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## 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 experts from Singapore*

*to be considered by the  
Technical Working Party for Ornamental Plants and Forest Trees  
at its thirty-ninth session, to be held in Fortaleza, Ceará State, Brazil,  
from August 28 to September 1, 2006*

Alternative Names: \*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Mokara</i> ( <i>Arachnis</i> × <i>Ascocentrum</i> × <i>Vanda</i> )	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.]

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## 1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of genus *Mokara*, 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 plants that have previously produced two inflorescence prior to submission and are about to flower for a third time.

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, which should be divided between 2 replicates.

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% and 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:

(Example different for different varieties)

- (a) Plant: size (characteristic 1)
- (b) Inflorescence: number of flowers (characteristic 9)
- (c) Flower: length (characteristic 14)
- (d) Flower: width (characteristic 15)
- (e) Lateral sepal: main colour (background colour) (characteristic 36)

- (f) Only varieties with more than one colour on petal: Petal: colour pattern (characteristic 45)
- (g) Petal: main colour (background colour) (characteristic 46)
- (h) Only varieties with more than one colour on apical lobe of lip only: Apical lobe of lip: colour pattern (characteristic 55)
- (i) Lip: apical lobe: main colour (background colour) (characteristic 56)

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: single measurement of a group of plants or parts of plants – see Chapter 3.3.1  
MS: measurement of a number of individual plants or parts of plants – see Chapter 3.3.1  
VG: visual assessment by a single observation of a group of plants or parts of plants – Chapter 3.3.1  
VS: visual assessment by observation of individual plants or parts of plants” –see Chapter 3.3.1

(a)-{x} 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
<b>1.</b>	<b>VG</b>	<b>Plant: size</b>				
(*)						
<b>QN</b>		small			Bangkok Gold	3
		medium			Chark Kuan 'Pink'	5
		large			Dear Heart	7
<b>2.</b>	<b>VG</b>	<b>Leaf: attitude</b>				
<b>QN</b>	<b>(a)</b>	semi-erect			Sunkist	3
(+)		horizontal			Chark Kuan 'Pink'	5
		semi-pendulous			Dear Heart	7
<b>3.</b>	<b>(a)</b>	<b>Leaf: length</b>				
(*)						
<b>QN</b>	<b>VG/ MS</b>	short			Bangkok Gold	3
		medium			Khaw Phaik Suan	5
		long			Dear Heart	7
<b>4.</b>	<b>(a)</b>	<b>Leaf: width</b>				
(*)						
<b>QN</b>	<b>VG/ MS</b>	narrow			Bangkok Gold	3
		medium			Luenberger Gold	5
		broad			Dear Heart	7
<b>5.</b>	<b>(a)</b>	<b>Leaf: shape of apex</b>				
(+)						
<b>PQ</b>	<b>VG</b>	obtuse			Dinah Shore	1
		emarginate			Bangkok Gold	2



		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>6.</b> (*) (+)	<b>(a)</b>	<b>Leaf: folding</b>					
QN	VG	weak				Chark Kuan 'Pink'	3
		medium				Dear Heart	5
		strong				Margaret Thatcher	7
<b>7.</b>	<b>(a)</b>	<b>Leaf: intensity of green colour on upper side</b>					
QN	VG	light				Singa Gold	3
		medium				Mak Chin On	5
		dark				Dinah Shore	7
<b>8.</b> (*)	<b>(b)</b>	<b>Inflorescence: length</b>					
QN	VG/ MS	short				Lions Gold	3
		medium				Prapin Gold	5
		long				Dear Heart	7
<b>9.</b> (*)	<b>(b)</b>	<b>Inflorescence: number of flowers</b>					
QN	VG	few				Lions Gold	3
		medium				Luenberger Gold, Singa Gold	5
		many				Dear Heart, Dinah Shore	7
<b>10.</b> (*)	<b>(b)</b>	<b>Peduncle: length</b>					
QN	VG/ MS	short				Margaret Thatcher	3
		medium				Khaw Phaik Suan	5
		long				Dear Heart	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>11.</b>	<b>(b)</b>	<b>Peduncle: anthocyanin coloration</b>					
<b>QL</b>	<b>VG</b>	absent			Prapin Gold	1	
		present			Sunkist	9	
<b>12.</b>	<b>(b)</b>	<b>Peduncle: intensity of green colour</b>					
<b>QN</b>	<b>VG</b>	light			Prapin Gold	3	
		medium			Chark Kuan 'Pink'	5	
		dark			Dinah Shore	7	
<b>13.</b>	<b>(b)</b>	<b>Pedicel: length</b>					
<b>QN</b>	<b>(c)</b>	short			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Bangkok Gold	5	
		long			Mak Chin On	7	
<b>14.</b>	<b>(b)</b>	<b>Flower: length</b>					
<b>QN</b>	<b>(c)</b>	short			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Bangkok Gold	5	
		long			Mak Chin On	7	
<b>15.</b>	<b>(b)</b>	<b>Flower: width</b>					
<b>QN</b>	<b>(c)</b>	narrow			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Khaw Phaik Suan	5	
		broad			Chark Kuan 'Pink'	7	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota	
<b>16.</b>	<b>(b)</b>	<b>Flower: general impression of sepals</b>					
<b>QL</b>	<b>VG</b>	incurving			Willie How	1	
		spreading			Dinah Shore	9	
<b>17.</b>	<b>(b)</b>	<b>Flower: general impression of petals</b>					
<b>QL</b>	<b>VG</b>	incurving			Willie How	1	
		spreading			Dinah Shore	9	
<b>18.</b>	<b>(b)</b>	<b>Flower: fragrance</b>					
<b>QL</b>	<b>VG</b>	absent			Singa Gold	1	
		present			Lions Gold	9	
<b>19.</b>	<b>(b)</b>	<b>Dorsal sepal: length</b>					
<b>(*)</b>							
<b>(+)</b>							
<b>QN</b>	<b>(c)</b>	short			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Khaw Phaik Suan	5	
		long			Chark Kuan 'Pink'	7	
<b>20.</b>	<b>(b)</b>	<b>Dorsal sepal: width</b>					
<b>(*)</b>							
<b>(+)</b>							
<b>QN</b>	<b>(c)</b>	narrow			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Khaw Phaik Suan	5	
		broad			Chark Kuan 'Pink'	7	
<b>21.</b>	<b>(b)</b>	<b>Dorsal sepal: shape</b>					
<b>(*)</b>							
<b>(+)</b>							
<b>PQ</b>	<b>VG</b>	oblanceolate oblong			Luenberger Gold	1	
		obovate			Dinah Shore	2	
		broad obovate				3	
		spatulate			Dear Heart	4	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>22.</b> (+)	<b>(b)</b>	<b>Dorsal sepal: shape of apex</b>					
<b>PQ</b>	<b>VG</b>	acute				1	
		obtuse			Chark Kuan 'Pink'	2	
		rotundate				3	
<b>23.</b> (* )	<b>(b)</b>	<b>Dorsal sepal: number of colours</b>					
<b>QL</b>	<b>(d)</b>	one			Prapin Gold	1	
	<b>VG</b>	two			Lions Gold	2	
		three				3	
		more than three				4	
<b>24.</b> (* )	<b>(b)</b>	<b>Varieties with more than one colour on dorsal sepal only: Dorsal sepal: colour pattern</b>					
<b>QL</b>	<b>(d)</b>	shaded			Dickson How	1	
	<b>VG</b>	edged				2	
		striped				3	
		netted			Sumalee	4	
		spotted			Khaw Phaik Suan	5	
		shaded and netted			Mak Chin On	6	
		shaded and spotted			Lions Gold	7	
<b>25.</b> (* )	<b>(b)</b> <b>(d)</b>	<b>Dorsal sepal: main colour (background colour)</b>					
<b>PQ</b>	<b>MG</b>	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>26.</b>	<b>(b) (d)</b>	<b>Dorsal sepal: colour of pattern</b>					
<b>PQ</b>	<b>MG</b>	RHS Colour Chart (indicate reference number)					
<b>27.</b>	<b>(b) (d)</b>	<b>Only varieties with shaded dorsal sepal: extent of shading</b>					
<b>QN</b>	<b>VG</b>	small				Sunkist	3
		medium				Lions Gold	5
		large				Margaret Thatcher	7
<b>28.</b>	<b>(b) (d)</b>	<b>Only varieties with spotted dorsal sepal: size of spots</b>					
<b>QN</b>	<b>VG</b>	small				Sunkist	3
		medium				Chark Kuan 'Pink'	5
		large				Margaret Thatcher	7
<b>29. (* (+)</b>	<b>(b)</b>	<b>Lateral sepal: length</b>					
<b>QN</b>	<b>(c)</b>	short				Margaret Thatcher	3
	<b>VG/ MS</b>	medium				Mak Chin On	5
		long				Chark Kuan 'Pink'	7
<b>30 (* (+)</b>	<b>(b)</b>	<b>Lateral sepal: width</b>					
<b>QN</b>	<b>(c)</b>	narrow				Margaret Thatcher	3
	<b>VG/ MS</b>	medium				Mak Chin On	5
		broad				Chark Kuan 'Pink'	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
<b>31.</b> (*) (+)	<b>(b)</b>	<b>Lateral sepal: shape</b>				
<b>PQ</b>	<b>VG</b>	lanceolate oblong				1
		ovate			Singa Gold	2
		broad ovate			Five Friendships Gold	3
		elliptical				4
<b>32.</b> (+)	<b>(b)</b>	<b>Lateral sepal: shape of apex</b>				
	<b>VG</b>	acute			Dear Heart	1
<b>PQ</b>		obtuse			Dinah Shore	2
		rotundate			Sunkist	3
<b>33.</b> (*)	<b>(b)</b>	<b>Lateral sepal: undulation of margin</b>				
<b>QN</b>	<b>VG</b>	absent or very weak			Dinah Shore	1
		weak			Khaw Phaik Suan	3
		medium				5
		strong				7
<b>34.</b> (*)	<b>(b)</b>	<b>Lateral sepal: number of colours</b>				
<b>QL</b>	<b>(d)</b>	one			Prapin Gold	1
	<b>VG</b>	two			Lions Gold	2
		three				3
		more than three				4

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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>39.</b>	<b>(b)</b>	<b>Only varieties with</b>					
	<b>(d)</b>	<b>spotted lateral</b>					
		<b>sepals: size of spots</b>					
<b>QN</b>	<b>VG</b>	small			Sunkist	3	
		medium			Chark Kuan 'Pink'	5	
		large			Margaret Thatcher	7	
<b>40.</b>	<b>(b)</b>	<b>Petal: length</b>					
	<b>(*)</b>						
	<b>(+)</b>						
<b>QN</b>	<b>(c)</b>	short			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Luenberger Gold	5	
		long			Chark Kuan 'Pink'	7	
<b>41.</b>	<b>(b)</b>	<b>Petal: width</b>					
	<b>(*)</b>						
	<b>(+)</b>						
<b>QN</b>	<b>(c)</b>	narrow			Margaret Thatcher	3	
	<b>VG/ MS</b>	medium			Luenberger Gold	5	
		broad			Chark Kuan 'Pink'	7	
<b>42.</b>	<b>(b)</b>	<b>Petal: shape</b>					
	<b>(*)</b>						
	<b>(+)</b>						
	<b>VG</b>	oblanceolate oblong				1	
<b>PQ</b>		obovate			Chark Kuan 'Pink'	2	
		broad obovate			Five Friendships Gold	3	
		spatulate			Luenberger Gold	4	
<b>43.</b>	<b>(b)</b>	<b>Petal: shape of apex</b>					
	<b>(+)</b>						
<b>PQ</b>	<b>VG</b>	acute				1	
		obtuse			Chark Kuan 'Pink'	2	
		rotundate			Five Friendships Gold	3	



	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>44.</b>	<b>(b)</b>	<b>Petal: number of colours</b>					
<b>(*)</b>							
<b>QL</b>	<b>(d)</b>	one			Prapin Gold	1	
	<b>VG</b>	two			Lions Gold	2	
		three				3	
		more than three				4	
<b>45.</b>	<b>(b)</b>	<b>Only varieties with more than one colour on petal:</b>					
<b>(*)</b>		<b>Petal: colour pattern</b>					
<b>QL</b>	<b>(d)</b>	shaded			Dickson How	1	
	<b>VG</b>	edged				2	
		striped				3	
		netted			Sumalee	4	
		spotted			Khaw Phaik Suan	5	
		shaded and netted			Mak Chin On	6	
		shaded and spotted			Lions Gold	7	
<b>46</b>	<b>(b)</b>	<b>Petal: main colour</b>					
<b>(*)</b>	<b>(d)</b>	<b>(background colour)</b>					
<b>PQ</b>	<b>MG</b>	RHS Colour Chart (indicate reference number)					
<b>47.</b>	<b>(b)</b>	<b>Petal: colour of pattern</b>					
	<b>(d)</b>						
<b>PQ</b>	<b>MG</b>	RHS Colour Chart (indicate reference number)					
<b>48.</b>	<b>(b)</b>	<b>Only varieties with shaded petals:</b>					
	<b>(d)</b>	<b>extent of shading</b>					
<b>QN</b>	<b>VG</b>	small				3	
		medium			Lions Gold	5	
		large			Margaret Thatcher	7	

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>49.</b>	<b>(b)</b> <b>(d)</b>	<b>Only varieties with spotted petals: size of spots</b>					
<b>QN</b>	<b>VG</b>	small				Sunkist	3
		medium				Chark Kuan 'Pink'	5
		large				Margaret Thatcher	7
<b>50.</b>	<b>(b)</b> <b>(*)</b> <b>(+)</b>	<b>Apical lobe of lip: length</b>					
<b>QN</b>	<b>(c)</b>	short					3
	<b>VG/ MS</b>	medium				Khaw Phaik Suan	5
		long				Chark Kuan 'Pink'	7
<b>51.</b>	<b>(b)</b> <b>(c)</b> <b>(*)</b> <b>(+)</b>	<b>Apical lobe of lip: width</b>					
<b>QN</b>	<b>VG/ MS</b>	narrow				Singa Gold	3
		medium				Chark Kuan 'Pink'	5
		broad				Lions Gold	7
<b>52.</b>	<b>(b)</b> <b>(*)</b> <b>(+)</b>	<b>Apical lobe of lip: lobing of apex</b>					
<b>QL</b>	<b>VG</b>	<b>absent</b>					1
		<b>present</b>					9
<b>53.</b>	<b>(b)</b> <b>(+)</b>	<b>Apical lobe of lip: protrusion on ventral side</b>					
<b>QN</b>	<b>VG</b>	absent				Khaw Phaik Suan	1
		weakly expressed				Dinah Shore	2
		strongly expressed				Chark Kuan 'Pink'	3

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>54.</b> <b>(*)</b>	<b>(b)</b> <b>(d)</b>	<b>Apical lobe of lip: number of colours on upper side</b>				
<b>QL</b>	<b>VG</b>	one			Prapin Gold	1
		two			Lions Gold	2
		three			Luenberger Gold	3
		more than three				4
<b>55.</b> <b>(*)</b>	<b>(b)</b> <b>(d)</b>	<b>Only varieties with more than one colour on apical lobe of lip only: Apical lobe of lip: colour pattern</b>				
<b>QL</b>	<b>VG</b>	shaded				1
		edged				2
		striped			Luenberger Gold	3
		netted				4
		spotted				5
		shaded and striped			Dinah Shore	6
<b>56.</b> <b>(*)</b>	<b>(b)</b> <b>(d)</b>	<b>Apical lobe of lip: main colour (background colour)</b>				
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)				
<b>57.</b> <b>(*)</b>	<b>(b)</b> <b>(d)</b>	<b>Apical lobe of lip: colour of pattern</b>				
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)				

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
<b>58.</b>	<b>(b)</b> <b>(d)</b>	<b>Only varieties with spotted apical lobe of lip: size of spots</b>						
<b>QN</b>	<b>VG</b>	small					3	
		medium					5	
		large					7	
<b>59.</b>	<b>(b)</b> <b>(d)</b>	<b>Lateral lobe of lip: number of colours on inner side</b>						
<b>(*)</b> <b>(+)</b>								
<b>QL</b>	<b>VG</b>	one				Prapin Gold	1	
		two				Dinah Shore	2	
		three				Khaw Phaik Suan	3	
		more than three					4	
<b>60.</b>	<b>(b)</b> <b>(d)</b>	<b>Only varieties with more than one colour on lateral lobe of lip: Lateral lobe of lip: colour pattern</b>						
<b>(*)</b>								
<b>QL</b>	<b>VG</b>	shaded				Prapin Gold	1	
		edged					2	
		striped					3	
		netted					4	
		spotted				Luenberger Gold	5	
		shaded and spotted				Lions Gold	6	
		shaded, spotted and striped				Five Friendships Gold	7	
<b>61.</b>	<b>(b)</b> <b>(d)</b>	<b>Lateral lobe of lip: main colour (background colour)</b>						
<b>(*)</b>								
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)						

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
<b>62.</b> <b>(*)</b>	<b>(b)</b> <b>(d)</b>	<b>Lateral lobe of lip: colour of pattern</b>					
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)					
<b>63.</b>	<b>(b)</b> <b>(c)</b>	<b>Only varieties with spotted lateral lobe of lip: size of spots</b>					
<b>QN</b>	<b>VG</b>	small				Sunkist	3
		medium					5
		large					7
<b>64.</b> <b>(+)</b>	<b>(b)</b>	<b>Column: colour pattern on upper side</b>					
<b>QL</b>	<b>VG</b>	evenly coloured				Prapin Gold	1
		shaded					2
		spotted				Lions Gold	3
<b>65.</b>	<b>(b)</b>	<b>Column: main colour on upper side (background colour)</b>					
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)					
<b>66.</b>	<b>(b)</b>	<b>Column: colour of pattern on upper side</b>					
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)					

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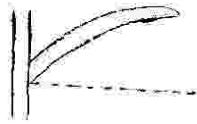
	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota	
<b>67.</b>	<b>(b)</b>	<b>Varieties with different coloured throat only: colour of throat</b>					
<b>PQ</b>	<b>MG</b>	RHS colour chart (indicate reference number)					

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8. Explanations on the Table of Characteristics8.1 *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 opening the folded leaf. Folding of leaf is observed at the mid point of the leaf length.
- (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 colour 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 side.

8.2 *Explanations for individual characteristics*Ad.2: Leaf: attitude

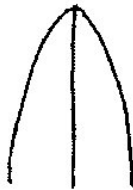
1  
semi-erect



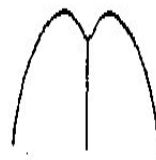
2  
horizontal



3  
semi-pendulous

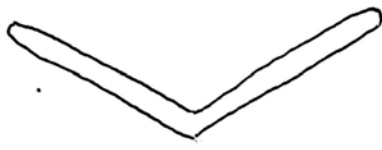
Ad. 5: Leaf: shape of apex

1  
obtuse



2  
emarginate

Ad. 6: Leaf: folding



1  
weak



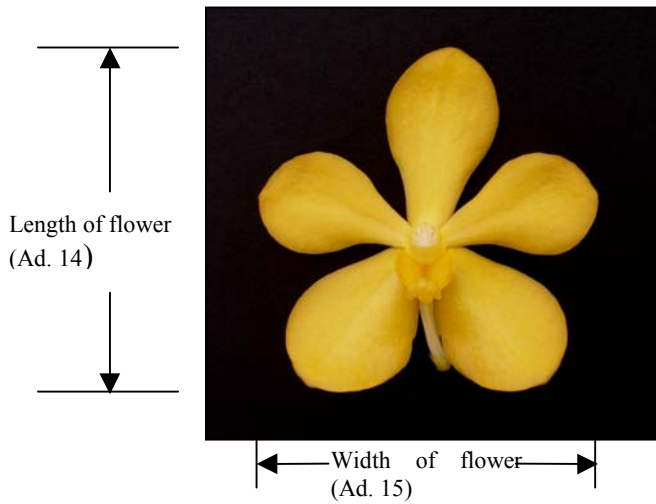
2  
medium



3  
strong

Ad. 14: Flower: length

Ad. 15: Flower: width

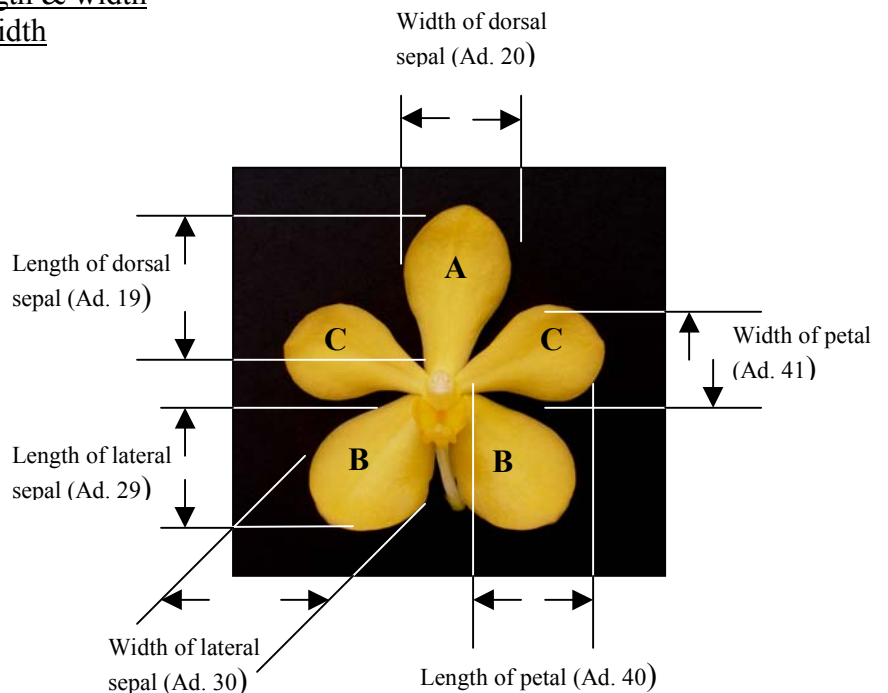


Ad. 19 & 20: Dorsal sepal: length & width

Ad. 29 & 30: Lateral sepal: length & width

Ad. 40 & 41: Petal: length & width

A: Dorsal sepal  
B: Lateral sepal  
C: Petal

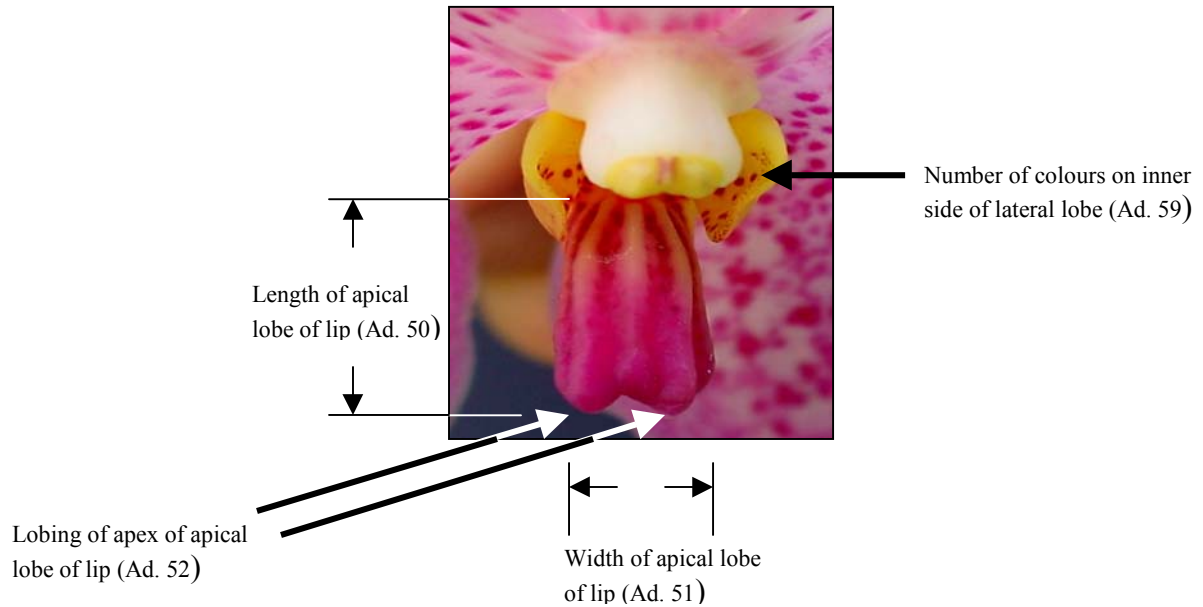




Ad. 50 & 51: Apical lobe of lip: length & width

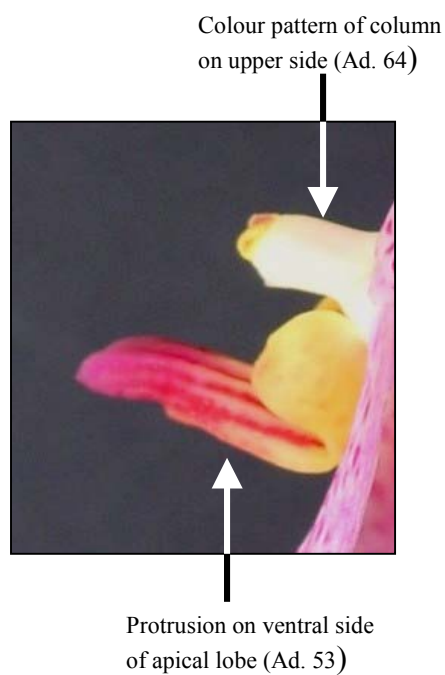
Ad. 52: Apical lobe of lip: lobing of apex

Ad. 59: Lateral lobe of lip: number of colours



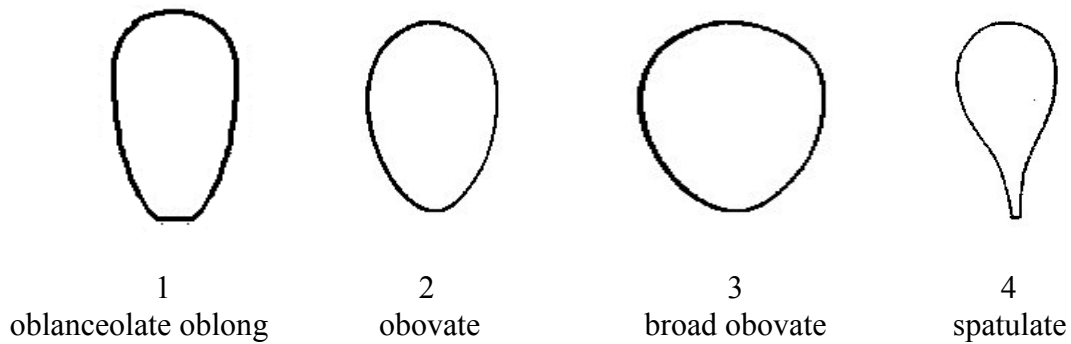
Ad. 53: Apical lobe of lip: protrusion on ventral side

Ad. 64: Column: colour pattern on upper side



Ad. 21: Dorsal sepal: shape

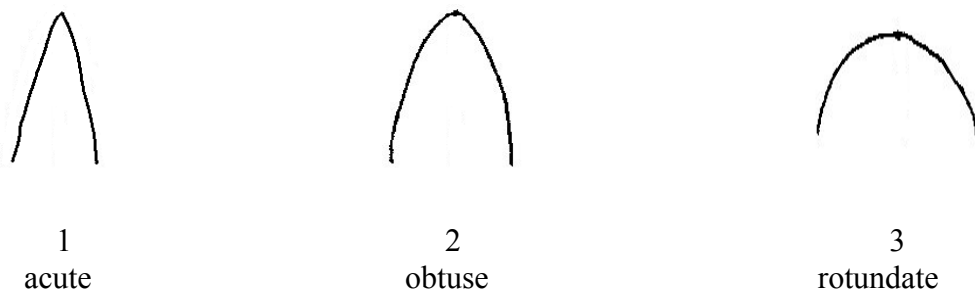
Ad. 42: Petal: shape



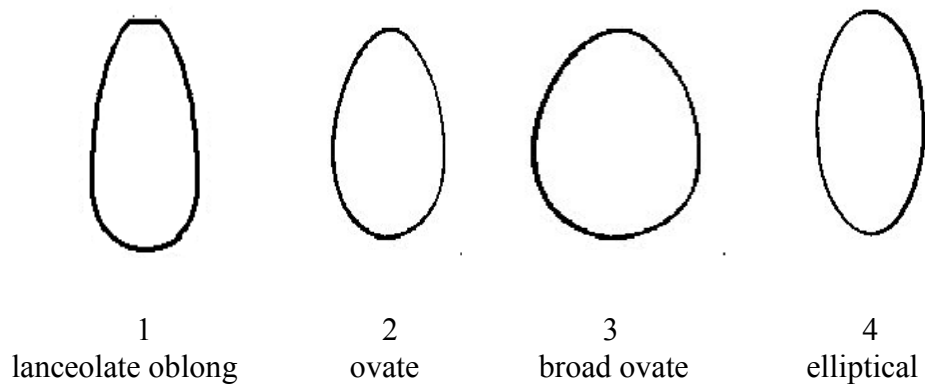
Ad. 22: Dorsal sepal: shape of apex

Ad. 32: Lateral sepal: shape of apex

Ad. 43: Petal: shape of apex



Ad. 31: Lateral sepal: shape



## 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, pp39-44.

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
		Application date: (not to be filled in by the applicant)
<b>TECHNICAL QUESTIONNAIRE</b> to be completed in connection with an application for plant breeders' rights		
1. Subject of the Technical Questionnaire		
1.1 Botanical name	<input type="text" value="Mokara"/>	
1.2 Common name	<input type="text" value="Mokara"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)	<input type="text"/>	
Breeder's reference	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<p>#4. Information on the breeding scheme and propagation of the variety (Information given here will be kept confidential)</p>		
<p>4.1 Breeding Scheme</p>		
<p>Variety resulting from [please "tick"]</p> <p><input type="checkbox"/> Controlled cross (pls state parent varieties)</p> <p><input type="checkbox"/> Partially known cross (pls state known parent varieties)</p> <p><input type="checkbox"/> Totally unknown cross</p> <p><input type="checkbox"/> Mutation (pls state parent variety)</p> <p><input type="checkbox"/> Discovery (pls state where, when and how developed)</p> <p><input type="checkbox"/> Other (pls provide details)</p>	<p>(For hybrid varieties, please provide details of all the parent lines required for propagating the hybrid. Indicate female component in first position.)</p>	
<p>4.2 Method of propagating the variety</p> <p><input type="checkbox"/> Cuttings</p> <p><input type="checkbox"/> <i>In vitro</i> propagation</p> <p><input type="checkbox"/> Seed</p> <p><input type="checkbox"/> Other (state method)</p>	<p>Indicate any male sterile lines and how they are maintained.</p>	
<p>4.3 Geographical origin of the variety</p>	<p>The region and country in which the variety was bred or discovered and developed.</p>	

# 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:
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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
<b>5.1</b>	<b>Plant: size</b>		
<b>(1)</b>			
	small	Bangkok Gold	3 [ ]
	medium	Chark Kuan 'Pink'	5 [ ]
	large	Dear Heart	7 [ ]
<b>5.2</b>	<b>Inflorescence: number of flowers</b>		
<b>(9)</b>			
	few	Lions Gold	3 [ ]
	medium	Luenberger Gold, Singa Gold	5 [ ]
	many	Dear Heart, Dinah Shore	7 [ ]
<b>5.3</b>	<b>Flower: length</b>		
<b>(14)</b>			
	short	Margaret Thatcher	3 [ ]
	medium	Khaw Phaik Suan	5 [ ]
	long	Chark Kuan 'Pink'	7 [ ]
<b>5.4</b>	<b>Flower: width</b>		
<b>(15)</b>			
	narrow	Margaret Thatcher	3 [ ]
	medium	Khaw Phaik Suan	5 [ ]
	broad	Chark Kuan 'Pink'	7 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
<b>5.5 Lateral sepal: main colour (background colour)</b> ( 36)		
green		1 [ ]
white		2 [ ]
yellow	Bangkok Gold	3 [ ]
orange		4 [ ]
red	Dinah Shore	5 [ ]
purple	Dear Heart	6 [ ]
<b>5.6 Only varieties with more than one colour on petal: Petal: colour pattern</b> ( 45)		
shaded	Dickson How	1 [ ]
edged		2 [ ]
striped		3 [ ]
netted	Sumalee	4 [ ]
spotted	Khaw Phaik Suan	5 [ ]
shaded and netted	Mak Chin On	6 [ ]
shaded and spotted	Lions Gold	7 [ ]
<b>5.7 Petal: main colour (background colour)</b> ( 46)		
green		1 [ ]
white		2 [ ]
yellow	Prapin Gold	3 [ ]
orange	Singa Gold	4 [ ]
red	Dinah Shore	5 [ ]
purple	Chark Kuan 'Pink'	6 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
	Characteristics	Example Varieties	Note
<b>5.8</b>	<b>Only varieties with more than one colour on apical lobe of lip only: Apical lobe of lip: colour pattern</b>		
( 55)	shaded		1[ ]
	edged		2[ ]
	striped	Luenberger Gold	3[ ]
	netted		4[ ]
	spotted		5[ ]
	shaded and striped	Dinah Shore	6[ ]
<b>5.9</b>	<b>Apical lobe of lip: main colour (background colour)</b>		
( 56)	green		1[ ]
	white		2[ ]
	yellow	Prapin Gold	3[ ]
	orange	Singa Gold	4[ ]
	red	Dinah Shore	5[ ]
	purple	Chark Kuan 'Pink'	6[ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
<i>Example</i>	<i>Petal: main colour</i>	<i>orange</i>	<i>orange red</i>

Comments:





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