

Technical Committee

TC/59/25

Fifty-Ninth Session
Geneva, October 23 and 24, 2023

Original: English
Date: September 29, 2023

PARTIAL REVISION OF THE TEST GUIDELINES FOR WATERMELON

Document prepared by an expert from the Netherlands

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1. The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Watermelon (document TG/142/5 Rev.).
2. The Technical Working Party for Vegetables (TWV), at its fifty-seventh session¹, considered a proposal for a partial revision of the Test Guidelines for Watermelon (*Citrullus lanatus* (Thunb.) Matsum. et Naka) on the basis of documents TG/142/5 Rev. and TWV/57/14 "Partial revision of the Test Guidelines for Watermelon" and proposed the following changes (see document TWV/57/26 "Report", paragraph 77):
 - (a) Revision of explanation Ad. 1 "Ploidy"
 - (b) Inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire
3. The proposed new wording is presented below. The proposed changes are presented in highlight and underline (insertion) and ~~striketrough~~ (deletion) in the Annex to this document (in English only).

Proposed revision of explanation Ad. 1 "Ploidy"Ad. 1: Ploidy

Ploidy level may be assessed by several methods:

- a. by counting chromosomes of cells under the microscope;
- b. by counting the number chloroplasts of stomatal guard cells using a leaf peel under the microscope;
- c. by flow cytometry.
- d. Triploid varieties show a whitish seed coat without embryo

Observation should be made on at least 5 plants.

¹ held in Antalya, Türkiye, from May 1 to 5, 2023

Proposed inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire

4. The TWV is invited to consider the inclusion of the following characteristics in the TQ (characteristics for inclusion indicated in highlight and underline):

Char. No.	(*)	Characteristic Name
1	(*)	Ploidy
8	(*)	<u>Leaf blade: degree of lobing</u>
11	(*)	Fruit: weight
12	(*)	Fruit: shape in longitudinal section
16	(*)	Fruit: ground color of skin
18	(*)	<u>Fruit: pattern of stripes</u>
19	(*)	Fruit: width of stripes
20		<u>Fruit: main color of stripes</u>
21	(*)	<u>Fruit: conspicuousness of stripes</u>
22	(*)	Fruit: margin of stripes
27	(*)	<u>Fruit: thickness of pericarp</u>
28	(*)	Fruit: main color of flesh
29		<u>Only triploid varieties: Seed coat: size</u>
31	(*)	<u>Only diploid and tetraploid varieties: Seed: length</u>
33	(*)	<u>Only diploid and tetraploid varieties: Seed: ground color of testa</u>
36		<u>Time of female flowering</u>
37.1		<u>Resistance to <i>Fusarium oxysporum</i> f.sp. <i>niveum</i> – Race 0</u>
37.2		<u>Resistance to <i>Fusarium oxysporum</i> f.sp. <i>niveum</i> – Race 1</u>
37.3		<u>Resistance to <i>Fusarium oxysporum</i> f.sp. <i>niveum</i> – Race 2</u>
38.1		<u>Resistance to <i>Colletotrichum orbiculare</i> – Race 1</u>

5. The detailed changes to the TQ are presented in highlight and underline (insertion) and ~~strikethrough~~ (deletion) in the Annex to this document (in English only).

[Annex follows]

PROPOSED CHANGES PRESENTED IN HIGHLIGHT
(in English only)

Proposed revision of explanation Ad. 1 "Ploidy"

Ad. 1: Ploidy

Ploidy level may be ~~detected~~ assessed by several methods:

- a. by counting chromosomes of cells under the microscope;
- b. by counting the number chloroplasts of stomatal guard cells using a leaf peel under the microscope;
- c. by flow cytometry.
- d. Triploid varieties show a whitish seed coat without embryo

Observation should be made on at least 5 plants.

Proposed inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire

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 Ploidy (1)		
diploid	SP 4, Sugar Baby, Yamato 3	2[]
triploid	Boston, TRIX 313	3[]
tetraploid		4[]
5.2 Leaf blade: degree of lobing (8)		
<u>absent or very weak</u>	<u>Sunshade</u>	<u>1[]</u>
<u>very weak to weak</u>		<u>2[]</u>
<u>weak</u>	<u>Estrella, Karistan</u>	<u>3[]</u>
<u>weak to medium</u>		<u>4[]</u>
<u>medium</u>	<u>Crimson Sweet, Crisby</u>	<u>5[]</u>
<u>medium to strong</u>		<u>6[]</u>
<u>strong</u>	<u>Cadanz</u>	<u>7[]</u>
<u>strong to very strong</u>		<u>8[]</u>
<u>very strong</u>	<u>SP 1</u>	<u>9[]</u>
5.2 3 Fruit: weight (11)		
very low	Monaco, New Hampshire Midget	1[]
very low to low	Mini, Petite Perfection	2[]
low	Angela	3[]
low to medium	Pasion, Sugar Baby	4[]
medium	Boston	5[]
medium to high	Crimson Sweet, Panonnia	6[]
high	Fabiola	7[]
high to very high	Jubilee	8[]
very high	Carolina Cross, Cobb's Gem, Florida Giant	9[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note	
5.3.4 Fruit: shape in longitudinal section (12)			
circular	Camilla, Kanro	1[]	
broad elliptic	Fumin, Gray Belle, Yellow Baby, Zorba	2[]	
medium elliptic	Congo, Kurobe, Picnic	3[]	
narrow elliptic	All Sweet, Charleston Gray	4[]	
5.4.5 Fruit: ground color of skin (16)			
yellow	Taiyô	1[]	
very light green	Ipanema	2[]	
very light green to light green	Napsugar	3[]	
light green	Tigre	4[]	
light green to medium green	Pepsin	5[]	
medium green	Ovation, Talete	6[]	
medium green to dark green	Odem, Resistant, Sweet Marvel	7[]	
dark green	Sugar Baby	8[]	
dark green to very dark green	Augusta, Rocio	9[]	
very dark green		10[]	
5.6 Fruit: pattern of stripes (18)			
<u>only one colored</u>	<u>Congo</u>	<u>1[]</u>	
<u>one colored and veins</u>	<u>Trix Palomar</u>	<u>2[]</u>	
<u>one colored, veins and marbled</u>	<u>Boston</u>	<u>3[]</u>	
<u>one colored and marbled</u>	<u>Jenny</u>	<u>4[]</u>	
<u>two colored, veins and marbled</u>	<u>Crisby</u>	<u>5[]</u>	
<u>only veins</u>		<u>6[]</u>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
5.5 7 Fruit: width of stripes (19)		
very narrow	SP 4, Tiny Orchid	1[]
very narrow to narrow		2[]
narrow	Boston	3[]
narrow to medium		4[]
medium	Crimson Sweet	5[]
medium to broad		6[]
broad	Sangria	7[]
broad to very broad		8[]
very broad	All Sweet	9[]
5.8 Fruit: main color of stripes (20)		
<u>yellow</u>		<u>1[]</u>
<u>very light green</u>		<u>2[]</u>
<u>light green</u>		<u>3[]</u>
<u>medium green</u>		<u>4[]</u>
<u>dark green</u>		<u>5[]</u>
<u>very dark green</u>		<u>6[]</u>
5.9 Fruit: conspicuousness of stripes (21)		
<u>inconspicuous or very weakly conspicuous</u>	<u>Augusta</u>	<u>1[]</u>
<u>weak</u>	<u>Odem</u>	<u>2[]</u>
<u>medium</u>	<u>Trix Palomar</u>	<u>3[]</u>
<u>strong</u>	<u>Jenny</u>	<u>4[]</u>
<u>very strong</u>	<u>A graine rouge à confire à chair verte</u>	<u>5[]</u>
5.6 10 Fruit: margin of stripes (22)		
diffuse	Crimson Glory, Crisby	1[]
medium	Crimson Sweet	2[]
sharp	Jenny, Jubilee	3[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.11 Fruit: thickness of pericarp (27)		
<u>very thin</u>	<u>Bibo, Tiny Orchid, Luciano</u>	1[]
<u>very thin to thin</u>		2[]
<u>thin</u>	<u>À graine rouge à confire à chair verte, Beni-kodama, Jenny, Kahô, Kassai</u>	3[]
<u>thin to medium</u>		4[]
<u>medium</u>	<u>Pannonia, Sugar Baby, Sugar Belle, Yamato 3</u>	5[]
<u>medium to thick</u>		6[]
<u>thick</u>	<u>Charleston Gray, Crimson Sweet, Kurobe, Triple Sweet, Sunrise</u>	7[]
<u>thick to very thick</u>		8[]
<u>very thick</u>	<u>Coles Early, Kholodok</u>	9[]
5.7.12 Fruit: main color of flesh (28)		
white	SP 4, SP 1, Yamato Cream 3	1[]
yellow	Napsugár, Yamato Cream 1	2[]
orange	Kahô, Tendersweet	3[]
pink	Sadul	4[]
pinkish red	Bingo, Crimson Sweet	5[]
red	Asahi Miyako Hybrid, Sugar Baby, Topgun	6[]
dark red	Dixie Lee	7[]
5.13 Only triploid varieties: Seed coat: size (29)		
<u>small</u>	<u>Petite Perfection</u>	2[]
<u>medium</u>	<u>Boston, Valdoria, Sweet Sun</u>	3[]
<u>large</u>	<u>Ortal, Tigre, Pasion</u>	4[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8 14 <u>Only diploid and tetraploid varieties:</u> Seed: length (31)		
very short	Kudam	1[]
very short to short		2[]
short	Pannonnia, Tabata	3[]
short to medium		4[]
medium	Sugar Baby	5[]
medium to long		6[]
long	Charleston Gray, Kurobe	7[]
long to very long		8[]
very long	Malali, Wanli	9[]
5.9 15 <u>Only diploid and tetraploid varieties:</u> Seed: ground color of testa (33)		
white	Sanpaku	1[]
cream	Kurobe	2[]
green	A confire allongée à graine verte, Green Citron	3[]
red	A graine rouge à confire à chair verte, Red Citron	4[]
red brown	Kahô	5[]
brown	Otome, Sugar Baby	6[]
black	Yamato Cream	7[]

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Characteristics	Example Varieties	Note
5.16 (36)		
<u>very early</u>		1f
<u>very early to early</u>		2f
<u>early</u>	<u>Tiny Orchid</u>	3f
<u>early to medium</u>		4f
<u>medium</u>	<u>Sugar Baby, Yamato 3</u>	5f
<u>medium to late</u>		6f
<u>late</u>	<u>Kurobe</u>	7f
<u>late to very late</u>		8f
<u>very late</u>		9f
5.17 (37.1)		
<u>absent</u>	<u>Kahô, Sugar Baby</u>	1f
<u>present</u>	<u>Calhoun Gray, Charleston Gray</u>	9f
<u>not tested</u>		
5.18 (37.2)		
<u>absent</u>	<u>Charleston Gray, Kahô, Sugar Baby</u>	1f
<u>present</u>	<u>Calhoun Gray</u>	9f
<u>not tested</u>		
5.19 (37.3)		
<u>absent</u>	<u>Calhoun Gray, Kahô</u>	1f
<u>present</u>	<u>PI 296341-FR</u>	9f
<u>not tested</u>		
5.20 (38.1)		
<u>absent</u>	<u>Black Diamond, Calhoun Gray, Kahô</u>	1f
<u>present</u>	<u>Charleston Gray, Congo, Jubilee</u>	9f
<u>not tested</u>		