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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-fifth session, to be held in Antalya, Turkey,
 from 2021-05-03 to 2021-05-07*

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Solanum melongena</i> L., <i>Solanum ovigerum</i> 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.]

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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 concluded 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 10 plants or parts of plants 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 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 varieties 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 self-pollinated varieties and 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 16)
 - (b) Fruit: ratio length/width (characteristic 18)
 - (c) Fruit: shape (characteristic 19)
 - (d) Fruit: main color of skin at harvest maturity (characteristic 24)
 - (e) Fruit: stripes (characteristic 28)
 - (f) Fruit: color of flesh (characteristic 39)
- 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 All relevant states of expression are presented in the characteristic.

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 Be ejemplo	Note
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)-(e) 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.	QN	VG	(a)				
	Seedling: intensity of anthocyanin coloration of hypocotyl						
	absent or very weak					Lydia	1
	very weak to weak						2
	weak					Bonica, Brigitte	3
	weak to medium						4
	medium					Baluroi	5
	medium to strong						6
	strong					Larga Morada	7
	strong to very strong						8
	very strong						9
2. (*)	QN	VG	(+)	(b)			
	Plant: growth habit						
	erect					Baluroi, Brigitte	1
	erect to semi-erect						2
	semi-erect					Birgah, Bonica	3
	semi-erect to spreading						4
	spreading					Irene	5
3.	QN	MS/VG	(b)				
	Plant: height						
	very short						1
	very short to short						2
	short					Adona, Monstrueuse de New York	3
	short to medium						4
	medium					Tudela	5
	medium to tall						6
	tall					Avan, Baluroi	7
	tall to very tall						8
	very tall					Nilo	9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
4.	QN	MS/VG	(+)	(b)				
	Stem: distance from cotyledons to the node of the first flower							
	very short							1
	very short to short							2
	short						Leticia, TSX-250	3
	short to medium							4
	medium						Bonica	5
	medium to long							6
	long						De Barbentane	7
	long to very long							8
	very long						Nilo	9
5.	QN	VG	(+)	(b)				
	Stem: intensity of anthocyanin coloration							
	absent or very weak						Blanche ronde à oeuf, Brigitte, Lato	1
	very weak to weak							2
	weak						Bonica	3
	weak to medium							4
	medium						Baluroi	5
	medium to strong							6
	strong						Ronde de Valence	7
	strong to very strong							8
	very strong						Konasu, Money Maker No 2	9
6.	QN	VG	(+)	(b)				
	Stem: pubescence							
	very weak							1
	very weak to weak							2
	weak						Baluroi	3
	weak to medium							4
	medium						Abrivado, Bonica	5
	strong to medium							6
	strong						Mistral	7
	strong to very strong							8
	very strong							9

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.	QN	MS/VG	(c)			
	Leaf blade: size					
	very small				Blanche ronde à oeuf	1
	very small to small					2
	small					3
	small to medium					4
	medium				Baluroi	5
	medium to large					6
	large				Bonica	7
	large to very large					8
	very large				Giada	9
8.	QN	VG	(+)	(c)		
	Leaf blade: situation of margin					
	absent or very weak				Baluroi, Bonica	1
	very weak to					2
	weak				Birgah, Konasu	3
	weak to medium					4
	medium				Epic, Fabiola	5
	medium to strong					6
	strong				Dalia	7
	strong to very strong					8
	very strong				Listada de Gandia	9
9.	QN	VG	(c)			
	Leaf blade: blistering					
	absent or very weak				Baluroi	1
	very weak to weak					2
	weak					3
	weak to medium					4
	medium				Bonica	5
	medium to strong					6
	strong				Listada de Gandia	7
	strong to very strong					8
	very strong					9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10	QN	VG	(c)				
	Leaf blade: intensity of green color						
	very light						1
	very light to light						2
	light					Black Beauty	3
	light to medium						4
	medium					Baluroi, Bonica	5
	medium to dark						6
	dark					Purpura	7
	dark to very dark						8
	very dark						9
11 (*)	QN	MG/VG	(e)				
	Time of beginning of flowering						
	very early						1
	very early to early						2
	early					Lato	3
	early to medium						4
	medium					Bonica	5
	medium to late						6
	late					Monstrueuse de New York	7
	late to very late						8
	very late						9
12	PQ	MS/VG	(+)	(d)			
	Inflorescence: number of flowers						
	one to three						1
	more than three					Blanche ronde à oeuf	2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13	QN MS/VG	(d)				
	Flower: size					
	very small					1
	very small to small					2
	small				Cima viola	3
	small to medium					4
	medium				Monstrueuse de New York	5
	medium to large					6
	large				Prosperosa	7
	large to very large					8
	very large					9
14	PQ VG	(d)				
	Flower: color					
	white					1
	light purple				Listada de Gandia	2
	medium purple				Baluroi	3
	dark purple				Ronde de Valence	4
15	QL VG	(+)				
	Parthenocarpy					
	absent					1
	present				Anominori 2 go	9
16 (*)	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

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
17	QN	MS/VG	(+)	(e)				
	Fruit: width							
	very small							1
	very small to small							2
	small					Indira, Mistral		3
	small to medium							4
	medium							5
	medium to large							6
	large					Bonica		7
	large to very large							8
	very large					Birgah		9
18 (*)	QN	MS/VG	(+)	(e)				
	Fruit: ratio length/width							
	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
19 (*)	PQ	VG	(+)	(e)				
	Fruit: shape							
	flattened globular					Birgah		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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20	QN	MS/VG	(+)	(e)		
	Fruit: size of pistil scar					
	very small				Alabaster	1
	very small to small					2
	small				Baluroi	3
	small to medium					4
	medium				Bonica	5
	medium to large					6
	large				Monstrueuse de New York	7
	large to very large					8
	very large				Purpura	9
21	PQ	VG	(+)	(e)		
	Fruit: apex					
	obcordate				Pietranera	1
	flattened				Prosperosa	2
	rounded				Baluroi	3
	acute				Tanyeli	4
22	QN	VG	(+)	(e)		
	Fruit: depth of indentation of pistil scar					
	absent or very shallow				Blanche ronde à oeuf, Cristal	1
	shallow					2
	medium					3
	deep				Pietranera	4
	very deep					5

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23	QN	VG	(+)	(e)				
	<u>Only for varieties with cylindrical fruits: Fruit: curvature</u>							
	absent or 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
24 (*)	QL	VG	(+)	(e)				
	<u>Fruit: main color of skin at harvest maturity</u>							
	white						Alabaster, Blanche ronde à oeuf, Lato	1
	green						Samantha	2
	violet						Baluroi, Purpura	3
25	QN	VG	(+)	(e)				
	<u>Only for varieties with green and violet skin color: Fruit: intensity of main color of skin</u>							
	very light							1
	very light to light							2
	light						Circe	3
	light to medium							4
	medium						Purpura, Shironasu	5
	medium to dark							6
	dark							7
	dark to very dark							8
	very dark						Faselis	9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26	QN	VG	(e)				
	Fruit: glossiness						
		very weak					1
		very weak to weak					2
		weak				Konasu	3
		weak to medium					4
		medium				Baluroi	5
		medium to strong					6
		strong				Elisa	7
		strong to very strong					8
		very strong					9
27	QL	VG	(+)	(e)			
	Fruit: patches						
		absent				Baluroi	1
		present				Emerald Isle	9
28 (*)	QL	VG	(+)	(e)			
	Fruit: stripes						
		absent				Baluroi	1
		present				Listada de Gandia	9
29	QN	VG	(+)	(e)			
	Fruit: conspicuousness of stripes						
		very weak					1
		very weak to weak					2
		weak				Bride	3
		weak to medium					4
		medium					5
		medium to strong					6
		strong				Listada de Gandia	7
		strong to very strong					8
		very strong					9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30	QN	VG	(e)				
	Fruit: density of stripes						
	very sparse						1
	very sparse to sparse						2
	sparse						3
	sparse to medium						4
	medium						5
	medium to dense						6
	dense					Listada de Gandia	7
	dense to very dense						8
	very dense						9
31 (*)	QN	VG	(+)	(e)			
	Fruit: grooves						
	absent or very weak					Bonica	1
	very weak to weak						2
	weak					Bibo	3
	weak to medium						4
	medium						5
	medium to strong						6
	strong					Black Beauty	7
	strong to very strong						8
	very strong						9
32	QN	MS/VG	(+)	(e)			
	Fruit: length of peduncle						
	very short					Blanche ronde à oeuf	1
	very short to short						2
	short					Birgah	3
	short to medium						4
	medium					Madonna	5
	medium to long						6
	long					Alex, Tanyeli	7
	long to very long						8
	very long					Avan	9

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33	(*)	QL	VG	(+)	(e)			
		Fruit: anthocyanin coloration underneath calyx						
		absent					Ronde de Valence	1
		present					Baluroi	9
34		QN	VG	(+)	(e)			
		Fruit: intensity of anthocyanin coloration underneath calyx						
		very weak						1
		very weak to weak						2
		weak						3
		weak to medium						4
		medium					Black Beauty	5
		medium to strong						6
		strong					Baluroi	7
		strong to very strong						8
		very strong						9
35		QN	VG	(+)	(e)			
		Fruit: size of calyx						
		very small					Blanche ronde à oeuf	1
		very small to small						2
		small						3
		small to medium						4
		medium					Baluroi	5
		medium to large						6
		large					Larga Morada	7
		large to very large						8
		very large					Dealmagro	9

	English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36	QN	VG	(e)				
	Fruit: intensity of anthocyanin coloration of calyx						
	absent or very weak					Blanche ronde à oeuf	1
	very weak to weak						2
	weak					Baluroi	3
	weak to medium						4
	medium					Mileda	5
	medium to strong						6
	strong					De Barbentane	7
	strong to very strong						8
	very strong					Birgah, Ronde de Valence	9
37 (*)	QN	VG	(+)	(e)			
	Fruit: spines on calyx						
	absent or very few					Lato	1
	very few to few						2
	few					Bonica	3
	few to medium						4
	medium					Baluroi	5
	medium to many						6
	many					Bibo	7
	many to very many						8
	very many						9
38	QN	VG	(+)	(e)			
	Fruit: creasing of calyx						
	absent or weak					Lato	1
	medium					Bonica	2
	strong					Linda, Talina	3
39 (*)	PQ	VG	(+)	(e)			
	Fruit: color of flesh						
	whitish					Lato	1
	greenish					Baluroi	2

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
40	PQ	VG	(+)	(e)				
	Ripe fruit: color of skin							
	yellow							1
	orange						Comprido Verde Claro	2
	brownish orange						Vernal	3
	brown						Abrivado, Baluroi	4

8. Explanations on the Table of Characteristics

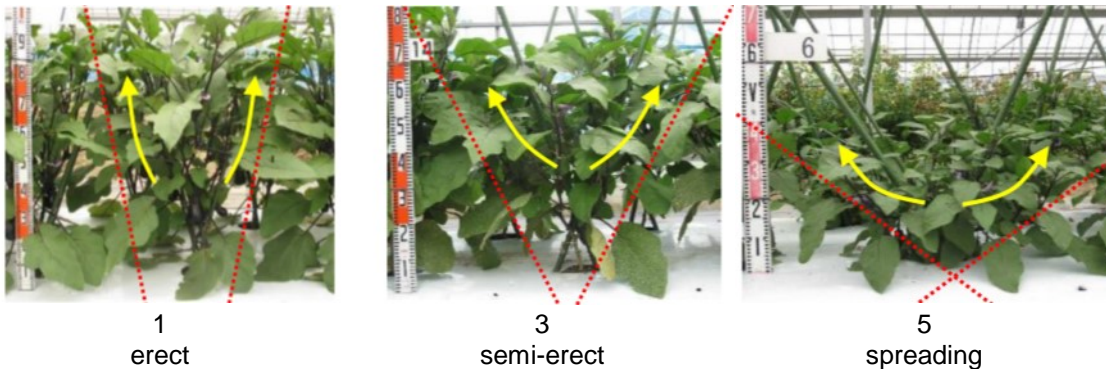
8.1 *Explanations covering several characteristics*

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 after the first inflorescence starts to flower and before the start of the harvest, excluding the fork inflorescence.
- (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 and excluding the fork inflorescence.
- (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 when the seeds start to develop, and excluding the fork fruit.

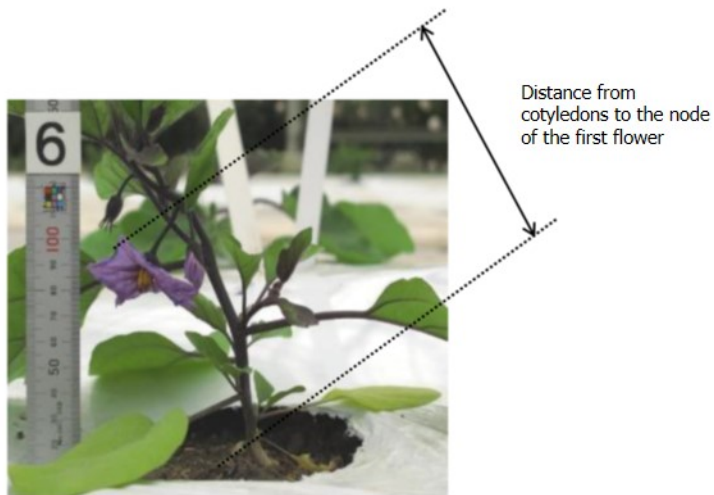
8.2 *Explanations for individual characteristics*

Ad. 2: Plant: growth habit



Yellow arrows show the direction to extend of branches. Red lines show the spreading of branches. For plants contained between two strings (which can modify the natural growth habit), we look at the angle of the branches at the fork level.

Ad. 4: Stem: distance from cotyledons to the node of the first flower



Ad. 5: Stem: intensity of anthocyanin coloration

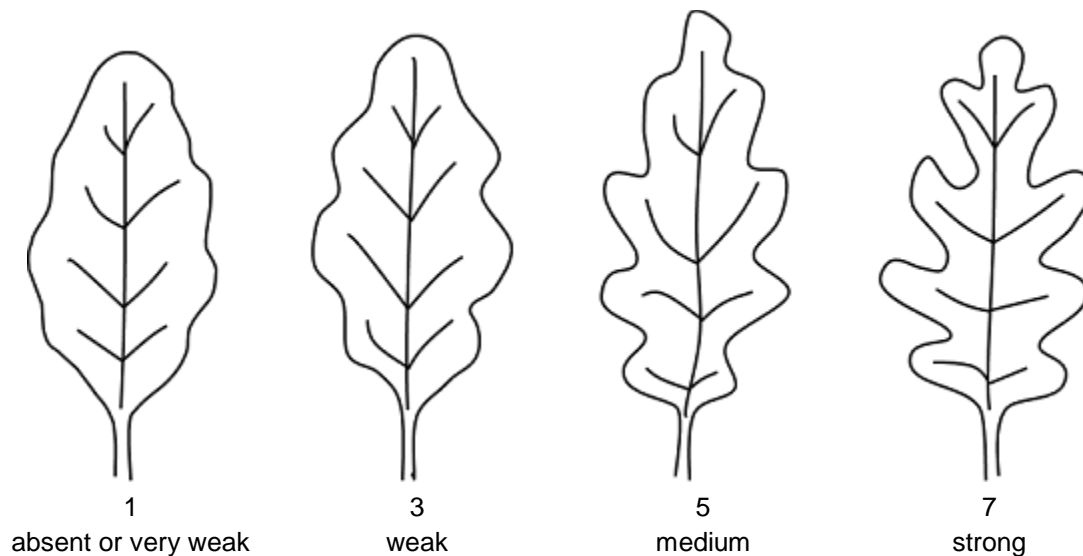
Observations should be made on the upper third of the plant.

Ad. 6: Stem: pubescence

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

Ad. 8: Leaf blade: situation of margin

Situation 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.



Ad. 12: Inflorescence: number of flowers



1
One to three



2
More than three

Ad. 15: 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

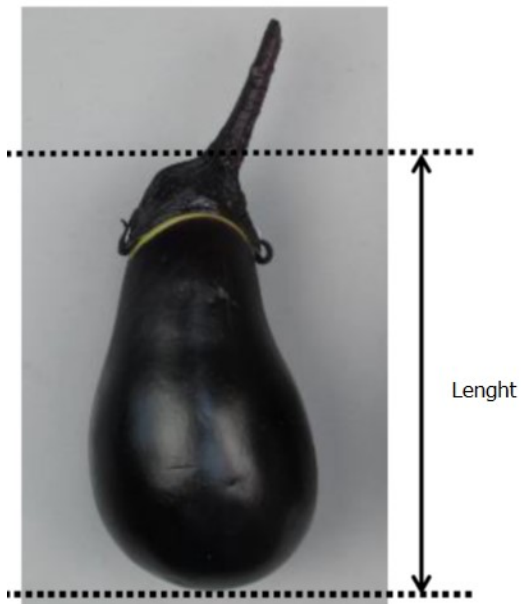


c. Removing the style

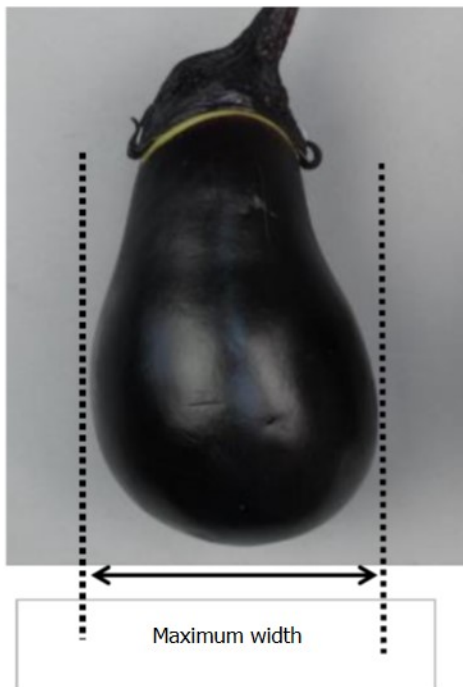


d. After removing the style

Ad. 16: Fruit: length



Ad. 17: Fruit: width



Width to be observed at the widest part.

Ad. 18: Fruit: ratio length/width

See Ad. 17 and Ad. 18

Ad. 19: Fruit: shape



1
flattened globular



2
globular



3
ovoid



4
obovate



5
pear shaped



6
club shaped



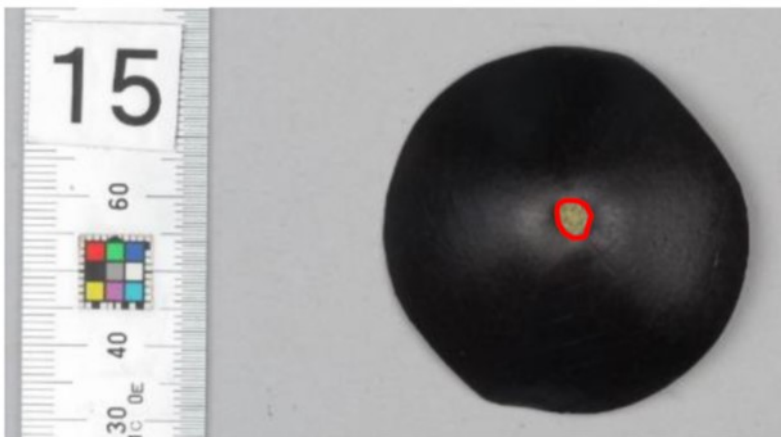
7
ellipsoid



8
cylindrical

Ad. 20: Fruit: size of pistil scar

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



The total area

The free software ImageJ, for example, could be helpful to quantify easily this area thanks to picture analysis.

Ad. 21: Fruit: apex



1
indented



2
flattened



3
rounded



4
acute

Ad. 22: Fruit: depth of indentation of pistil scar



1
absent or very shallow

3
medium

5
very deep

Ad. 23: 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



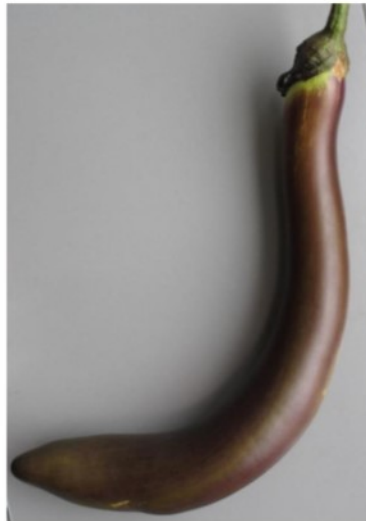
3
weak



5
medium



7
strong



9
very strong

Ad. 24: 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. 25: Only for varieties with green and violet skin color: Fruit: intensity of main color of skin

Varieties with Fruit with main color of skin at harvest maturity: green
 Please provide pictures

Varieties with Fruit with main color of skin at harvest maturity: violet

1 very light Circe



3 light Bride, Angela



5 medium Ruby, Prosperosa



7 dark Patio Baby, Impulsion



9 very dark Faselis



Ad. 27: 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

Ad. 28: Fruit: stripes



1
absent



9
present

Ad. 29: Fruit: conspicuousness of stripes



note 1 or 3?
very weak or weak?



5
medium



7
strong



Ad. 31: Fruit: grooves



1
absent to very weak

3
weak

5
medium



7
strong



9
very strong

Ad. 32: Fruit: length of peduncle



Ad. 33: Fruit: anthocyanin coloration underneath calyx

Observations should be made by lifting or removing the calyx.



Ad. 34: Fruit: intensity of anthocyanin coloration underneath calyx

See Ad. 33

Ad. 35: Fruit: size of calyx

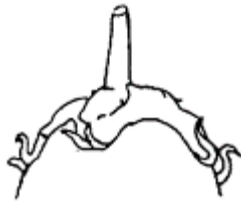
Observations should be made regarding the absolute size of the calyx, not the relative to the size of the fruit.

Ad. 37: Fruit: spines on calyx

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



1
absent or very few



3
few



5
medium



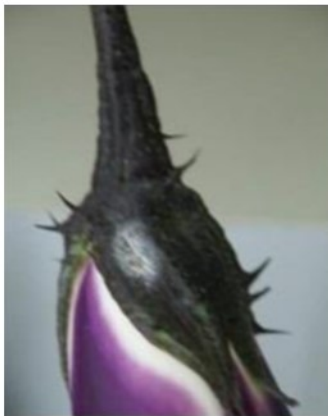
7
many



1
Absent to very weak



3
weak

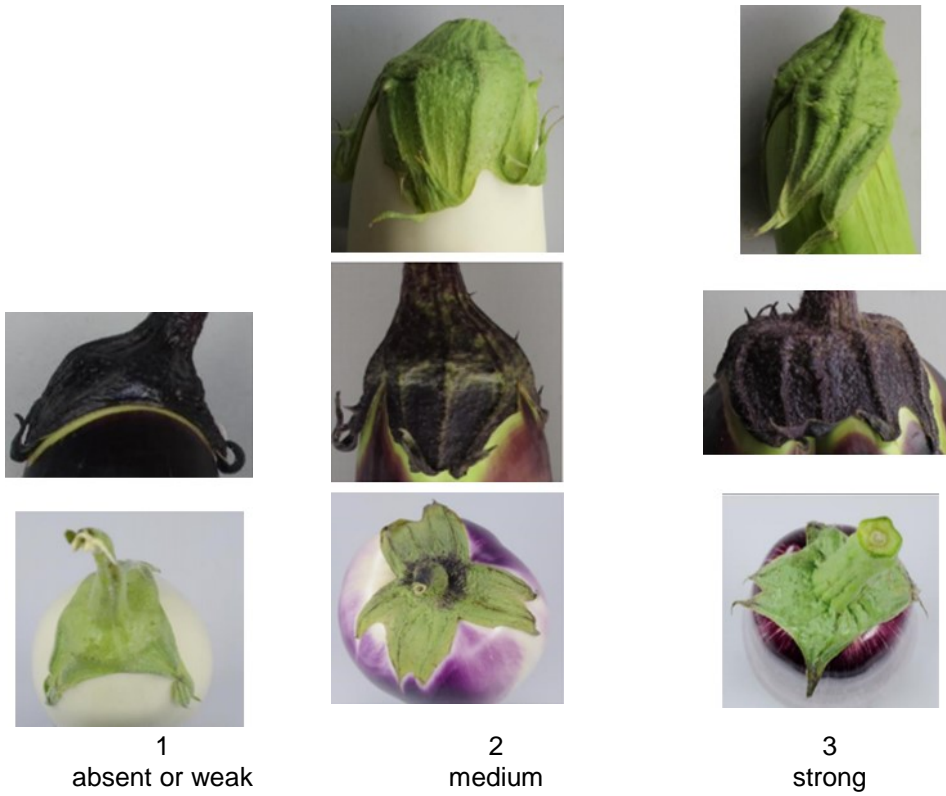


5
medium



7
strong

Ad. 38: Fruit: creasing of calyx



Ad. 39: Fruit: color of flesh



Ad. 40: 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 varietà 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.

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

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

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	<input type="text" value="Solanum melongena L."/>
1.2	Common name	<input type="text" value="Egg Plant, Aubergine"/>
2. Applicant		
	Name	<input type="text"/>
	Address	<input type="text"/>
	Telephone No.	<input type="text"/>
	Fax No.	<input type="text"/>
	E-mail address	<input type="text"/>
	Breeder (if different from applicant)	<input type="text"/>
3. Proposed denomination and breeder's reference		
	Proposed denomination (if available)	<input type="text"/>
	Breeder's reference	<input type="text"/>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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:
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4.2	Method of propagating the variety	
4.2.1	Seed-propagated varieties	
(a)	Self-pollination	[]
(b)	Cross-pollination	[]
(c)	Hybrid	[]
(d)	Inbred line	[]
(e)	Other (please provide details)	[]
	<input type="text"/>	
4.2.2	Other (Please provide details)	[]
	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

Characteristics	Example Varieties	Note
5.1 Plant: height (3)		
very short		1 []
very short to short		2 []
short	Adona, Monstrueuse de New York	3 []
short to medium		4 []
medium	Tudela	5 []
medium to tall		6 []
tall	Avan, Baluroi	7 []
tall to very tall		8 []
very tall	Nilo	9 []
5.2 Stem: pubescence (6)		
very weak		1 []
very weak to weak		2 []
weak	Baluroi	3 []
weak to medium		4 []
medium	Abrivado, Bonica	5 []
strong to medium		6 []
strong	Mistral	7 []
strong to very strong		8 []
very strong		9 []
5.3 Parthenocarpy (15)		
absent		1 []
present	Anominori 2 go	9 []

Characteristics	Example Varieties	Note
5.4 Fruit: length (16)		
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 []
5.5 Fruit: ratio length/width (18)		
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 []
5.6 Fruit: shape (19)		
flattened globular	Birgah	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 []
5.7 Fruit: main color of skin <u>at harvest maturity</u> (24)		
white	Alabaster, Blanche ronde à oeuf, Lato	1 []
green	Samantha	2 []
violet	Baluroi, Purpura	3 []

Characteristics	Example Varieties	Note
5.8 (25) <u>Only for varieties with green and violet skin color:</u> Fruit: intensity of main color of skin		
very light		1 []
very light to light		2 []
light	Circe	3 []
light to medium		4 []
medium	Purpura, Shironasu	5 []
medium to dark		6 []
dark		7 []
dark to very dark		8 []
very dark	Faselis	9 []
5.9 (28) Fruit: stripes		
absent	Baluroi	1 []
present	Listada de Gandia	9 []
5.10 (33) Fruit: anthocyanin coloration underneath calyx		
absent	Ronde de Valence	1 []
present	Baluroi	9 []
5.11 (34) Fruit: intensity of anthocyanin coloration underneath calyx		
very weak		1 []
very weak to weak		2 []
weak		3 []
weak to medium		4 []
medium	Black Beauty	5 []
medium to strong		6 []
strong	Baluroi	7 []
strong to very strong		8 []
very strong		9 []

Characteristics	Example Varieties	Note
5.12 Fruit: spines on calyx (37)		
absent or very few	Lato	1 []
very few to few		2 []
few	Bonica	3 []
few to medium		4 []
medium	Baluroi	5 []
medium to many		6 []
many	Bibo	7 []
many to very many		8 []
very many		9 []
5.13 Fruit: color of flesh (39)		
whitish	Lato	1 []
greenish	Baluroi	2 []

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

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

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Fruit: length</i>	<i>1 - very short</i>	<i>3 - short</i>
Comments:			

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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
- Type of culture: under glass or in the open

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