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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

BOTTLE GOURD, CALABASH *

UPOV Code: LAGEN_SIC

Lagenaria siceraria (Molina) Standl.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Lagenaria siceraria (Molina) Standl., *Lagenaria siceraria* Standley, *Lagenaria vulgaris* Ser.	Bottle Gourd, Calabash, Calabash Gourd, White-flower Gourd	Calebasse, Gourde bouteille	Flaschenkürbis, Kalebasse	Acocote, Cajombre, Calabaza, Guiro amargo

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 *Lagenaria siceraria* (Molina) Standl..

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 seeds.

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

200g or 1,500 seeds.

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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 two independent growing cycles.

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

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.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 20 plants, which should be divided between at least 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 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.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

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

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

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

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

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

4.2 Uniformity

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 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction.

4.2.4 For the assessment of uniformity, a population standard of 2% for cross-pollinated varieties and of 1% for hybrid varieties with an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, the maximum number of off-types allowed is 1 for hybrid varieties and 2 whereas for cross-pollinated varieties.

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

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Fruit: shape of fruit excluding neck (characteristic 10)
(b) Fruit: length (characteristic 11)
(c) Fruit: diameter (characteristic 12)
(d) Fruit: neck (characteristic 13)
(e) Neck: length in relation to length of fruit (characteristic 15)
(f) Fruit: texture of skin (characteristic 20)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

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

6.2.1 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.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	Note
small	3
medium	5
large	7

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

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

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

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 4.1.5

(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/ MS**	**Cotyledon: length**	**Cotylédon : longueur**	**Keimblatt: Länge**	**Cotiledón: longitud**		
QN		short	court	kurz	corto	Renshi	1
		medium	moyen	mittel	medio	Shimotsukeshiro	2
		long	long	lang	largo	Omarukanpyo	3
2.	**VG**	**Plant: length of main stem**	**Plante : longueur de la tige principale**	**Pflanze: Länge des Haupttriebes**	**Planta: longitud del tallo principal**		
(+)							
QN	**(a)**	short	courte	kurz	corto	Koganeizairai	3
		medium	moyenne	mittel	medio	Shimotsukeshiro	5
		long	longue	lang	largo	Aodainaga	7
3.	**VG**	**Leaf blade: size**	**Limbe : taille**	**Blattspreite: Größe**	**Limbo: tamaño**		
QN	**(a)**	small	petit	klein	pequeño	Koganeizairai	3
		medium	moyen	mittel	mediano	Shimotsukeshiro	5
		large	grand	groß	grande	Sakigake	7
4.	**VG**	**Leaf blade: intensity of green color**	**Limbe : intensité de la couleur verte**	**Blattspreite: Intensität der Grünfärbung**	**Limbo: intensidad del color verde**		
QN	**(a)**	light	claire	hell	claro	Indo	3
		medium	moyenne	mittel	medio	Shimotsukeshiro	5
		dark	foncée	dunkel	oscuro	Don-K	7
5.	**VG**	**Leaf blade: incisions**	**Limbe : incisions**	**Blattspreite: Einschnitte**	**Limbo: incisiones**		
(+)							
QN	**(a)**	absent or shallow	absentes ou peu profondes	fehlend oder flach	ausentes o poco profundas	Gigantesque	1
		medium	moyennes	mittel	medias	Pélerine	2
		deep	profondes	tief	profundas	Tarahumara Canteen 3	3
6.	**VG**	**Male flower: diameter of corolla**	**Fleur mâle : diamètre de la corolle**	**Männliche Blüte: Durchmesser der Krone**	**Flor masculina: diámetro de la corola**		
(+)							
QN	**(b)**	small	petit	klein	pequeño	Mini Bottle	3
		medium	moyen	mittel	medio	Shimotsukeshiro	5
		large	grand	groß	grande	Massue Comestible	7
7.	**VG**	**Male flower: overlapping of petals**	**Fleur mâle : chevauchement des pétales**	**Männliche Blüte: Überlappen der Blütenblätter**	**Flor masculina: solapamiento de los pétalos**		
(+)							
QN	**(b)**	free	séparés	freistehend	libres	Canon Ball, Missionaris	1
		touching to slightly overlapping	tangents à légèrement chevauchants	sich berührend bis leicht überlappend	en contacto o ligeramente solapados	Bouteille	2
		strongly overlapping	fortement chevauchants	stark überlappend	muy solapados	FR Strong, Massue Comestible	3

		English	Français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
8. **(+)**	**VG**	**Female flower: diameter of corolla**	**Fleur femelle : diamètre de la corolle**	**Weibliche Blüte: Durchmesser der Krone**	**Flor femenina: diámetro de la corola**		
QN	**(b)**	small	petit	klein	pequeño	Bouteille, Missionaris	3
		medium	moyen	mittel	medio	Basket Ball Brasil, Shimotsukeshiro	5
		large	grand	groß	grande	Massue Comestible	7
9. **(+)**	**VG**	**Female flower: overlapping of petals**	**Fleur femelle : chevauchement des pétales**	**Weibliche Blüte: Überlappen der Blütenblätter**	**Flor femenina: solapamiento de los pétalos**		
QN	**(b)**	free	séparés	freistehend	libres	Canon Ball, Missionaris	1
		touching to slightly overlapping	tangents à légèrement chevauchants	sich berührend bis leicht überlappend	en contacto o ligeramente solapados	Basket Ball Brasil	2
		strongly overlapping	fortement chevauchants	stark überlappend	muy solapados	Massue Comestible	3
10. **(*)** **(+)**	**VG**	**Fruit: shape of fruit excluding neck**	**Fruit : forme du fruit à l'exclusion du col**	**Frucht: Form der Frucht ohne Hals**	**Fruto: forma del fruto excluido el cuello**		
PQ	**(c)**	obovate	obovale	verkehrt eiförmig	oboval	Tarahumara canteen	1
		clavate	claviforme	keulenförmig	claviforme	Mayo Giant Bule	2
		oblate	arrondi aplati	breitrund	achatado	Plate de Corse	3
		round	rond	rund	redondo	Canon Ball, Dipper Short Handled Mottled, Kroochneck fr, Medium Thai Bottle fr	4
		elliptic	elliptique	elliptisch	elíptico	Basket Ball Brasil, Tonneau Africa, Votavua Monta	5
		cylindrical	cylindrique	zylindrisch	cilíndrico	Massue Comestible	6
		ovate	oval	eiförmig	oval	Apple, Verruqueuse africaine	7
11. **(*)** **(+)**	**MS/ VG**	**Fruit: length**	**Fruit : longueur**	**Frucht: Länge**	**Fruto: longitud**		
QN	**(c)**	very short	très court	sehr kurz	muy corto	Canon Ball	1
		short	court	kurz	corto	Basket Ball Brasil	3
		medium	moyen	mittel	medio	Mayo Giant Bule	5
		long	long	lang	largo	Zucca	7
		very long	très long	sehr lang	muy largo	Snake Speckled	9
12. **(*)** **(+)**	**MS/ VG**	**Fruit: diameter**	**Fruit : diamètre**	**Frucht: Durchmesser**	**Fruto: diámetro**		
QN	**(c)**	very small	très petit	sehr klein	muy pequeño	Mini Nigerian	1
		small	petit	klein	pequeño	Massue Comestible	3
		medium	moyen	mittel	medio	Strawberry	5
		large	grand	groß	grande	Bule Mayo	7
		very large	très grand	sehr groß	muy grande	Gigantesque	9

		English	Français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. (*) (+)	**VG**	**Fruit: neck**	**Fruit : col**	**Frucht: Hals**	**Fruto: cuello**		
QN		absent or very short	absent ou très court	fehlend oder sehr kurz	ausente o muy corto	Canon Ball, Plate de Corse	1
		short	court	kurz	corto	Bule Mayo, Drague	3
		medium	moyen	mittel	medio	Mayo gooseneck	5
		long	long	lang	largo	Long Handled Dipper	7
		very long	très long	sehr lang	muy largo	Extra Long Dipper	9
14. (*) (+)	**VG**	**Neck: shape**	**Col : forme**	**Hals: Form**	**Cuello: forma**		
PQ	**(c)**	globose	globuleux	kugelförmig	globoso	Medium Thai Bottle fr	1
		fusiform	fusiforme	spindelförmig	fusiforme	Mayo gooseneck	2
		cylindrical	cylindrique	zylindrisch	cilíndrico	Dipper Short Handled Mottled, Lagenaria 12 A	3
15. (*) (+)	**MS/ VG**	**Neck: length in relation to length of fruit**	**Col : longueur par rapport à la longueur du fruit**	**Hals: Länge im Verhältnis zur Länge der Frucht**	**Cuello: longitud en relación con la longitud del fruto**		
QN	**(c)**	very short	très court	sehr kurz	muy corto	Missionaris	1
		short	court	kurz	corto	Medium Thai Bottle	3
		medium	moyen	mittel	medio	Long Handled Dipper	5
		long	long	lang	largo	Duck Australie fr	7
		very long	très long	sehr lang	muy largo	Extra Long Dipper	9
16. (+)	**MS/ VG**	**Neck: diameter in relation to diameter of fruit**	**Col : diamètre par rapport au diamètre du fruit**	**Hals: Durchmesser im Verhältnis zum Durchmesser der Frucht**	**Cuello: diámetro en relación con el diámetro del fruto**		
QN	**(c)**	small	petit	klein	pequeño	Dipper Short Handled Mottled	3
		medium	moyen	mittel	medio	Froggy	5
		large	grand	groß	grande	Gigantesque	7
17.	**VG**	**Fruit: main color**	**Fruit : couleur principale**	**Frucht: Hauptfarbe**	**Fruto: color principal**		
QN	**(c)**	very light green	vert très clair	sehr hellgrün	verde muy claro	Bianca, Shimotsukeshiro	1
		light green	vert clair	hellgrün	verde claro	Pélerine, Plate de Corse	3
		medium green	vert moyen	mittelgrün	verde medio	Basket Ball Brasil, Canon Ball	5
		dark green	vert foncé	dunkelgrün	verde oscuro	Kroochneck fr	7
		very dark green	vert très foncé	sehr dunkelgrün	verde muy oscuro	Marenka	9

		English	Français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
18. (*) (+)	**VG**	**Fruit: number of speckles**	**Fruit : nombre de taches**	**Frucht: Anzahl Flecken**	**Fruto: número de manchas**		
QN	**(c)**	none or very few	nul ou très petit	keine oder sehr wenige	nulo o muy bajo	Marenka Limegreen, Shimotsukeshiro	1
		few	petit	wenige	bajo	Basket Ball Brasil	3
		medium	moyen	mittel	medio	Drague	5
		many	grand	viele	alto	Froggy	7
19.	**VG**	**Fruit: size of speckles**	**Fruit : taille des taches**	**Frucht: Größe der Flecken**	**Fruto: tamaño de las manchas**		
QN	**(c)**	small	petite	klein	pequeñas	Basket Ball Brasil	3
		medium	moyenne	mittel	medias	Chata P. Alegre	5
		large	grande	groß	grandes	Kroochneck fr	7
20. (*) (+)	**VG**	**Fruit: texture of skin**	**Fruit : texture de la peau**	**Frucht: Textur der Schale**	**Fruto: textura de la piel**		
PQ	**(c)**	smooth	lisse	glatt	lisa	Kroochneck fr	1
		slightly verrucose	légèrement verruqueuse	leicht warzig	ligeramente verrugosa	Bule Mayo	2
		moderately verrucose	modérément verruqueuse	mäßig warzig	moderadamente verrugosa	Warthy Australia fr	3
		strongly verrucose	fortement verruqueuse	stark warzig	muy verrugosa	Verruqueuse Africaine	4
		slightly corrugated	légèrement plissée	leicht gefurcht	ligeramente corrugada	Tol Fravago	5
		moderately corrugated	modérément plissée	mäßig gefurcht	moderadamente corrugada	Marenka Limegreen	6
		strongly corrugated	fortement plissée	stark gefurcht	muy corrugada	Marenka	7
21. (+)	**VG**	**Fruit: pistil scar**	**Fruit : attache pistillaire**	**Frucht: Griffelnarbe**	**Fruto: cicatriz pistilar**		
QN		small	petite	klein	pequeña	Pélerine	3
		medium	moyenne	mittel	mediana	Massue Comestible	5
		large	grande	groß	grande	NKombo fr	7
22. (+)	**VG**	**Seed: width**	**Graine : largeur**	**Samen: Breite**	**Semilla: anchura**		
QN	**(d)**	narrow	étroite	schmal	estrecha	Mayo Gooseneck, Suisukanpyo	1
		medium	moyenne	mittel	media	Mayo Giant Bule, Shimotsukeshiro	3
		broad	large	breit	ancha	Nkombo fr, Omarukanpyo	5
23. (*)	**VG**	**Seed: color**	**Graine : couleur**	**Samen: Farbe**	**Semilla: color**		
PQ	**(d)**	light brown	marron clair	hellbraun	marrón claro	Lagenaria 12A	1
		dark brown	marron foncé	dunkelbraun	marrón oscuro	Canon Ball, Nkombo fr, Shimotsukeshiro	2
		black	noir	schwarz	negro	Bule Mayo	3

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:

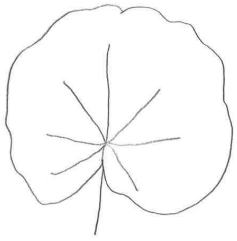
(a) Observations should be made on fully developed leaves, at beginning of flowering.
(b) Observations should be made on flowers at full flowering.
(c) Observations should be made on fruits at physiological maturity.
(d) Observations should be made on fully developed dry seeds, after washing and leaving to dry in a shaded area.

8.2 Explanations for individual characteristics

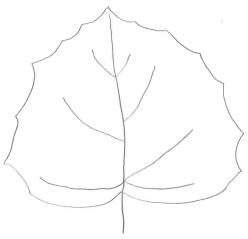
Ad. 2: Plant: length of the main stem

Plants tend to develop many branches. The length of the main stem is correlated to the volume of the plant, the surface covered by the plant in the field, the growth speed of the stems. This characteristic could be assessed by comparisons between the plants of the same variety. When plants are spaced between the same distance between plants, it is possible to identify a variety which grows faster than another.

Ad. 5: Leaf blade: incisions



1
absent or shallow



2
medium

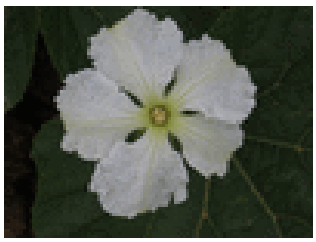
3
deep

Ad. 6: Male flower: diameter of corolla
Ad. 8: Female flower: diameter of corolla

The widest part of the flower should be assessed.

Ad. 7: Male flower: overlapping of petals

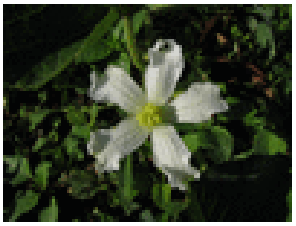
1
free



2
touching to slightly overlapping

3
strongly overlapping

Ad. 9: Female flower: overlapping of petals



1
free

2
touching to slightly overlapping

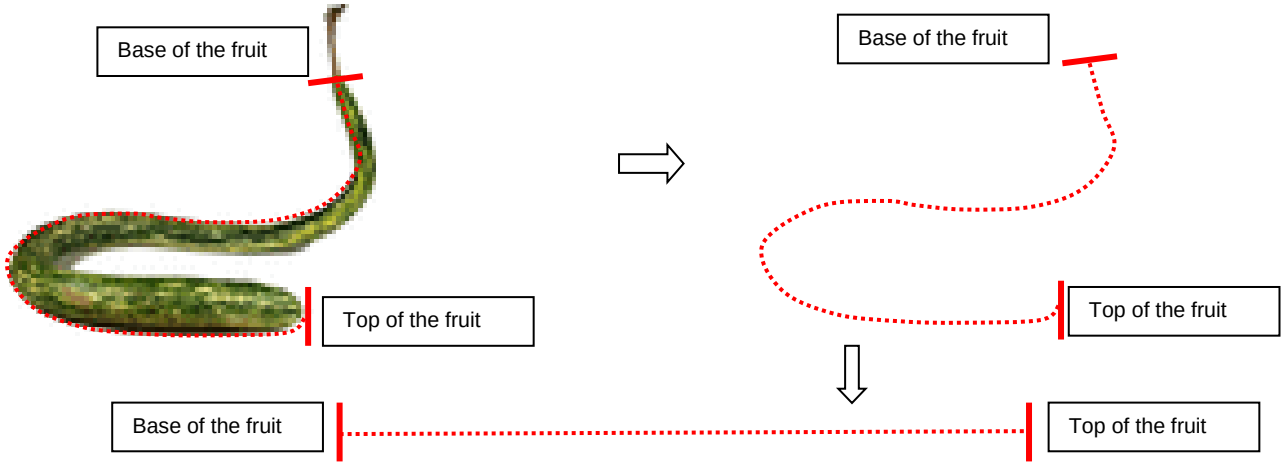
3
strongly overlapping

Ad. 10: Fruit: shape of fruit excluding neck

width (ratio length/width)	← broadest part →		
	below middle	at middle	above middle
narrow (high) →	 2 clavate	 6 cylindrical	
	 1 obovate	 5 elliptic	 7 ovate
↓		 4 round	
broad (low)		 3 oblate	

Ad. 11: Fruit: length

Observations should be made on fully developed fruits including the neck.



Ad. 12: Fruit: diameter

This widest part of the fruit should be assessed on fully developed fruits.

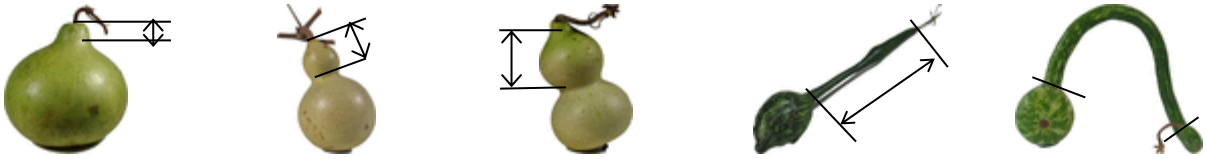
Ad. 13: Fruit: neck

1	3	5	7	9
absent or very short	short	medium	long	very long

Ad. 14: Neck: shape

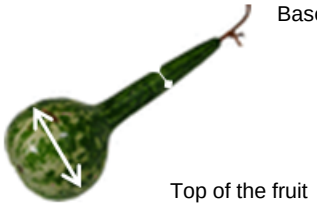
1	2	3
globose	fusiform	cylindrical

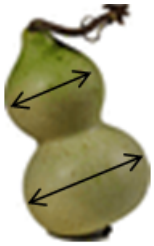
Ad. 15: Neck: length in relation to length of fruit



1 very short | 3 short | 5 medium | 7 long | 9 very long

Ad. 16: Neck: diameter in relation to diameter of fruit





neck diameter = ½ fruit diameter

3 small | 5 medium | 7 large

Ad. 18: Fruit: number of speckles

1 none or very few | 3 few | 5 medium | 7 many

Ad. 19: Fruit: size of speckles

3 small | 5 medium | 7 large

Ad. 20: Fruit: texture of skin

1
smooth

2
slightly verrucose

3
moderately verrucose

4
strongly verrucose

5
slightly corrugated

6
moderately corrugated

7
strongly corrugated

Ad. 21: Fruit: pistil scar

3
small

5
medium

7
large

Ad. 22: Seed: width

The width of the seed is measured at the widest point.

9. Literature

http://cucurbitophile.fr/esp/051/esp.php

http://www.ars-grin.gov/~sbmljw/cgi-bin/taxon.pl?21385

http://plants.usda.gov/java/profile?symbol=LASI

http://www.prota4u.org/protav8.asp?h=M4&t=lagenaria,siceraria&p=Lagenaria+siceraria#Synonyms

Darekar, K.S., Mhase, N.L., Shelke, S.S., 1989: Effect of nematicidal seed treatment on root knot nematode and yield of bottle-gourd. International Nematology Network Newsletter 6(1), US, pp. 14 to 16

Decker-Walters, D., Staub, J., López-Sesé, A., Nakata, E., 2001: Diversity in landraces and cultivars of bottle gourd (Lagenaria siceraria: Cucurbitaceae) as assessed by random amplified polymorphic DNA. Genetic Resources and Crop Evolution 48, US, pp. 369 to 380

Heiser, C.B., 1979: The gourd book. University of Oklahoma Press, Norman, US, 248 pp.

Ho CH, Ho MG, Ho SP, Ho HH., 2013: Bitter Bottle Gourd (Lagenaria siceraria) Toxicity. J Emerg Med. 2013.08.106, US <http://www.ncbi.nlm.nih.gov/pubmed/24360122>

Jeffrey, C.: 1967: Cucurbitaceae. In: Milne-Redhead, E. & Polhill, R.M. (Editors). Flora of Tropical East Africa. Crown Agents for Oversea Governments and Administrations, London, GB. 157 pp.

Maundu, P.M., Ngugi, G.W., Kabuye, C.H.S., 1999: Traditional food plants of Kenya. Kenya Resource Centre for Indigenous Knowledge (KENRIK), Nairobi, KE, 270 pp.

Morimoto, Y., Mvere, B., 2004: Lagenaria siceraria (Molina) Standl. [Internet] Record from Protabase. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, NL < http://database.prota.org/search.htm>.

Richardson, J.B., 1972: The pre-Columbian distribution of the bottle gourd (Lagenaria siceraria): a re-evaluation. Economic Botany 26, US, pp. 265 to 273

Schippers, R.R., 2002: African indigenous vegetables, an overview of the cultivated species 2002. Revised edition on CD-ROM. National Resources International Limited, Aylesford, GB.

Shah, B.N., Seth, A.K., Desai, R.V., 2010: Phytopharmacological Profile of *Lagenaria siceraria*: A Review. Asian Journal of Plant Sciences 9 (3), pp. 152 to 157

Widjaja, E.A., Reyes, M.E.C., 1993: Lagenaria siceraria (Molina) Standley. In: Siemonsma, J.S. & Kasem Piluek (Editors). Plant Resources of South-East Asia No 8. Vegetables. Pudoc Scientific Publishers, Wageningen, NL, pp. 190 to 192

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	*Lagenaria siceraria* (Molina) Standl.
1.2 Common name	Bottle Gourd, Calabash

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 [ ]

(b) partially known cross [ ]

(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)

[#] 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:

4.2 Method of propagating the variety

4.2.1 Seed propagated varieties

(a)	Self-pollination	[ ]
(b)	Cross-pollination	
	(i) population	[ ]
	(ii) synthetic variety	[ ]
(c)	Hybrid	
	(i) single hybrid	[ ]
	(ii) three-way hybrid	[ ]
(d)	Other	[ ]
	(please provide details)	

4.2.2 Other [ ]
(please provide details)

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 (10)	**Fruit: shape of fruit excluding neck**		
	obovate	Tarahumara canteen	1 [ ]
	clavate	Mayo Giant Bule	2 [ ]
	oblate	Plate de Corse	3 [ ]
	round	Canon Ball, Dipper Short Handled Mottled, Kroochneck fr, Medium Thai Bottle fr	4 [ ]
	elliptic	Basket Ball Brasil, Tonneau Africa, Votavua Monta	5 [ ]
	cylindrical	Massue Comestible	6 [ ]
	ovate	Apple, Verruqueuse africaine	7 [ ]
5.2 (11)	**Fruit: length**		
	very short	Canon Ball	1 [ ]
	very short to short		2 [ ]
	short	Basket Ball Brasil	3 [ ]
	short to medium		4 [ ]
	medium	Mayo Giant Bule	5 [ ]
	medium to long		6 [ ]
	long	Zucca	7 [ ]
	long to very long		8 [ ]
	very long	Snake Speckled	9 [ ]
5.3 (12)	**Fruit: diameter**		
	very small	Mini Nigerian	1 [ ]
	very small to small		2 [ ]
	small	Massue Comestible	3 [ ]
	small to medium		4 [ ]
	medium	Strawberry	5 [ ]
	medium to large		6 [ ]
	large	Bule Mayo	7 [ ]
	large to very large		8 [ ]
	very large	Gigantesque	9 [ ]

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

	Characteristics	Example Varieties	Note
5.4 (13)	**Fruit: neck**		
	absent or very short	Canon Ball, Plate de Corse	1 [ ]
	very short to short		2 [ ]
	short	Bule Mayo, Drague	3 [ ]
	short to medium		4 [ ]
	medium	Mayo gooseneck	5 [ ]
	medium to long		6 [ ]
	long	Long Handled Dipper	7 [ ]
	long to very long		8 [ ]
	very long	Extra Long Dipper	9 [ ]
5.5 (15)	**Neck: length in relation to length of fruit**		
	very short	Missionaris	1 [ ]
	very short to short		2 [ ]
	short	Medium Thai Bottle	3 [ ]
	short to medium		4 [ ]
	medium	Long Handled Dipper	5 [ ]
	medium to long		6 [ ]
	long	Duck Australie fr	7 [ ]
	long to very long		8 [ ]
	very long	Extra Long Dipper	9 [ ]
5.6 (18)	**Fruit: number of speckles**		
	none or very few	Marenka Limegreen, Shimotsukeshiro	1 [ ]
	very few to few		2 [ ]
	few	Basket Ball Brasil	3 [ ]
	few to medium		4 [ ]
	medium	Drague	5 [ ]
	medium to many		6 [ ]
	many	Froggy	7 [ ]
	many to very many		8 [ ]
	very many		9 [ ]

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

	Characteristics	Example Varieties	Note
5.7 (20)	**Fruit: texture of skin**		
	smooth	Kroochneck fr	1 [ ]
	slightly verrucose	Bule Mayo	2 [ ]
	moderately verrucose	Warthy Australia fr	3 [ ]
	strongly verrucose	Verruqueuse Africaine	4 [ ]
	slightly corrugated	Tol Fravago	5 [ ]
	moderately corrugated	Marenka Limegreen	6 [ ]
	strongly corrugated	Marenka	7 [ ]

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	*Fruit: number of speckles*	*few*	*medium*

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

Variety use:

(a) vegetable [ ]

(b) rootstock [ ]
(please provide details)

(c) other [ ]
(please provide details)

7.4 A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (http://www.upov.int/tgp/en/).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

[#] 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:

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. 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”.

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 the document]