [ ]
	many	Dear Heart, Dinah Shore	7 [ ]
5.3 (13)	**Flower: length**		
	short	Margaret Thatcher	3 [ ]
	medium	Bangkok Gold	5 [ ]
	long	Mak Chin On	7 [ ]
5.4 (14)	**Flower: width**		
	narrow	Margaret Thatcher	3 [ ]
	medium	Khaw Phaik Suan	5 [ ]
	broad	Chark Kuan 'Pink'	7 [ ]

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

	Characteristics	Example Varieties	Note
5.5 (23)	**Dorsal sepal: main color (background color)**		
	green		1 [ ]
	white		2 [ ]
	yellow	Chao Praya Gold	3 [ ]
	orange	Singa Gold	4 [ ]
	red	Dinah Shore	5 [ ]
	purple	Dear Heart	6 [ ]
5.6 (35)	**Lateral sepal: main color (background color)**		
	green		1 [ ]
	white		2 [ ]
	yellow	Chao Praya Gold	3 [ ]
	orange	Singa Gold	4 [ ]
	red	Dinah Shore	5 [ ]
	purple	Dear Heart	6 [ ]
5.7 (47)	**Petal: main color (background color)**		
	green		1 [ ]
	white		2 [ ]
	yellow	Chao Praya Gold	3 [ ]
	orange	Singa Gold	4 [ ]
	red	Dinah Shore	5 [ ]
	purple	Dear Heart	6 [ ]

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

	Characteristics	Example Varieties	Note
5.8 (58)	**Apical lobe of lip: main color (background color)**		
	green		1[ ]
	white		2[ ]
	yellow	Chao Praya Gold	3[ ]
	orange	Singa Gold	4[ ]
	red	Dinah Shore	5[ ]
	purple	Chark Kuan 'Pink'	6[ ]
5.9 (70)	**<u>Only varieties with different colored throat</u>: color of throat**		
	green		1 [ ]
	white		2 [ ]
	yellow	Colopso Jambo	3 [ ]
	orange	Chao Praya Gold	4 [ ]
	red	Khaw Phaik Suan	5 [ ]
	purple	Dinah Shore	6 [ ]

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

6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

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	*petal: main color*	*orange*	*orange red*

Comments:

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

[#]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 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

A representative color photograph of the variety should accompany the Technical Questionnaire.

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.

[#] Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

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

9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a) Microorganisms (e.g. virus, bacteria, phytoplasma) Yes [ ] No [ ]

(b) Chemical treatment (e.g. growth retardant, pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details for where you have indicated “yes”.

……

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]

10. 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]