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TG/LAGEN(proj.1)
ORIGINAL: English
DATE: 2012-05-11

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

BOTTLE GOURD, CALABASH

(UPOV Code: LAGEN_SIC)

Lagenaria siceraria (Molina) Standl.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from France

to be considered by the

Technical Working Party for Vegetables at its forty-sixth session,
to be held near the City of Venlo, Netherlands, from June 11 to 15, 2012

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	Calebassier; Gourde bouteille	Flaschenfrucht; Flaschenkürbis; Gewöhnlicher Flaschenkürbis	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 – 1500 seeds.

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

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 in Chapter 8.”

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:

(a) Cross-pollinated varieties

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

(b) Hybrid varieties

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.

(c) Uniformity assessment by off-types (all characteristics observed on the same sample size)

For the assessment of uniformity a population standard of 2 % for open-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 would be 1 for hybrid varieties whereas for open-pollinated varieties it would be 2.

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) Plant: vigor (characteristic 3)
b) Fruit: shape in longitudinal section (characteristic 12)
c) Fruit: length (characteristic 13)
d) Fruit: maximum diameter (characteristic 14)
e) Fruit: neck (characteristic 15)
f) Only necked varieties: Fruit: length of neck (characteristic 17)
g) Fruit : texture of skin (characteristic 23)

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)-(c)	See Explanations on the Table of Characteristics in Chapter 8.1	
(+)	See Explanations on the Table of Characteristics in Chapter 8.2.	

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**VG**	**Seedling: size of cotyledons**	**Plantule : taille des cotylédons**				
QN	**(a)**	very small	très petite				1
		small	petite				3
		medium	moyenne				5
		large	grande				7
		very large	très grande				9
2.	**VG**	**Plant: Length of the main stem**	**Plante : longueur de la tige principale**				
QN	**(b)**	very short	très courte				1
		short	courte				3
		medium	moyenne				5
		long	longue				7
		very long	très longue				9
3. (*) (+)	**VG**	**Plant: vigor**					
QN		very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
4.	**MS / VG**	**Leaf blade: size**	**Limbe : taille**				
QN	**(b)**	very small	très petite				1
		small	petite				3
		medium	moyenne				5
		large	grande				7
		very large	très grande				9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.	**VG**	**Leaf blade: intensity of green color**	**Limbe : intensité de la couleur verte**				
QN	**(b)**	very light	très faible				1
		light	faible				3
		medium	moyenne				5
		dark	forte				7
		very dark	très forte				9
6.	**VG**	**Leaf blade: blistering**	**Limbe : cloqûre**				
QN	**(b)**	very weak	très faible				1
		weak	faible				3
		medium	moyenne				5
		strong	forte				7
		very strong	très forte				9
7.	**VG**	**Leaf blade: degree of lobbing**	**Limbe : degré de la découpure**				
QN	**(b)**	very weak	très faible				1
		weak	faible				3
		medium	moyen				5
		strong	fort				7
		very strong	très fort				9
8.	**VG**	**Leaf blade: dentation of margin**	**Limbe : dentelure du bord**				
QN	**(b)**	very weak	très faible				1
		weak	faible				3
		medium	moyenne				5
		strong	forte				7
		very strong	très forte				9
9.	**MS/ VG**	**Male flower: diameter of corolla**	**Fleur mâle: diamètre de la corolle**				
QN	**(b)**	very small	très petit				1
		small	petit				3
		medium	moyen				5
		large	grand				7
		very large	très grand				9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10.	**MS/ VG**	**Female flower: diameter of corolla**	**Fleur femelle : diamètre de la corolle**				
QN	**(b)**	very small	très petit				1
		small	petit				3
		medium	moyen				5
		large	grand				7
		very large	très grand				9
11.		**Young fruit: bitterness**					
		absent					1
		present					9
12. (*) (+)	**VG**	**Fruit: shape in longitudinal section**	**Fruit: forme en section longitudinale**				
PQ	**(b)**	flattened round	ronde aplatie			Plate de Corse	1
		round	ronde			Canon Ball	2
		pear shaped	piriforme			Tarahumara canteen	3
		bottle shaped	en bouteille			Bianca	4
		club shaped	en massue			Mayo Giant Bule	5
		cylindrical	cylindrique			Massue comestible	6
13. (*) (+)	**MS/ VG**	**Fruit: length**	**Fruit : longueur**				
GN	**(b)**	very short	très petit	<20cm		Canon Ball	1
		short	petit	20 – 35cm		Pélerine pointue	3
		medium	moyen	35-60 cm		Mayo Giant Bule	5
		long	long	60-100 cm		Zucca	7
		very long	très long	>100cm		Snake speckled	9
14. (*) (+)	**MS/ VG**	**Fruit: maximum diameter**	**Fruit : diamètre maximum**				
QN	**(b)**	very small	très petit	<10 cm		Mini Nigerian	1
		small	petit	10-15 cm		Massue comestible	3
		medium	moyen	15-20 cm		Strawberry	5
		large	grand	20-25 cm		Blue Mayo	7
		very large	très grand	>25 cm		Figue	9
15. (*) (+)	**VG**	**Fruit: neck**	**Fruit : col**				
QL	**(b)**	absent	absent			Strawberry	1
		present	present			Figue	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. **(+)**	**VG**	**Only necked varieties: Fruit: shape of neck**	**Seulement les variétés à col : Fruit : forme du col**				
PQ	**(b)**	globe shaped	en forme de globe			Medium Thai Bottle fr	1
		spool shaped	en forme de bobine			Mayo goosneck	2
		cylindrical	cylindrique			Lagenaria 12 A	3
17. **(*)** **(+)**	**MS/ VG**	**Only necked varieties: Fruit: length of neck**	**Seulement les variétés à col : Fruit: longueur du col**				
GN	**(b)**	very short	très petit			Missionaris	1
		short	petit			Indonesian bottle	3
		medium	moyen			Long handled dipper	5
		long	long			Duck Australie fr	7
		very long	très long			Extra long dipper	9
18. **(+)**	**MS/ VG**	**Only necked varieties: Fruit: maximum diameter of neck**	**Seulement les variétés à col : Fruit: diamètre maximal du col**				
QN	**(b)**	very small	très petit				1
		small	petit			Duck Australie fr	3
		medium	moyen			Froggy	5
		large	grand			Gigantesque	7
		very large	très grand				9
19. **(*)** **(+)**	**VG**	**Fruit: main color**	**Fruit : couleur principale**				
QL	**(b)**	yellow	jaune				1
		green	verte				2
20. **(+)**	**VG**	**Fruit: intensity of main color**	**Fruit : intensité de la couleur principale**				
QN	**(b)**	very light	très faible				1
		light	faible				3
		medium	moyenne				5
		dark	forte				7
		very dark	très forte				9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21. **(*)** **(+)**	**VG**	**Fruit: spots**	**Fruit : tâches**				
QL	**(b)**	absent	absent			Marenka Limegreen	1
		present	present			Froggy	9
22. **(+)**	**VG**	**Only varieties with dots on skin: Fruit: intensity of spots**	**Seulement variétés à fruits tachetées: Fruit : intensité des tâches**				
QN	**(b)**	very weak	très faible				1
		weak	faible			Basket Ball Brasil	3
		medium	moyenne			Drague	5
		strong	forte			Froggy	7
		very strong	très forte				9
23. **(*)** **(+)**	**VG**	**Fruit: texture of skin**	**Fruit : texture de l'épiderme**				
QL	**(b)**	smooth	lisse			Kroochneck fr	1
		warted	verruqueuse			Bule Mayo	2
		ridged	plissé			Marenka	3
24. **(+)**	**VG**	**Only varieties with warts on skin: number of warts**	**Seulement les variétés verruqueuses: nombre de verrues**				
QN	**(b)**	very few	très peu nombreuses				1
		few	peu nombreuses			Bule Mayo	3
		medium	moyennement nombreuses			Warthy Australia fr	5
		many	nombreuses			Verruqueuse Africaine	7
		very many	très nombreuses				9
25. **(+)**	**MS/ VG**	**Seed: size**	**Graine : taille**				
QN		small	petite			Mayo Groosneck	3
		medium	moyenne			Mayo Giant Bule	5
		large	grande			Nkombo fr	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26.	**VG**	**Seed: color**	**Graine : couleur**				
(+)							
PQ		light brown	brun clair			Lagenaria 12A	1
		dark brown	brun foncé			Little Man	2
		black	noir			Hopi Sonaja	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) at appearing of the first leaf
(b) at full development of the first fruit

8.2 Explanations for individual characteristics

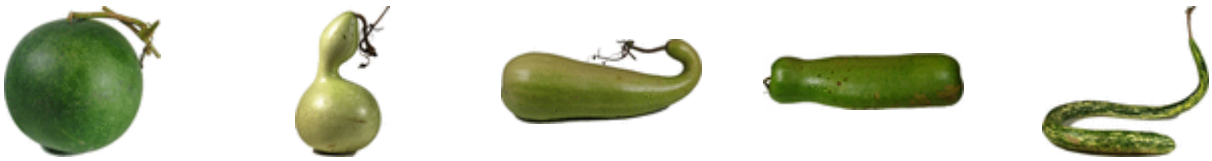
Ad. 3: Plant: vigour

How to assess? Explanation to provide.

Ad. 12: Fruit: shape in longitudinal section

1	2	3	4	5	6
flattened round	round	pear shaped	bottle shaped	club shaped	cylindrical

Ad. 13: Fruit: length



1	3	5	7	9
very short	short	medium	long	very long
Canon Ball (17 cm)	Pélerine pointue (28 cm)	Mayo Giant Bule (53 cm)	Zucca(80 cm)	Snake speckled (128 cm)
<20cm	20 – 35cm	35-60 cm	60-100 cm	>100cm

Ad. 14: Fruit: maximum diameter

1	3	5	7	9
very small	small	medium	large	very large
Mini Nigerian (6 cm)	Massue comestible (13 cm)	Strawberry (18 cm)	Blue Mayo (23 cm)	Figue (32 cm)
<10 cm	10-15 cm	15-20 cm	20-25 cm	>25 cm

Ad. 15: Fruit: neck

1
absent

9
present

Ad. 16: Only necked varieties: Fruit: shape of neck

1
globe shaped

2
spool shaped

3
cylindrical

Ad. 17: Only necked varieties: Fruit: length of neck

1
very short

3
short

5
medium

7
long

9
very long

Ad. 18: Only necked varieties: Fruit: maximum diameter of neck

3
small

5
medium

7
large

Ad. 19: Fruit : main color

Picture to provide

1
yellow

2
green

Ad.20: Fruit: intensity of main color

1 very light | 3 light | 5 medium | 7 dark | 9 very dark

Ad. 21: Fruit: spots

absent 1 | present 9

Ad. 22: Only varieties with dots on skin: Fruit: intensity of spots

1 very weak | 3 weak | 5 medium | 7 strong | 9 very strong

Ad. 23: Fruit: texture of skin

smooth 1 | warted 2 | ridged 3

Ad. 24: Only varieties with warts on skin: number of warts

3 few | 5 medium | 7 many

Ad. 25: Seed: size

3
small

5
medium

7
large

Ad. 26: Seed: color

1
light brown

2
dark brown

3
black

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

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 pp.157.

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 [ ]
(please state parent varieties)

(……) x (……)
female parent male parent

(b) partially known cross [ ]

(c) unknown cross [ ]
(please state parent varieties)

(……) x (……)
female parent male parent

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)”

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 [ ]

(d) 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 (3)	**Plant: vigor**		
	very weak		1[ ]
	very weak to weak		2[ ]
	weak		3[ ]
	weak to medium		4[ ]
	medium		5[ ]
	medium to strong		6[ ]
	strong		7[ ]
	strong to very strong		8[ ]
	very strong		9[ ]
5.2 (12)	**Fruit: shape in longitudinal section**		
	flattened round	Plate de Corse	1[ ]
	round	Canon Ball	2[ ]
	pear shaped	Tarahumara canteen	3[ ]
	bottle shaped	Bianca	4[ ]
	club shaped	Mayo Giant Bule	5[ ]
	cylindrical	Massue comestible	6[ ]
5.3 (13)	**Fruit: length**		
	very short	Canon Ball	1[ ]
	very short to short		2[ ]
	short	Pélerine pointue	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[ ]

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

	Characteristics	Example Varieties	Note
5.4 (14)	**Fruit: maximum 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	Blue Mayo	7[ ]
	large to very large		8[ ]
	very large	Figue	9[ ]
5.5 (15)	**Fruit: neck**		
	absent	Strawberry	1[ ]
	present	Figue	9[ ]
5.6 (17)	**Only necked varieties : Fruit: length of neck**		
	very short	Missionaris	1[ ]
	very short to short		2[ ]
	short	Indonesian 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[ ]
5.7 (19)	**Fruit : main color**		
	yellow		1[ ]
	green		2[ ]
5.8 (21)	**Fruit : spots**		
	absent	Marenka Limegreen	1[ ]
	present	Froggy	2[ ]

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

	Characteristics	Example Varieties	Note
5.9 (23)	**Fruit : texture of skin**		
	smooth	Kroochneck fr	1[ ]
	warted	Bule Mayo	2[ ]
	ridged	Marenka	3[ ]

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	*Only necked varieties : Fruit: length of neck*	*long*	*very long*

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, *with an impact on:*

- the adaptation to abiotic stresses (low temperature, salinity, water excess or shortage) [ ]
- the yield via an increased vigor [ ]
- Improving fruit quality [ ]
- the control of soil-borne diseases [ ]

	not tested	susceptible	intermediate resistant	hightly resistant
Colletotrichum orbiculare race 1				
Colletotrichum orbiculare race 2				
Colletotrichum orbiculare race 3				
Fusarium oxysporum f.sp. *cucumerinum*				
Fusarium oxysporum f.sp. *melonis* race 0				
Fusarium oxysporum f.sp. *melonis* race 1				
Fusarium oxysporum f.sp. *melonis* race 1-2				
Fusarium oxysporum f.sp. *niveum* race 0				
Fusarium oxysporum f.sp. *niveum* race 1				
Phomopsis sclerotioïdes				
Verticillium albo- atrum				
Verticillium dahliae				
Rhizoctonia solani				
Meloidogyne arenaria				
Meloidogyne incognita.				
Meloidogyne javanica.				

(please provide details)

(c) other: container, ornamental, musical instrument… [ ]
(please provide details)

A representative color image of the **fruit at full development** should accompany 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

[Annex follows]

ANNEX

COMMENTS ON TG/LAGEN(PROJ.1)

Chapter 1: Subject of this Test Guideline

- According to GENIE data base *Lagenaria siceraria* (Molina) Standl.
- No additional comments

Chapter 2: Material required

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

200g – 1500seeds

- **ISF proposal**

Minimum quantity of seed: **1000 seeds.**

- **FR comment**

To keep **1500seeds**, which allow supplying the initial stock of the reference collection, not only for the 2 first DUS cycles. (Potential use in the future for disease resistance tests –rootstock use)

Chapter 3: Method of Examination

- No additional comment

Chapter 4: Assessment of Distinctness, Uniformity and Stability

- No additional comment

Chapter 5: Grouping of Varieties and Organization of the Growing Trial

5.3 **Grouping characteristics**

- **ISF proposal**

"… the number of applications for this crop will be relatively low. The varieties from Europe are mainly used as rootstock and the grouping characteristics mentioned concern fruit characteristics, so therefore not relevant to the breeder."

Priority done to the following characteristics

a) Plant: vigour (NEW)
included in the Naktuinbouw Technical Questionnaire, characteristic to create
b) Leaf: degree of lobbing (characteristic 7- old 6)
c) Seed: size (characteristic 25 - old 23)
d) Seed: color (characteristic 26 - old 26)

- **FR comments**
  - This draft guideline has to be built whatever the use of the variety.
  - To keep relevant Fruit grouping characteristics (primary structuration of the variability of the species.
    - Fruit: shape in longitudinal section (characteristic 12)
    - Fruit: length (characteristic 13)
    - Fruit: maximum diameter (characteristic 14)
    - Fruit: neck (characteristic 15)
    - Only necked varieties: Fruit: length of neck (characteristic 17)
    - Fruit : texture of skin (characteristic 23)
  - To introduce the NEW characteristic : Plant vigor (characteristic 3)
    - with (*) and (+)

- How to assess this characteristic?
  - The others ISF proposals have to be discussed.

Chapter 6: Introduction to the Table of Characteristics

- No additional comment

Chapter 7: Table of characteristics

- **Preliminary remark: Example varieties**
  - References to example varieties, pictures and quantitative data included come from Internet data (see the literature)
  - The 2012 GEVES's *Lagenaria* trial (planted in May 2012) include the following example varieties:
    PELOPS, ARGENTARIO, FR STRONG, EMPHASIS, VITA, TITAN, FORZA, UNION, MINI BOTTLE, DIPPER, MARAMKA, MACIS.
    It will allow completing the allocation of example varieties.
    - Several of these varieties were bred for rootstock use… This trial will allow testing the relevance of this draft.

- **NEW characteristics**
  - Char 3: Plant: Vigour
  - Char 11: Young fruit: bitterness

- **Disease resistance characteristics**
  - **ISF proposal (2012/03/29)**
    To add:
    - Fon
    - Fol
    - *Verticilium dahliae*
  - **FR comments (2012/03/29)**
    Not to include these characteristics in this chapter (7- Table of characteristics) but in the chapter 10: Technical Questionnaire, paragraph 7: Additional information.

Chapter 8: Explanations on the Table of Characteristics

Ad.3: Plant: vigor
ISF proposal: Characteristic to add. (on the base of the NAKT Technical Questionnaire).
FR comment: How to assess this characteristic?
Which example varieties?

Ad 11: Young fruit: bitterness
FR comment: Example varieties to provide.
Relation with potential fruit toxicity to be clarified

Ad 13: Fruit: length

FR proposal: Pictures are not at the same scale. Is possible to keep the indications of size, to truly illustrate (reference to an example variety) the fruit length?

				
1	3	5	7	9
very short	short	medium	long	very long
Canon Ball (17 cm)	Pélerine pointue (28 cm)	Mayo Giant Bule (53 cm)	Zucca (80 cm)	Snake speckled (128 cm)
<20cm	20 – 35cm	35-60 cm	60-100 cm	>100cm

Ad 14: Fruit: maximum diameter

FR proposal: Pictures are not at the same scale. Is possible to keep the indications of size, to truly illustrate (reference to an example variety) the maximum fruit diameter?

				
1	3	5	7	9
very small	small	medium	large	very large
Mini Nigerian (6 cm)	Massue comestible (13 cm)	Strawberry (18 cm)	Blue Mayo (23 cm)	Figue (32 cm)
<10 cm	10-15 cm	15-20 cm	20-25 cm	>25 cm

Ad. 19: Fruit : main color

FR comment: Characteristic included in the NAKT TQ

State 1: yellow

Which example varieties?

Picture to provide

If no positive answer, characteristic to delete.

Chapter 9: Literature

FR comment: References to the used websites.

Chapter 10: Technical questionnaire

Paragraph 5: to update with the finalized grouping characteristics (Chapter 5, paragraph 5.3).

ISF proposal: to add in the TQ, the proposed grouping characteristics

- Leaf: degree of lobbing (7)
- Seed: size (25)
- Seed: color (26)

FR comment: to be discussed

Paragraph 7: Additional information

7.3 Other information

Variety use

FR proposal: a precise focus on the rootstock use

This guideline is dedicated to the species *Lagenaria siceraria*, as a whole.

This work could be considered as a first step of a draft document covering several species (*Lagenaria*, inter specific *Cucurbita* crosses, *Cucurbita ficifolia, Benincasa*…) which will be focused on the rootstock use, for *Cucurbitacea* species (melon, watermelon, summer squash...).

[End of Annex and of document]