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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

WATERMELON

UPOV Code: CTRLS_LAN

(*Citrullus lanatus* (Thunb.) Matsum. et Nakai)

[*]

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from the Netherlands

to be considered by

the Technical Working Party for Vegetables
at its forty-fourth session, to be held in Veliko Tarnovo, Bulgaria, from July 5 to 9, 2010

Alternative Names:[*]

Botanical name	*English*	*French*	*German*	*Spanish*
Citrullus lanatus (Thunb.) Matsum. et Nakai, *Citrullus vulgaris* Schrad.	Watermelon	Pastèque	Wassermelone	Sandía

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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underlined: changes proposed by the Leading Experts to document TG/142/4

italic and highlighted: comments made by interested experts

bold and highlighted: comments made by the Leading Expert on the comments made by interested experts

highlighted: amendments in accordance with document TGP/7/2

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Citrullus lanatus* (Thunb.) Matsum. et Nakai.

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 seed.

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

1,200 seeds.

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

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Duration of Tests

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

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 35 plants in the open or 20 plants in the greenhouse, which should be divided between at least two 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.

3.4.3 For pollination and fruit set of triploid varieties it is needed to interplant with diploid varieties in a trial lay out so that the diploid *pollenizers* will be close to the triploid plants. The minimum percentage of diploid plants should not be less than *30%*. **(original proposal 50%, for NL 30% is ok.)** When special pollinators (e.g. bees, bumblebees) are used a lower percentage *of pollenizer* is required

ISF comment: For pollination and fruit set of triploid varieties it is needed to interplant with diploid varieties in a trial lay out so that the diploid pollinators pollenizers will be close to the triploid plants. The minimum percentage of diploid plants should not be less than 30 50%. When special pollinators are used a lower percentage of pollenizer is required.
For FR, it is too much: One diploid plant (as pollinator) on every 3 triploid plants is enough.

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, all observations for the purposes of distinctness should be made on 20 plants or parts taken from each of 20 plants, 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 cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

(b) Hybrid varieties

4.2.3 For the assessment of uniformity of hybrids, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 35 plants *(in open field)* or 20 plants *(in greenhouse)*, 2 off-types are allowed.
(Additions from Fr)

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 is 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) Ploidy (characteristic 1)
(b) Leaf blade: degree of lobing (characteristic 16 (new))
(c) Fruit: weight (characteristic 22 (old 19))
(d) Fruit: shape in longitudinal section (characteristic 23 (old 20))
(e) Fruit: ground color of skin (characteristic 24 (old 21))
(f) Fruit: netted color pattern (characteristic 33 (new))

(g) Only varieties with fruit without netted color pattern: Fruit: stripes (characteristic 35 (old 30)) *ISF: to delete Only varieties with fruit without netted color pattern:*

(h) Only varieties with fruit without netted color pattern: Fruit: type of stripes (characteristic 36 (old 31)) *ISF: to delete Only varieties with fruit without netted color pattern*:

(i) Only varieties with fruit without netted color pattern: Fruit: width of stripes (characteristic 38 (old 33)) *ISF: to delete Only varieties with fruit without netted color pattern*:

(j) Fruit: main color of flesh (characteristic 42 (old 36))

(k) Seed: ground color of testa (characteristic 48 (old 41))

France agrees with the grouping characteristics.

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

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

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

State	Note
small	3
medium	5
large	7

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

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

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

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

(*) Asterisked characteristic – see Chapter 6.1.2

QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS – see Chapter 4.1.5

(a) – (d) See Explanations on the Table of Characteristics in Chapter 8, Chapter 8.1.

(+) See Explanations on the Table of Characteristics in Chapter 8, 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
HU: Char. 1. Ploidy: Adding tetraploid – *For commercial varieties we do not see its importance.* – *Is it important for protecting the mother lines of the triploid varieties?* **NL: important for parent lines** *FR agrees to add a third level of expression " tetraploid = note 4"*							
1. (*)	**VS**	**Ploidy**	**Ploïdie**	**Ploidie**	**Ploidía**		
QL		diploid	diploïde	diploid	diploide	Sugar Baby, Yamato 3 *ISF to add SP4*	2
		triploid	triploïde	triploid	triploide	Kimiwa Red Seedless, Kôyô Seedless, ~~Pepsin,~~ Boston *ISF: skip Koyo Seedless, add TRIX 313*	3
add		**tetraploid**					**4**
2.	**VG**	**Cotyledon: shape**	**Cotylédon: forme**	**Keimblatt: Form**	**Cotiledón: forma**		
(+)							
PQ	**(a)**	narrow elliptic	elliptique étroit	schmal elliptisch	elíptica estrecha	Kahô, Topgun	1
		medium elliptic	elliptique moyen	mittel elliptisch	elíptica media	Crimson Sweet, Farao, Napsugár, Sweet Favorite, Yamato 3,	2
		broad elliptic	elliptique large	breit elliptisch	elíptica ancha	Kanro, Oasis, Rubin, Scarlet Trio	3
3.	**MS/ VG**	**Cotyledon: size**	**Cotylédon: taille**	**Keimblatt: Größe**	**Cotiledón: tamaño**		
QN	**(a)**	small	petit	klein	pequeño	Crimson Glory, Kanro, Rapid, Rocio	3
		medium	moyen	mittel	medio	Granit, Crisby, Panni Sugar Suika, Yamato 3,	5
		large	grand	groß	grande	Candida, Farao, Kurobe, Royal flesh hybrid	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
4.	**VG**	**Cotyledon: intensity of green color**	**Cotylédon: intensité de la couleur verte**	**Keimblatt: Intensität der Grünfärbung**	**Cotiledón: intensidad del color verde**		
QN	**(a)**	light	faible	hell	claro	À graine rouge à confire à chair verte, Shin Kurobe 7	3
		medium	moyenne	mittel	medio	Yamato 3, Jenny	5
		dark	forte	dunkel	oscuro	Kahô, Boston	7

Char. 5: A photo of the spots would help as an explanation. Can Japan provide this perhaps?

ISF: agree, rarely see spots

5.	**VG**	**Cotyledon: spots**	**Cotylédon: taches**	**Keimblatt: Flecken**	**Cotiledón: manchas**		
QL	**(a)**	absent	absentes	fehlend	ausentes	Yamato 3	1
(+)		present	présentes	vorhanden	presentes	Okan	9

Proposal NL to delete characteristic 6, this is difficult and time consuming to assess. No differences were observed between 5 and 7 example varieties in NL trials

Hu, Fr agrees

6. **del**	**MS**	**Plant: length of internode**	**Plante: longueur de l'entre-nœud**	**Pflanze: Internodienlänge**	**Planta: longitud del entrenudo**		
QN		short	court	kurz	corto	Fumin, Tsurunashi Asahi	3
		medium	moyen	mittel	medio	Crimstar, Panonia, Yamato 3,	5
		long	long	lang	largo	Charleston Gray, Crimson Sweet, Kanro	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to delete characteristic 7 and to be replaced by a new characteristic (leaf blade: size)							
				Hu agrees			
7. **del**	**MS/ VG**	**Leaf blade: length (on the 3rd leaf when fully developed)**	**Limbe: longueur (sur la 3ème feuille à complet déve-loppement)**	**Blattspreite: Länge (am 3. Blatt wenn voll entwickelt)**	**Limbo: longitud (de la 3a hoja completamente desarrolada)**		
QN	**(a)**	short	court	kurz	corto	Kanro 3	3
		medium	moyen	mittel	medio	Sugar Baby, Yamato	5
		long	long	lang	largo	À graine rouge à confire à chair verte, Sweet Siberian	7
Proposal NL to delete characteristic 8 and to be replaced by a new characteristic (leaf blade: size)							
*ISF: Carolina Cross is a good reference for 7; Hu agrees with deletion**;** Fr: does not have a strong objection to these deletions. But... a characteristic such the **size** of the leaf is a two dimensional one, the length and the width. can UPOV accept this.*							
NL: not to take over ISF as the proposal is to delete this char.							
8. **del**	**MS/ VG**	**Leaf blade: width (as for 7)**	**Limbe: largeur (comme pour 7)**	**Blattspreite: Breite (wie unter 7)**	**Limbo: anchura (como para 7)**		
QN	**(a)**	narrow	étroit	schmal	estrecho	Ogon, Striped Blue Limber	3
		medium	moyen	mittel	medio	Candida, Sugar Baby, Yamato 3	5
		broad	large	breit	ancho	Fabiola, Sanpaku	7
9. **(new)**	**VG**	**Leaf blade: size**					
QN	**(b)**	small				SP4	3
		medium				Sugar Baby, Yamato 3	5
		large				Crimson Sweet	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota

Proposal NL to delete characteristic 10 (old 9)

Hu agrees with deletion, FR: it can be useful to appreciate the global shape of the leaf. But if we agree to delete Length end Width, to keep the ratio will not be easy to produce.

10. (old 9)	**MS**	**Leaf blade: ratio length/width (as for 7)**	**Limbe: rapport longueur/largeur (comme pour 7)**	**Blattspreite: Verhältnis Länge/Breite (wie unter 7)**	**Limbo: relación entre la longitud y la anchura (como para 7)**		
del							
QN	**(b)**	small	petit	klein	pequeña	Kanro	3
		medium	moyen	mittel	media	Sugar Baby, Yamato 3	5
		large	grand	groß	grande	Kurobe	7
11. (old 10)	**VG**	**Leaf blade: color**	**Limbe: couleur**	**Blattspreite: Farbe**	**Limbo: color**		
PQ	**(b)**	yellow-green	vert-jaune	gelbgrün	verde amarillento	Baby Fun, Okan	1
		green	vert	grün	verde	Yamato 3, Crimson Sweet	2
		grey-green	vert-gris	graugrün	verde grisáceo	Candida, Sugar Baby	3
12. (old 11)	**VG**	**Leaf blade: intensity of color**	**Limbe: intensité de la couleur**	**Blattspreite: Intensität der Farbe**	**Limbo: intensidad del color**		
QN	**(b)**	light	claire	hell	claro	Giant Flesh	3
		medium	moyenne	mittel	medio	Yamato 3	5
		dark	foncée	dunkel	oscuro	Kurobe	7

Proposal NL to delete characteristic 13 (old 12), to be replaced by 2 new characteristics *Fr agrees*

13. (old 12) (*) (+)	**VG**	**Leaf blade: degree of primary lobing**	**Limbe: degré de la découpure primaire du bord**	**Blattspreite: Stärke der Lappung erster Ordnung**	**Limbo: grado de lobulado primario**		
del							
QN	**(a)**	weak	faible	gering	débil	Rapid	3
		medium	moyenne	mittel	medio	Fumin	5
		strong	forte	stark	fuerte	Panonia, Panni	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to delete characteristic 14 (old 13), to be replaced by 2 new characteristics							
				Fr agrees			
14 . (old 13)	**VG**	**Leaf blade: degree of secondary lobing**	**Limbe: degré de la découpure secondaire du bord**	**Blattspreite: Stärke der Lappung zweiter Ordnung**	**Limbo: grado de lobulado secundario**		
(+)							
del							
QN	**(a)**	weak	faible	gering	débil	Daisen	3
		medium	moyenne	mittel	medio	Sugar Baby	5
		strong	forte	stark	fuerte	Fumin	7
Hu: New 2. Leaf blade : lobing – we do not agree with this char. For note 1 there is no example variety given. We propose to leave out new 2. and to change New 3. Leaf blade : degree of lobing note 1 for absent or very weak. *Fr agrees with NL proposal*							
NL: there is an application, so proposal for 2 new characteristics remains							
15. New	**VG**	**Leaf blade: lobing**					
(+)							
QL	**(b)**	absent					1
		present				Early Florida, Crimson Sweet	9
FR agree *Please to add an photo for the level 9*							
NL will try to obtain a photo							
16. (new)	**VG**	**Leaf blade : degree of lobing**					
(+)							
QN	**(b)**	very weak				Early Florida	1
		weak				Dumara	3
		medium				Crimson Sweet, Crisby	5
		strong				SP4	7
		very strong					9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to delete characteristic 17 (old 14)							
Hu agrees with deletion, Fr wants to keep it							
17. (old 14) **del**	**VG**	**Leaf blade: blistering (on 10th to 15th leaf)**	**Limbe: cloqûre (de la 10ème à la 15ème feuille)**	**Blattspreite: Blasigkeit (vom 10. bis 15. Blatt)**	**Limbo: abullonado (de la 10ª a la 15ª hoja)**		
QN	**(a)**	weak	faible	gering	débil	Tabata	3
		medium	moyenne	mittel	medio	Yamato 3	5
		strong	forte	stark	fuerte	Klondike Striped II	7
Char. 18 (old 15): Photo's of the marbling would help as an explanation. Can Japan provide this perhaps?							
Hu: quite difficult to evaluate; Fr: photos needed							
18. (old 15) (*)	**VG**	**Leaf blade: marbling**	**Limbe: marbrures**	**Blattspreite: Marmorierung**	**Limbo: jaspeado**		
QN	**(b)**	absent or weak	absentes ou faibles	fehlend oder gering	ausente o muy débil	Sugar Baby, Yamato 3	1
		medium	moyennes	mittel	medio	Okan, Taiyô	2
		strong	fortes	stark	fuerte		3
Proposal NL to delete characteristic 19 (old 16)							
Hu agrees with :deletion, Fr agrees with deletion: measured this characteristic several years. A variability exists between varieties, but the standard deviation for a sample is very important. The definition of classes is not easy							
19. (old 16) **del**	**MS/ VG**	**Petiole: length**	**Pétiole: longueur**	**Blattstiel: Länge**	**Pecíolo: longitud**		
QN	**(b)**	short	court	kurz	corto	Sugar Baby, Yamato 3	3
		medium	moyen	mittel	medio	Kahô, Panonia	5
		long	long	lang	largo	Charleston Gray, Kurobe	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to delete characteristic 20 (old 17), because at the same plant, different sizes of ovaries are observed							
Hu agrees with deletion; Fr agrees with deletion							
20. (old 17)	**VG**	**Ovary: size (at the time of flowering)**	**Ovaire: taille (à l'époque de la floraison)**	**Fruchtknoten: Größe (zum Zeitpunkt der Blüte)**	**Ovario: tamaño (en el momento de la floración)**		
del							
QN		small	petit	klein	pequeño	Kahô	3
		medium	moyen	mittel	mediano	Fumin	5
		large	grand	groß	grande	Ogon	7
Proposal NL to delete characteristic 21 (old 18), or to provide an explanation with photo's							
Hu agrees with deletion; FR: provide photos or explanations, nevertheless observed differences between varieties. To be discussed.							
21. (old 18)	**VG**	**Ovary: pubescence**	**Ovaire: pilosité**	**Fruchtknoten: Behaarung**	**Ovario: pubescencia**		
(+)							
QN		weak	faible	gering	débil	Rapid	3
		medium	moyenne	mittel	media	Panonia, Yamato 3	5
		strong	forte	stark	fuerte	Kahô	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
22. (old 19) (*)	**MS**	**Fruit: weight (1st mature fruit)**	**Fruit: poids (1er fruit mûr)**	**Frucht: Gewicht (1. reife Frucht)**	**Fruto: peso (1er fruto maduro)**		
QN	**(c)**	very low	très petit	sehr niedrig	muy pequeño	Colocynthis, *ISF: to delete Petite Perfection*	1
Colocynthis as a variety name is confusing, as Colocynthis citrullus L. is synonym for Citrullus lanatus L. On the other hand Citrullus colocynthis is a different species, commonly called colocynth. Is this really a variety?							
		very low to low	très petit à petit	sehr niedrig bis niedrig	muy pequeño a pequeño	Mini, *ISF: to add Petite Perfection*	2
		low	petit	niedrig	pequeño	Angela, Jenny	3
		low to medium	petit à moyen	niedrig bis mittel	prequeño a medio	Pasión	4
		medium	moyen	mittel	medio	Boston, Sugar Baby	5
		medium to high	moyen à grand	mittel bis hoch	medio a grande	Panonia	6
		high	grand	hoch	grande	Fabiola	7
		high to very high	grand à très grand	hoch bis sehr hoch	grande a muy grande	Crimson Sweet	8
		very high	très grand	sehr hoch	muy grande	Florida Giant, *ISF: Carolina Cross is better then Fl. Giant)*	9
Char. 23 (old 20): See explanation in chapter 8 (modified)							
23. (old 20) (*) (+)	**VG**	**Fruit: shape in longitudinal section**	**Fruit: forme en section longitudinale**	**Frucht: Form im Längsschnitt**	**Fruto: forma en sección longitudinal**		
PQ	**(c)**	circular	circulaire	kreisförmig	circular	Kanro, Sugar Baby	1
		broad elliptic	elliptique large	breit elliptisch	elíptico ancho	Fumin, Gray Belle, Yellow Baby, Zorba	2
		elliptic	elliptique	elliptisch	elíptico	Congo, Kurobe, Picnic	3
		elongated elliptic	elliptique allongé	länglich elliptisch	elíptico alargado	Charleston Gray, *ISF: to add Allsweet*	4

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Char. 24 (old 21): See explanation in chapter 8 (modified)							
24. (old 21) (*) (+)	**VG**	**Fruit: ground color of skin**	**Fruit: couleur du fond de l'épiderme**	**Frucht: Grundfarbe der Schale**	**Fruto: color de fondo de la epidermis**		
FR: to add o third level							
		White	*Blanca de Benocaz*	*3*			
It is the only white-skinned variety that I know. To complete Ad.24 (old 21) in chapter 8.							
NL: the ground color of Blanca de Benocaz looks like green, see photo. Furthermore it looks like Napsugar (see photo Hu)							
							
QL	**(c)**	yellow	jaune	gelb	amarillo	Okan, Taiyô, Golden Dragon	1
		green	vert	grün	verde	Fabiola, Sugar Baby, Sugar Belle, Crimson Sweet	2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
25. (old 22) (*) (+)	**VG**	**Fruit: intensity of ground color of skin**	**Fruit: intensité de la couleur du fond de l'épiderme**	**Frucht: Intensität der Grundfarbe der Schale**	**Fruto: intensidad del color de fondo de la epidermis**		
QN	**(c)**	very light	très claire	sehr hell	muy claro	Fumin **NL: Blanca de Benocaz, Napsugar**	1
		very light to light	très claire à claire	sehr hell bis hell	muy claro a claro	Crimson Sweet	2
		light	claire	hell	claro	Estella Rocha, Sweet Favorite, Yamato 3	3
		light to medium	claire à moyenne	hell bis mittel	claro a medio	Tigre	4
		medium	moyenne	mittel	medio	Asahiyamato, Lucky Sweet, Rodeo	5
		medium to dark	moyenne à foncée	mittel bis dunkel	medio a oscuro	Sweet Marvel	6
		dark	foncée	dunkel	oscuro	Benimusume, Resistant	7
		dark to very dark	foncée à très foncée	dunkel bis sehr dunkel	oscuro a muy oscuro	Sugar Baby, Panni, *ISF: add Augusta: delete Sugar Baby* **NL: keep Sugar Baby, add Augusta to 9**	8
		very dark	très foncée	sehr dunkel	muy oscuro	Rocio, Tabor 5	9
			Proposal NL to put characteristic 26 (old 23) after 29 (old 26)				
26. (old 23)	**VG**	**Fruit: size of insertion of peduncle**	**Fruit: taille de l'insertion du pédoncule**	**Frucht: Größe des Stielansatzes**	**Fruto: tamaño de la inserción del pedúnculo**		
(+)							
QN	**(b)**	small	petite	klein	pequeño	Charleston Gray, Sugar Bush	3
		medium	moyenne	mittel	mediano	Fumin, Picnic	5
		large	grande	groß	grande	Dixie Queen, Kanro	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to put characteristics 27 (old 24), 28 (old 25) and 29 (old 26) after char. 23 (old 20), as these are shape characteristics *Fr agrees*							
Char. 27 (old 24): better explanation needed (photo's)							
27. (old 24)	**VG**	**Fruit: depression at base**	**Fruit: dépression à la base**	**Frucht: Vertiefung an der Basis**	**Fruto: depresión de la base**		
(+)							
QN	**(c)**	shallow	peu profonde	flach	poco profunda	Kahô, Yellow Baby	3
		medium	moyenne	mittel	media	Triple Sweet, Yamato 3	5
		deep	profonde	tief	profunda	À graine rouge à confire à chair verte, Kanro	7
Char 28 (old 25): Explanation about the states needed (drawings or photo's)							
28. (old 25) (*) (+)	**VG**	**Fruit: shape of apical part**	**Fruit: forme de la partie apicale**	**Frucht: Form des apikalen Teils**	**Fruto: forma de la zona apical**		
PQ	**(c)**	flat	plate	flach	plana	Cream Sinka, Kanro	1
		flat to rounded	plate à arrondie	flach bis abgerundet	plana a redondeada		2
		rounded	arrondie	abgerundet	redondeada	Glory, Sugar Baby, Toro, Yamato 3	3
		rounded to conical	arrondie à conique	abgerundet bis kegelförmig	redondeada a cónica		4
		conical	conique	kegelförmig	cónica	Kahô	5
Char. 29 (old 26): better explanation needed (drawings or photo's)							
29. (old 26)	**VG**	**Fruit: depression at apex**	**Fruit: cuvette pistillaire**	**Frucht: Vertiefung an der Spitze**	**Fruto: depresión del ápice**		
(+)							
QN	**(c)**	shallow	peu profonde	flach	poco profunda	Burpee Hybrid, Kahô	3
		medium	moyenne	mittel	media	Asahi Miyako, Fumin	5
		deep	profonde	tief	profunda		7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
30. (old 27)	**VG**	**Fruit: size of pistil scar**	**Fruit: taille de l'attache pistillaire**	**Frucht: Größe der Griffelnarbe**	**Fruto: tamaño de la cicatriz del pistilo**		
QN	**(c)**	small	petite	klein	pequeña	Charleston Gray, Daisen	3
		medium	moyenne	mittel	media	Yamato 3	5
		large	grande	groß	grande	Kanro	7

Char. 31 (old 28): When no example varieties are known for state 2 and 3, proposal NL to delete these states. States then will become 1 absent and 9 present. See also explanation in chapter 8 *ISF agrees to limit to absent and present, Hu agrees with deletion of notes 2 and 3, Fr agrees*

31. (old 28) (+)	**VG**	**Fruit: distribution of grooves**	**Fruit: distribution des cannelures**	**Frucht: Verteilung der Riefen**	**Fruto: distribución de las acanaladuras**		
PQ	**(c)**	absent	absentes	fehlend	ausente	Sugar Baby, Yamato	1
		at basal half	au niveau de la moitié basale	an der basalen Hälfte	en la mitad basal	Example varieties?	2
		at apical half	au niveau de la moitié apicale	an der apikalen Hälfte	en la mitad apical	Example varieties?	3
		on whole fruit	sur tout le fruit	an der gesamten Frucht	en todo el fruto	Kurobe, Tabata, Black Pearl	4

Char. 32 (old 29): Explanations about the states needed (photo's) (see also char. 31 (old 28))

32. (old 29)	**VG**	**Fruit: degree of grooving**	**Fruit: degré de la cannelure**	**Frucht: Grad der Riefung**	**Fruto: grado de acanalado**		
QN	**(c)**	weak	faible	gering	débil	Rapid, Kanro	3
		medium	moyenne	mittel	medio	Miyako, Asahi	5
		strong	forte	stark	fuerte	Napsugár, Marsowszky, Panni	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Proposal NL to put characteristics 33, 34, 35 (old 30), 36 (old 31), 37 (old 32), 38 (old 33), and 39 (old 34) after 25 (old 22), as these are color characteristics of the fruit						
			Fr agrees			
			Hu agrees with new char.33			
33. (new) (*) (+) **VG**	**Fruit: netted color pattern**					
QL **(c)**	absent	absentes	fehlend	ausentes	Crimson Sweet, Sugar Baby	1
	present	presentes	vorhanden	presentes	Charleston Gray, SP 4, Fumin, Asahiyamato, Bambino	9
			ISF: keep the wording Fruit: stripes as such for 34, 40			
34. (new) (*) (+) **VG**	***Only varieties with fruit WITH NETTED color pattern*: Fruit: stripes**					
QL **(c)**	absent	absentes	fehlend	ausentes	Charleston Gray, Bambino	1
	present	presentes	vorhanden	presentes	Fumin, Asahiyamato, SP 4.	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
Char 35 (old 30): Hu: for note 9 (present) Sugar Baby is probably not the best example variety against we know that this type also has stripes but at this variety they are not always visible. (Coral would be the best from this type but it will be deleted this year from the common catalogue.)							
Fr: agree with example varieties							
			NL proposes to keep Sugar Baby for the reason above				
35. (old 30) (*) (+) **mod**	**VG**	**Only varieties with fruit WITHOUT NETTED color pattern: Fruit: stripes**					
QL	**(c)**	absent	absentes	fehlend	Ausentes	~~Asahi, Yamato,~~ Betica, *ISF keep Asahiyamato, delete Betica* ~~Marsowszky, Sugar baby~~	1
		present	presentes	vorhanden	presentes	Sugar Baby, Kanro, Yellow Baby, *HU: add Crimson Sweet, Tiger Baby*	9
FR: to add another state of expression • *one main color mottled* — *Crimson Sweet, Sangria* — *1* • *two main color mottled* — *Crisby, Crimset, Crimson Trust* — *2* • *clearly defined* — *Jenny, Tigre* — *3*							
			NL agrees with new state, photo's would help				
36. (old 31) mod (+)	**VG**	***Only varieties with fruit WITHOUT NETTED color pattern: Fruit: type of stripes***	**Fruit: type de stries**	**Frucht: Art der Streifen**	**Fruto: tipo de rayas**		
QL	**(c)**	mottled *ISF: non defined instead*				Crimson Sweet, Sangria , ~~Asahi, Yamato, Fumin~~	1
		clearly defined	clairement définies	deutlich definiert	claramente definidas	Kanro ~~Miyako,~~ Jenny, Tigre *ISF: add Sugarlee, Jubilee*, ~~Cremson Sweet~~	~~9~~2

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota

ISF proposes to add Tiger Baby for 1, Sugar lee for 3 and skip Jenny for 7 **NL: Not to take over ISF proposal, as stripe color is the darkest color.**

37. (old 32) (*) (+) mod	**VG**	***Only varieties with fruit WITHOUT NETTED color pattern:*** **Fruit: intensity of color of stripes**	**Fruit: intensité de la couleur des stries**	**Frucht: Intensität der Farbe der Streifen**	**Fruto: intensidad del color de las rayas**		
QN	**(c)**	very light	très faible	sehr hell	muy claro		1
		light	faible	hell	claro		3
		medium	moyenne	mittel	medio	Kurobe, Crimson Sweet	5
		dark	forte	dunkel	oscuro	~~Crimson Sweet~~ Miyako 3, Jenny	7
		very dark	très forte	sehr dunkel	muy oscuro	Tabata, Sugar Baby	9

Hu: Napsugár is a good example, but we should know that its stripes are lighter (white) than its ground color.
NL: See photo of Napsugár, provided by HU; no stripes can be observed here

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
38. (old 33) (*) **mod**	**VG**	***Only varieties with fruit WITHOUT NETTED color pattern*:: Fruit: width of stripes**	**Fruit: largeur des stries**	**Frucht: Breite der Streifen**	**Fruto: anchura de las rayas**		
QN	**(c)**	very narrow	très étroites	sehr schmal	muy estrechas	*Napsugár to delete ISF: add Tiny Orchid*	1
		narrow	étroites	schmal	estrechas	Festival Queen, Yamato Cream 2, Jenny	3
		medium	moyennes	mittel	medias	Crimson Sweet	5
		broad	larges	breit	anchas	~~Crimson Sweet,~~ Kurobe, Sweet Heart *ISF: skip Kurobe and Sweet Heart, add Sunsugar*	7
		very broad	très larges	sehr breit	muy anchas	Sangria, *ISF: add Allsweet*	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota

Char 39 (old 34): Hu: Not to delete Napsugár as example variety for note 1
NL: agree
Fr agrees with modification of example varieties; Please provide photos in Ad 39 (old 34).

39. (old 34) (+) mod	**VG**	***Only varieties with fruit WITHOUT NETTED color pattern:*** **Fruit: intensity of marbling**	**Fruit: intensité de la marbrure**	**Frucht: Intensität der Marmorierung**	**Fruto: intensidad del jaspeado**		
QN	**(c)**	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Bettica, ~~Napsugár~~	1
		weak	faible	gering	débil	Crimson Sweet, Dumara,~~Fumin~~	3
		medium	moyenne	mittel	medio	Tigre, ~~Panni, Yamoto 3~~	5
		strong	forte	stark	fuerte	Madera, ~~Kurobe~~	7
		very strong	très forte	sehr stark	muy fuerte	~~Rapid~~	9

Fr: accept char. 40(new)
HU: with ripening waxy layer disappears in the open field and ground color has a strong effect on its evaluation. We would like to leave out this char.

NL: gives very good distinctition in greenhouse, to keep it

40 (new) (+)	**VG**	**Fruit: waxy layer**					
QN	**(c)**	absent or very weak	absente ou très faible	fehlend oder sehr gering	ausente o muy débil	Betica	1
		weak	faible	gering	débil	Dumara	3
		medium	moyenne	mittel	medio	Sugar Baby	5
		strong	forte	stark	fuerte	Red Star	7
		very strong	très forte	sehr stark	muy fuerte	*ISF: add Romanza and Cobb Gem*	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
				Fr accepts mod ex. vars			
41. (new 35) (*) (+)	**MS/ VG**	**Fruit: thickness of pericarp**	**Fruit: épaisseur du péricarpe**	**Frucht: Dicke des Perikarps**	**Fruto: espesor del pericarpio**		
mod							
		very thin				Bibo, *ISF add Tiny Orchid*	1
QN	**(c)**	thin	mince	dünn	delgado	À graine rouge à confire à chair verte, Beni-kodama, Kahô	3
		medium	moyen	mittel	medio	Panonia, Sugar Baby, Sugar Belle, Yamato 3	5
		thick	épais	dick	grueso	Charleston Gray, Crimson Sweet, Kurobe, Triple Sweet	7
		very thick				SP 4 *ISF add Carolina Cross* **(and delete SP4?)**	9
				Fr accepts mod ex. vars			
42. (old 36) (*)	**VS**	**Fruit: main color of flesh**	**Fruit: couleur principale de la chair**	**Frucht: Hauptfarbe des Fleisches**	**Fruto: color principal de la pulpa**		
mod							
PQ	**(c)**	white	blanche	weiß	blanco	Yamato Cream 3, SP 4, *ISF: add SP1*	1
		yellow	jaune	gelb	amarillo	Yamato Cream 1, Napsugár	2
		orange	orange	orange	naranja	Kahô, Tendersweet	3
		pink	rose	rosa	rosa	Sadur, *ISF add Charleston Gray* **NL: is more 5 pinkish red**	4
		pinkish red	rouge rosâtre	rosarot	rojo rosado	Bingo, Crimson Sweet	5
		red	rouge	rot	rojo	Asahiy ~~Yamato~~, Sugar Baby	6

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota

Proposal NL to delete Char 43. (old 37), as this is very dependent on state of maturity of the fruit *Hu agrees with deletion*;

FR:It is linked to the state of maturity of fruit. I harvest at the same date, all the varieties in the same culti group and I asses the color and the firmness of flesh in these conditions. To be discussed

ISF proposes Add CHARLESTON GRAY for level 3; Add TRIX 313 for level 5; Add SUNSUGAR and TOP GUN for level 7

NL: not to take over ISF proposal, as proposal is to delete Char 43 (old 37)

43. (old 37)	**VG**	**Fruit: intensity of main color of flesh**	**Fruit: intensité de la couleur principale de la chair**	**Frucht: Intensität der Hauptfarbe des Fleisches**	**Fruto: intensidad del color principal de la pulpa**		
del							
QN	**(c)**	light	claire	hell	claro		3
		medium	moyenne	mittel	medio		5
		dark	foncée	dunkel	oscuro		7

Proposal NL to delete Char 44 (old 38), as this is very dependent on state of maturity of the fruit *Hu agrees with deletion*

ISF: Add SANGRIA for level 7

NL: not to take over, as proposal is to delete Char 44 (old 38)

44. (old 38)	**MS**	**Fruit: firmness of flesh**	**Fruit: fermeté de la chair**	**Frucht: Festigkeit des Fleisches**	**Fruto: firmeza de la pulpa**		
del							
(+)							
QN	**(c)**	soft	molle	weich	blanda	Yamato Cream 2	3
		medium	moyenne	mittel	media	Miyako 3	5
		firm	ferme	fest	firme	Fumin	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
		Hu and Fr agree with new 45					
45. (new) **(+)**	**MS/ VG**	**Only triploid varieties: Seed coat: size**					
QN	**(d)**	very small				Petite Perfection	1
		small				Boston	3
		medium				Ortal	5
		large				*ISF: add Sunrise*	7
		very large					9
46. (old 39) **mod**	**QN**	**Only diploid and tetraploid varieties: Fruit: number of seeds**	**Fruit: nombre de graines**	**Frucht: Anzahl Samen**	**Fruto: número de semillas**		
VG	**(d)**	absent or few	nul ou très petit	fehlend oder sehr gering	ausente o muy bajo	Tanenashi Kôyô	1
		medium	moyen	mittel	medio	Miyako 3	2
		many	grand	groß	alto	Fumin	3
47. (old 40) **(+)** **(*)** **mod**	**MS/ VG**	**Only diploid and tetraploid varieties: Seed: size**	**Graine: taille**	**Samen: Größe**	**Semilla: tamaño**		
QN	**(d)**	very small	très petite	sehr klein	muy pequeña	Urimi *ISF skip Urimi, add Jenny and Bonanza*	1
		small	petite	klein	pequeña	Panonia, Tabata, Jenny *ISF: skip Jenny*	3
		medium	moyenne	mittel	mediana	Sugar Baby	5
		large	grande	groß	grande	Charleston Gray, Kurobe	7
		very large	très grande	sehr groß	muy grande	Malali, Wanli	9

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
48. (old 41) (+)	**VG**	**Only diploid and tetraploid varieties: Seed: ground color of testa**	**Graine: couleur de fond du tégument**	**Samen: Grundfarbe der Samenschale**	**Semilla: color de fondo del tegumento**		
mod							
PQ	**(d)**	white	blanc	weiß	blanco	Sanpaku	1
		cream	crème	cremefarben	crema	Kurobe	2
		green	vert	grün	verde	Green Citron	3
		red	rouge	rot	rojo	Red Citron	4
		red-brown	brun-rouge	rotbraun	marrón rojizo	Kahô	5
		brown	brun	braun	marrón	Otome, Sugar Baby	6
		black	noir	schwarz	negro	Yamato Cream	7
49. (old 42)	**VG**	**Only diploid and tetraploid varieties: Seed: secondary color of testa**	**Graine: couleur secondaire de fond du tégument**	**Samen: sekundäre Grundfarbe der Samenschale**	**Semilla: color secundario del tegumento**		
(+)							
mod							
QL	**(d)**	absent	absente	fehlend	ausente	Kahô	1
		present	présente	vorhanden	present	Charleston Gray	9
50. (old 43)	**VG**	**Only diploid and tetraploid varieties: Seed: distribution of secondary color of testa**	**Graine: distribution de la couleur secondaire du tégument**	**Samen: Verteilung der Sekundärfarbe der Samenschale**	**Semilla: distribución del color secundario del tegumento**		
(+)							
mod							
PQ	**(d)**	in dots only	en points seulement	nur in Punkten	sólo en puntos	Charleston Gray, Excel	1
		in dots and in patches	en points et en taches	in Punkten und Flecken	en puntos y manchas	Lady, Yamato 3	2
		in patches only	en taches seulement	nur in Flecken	sólo en manchas	Kurobe, Rattle Snake	3

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
		Proposal NL to delete characteristic 51 (old 44)					
		Fr agrees					
51. (old 44)	**VG**	**Seed: area of secondary color in relation to that of ground color**	**Graine: surface de la couleur secondaire par rapport à celle de la couleur de fond**	**Samen: Ausdehnung der Sekundärfarbe im Vergleich zu der der Grundfarbe**	**Semilla: área del color secundario en relación con el del color de fondo**		
QN	**(d)**	small	petite	klein	pequeño	Early Star	3
		medium	moyenne	mittel	medio	Crimson Sweet	5
		large	grande	groß	grande	Resistant	7
		ISF: skip 52 (old 45)					
52. (old 45) **(+)** **mod**	**VG**	**Only diploid and tetraploid varieties: Seed: patches at hilum**	**Graine: taches sur le hile**	**Samen: Flecken am Nabel**	**Semilla: manchas en el hilo**		
QL	**(d)**	absent	absentes	fehlend	ausentes	Daisen, Kahô	1
		present	présentes	vorhanden	presentes	Kurobe, Rattle Snake, Yamato 3	9
53. (old 46)	**VG**	**Time of female flowering (50% of plants with at least one female flower)**	**Époque de floraison femelle (50% des plantes avec au moins une fleur femelle)**	**Zeitpunkt der Blüte der weiblichen Blüte (50% der Pflanzen mit mindestens einer weiblichen Blüte)**	**Época de la floración femenina (50% de las plantas con al menos una flor femenina)**		
QN		early	précoce	früh	temprana	*ISF: add Tiny Orchid*	3
		medium	moyenne	mittel	media	Sugar Baby, Yamato 3	5
		late	tardive	spät	tardía	Kurobe	7

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota

Proposal NL to delete characteristic 54 (old 47) Hu *agrees with deletion*

FR: the deletion have to be discussed. It is an important characteristic, but not so easy to assess.... If it is maintained, it needs further explanations.

ISF proposes to add Bonanza for 3 **NL: not to take over, as the proposal is to delete char. 54 (old 47)**

54. (old 47) **del**	**VG**	**Time of maturity (50% of plants with at least one ripe fruit)**	**Époque de maturité (50% des plantes avec au moins un fruit mûr)**	**Zeitpunkt der Reife (50% der Pflanzen mit mindestens einer reifen Frucht)**	**Época de madurez (50% de las plantas con al menos un fruto maduro)**		
QN		early	précoce	früh	temprana	Kahô, Sugar Baby	3
		medium	moyenne	mittel	media	Panonia, Yamato 3	5
		late	tardive	spät	tardía	Charleston Gray, Fumin, Kurobe	7
55. (old 48) **(+)**		**Resistance to Fusarium *oxysporum* f.sp. *niveum* (E.F. Smith) Snyder et Hansen**	**Résistance au Fusarium *oxysporum* f.sp. *niveum* (E.F. Smith) Snyder et Hansen**	**Resistenz gegen Fusarium *oxysporum* f.sp. *niveum* (E.F. Smith) Snyder et Hansen**	**Resistencia a Fusarium *oxysporum* f.sp. *niveum* (E.F. Smith) Snyder et Hansen**		
55.1 (old 48.1)		**Race 0**	**Pathotype 0**	**Pathotyp 0**	**Raza 0**		
		absent	absente	fehlend	ausente	Kahô; *ISF to add Sugar Baby*	1
		present	présente	vorhanden	presente	Calhoun Gray, Charleston Gray	9
55.2 (old 48.2)		**Race 1**	**Pathotype 1**	**Pathotyp 1**	**Raza 1**		
		absent	absente	fehlend	ausente	Kahô; *ISF to add Sugar Baby and Charleston Gray*	1
		present	présente	vorhanden	presente	Calhoun Gray	9
55.3 (old 48.3)		**Race 2**	**Pathotype 2**	**Pathotyp 2**	**Raza 2**		
		absent	absente	fehlend	ausente	Kahô *ISF to add Calhoun Gray*	1
		present	présente	vorhanden	presente	P.I.-296341-FR	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
	ISF: should read Colletotrichum obiculare					
56. (old 49) (+)	**Resistance to *Colletotrichum lagenarium (passerini)* Ellis et Halsted**	**Résistance au *Colletotrichum lagenarium (passerini)* Ellis et Halsted**	**Resistenz gegen *Colletotrichum lagenarium (passerini)* Ellis et Halsted**	**Resistencia a *Colletotrichum lagenarium (passerini)* Ellis et Halsted**		
56.1 (old 49.1)	**Race 1**	**Pathotype 1**	**Pathotyp 1**	**Raza 1**		
	absent	absente	fehlend	ausente	Kahô; *ISF add Black Diamond*	1
	present	présente	vorhanden	presente	Charleston Gray, Congo	9
56.2 (old 49.2)	**Race 2**	**Pathotype 2**	**Pathotyp 2**	**Raza 2**		
	absent	absente	fehlend	ausente	Kahô; *ISF add Charleston Gray*	1
	present	présente	vorhanden	presente	African citron W-695	9
56.3 (old 49.3)	**Race 3** ***ISF should read: 2b***	**Pathotype 3**	**Pathotyp 3**	**Raza 3**		
	absent	absente	fehlend	ausente	Kahô, *ISF add Black Diamond*	1
	present	présente	vorhanden	presente	Charleston Gray, Congo	9

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) Cotyledon: All observations on the cotyledon should be observed when the cotyledons are fully developed and before the development of the first leaf: the surface is flat and the attitude is horizontal

Right stage for observation

Too early stage for observation

HU: the 2. photo does not seems as it was taken in too early stage. It is like triploid seedling, which did not get the optimal temperature for germination. **NL: ok to delete the 2nd photo**

(b) Leaf blade: All observations on the leaf blade should be made on fully developed leaves on the main vine, from the 10th to the 20th leaf, during fruit set, before the fruits are developed.

Hu: we would keep the earlier explanation (from the 10th to the 15th leaf) which is more precise and at that stage the main vine is still more visible than later. **NL proposes to keep the proposed explanation, is useful in the greenhouse as well as in the open field.**

(c) Fruit: Unless otherwise indicated, all observations on the fruit should be made on first well developed, mature fruits.

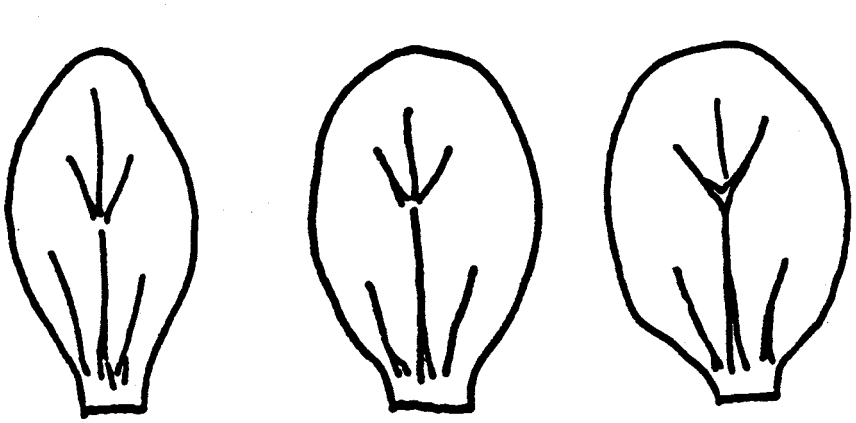
(d) Seed: All observations on the seed should be recorded on fully developed, mature seeds harvested from the fruit.

Fr agrees with (a), (b), (d); The color descriptions (Char 41, 42, 43, 45) have to be done on dry seeds or "fresh" seeds just after extraction?

NL: color stays the same, whether fresh or dry seeds

8.2 Explanations for individual characteristics

Ad. 2: Cotyledon: shape



1	2	3
narrow elliptic	medium elliptic	broad elliptic

Ad. 15 (new): Leaf blade: lobbing

HU: the photo does not show fully developed leaves; Fr asks for to separate photo's
NL: better photo's will be provided

9	1
present	absent

Ad 16 (new): Leaf blade: degree of lobbing

1	3	5	7
Very weak	weak	medium	strong

FR : to add the illustration of the state 9

Ad. 21 (old 18): Ovary: pubescence

Explanation to be provided (photo's) *FR: I don't have photos to provide. I agree to delete.*

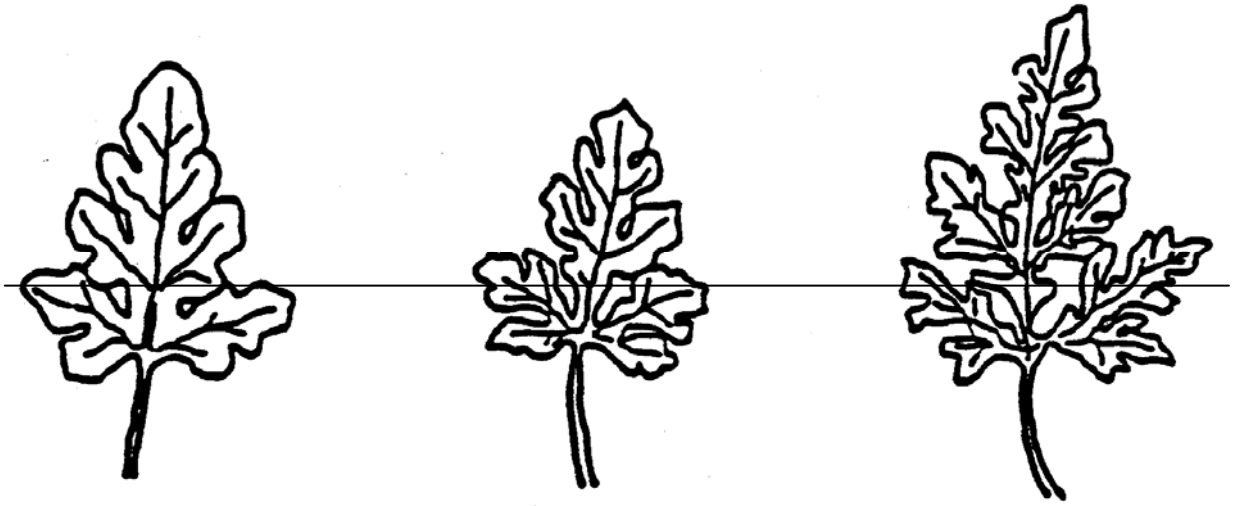
~~1.4.1.2: Leaf Blade: degree of primary lobbing~~

~~The incisions should be observed on the 3rd leaf of the main stem when fully developed.~~

~~3~~	~~5~~	~~7~~
~~weak~~	~~medium~~	~~strong~~

~~Ad. 18.13: Leaf blade: degree of secondary lobbing Leaf blade: depth of incisions of margin of leaf of central third of plant~~

~~The incisions should be observed at the largest leaf between the fifteenth and twentieth node of the main stem.~~

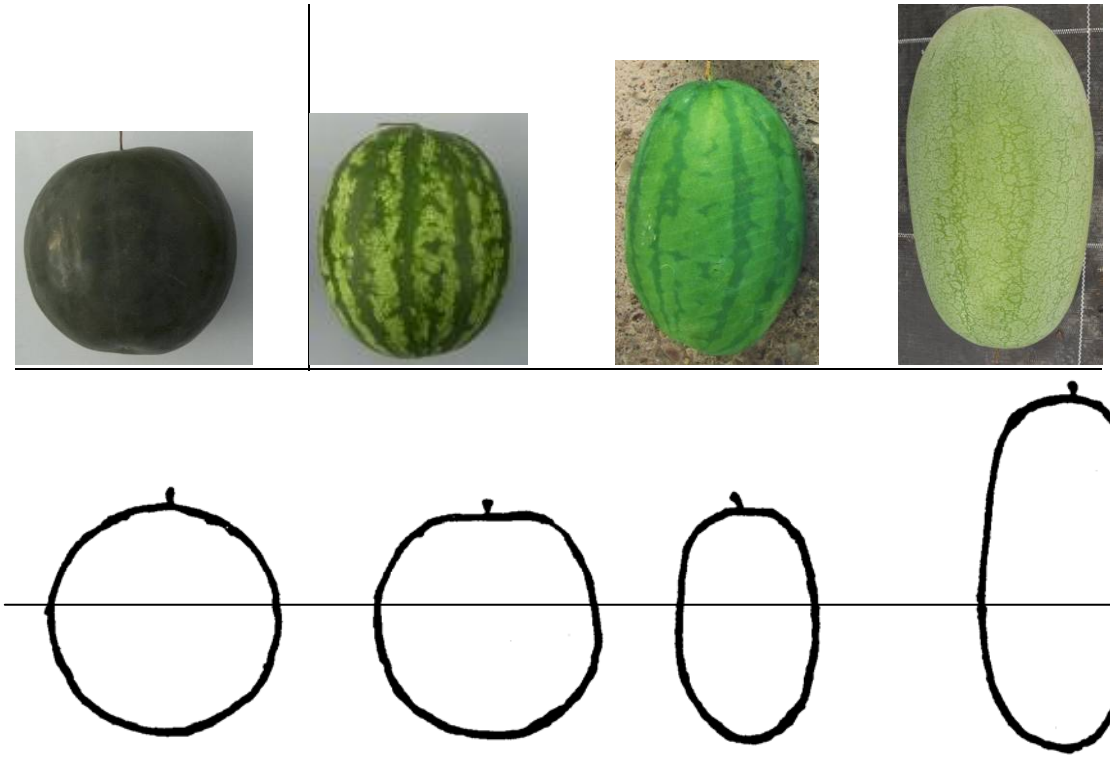


~~3~~
~~weak~~

~~5~~
~~medium~~

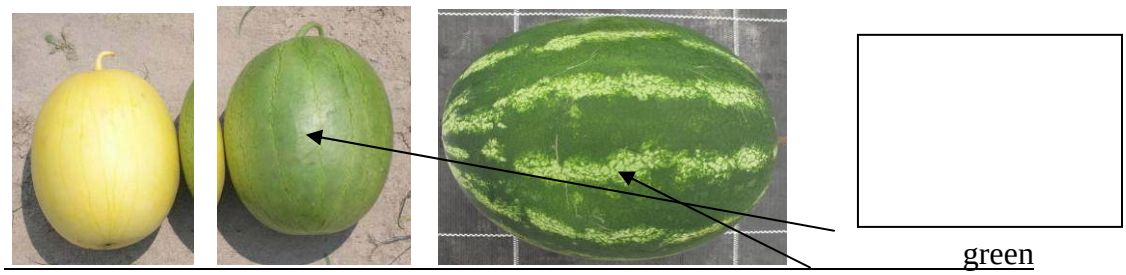
~~7~~
~~strong~~

Ad. 23 (old 20): Fruit: shape in longitudinal section (modified)



1 circular | 2 broad elliptic | 3 elliptic | 4 elongated elliptic

Ad. 24 (old 21) Fruit: ground color of skin



1 yellow | 2 green

Fr: to add o third level

White	*Blanca de Benocaz*	*3*

It is the only white-skinned variety that I know.
FR: to add the photo of the third note

White	*Blanca de Benocaz*	*3*

NL: see comments in the table chapter 7

In the case of striped fruits the ground color is defined as the lighter color and the color of the stripes as the darker color.

Ad. 25 (old 22): Fruit: intensity of ground color of skin

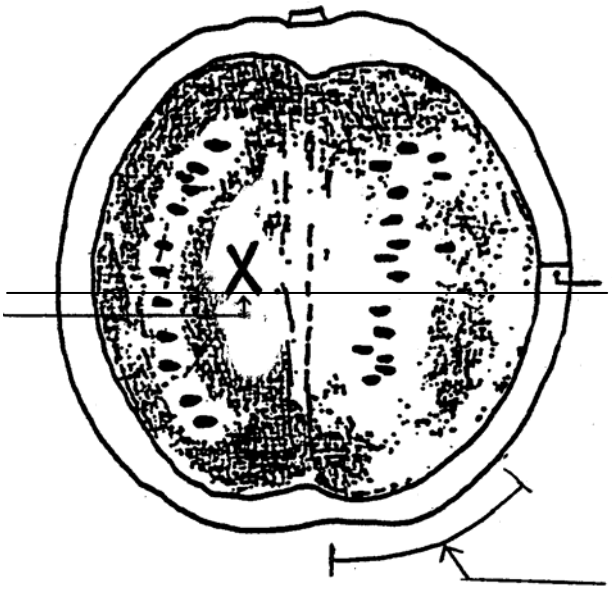
2	5	7	9
very light to light	medium	dark	very dark

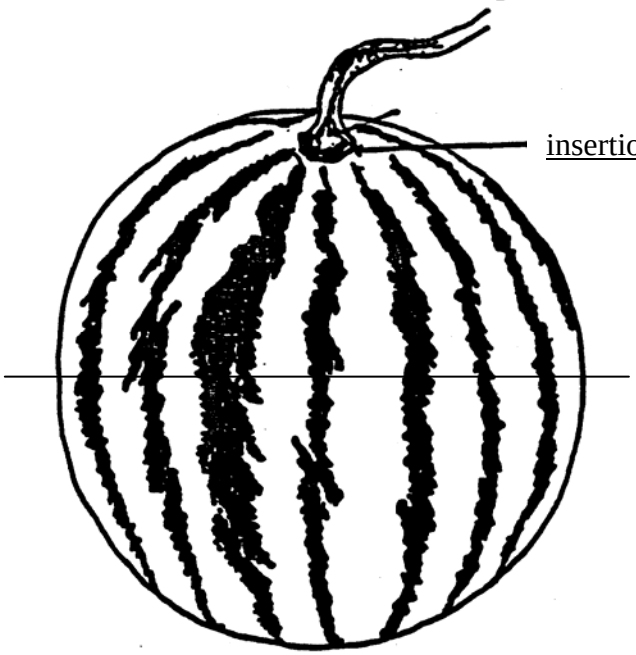
FR: to complete with photos as far as possible
States 1, 3, 4, 6, 8
Or at least to have the notes 1-3-5-7-9

Proposal to delete explanation Ad.26 (old 23) + 28 (old 25) +41 (old 35) + 44 (old 38): Fruit, see separate explanations ~~Ad.23 + 25 + 35 + 38: Fruit~~

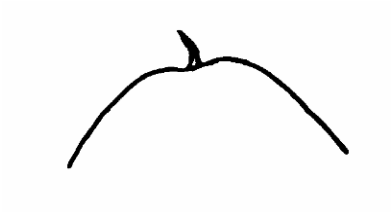
Ad 26 (old 23), 27 (old 24), 28 (old 25), 29 (old 26)

FR: I agree to delete the previous illustrations, if they can be replaced by more informative drawings or photos





Ad. 27 (old 24): Fruit: depression at base: **better explanation needed (photo's)**



3
shallow

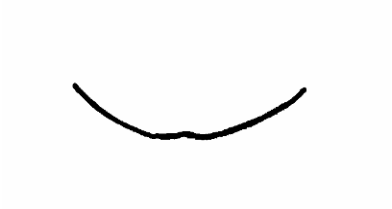
5
medium

7
deep

Ad. 28 (old 25): Fruit: shape of apical part

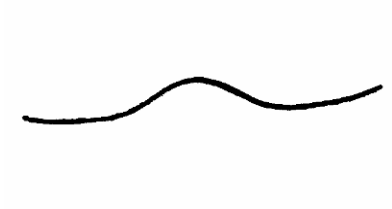
Explanations about the states needed (drawings or photo's)

Ad. 29 (old 26): Fruit: depression at apex**: better explanation needed (drawing or photo's)**



3
shallow

5
medium



7
deep

Ad. 31 (old 28): Fruit: distribution of grooves

1
absent

9
present

Ad. 33 (new): Fruit: netted color pattern

1
absent

9
Present

FR: to avoid any misunderstanding, to complete the illustrations of the two states

1- absent
to include photos of Crimson Sweet type, Sugar Baby type, and Asiatic type (and not only one)

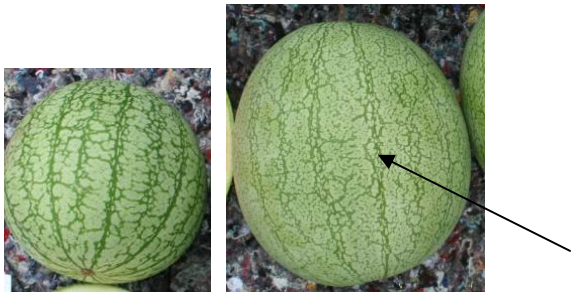
9- present
Only varieties in the Charleston Gray type, whatever the shape of the fruit **NL: these photo's are also to show that in this case of the round fruit has stripes**

FR question: it is very common to have a variety with fruits which are netted AND striped. (ex: Crimson Trio)

Perhaps I made a mistake. Do you think that Crimson Trio fruits are ONLY striped? Or striped AND netted?

Of course; it will be easier to conclude that a stripe can not be netted, but is it the case?
If your answer is "yes, netted + srtiped", we have to include these case in the illustrations, or add an additional remark to avoid any doubts.

Ad. 34 (new): Only varieties with fruit with netted color pattern: Fruit: stripes *ISF: wording: Fruit: pencil stripes)*



1
absent

9
present

FR: another question...

Note 1: absent
The nets are cowards and distributed throughout the skin.
Note 9 : present
The stripes are very thin and not dense, because they are constituted by a conglomerate of nets.

Do you agree? **NL: yes**

Ad. 35 (old 30): Only varieties with fruit without netted color pattern: Fruit: stripes

1
absent

9
present

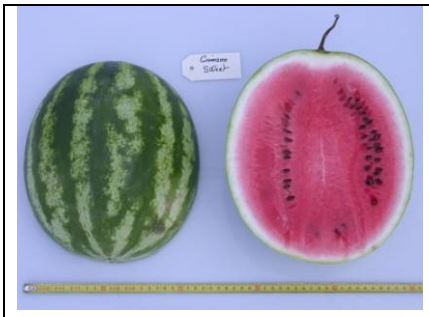
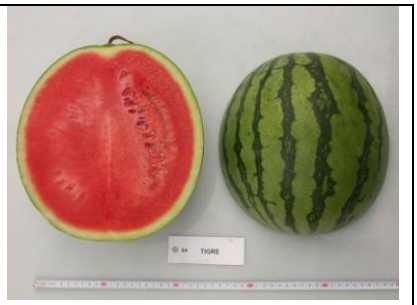
FR: Note 1: absent
Nor net, nor stripe
Case of Sugar Baby variety, with an uniform skin
Note 9 : present
The stripes are clearly expressed, dense, more or less large
Case of Crimson Sweet type, Crisby type, Tigre type.

Do you agree? **NL: yes, although Sugar Baby itself shows stripes!**

Ad. 36 (old 31): Only variety and fruits without netted color pattern: Fruit: type of stripes
Mottled: the border with the ground color is as blotches which are not sharply outlined

1	9
mottled *ISF: wording: non defined*	clearly *defined*

FR: I identify three types of stripes; I propose to add a state between "mottled" and "clearly out lined".

		
1	2	3
one main color mottled	two main color mottled	clearly defined
Crimson Sweet type	*Crisby type*	*Tigre type*

Note1 : The border with the ground color is blotched and not sharply outlined.

Note 2: The border with the ground color is blotched and not sharply outlined The stripe is composed of two main colors, a darker in the centre, a lighter in the extern part of the stripe.

Note3 : the border with the ground color is sharply outlined.
NL: we agree

Ad. 39 (old 34): Only variety and fruits without netted color pattern: Fruit: intensity of marbling

marbling
FR: the zoom to illustrate what is a marling is very useful.
The 3 levels of expression (3 / 5 / 7) can also deserve a zoom of the area between two stripes.
NL: We will try to provide suitable photo's



3	5	7	9
weak	medium	strong	very strong

Ad. 40 (new): Fruit: waxy layer




1	3	5	7	9
absent or very weak	weak	medium	strong	very strong

Ad 41 (new 35): Fruit: thickness of pericarp




1	3	5	7	9
very thin	thin	medium	thick	very thick

ISF: picture for level 9 is wrong: better picture needed **NL ok, we will try to provide**
FR: to add a photo for note 3 thin. **NL: we will try to provide**

Ad. 44 (old 38): Fruit: firmness of flesh (proposal to delete this characteristic)

Ad 45 (new): Only triploid varieties: Seed coat: size

1	3	5
very small	small	medium

~~Testing method: Firmness is measured by a hardness meter (tester), which has 9 mm (diameter head) and measures from 10 g/cm^2 - 2000 g/cm^2:~~

Ad. 47 (old 40): Only diploid and tetraploid varieties: Seed: size

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

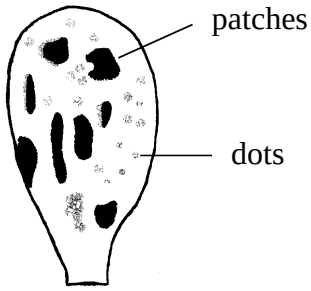
Ad. 48 (old 41): Only diploid and tetraploid varieties: Seed: ground color of testa

1	2	3	4	5	6	7
white	cream	green	red	red brown	brown	black

Ad 49 (old.42): Only diploid and tetraploid varieties: ~~Seed: secondary color of testa~~

1	9
absent	present

Ad. 50 (old 43): Only diploid and tetraploid varieties: Seed: distribution of secondary color of testa



Ad 52 (old 45): Only diploid and tetraploid varieties: Seed: patches at hilum

1	9
absent	present

Ad. 55 (old 48): Resistance to *Fusarium oxysporum* f. sp. *niveum* (E.F. Smith) Snyder et Hansen

Maintenance of races

Type of medium:	P.S.A. (Potato, Sugar and Agar) medium
Special conditions:	Stored below 5°C
Preparation of inoculum:	Shaking culture in P.S. (Potato and Sugar) liquid medium for 7 to 10 days at 28°C. Filtration by using double gauzes. Adjusting concentration of spore to 1.3×10^7/ml with sterlized water.

Execution of test

Sowing the seeds:	In sterilized soil
Growth stage of plants:	Expanding of 2nd to 3rd true leaf
Method of inoculation:	Soaking of roots and of hypocotyl axis for one minute inoculum solution. After inoculation, transplantation of plantlets in sterilised (by steam) soil or perlite.
Number of plants tested:	10 to 20 plants

Environmental condition after inoculation

Temperature:	Day: 25°C; night: 16°C
Light:	Natural (longer than 12 hours)
Growing method:	In the greenhouse or climatic room. Application of liquid fertilizer every week.

Duration of test

Inoculation to last observation:	20 days. Disease symptoms appear from 5 to 10 days after inoculation. Observation should be made on several occasions

Remarks

Keeping of pathogenecity:	Renewal of medium at least once a year

Standard varieties

	Race 0	Race 1	Race 2
Black Diamond, Kahô	S	S	S
Charleston Gray	R	S	S
Calhoun Gray	R	R	S
P.I. 296341-FR	R	R	R

S: susceptible R: resistant

Ad. 56 (old 49): Resistance to *Colletotrichum lagenarium (passerini)* Ellis et Halsted

Maintenance of races

Type of medium: P.S.A. (Potato, Sugar and Agar) medium

Special conditions: Stored below 5°C

Preparation of inoculum: Shaking culture in P.D. (Potato and Dextrose) liquid medium for 7 to 10 days at 28°C. Filtration by using double gauzes. Adjusting concentration of spore to 1.5×10^4/ml with sterilized water.

Execution of test

Sowing the seeds: In sterilized soil

Growth stage of plants: Expanding of 2nd to 3rd true leaf

Method of inoculation: Spraying inoculum on the leaves and the stem

Treatment after inoculation: Inoculated plants should be placed in a dark and humid chamber at 25°C with 100% relative humidity for 48 hours before being moved to the greenhouse.

Number of plants tested: 10 to 20 plants

Environmental condition after inoculation

Temperature: Day: 25°C; night: 16°C

Light: Natural (longer than 12 hours)

Growing method: In the greenhouse

Duration of test

Inoculation to last observation: 25 days

Remarks

Race: Three races are identified

Keeping of pathogenecity: Renewal of medium at least once a year

Standard varieties

	Race 1	Race 2	Race 3
Kahô *ISF: skip Kahô and add Calhoun Gray*	S	S	S
Charleston Gray, Congo *ISF: skip Congo*	R	S	R
African citron W-695	S	R	S

S: susceptible R: resistant

9. Literature

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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

ISF: delete following sentence
In the case of hybrid varieties which are the subject of an application for plant breeders' rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety.

1. Subject of the Technical Questionnaire

1.1 Latin Name	*Citrullus lanatus* (Thunb.) Matsum. et Nakai
1.2 Common Name	Watermelon

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 [ ]
(please state known parent variety(ies))

(……..……..…)	x	(……..……..…)
female parent		male parent

(c) unknown cross [ ]

ISF: Crossing: this scheme is appropriate for hybrid varieties. Which choice should be made when applying for a parental line, since usually it is a controlled cross, but with a larger number of "parent varieties".

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)

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).

To be decided, at least the grouping characteristics to be included

Characteristics	Example Varieties	Note

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

6. Similar varieties and differences from these varieties

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

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Fruit: width of stripes*	*narrow*	*medium*

Comments:

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

[#]7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

A representative color image of the variety should accompany the Technical Questionnaire.

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.

[#] 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:

9. Information on plant material to be examined.

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 or pesticide) Yes [ ] No [ ]

(c) Tissue culture Yes [ ] No [ ]

(d) Other factors Yes [ ] No [ ]

Please provide details of 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]