E

TG/117/5(proj.1)
ORIGINAL: English
DATE: 2020-02-28

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

EGG PLANT

UPOV Code(s): SOLAN_MEL

Solanum melongena L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from the European Union
to be considered by the
Technical Working Party for Vegetables
at its fifty-fourth session, to be held in Brasilia, Brazil,
from 2020-05-11 to 2020-05-15

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Solanum melongena L., *Solanum ovigerum* Dunal	Egg Plant, Aubergine	Aubergine	Aubergine, Eierfrucht	Berenjena

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

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

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

TABLE OF CONTENTS PAGE

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Solanum melongena* L.

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:

10g or 2500 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

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 The two independent growing cycles should be in the form of two separate plantings.

3.1.3 The testing of a variety may be conducted when the competent authority can determine with certainty the outcome of the test.

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

Each test should be designed to result in a total of at least 20 plants, which should be divided between at least 2 replicates.

3.5 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 or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts of plants taken from each of 20 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 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 These Test Guidelines have been developed for the examination of seed-propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

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

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

4.2.5 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.

4.2.6 For the assessment of uniformity of hybrids, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 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 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: length (characteristic 17)
(b) Fruit: ratio length/maximum diameter (characteristic 19)
(c) Fruit: shape (characteristic 20)
(d) Fruit: main color of skin at harvest maturity (characteristic 25)
(e) Fruit: stripes (characteristic 29)
(f) Fruit: color of flesh (characteristic 41)

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1 **2**	**3** **4**	**5** **6**	**7**			
	Name of characteristics in English	**Nom du caractère en français**	**Name des Merkmals auf Deutsch**	**Nombre del carácter en español**		
	states of expression	types d'expression	Ausprägungsstufen	tipos de expresión		

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

6 (a)-(f) See Explanations on the Table of Characteristics in Chapter 8.1

7 Not applicable

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1.	**(*)**	**QL VG**	**(a)**				
		Seedling: anthocyanin coloration of hypocotyl					
		absent				Brigitte, Listada de Gandia, Lydia	1
		present				Baluroi, Bonica	9
2.		**QN VG**	**(a)**				
		Seedling: intensity of anthocyanin coloration of hypocotyl					
		very weak					1
		weak				Bonica	3
		medium				Baluroi	5
		strong				Larga Morada	7
		very strong					9
3.	**(*)**	**QN VG**	**(+)** **(b)**				
		Plant: growth habit					
		erect				Baluroi, Brigitte	1
		semi-erect				Birgah, Bonica	3
		horizontal				Irene, Listada de Gandia	5
4.		**QN MS/VG**	**(b)**				
		Plant: height					
		very short					1
		short				Adona, Monstrueuse de New York	3
		medium				Tudela	5
		tall				Avan, Baluroi	7
		very tall				Nilo	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.		**QN MS/VG**	**(+) (b)**				
		Stem: distance from cotyledons to the node of the first flower					
		very short					1
		short					3
		medium				Bonica	5
		long				De Barbentane	7
		very long				Nilo	9
6.	**(*)**	**QL VG**	**(+) (b)**				
		Stem: anthocyanin coloration					
		absent				Blanche ronde à oeuf, Lato	1
		present				Baluroi	9
7.		**QN VG**	**(+) (b)**				
		Stem: intensity of anthocyanin coloration					
		very weak				Brigitte	1
		weak				Bonica	3
		medium				Baluroi	5
		strong				Ronde de Valence	7
		very strong				Konasu, Money Maker No 2	9
8.		**QN VG**	**(+) (b)**				
		Stem: pubescence					
		weak				Baluroi	3
		medium				Abrivado, Bonica	5
		strong				Mistral	7
9.		**QN VG**	**(c)**				
		Leaf blade: size					
		very small				Blanche ronde à oeuf	1
		small					3
		medium				Baluroi	5
		large				Bonica	7
		very large				Giada	9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10.	**QN VG**	**(+) (c)**				
	Leaf blade: sinuation of margin					
	absent or very weak				Baluroi, Bonica	1
	weak				Birgah, Konasu	3
	medium				Epic, Fabiola	5
	strong				Dalia	7
	very strong				Listada de Gandia	9
11.	**QN VG**	**(+) (c)**				
	Leaf blade: blistering					
	absent or very weak				Baluroi	1
	weak					3
	medium				Bonica	5
	strong				Listada de Gandia	7
	very strong					9
12.	**QN VG**	**(c)**				
	Leaf blade: intensity of green color					
	light				Black Beauty	3
	medium				Baluroi, Bonica	5
	dark				Purpura	7
13.	**PQ MS/VG**	**(+) (d)**				
	Inflorescence: number of flowers					
	one to three					1
	more than three				Blanche ronde à oeuf	2
14.	**QN MS/VG**	**(d)**				
	Flower: size					
	small				Cima viola	3
	medium				Monstrueuse de New York	5
	large				Prosperosa	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.		**PQ VG**	**(d)**				
		Flower: color					
		white					1
		light purple				Listada de Gandia	2
		medium purple				Baluroi	3
		dark purple				Ronde de Valence	4
16.		**QL VG**	**(+)**				
		Parthenocarpy					
		absent					1
		present				Anominori 2 go	9
17.	**(*)**	**QN MS/VG**	**(+)** **(e)**				
		Fruit: length					
		very short				Blanche ronde à oeuf	1
		very short to short					2
		short				Birgah	3
		short to medium					4
		medium					5
		medium to long					6
		long				Mistral	7
		long to very long					8
		very long				Indira	9
18.		**QN MS/VG**	**(+)** **(e)**				
		Fruit: maximum width					
		very small					1
		small				Indira, Mistral	3
		medium					5
		large				Bonica	7
		very large				Birgah	9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	**(*)**	**PQ**	**MS/VG**		**(e)**				
		Fruit: ratio length/maximum diameter							
		very small						Birgah	1
		very small to small							2
		small						Bonica	3
		small to medium							4
		medium							5
		medium to large							6
		large						Mistral	7
		large to very large							8
		very large						Indira	9
20.	**(*)**	**PQ**	**VG**	**(+)**	**(e)**				
		Fruit: shape							
		flattened globular							1
		globular						Monstrueuse de New York, Purpura	2
		ovoid						Beatrice	3
		obovate						Black King	4
		pear shaped						Listada de Gandia	5
		club shaped						Baluroi, Mileda	6
		ellipsoid						Volta	7
		cylindrical						Mirabelle, Tango	8
21.		**QN**	**VG**	**(+)**	**(e)**				
		Fruit: size of pistil scar							
		very small						Alabaster	1
		small						Baluroi	3
		medium						Bonica	5
		large						Monstrueuse de New York	7
		very large						Purpura	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22.		**PQ VG**	**(+) (e)**				
		Fruit: apex					
		indented					1
		flattened				Prosperosa	2
		rounded				Baluroi	3
		pointed				Tanyeli	4
23.		**QN VG**	**(+) (e)**				
		Fruit: depth of indentation of pistil scar					
		absent or very shallow				Blanche ronde à oeuf, Cristal	1
		shallow					3
		medium					5
		deep				Pietranera	7
		very deep					9
24.		**QN VG**	**(+) (e)**				
		<u>Only for varieties with cylindrical fruits</u>: Fruit: curvature					
		absent or very weak					1
		weak					3
		medium					5
		strong					7
		very strong					9
25.	**(*)**	**QL VG**	**(+) (e), (f)**				
		Fruit: main color of skin <u>at harvest maturity</u>					
		white				Alabaster, Blanche ronde à oeuf, Lato	1
		green				Samantha	2
		violet				Baluroi, Purpura	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26.		**QN VG**	**(+) (e)**				
		<u>Only for varieties with green and violet skin color</u>: Fruit: intensity of main color of skin					
		very light					1
		light				Circe	3
		medium				Purpura	5
		dark					7
		very dark				Faselis	9
27.		**QN VG**	**(e)**				
		Fruit: glossiness					
		weak				Konasu	3
		medium				Baluroi	5
		strong				Elisa	7
28.		**QL VG**	**(+) (e)**				
		Fruit: patches					
		absent				Baluroi	1
		present				Emerald Isle	9
29.	**(*)**	**QL VG**	**(+) (e)**				
		Fruit: stripes					
		absent				Baluroi	1
		present				Listada de Gandia	9
30.		**QN VG**	**(e)**				
		Fruit: prominence of stripes					
		weak					3
		medium					5
		strong				Listada de Gandia	7
31.		**QN VG**	**(e)**				
		Fruit: density of stripes					
		sparse					3
		medium					5
		dense				Listada de Gandia	7

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32.	**(*)**	**QN**	**VG**	**(+)**	**(e)**				
		Fruit: ribs							
		absent or very weak						Bonica	1
		weak						Bibo	3
		medium							5
		strong						Black Beauty	7
		very strong							9
33.		**QN**	**MS/VG**	**(+)**	**(e)**				
		Fruit: length of peduncle							
		very short						Blanche ronde à oeuf	1
		short						Birgah	3
		medium						Madonna	5
		long						Alex, Tanyeli	7
		very long						Avan	9
34.	**(*)**	**QL**	**VG**	**(+)**	**(e)**				
		Fruit: anthocyanin coloration underneath calyx							
		absent						Ronde de Valence	1
		present						Baluroi	9
35.		**QN**	**VG**	**(+)**	**(e)**				
		Fruit: intensity of anthocyanin coloration underneath calyx							
		weak							3
		medium						Black Beauty	5
		strong						Baluroi	7
36.		**QN**	**VG**	**(+)**	**(e)**				
		Fruit: size of calyx							
		very small						Blanche ronde à oeuf	1
		small							3
		medium						Baluroi	5
		large						Larga Morada	7
		very large						Dealmagro	9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37.	**(*)**	**QL**	**VG**		**(e)**				
		Fruit: anthocyanin coloration of calyx							
		absent						Blanche ronde à oeuf	1
		present						Birgah	9
38.		**QN**	**VG**		**(e)**				
		Fruit: intensity of anthocyanin coloration of calyx							
		very weak							1
		weak						Baluroi	3
		medium						Mileda	5
		strong						De Barbentane	7
		very strong						Birgah, Ronde de Valence	9
39.	**(*)**	**QN**	**VG**	**(+)**	**(e)**				
		Fruit: spininess of calyx							
		absent or very weak						Lato	1
		weak						Bonica	3
		medium						Baluroi	5
		strong						Bibo	7
		very strong							9
40.		**QN**	**VG**		**(e)**				
		Fruit: creasing of calyx							
		very weak							1
		weak						Lato	3
		medium						Bonica	5
		strong						Talina	7
		very strong						Linda	9

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
41.	**(*)**	**PQ**	**VG**		**(e)**				
		Fruit: color of flesh							
		whitish						Lato	1
		greenish						Baluroi	2
42.		**QL**	**VG**	**(+)**	**(e)**				
		Ripe fruit: color of skin							
		yellow							1
		orange						Comprido Verde Claro	2
		ochre						Vernal	3
		brown						Abrivado, Baluroi	4
43.	**(*)**	**QN**	**MG/VG**		**(e)**				
		Time of beginning of flowering							
		early						Lato	3
		medium						Bonica	5
		late						Monstrueuse de New York	7
44.		**QN**	**MG/VG**		**(e)**				
		Time of physiological ripeness							
		early							3
		medium						Bonica	5
		late						Monstrueuse de New York	7

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

(a) Seedling: observations on the seedling should be made at full development of the cotyledons, when the first leaf begins to develop, before transplanting

(b) Plant and stem: observations of plant and stem should be made before they get old.

(c) Leaf blade: observations on the leaf blade should be made after the first inflorescence starts to flower and before the start of the harvest, at the middle third part of the plant.

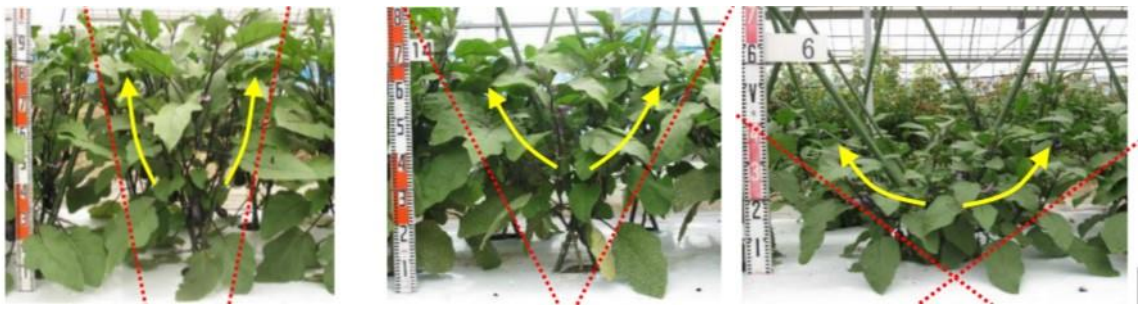
(d) Flower and inflorescence: observations should be made when 50% of the plants of the variety has opened flowers on the second or the third inflorescence, Observations on the flower should be made at fresh, fully opened flowers.

(e) Fruit: all observations on the fruit should be made on the first normally developed fruits.

(f) At harvest maturity: 'harvest maturity' is when the seeds start to develop.

8.2 Explanations for individual characteristics

Ad. 3: Plant: growth habit



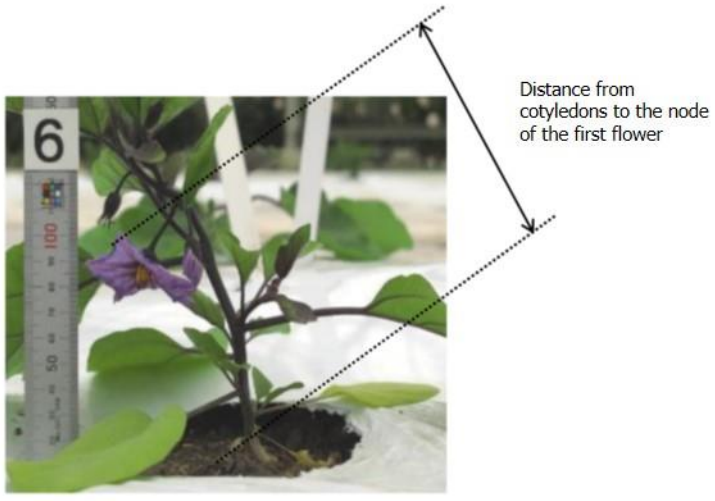
1
erect

3
semi-erect

5
horizontal

Yellow arrows show the direction to extend of branches. Red lines show the spreading of branches. These images serve only to illustrate the variation present in the crop and should not be used as an absolute reference.

Ad. 5: Stem: distance from cotyledons to the node of the first flower



Ad. 6: Stem: anthocyanin coloration

Observations should be made on the upper third of the plant.

Ad. 7: Stem: intensity of anthocyanin coloration

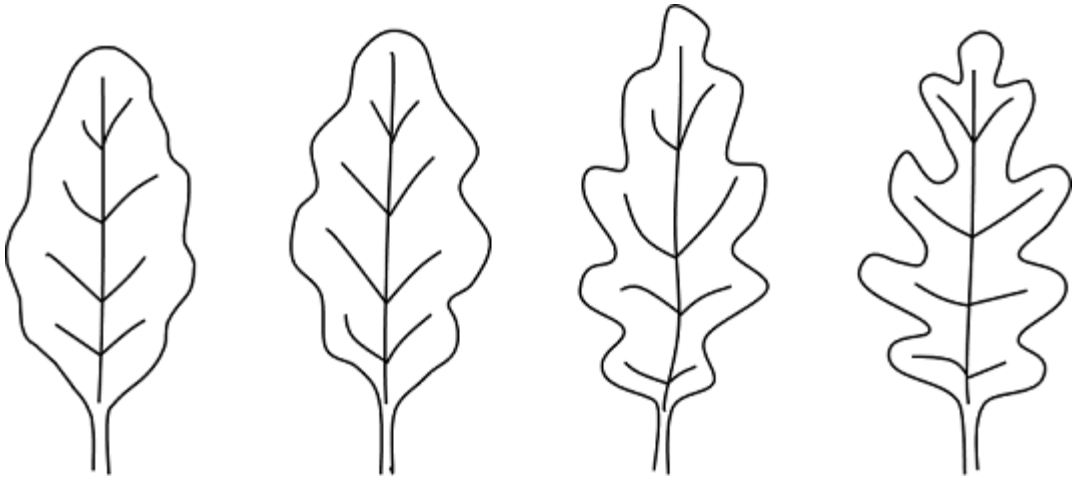
Observations should be made on the upper third of the plant.

Ad. 8: Stem: pubescence

Observations should be made at the middle third of the plant.

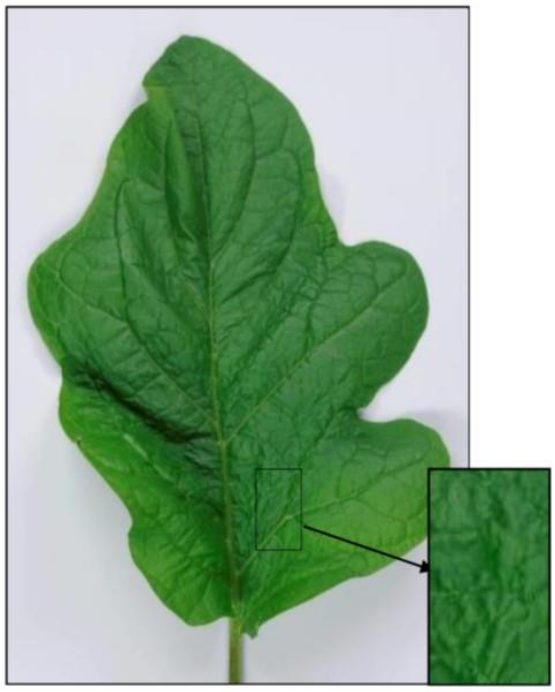
Ad. 10: Leaf blade: sinuation of margin

Sinuation of margin is a kind of lobing (but not entirely unto the midrib) which arises from incision of the leaf margin. It must be explained that it does not involve undulation of the margin.



1	3	5	7
absent or very weak	weak	medium	strong

Ad. 11: Leaf blade: blistering



Ad. 13: Inflorescence: number of flowers

1
one to three

2
more than three

Ad. 16: Parthenocarpy

Method of observation:
Remove the style inside 3 to 5 buds of each plants and mark them three weeks after the time of beginning of flowering (as for characteristic 42). Observe the fructification condition of normally developed fruit 30 days after the removed style floweropened. Assess it as “present” if 19 of 20 test plants have normally developed fruit.

Procedure of the removing of the style inside bud:

1. Before removing the style

Cut the dotted line part. The pollen can pollinate on the day before flowering therefore the style should be cut when the bud is still hard

2. After removing the style

After confirming that the anther not dehiscent yet, remove the style by tweezers and mark them.

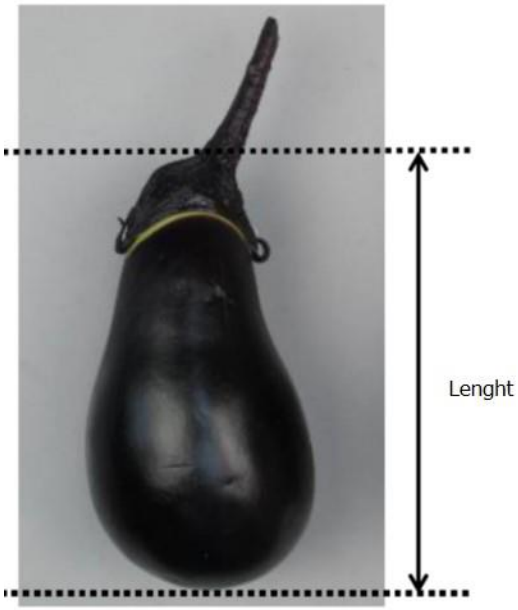
a. Before cutting bud

b. After cutting bud

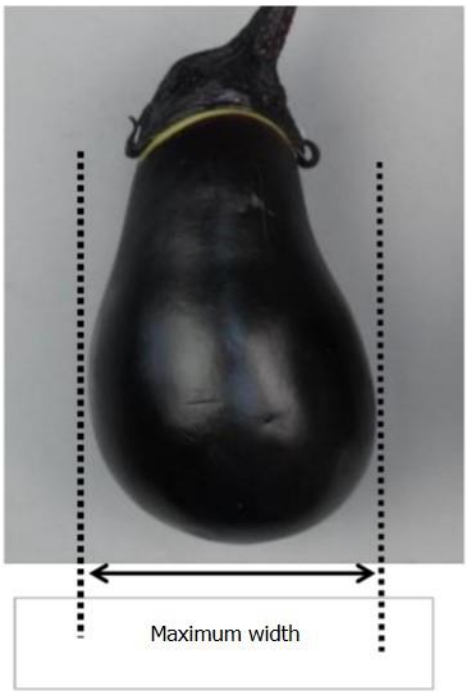
c. Removing the style

d. After removing the style

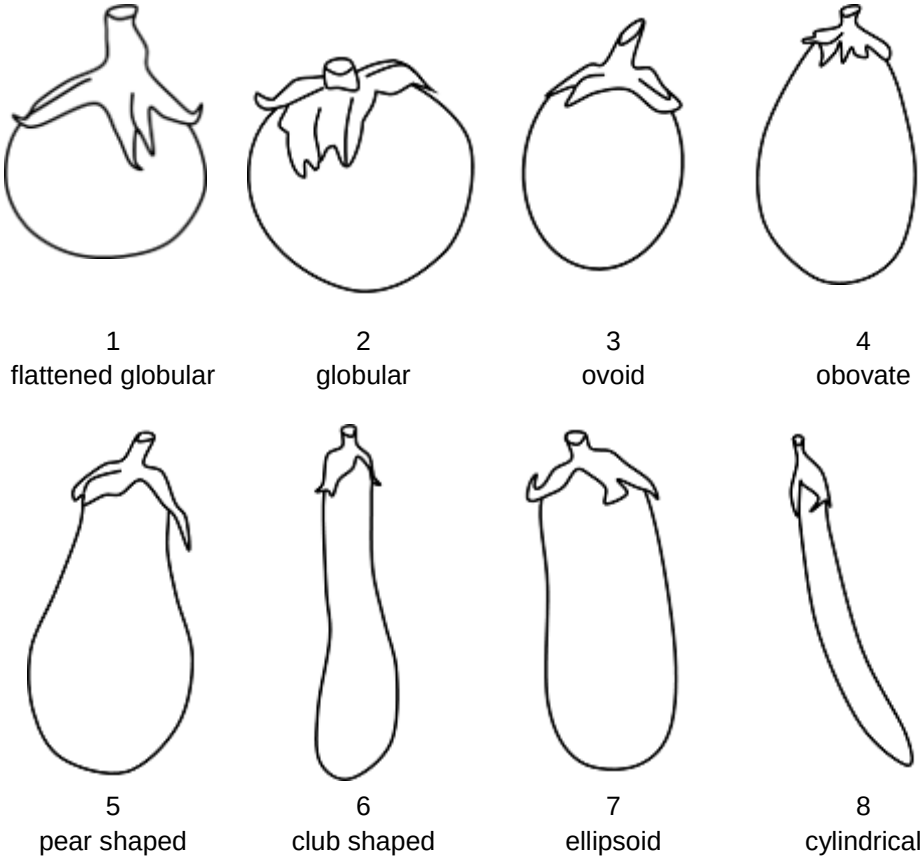
Ad. 17: Fruit: length



Ad. 18: Fruit: maximum width



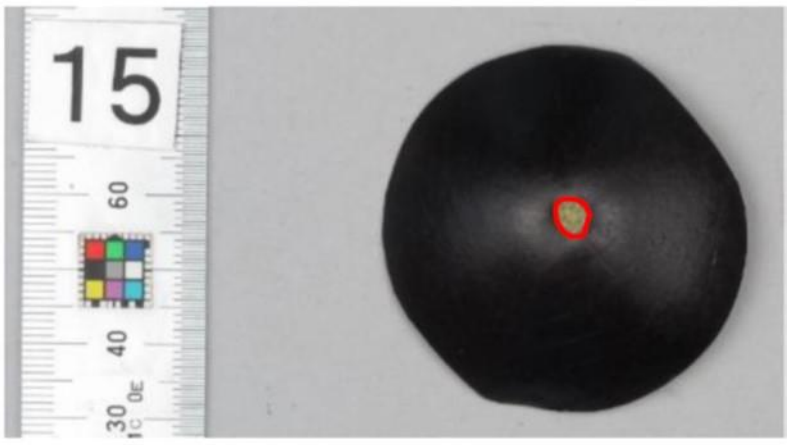
Ad. 20: Fruit: shape



1 flattened globular
2 globular
3 ovoid
4 obovate
5 pear shaped
6 club shaped
7 ellipsoid
8 cylindrical

Ad. 21: Fruit: size of pistil scar

Observations should be made on the total area of the pistil scar.

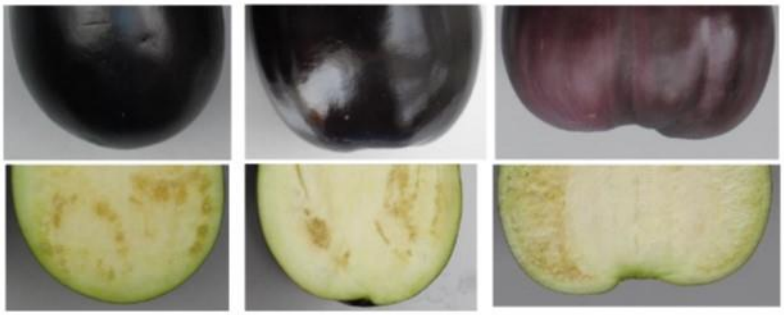


The total area

Ad. 22: Fruit: apex

1 indented | 2 flattened | 3 rounded | 4 pointed

Ad. 23: Fruit: depth of indentation of pistil scar



Ad. 24: Only for varieties with cylindrical fruits: Fruit: curvature

Observations should be made on fruits that have been growing without any obstacles since that can affect the curvature.

1
absent or very weak

3
weak

5
medium

7
strong

9
very strong

Ad. 25: Fruit: main color of skin at harvest maturity

For varieties with stripes on the fruits, the color which occupies the largest area on the fruit is regarded as main color

1
white

2
green

3
violet

Ad. 26: Only for varieties with green and violet skin color: Fruit: intensity of main color of skin

See Ad. 25

Ad. 28: Fruit: patches

Observations should be done directly after harvest, older fruits can appear to be patched, when in fact they are starting to discolor.

1
absent

9
present

Overripe fruit which appears to have patches but is in fact discoloring:

Ad. 29: Fruit: stripes

1
absent

9
present

Broad stripes type

Ad. 32: Fruit: ribs

1
Absent to very weak

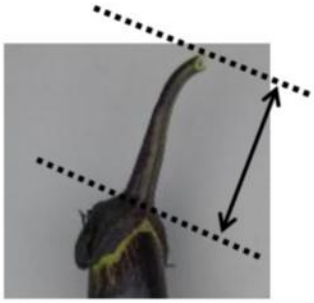
3
weak

5
medium

7
strong

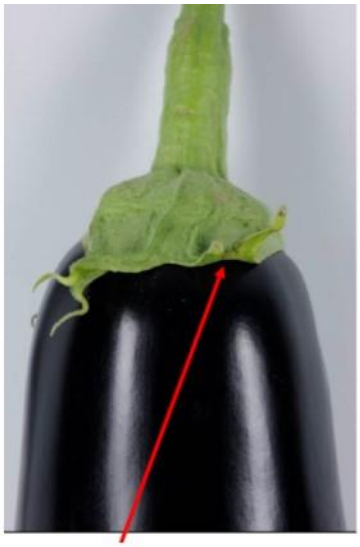
9
very strong

Ad. 33: Fruit: length of peduncle



Ad. 34: Fruit: anthocyanin coloration underneath calyx

Observations should be made by lifting or removing the calyx.



9 present

Ad. 35: Fruit: intensity of anthocyanin coloration underneath calyx

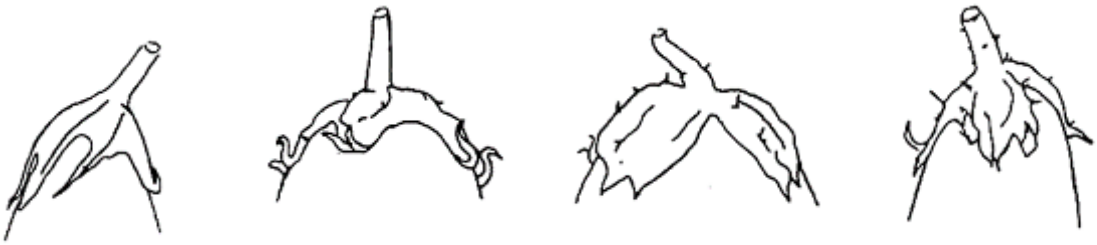
See Ad. 39

Ad. 36: Fruit: size of calyx

Observations should be made regarding the absolute size of the calyx, not the relative to the size of the fruit.

Ad. 39: Fruit: spininess of calyx

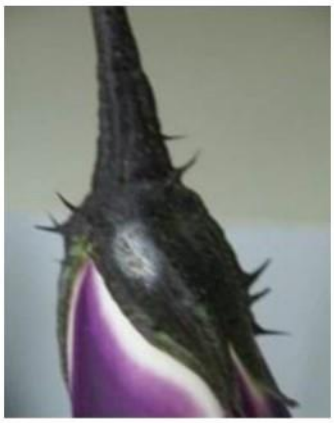
Observations should be made combining the intensity and the size of the spines.



1	3	5	7
absent or very weak	weak	medium	strong

1
Absent to very weak

3
weak



5
medium

7
strong

Ad. 42: Ripe fruit: color of skin

Observations should be made on fruits at physiological ripeness, when the color stops changing.

9. Literature

Adinolfi, A., Bianchi, M.: “Caratterizzazione di varieta di Melanzana,” Quaderno n. 38 dell’E.N.S.E.

Daunay, M. C., Lester, R. N., Ano, G., 2001: “Eggplant,” p. 199-222 in Tropical Plant Breeding (569 p.), Scient. Ed., Charrier, A., Jacquot, M., Hamon, S., Nicolas, D., CIRAD; Science Publishers, Inc., Enfield (USA), Plymouth UK, 569 p.

Phillips, R., Rix, M., 1995: “Vegetables”, Macmillan Reference Books.

Naktuinbouw and NCSS(/NARO), 2019: Calibration Manual DUS Tes for Eggplant

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	*Solanum melongena* L.
1.2 Common name	Egg Plant, Aubergine

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

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 Vegetative propagation

4.2.2 Seed-propagated varieties

(a)	Self-pollination	[ ]
(b)	Cross-pollination	[ ]
(c)	Hybrid	[ ]
(d)	Inbred line	[ ]
(e)	Other (please provide details)	[ ]

4.2.3 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 (17)	**Fruit: length**		
	very short	Blanche ronde à oeuf	1 [ ]
	very short to short		2 [ ]
	short	Birgah	3 [ ]
	short to medium		4 [ ]
	medium		5 [ ]
	medium to long		6 [ ]
	long	Mistral	7 [ ]
	long to very long		8 [ ]
	very long	Indira	9 [ ]
5.2 (19)	**Fruit: ratio length/maximum diameter**		
	very small	Birgah	1 [ ]
	very small to small		2 [ ]
	small	Bonica	3 [ ]
	small to medium		4 [ ]
	medium		5 [ ]
	medium to large		6 [ ]
	large	Mistral	7 [ ]
	large to very large		8 [ ]
	very large	Indira	9 [ ]
5.3 (20)	**Fruit: shape**		
	flattened globular		1 [ ]
	globular	Monstrueuse de New York, Purpura	2 [ ]
	ovoid	Beatrice	3 [ ]
	obovate	Black King	4 [ ]
	pear shaped	Listada de Gandia	5 [ ]
	club shaped	Baluroi, Mileda	6 [ ]
	ellipsoid	Volta	7 [ ]
	cylindrical	Mirabelle, Tango	8 [ ]

	Characteristics	Example Varieties	Note
5.4 (25)	**Fruit: main color of skin <u>at harvest maturity</u>**		
	white	Alabaster, Blanche ronde à oeuf, Lato	1 [ ]
	green	Samantha	2 [ ]
	violet	Baluroi, Purpura	3 [ ]
5.5 (29)	**Fruit: stripes**		
	absent	Baluroi	1 [ ]
	present	Listada de Gandia	9 [ ]
5.6 (41)	**Fruit: color of flesh**		
	whitish	Lato	1 [ ]
	greenish	Baluroi	2 [ ]

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	Characteristic(s) in which your candidate variety differs	Describe the expression of the characteristic(s) for the	Describe the expression of the characteristic(s) for **your**
Example	*Fruit: length*	*1 - very short*	*3 - short*

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

- Resistance to pests and diseases

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 document]