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| International Union for the Protection of New Varieties of Plants |  |

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| Technical Committee  Fifty-Ninth Session  Geneva, October 23 and 24, 2023 | TC/59/25  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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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.).

The Technical Working Party for Vegetables (TWV), at its fifty-seventh session[[1]](#footnote-2), 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):

1. Revision of explanation Ad. 1 “Ploidy”
2. Inclusion of characteristics from the Table of Characteristics in the Technical Questionnaire

The proposed new wording is presented below. The proposed changes are presented in highlight and underline (insertion) and ~~strikethrough~~ (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.

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

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 | (\*) | Leaf blade: degree of lobing |
| 11 | (\*) | Fruit: weight |
| 12 | (\*) | Fruit: shape in longitudinal section |
| 16 | (\*) | Fruit: ground color of skin |
| 18 | (\*) | Fruit: pattern of stripes |
| 19 | (\*) | Fruit: width of stripes |
| 20 |  | Fruit: main color of stripes |
| 21 | (\*) | Fruit: conspicuousness of stripes |
| 22 | (\*) | Fruit: margin of stripes |
| 27 | (\*) | Fruit: thickness of pericarp |
| 28 | (\*) | Fruit: main color of flesh |
| 29 |  | Only triploid varieties: Seed coat: size |
| 31 | (\*) | Only diploid and tetraploid varieties: Seed: length |
| 33 | (\*) | Only diploid and tetraploid varieties: Seed: ground color of testa |
| 36 |  | Time of female flowering |
| 37.1 |  | Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 0 |
| 37.2 |  | Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 1 |
| 37.3 |  | Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 2 |
| 38.1 |  | Resistance to *Colletotrichum orbiculare* – Race 1 |

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: | | |
| --- | --- | --- | --- | --- | --- |
|  | |  |  | | |
| 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 (1)** | **Ploidy** | | |  |  |
|  | diploid | | | SP 4, Sugar Baby, Yamato 3 | 2[ ] |
|  | triploid | | | Boston, TRIX 313 | 3[ ] |
|  | tetraploid | | |  | 4[ ] |
| **5.2 (8)** | **Leaf blade: degree of lobing** | | |  |  |
|  | absent or very weak | | | Sunshade | 1[ ] |
|  | very weak to weak | | |  | 2[ ] |
|  | weak | | | Estrella, Karistan | 3[ ] |
|  | weak to medium | | |  | 4[ ] |
|  | medium | | | Crimson Sweet, Crisby | 5[ ] |
|  | medium to strong | | |  | 6[ ] |
|  | strong | | | Cadanz | 7[ ] |
|  | strong to very strong | | |  | 8[ ] |
|  | very strong | | | SP 1 | 9[ ] |
| **5.~~2~~ 3 (11)** | **Fruit: weight** | | |  |  |
|  | 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[ ] |
|  | Characteristics | | | Example Varieties | Note |
| **5.~~3~~ 4 (12)** | **Fruit: shape in longitudinal section** | | |  |  |
|  | 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 (16)** | **Fruit: ground color of skin** | | |  |  |
|  | 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 (18)** | **Fruit: pattern of stripes** | | |  |  |
|  | only one colored | | | Congo | 1[ ] |
|  | one colored and veins | | | Trix Palomar | 2[ ] |
|  | one colored, veins and marbled | | | Boston | 3[ ] |
|  | one colored and marbled | | | Jenny | 4[ ] |
|  | two colored, veins and marbled | | | Crisby | 5[ ] |
|  | only veins | | |  | 6[ ] |
|  | Characteristics | | | Example Varieties | Note |
| **5.~~5~~ 7 (19)** | **Fruit: width of stripes** | | |  |  |
|  | 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 (20)** | **Fruit: main color of stripes** | | |  |  |
|  | yellow | | |  | 1[ ] |
|  | very light green | | |  | 2[ ] |
|  | light green | | |  | 3[ ] |
|  | medium green | | |  | 4[ ] |
|  | dark green | | |  | 5[ ] |
|  | very dark green | | |  | 6[ ] |
| **5.9 (21)** | **Fruit: conspicuousness of stripes** | | |  |  |
|  | inconspicuous or very weakly conspicuous | | | Augusta | 1[ ] |
|  | weak | | | Odem | 2[ ] |
|  | medium | | | Trix Palomar | 3[ ] |
|  | strong | | | Jenny | 4[ ] |
|  | very strong | | | A graine rouge à confire à chair verte | 5[ ] |
| **5.~~6~~ 10 (22)** | **Fruit: margin of stripes** | | |  |  |
|  | diffuse | | | Crimson Glory, Crisby | 1[ ] |
|  | medium | | | Crimson Sweet | 2[ ] |
|  | sharp | | | Jenny, Jubilee | 3[ ] |
|  | Characteristics | | | Example Varieties | Note |
| **5.11 (27)** | **Fruit: thickness of pericarp** | | |  |  |
|  | very thin | | | Bibo, Tiny Orchid, Luciano | 1[ ] |
|  | very thin to thin | | |  | 2[ ] |
|  | thin | | | À graine rouge à confire à chair verte, Beni-kodama, Jenny, Kahô, Kassai | 3[ ] |
|  | thin to medium | | |  | 4[ ] |
|  | medium | | | Panonnia, Sugar Baby, Sugar Belle, Yamato 3 | 5[ ] |
|  | medium to thick | | |  | 6[ ] |
|  | thick | | | Charleston Gray, Crimson Sweet, Kurobe, Triple Sweet, Sunrise | 7[ ] |
|  | thick to very thick | | |  | 8[ ] |
|  | very thick | | | Coles Early, Kholodok | 9[ ] |
| **5.~~7~~ 12 (28)** | **Fruit: main color of flesh** | | |  |  |
|  | 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 (29)** | **Only triploid varieties: Seed coat: size** | | |  |  |
|  | small | | | Petite Perfection | 2[ ] |
|  | medium | | | Boston, Valdoria,  Sweet Sun | 3[ ] |
|  | large | | | Ortal, Tigre, Pasion | 4[ ] |
|  | Characteristics | | | Example Varieties | Note |
| **5.~~8~~ 14 (31)** | **Only diploid and tetraploid varieties: Seed: length** | | |  |  |
|  | very short | | | Kudam | 1[ ] |
|  | very short to short | | |  | 2[ ] |
|  | short | | | Panonnia, 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 (33)** | **Only diploid and tetraploid varieties: Seed: ground color of testa** | | |  |  |
|  | 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[ ] |
|  | Characteristics | | | Example Varieties | Note |
| **5.16 (36)** | **Time of female flowering** | | |  |  |
|  | very early | | |  | 1[ ] |
|  | very early to early | | |  | 2[ ] |
|  | early | | | Tiny Orchid | 3[ ] |
|  | early to medium | | |  | 4[ ] |
|  | medium | | | Sugar Baby, Yamato 3 | 5[ ] |
|  | medium to late | | |  | 6[ ] |
|  | late | | | Kurobe | 7[ ] |
|  | late to very late | | |  | 8[ ] |
|  | very late | | |  | 9[ ] |
| **5.17 (37.1)** | **Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 0** | | |  |  |
|  | absent | | | Kahô, Sugar Baby | 1[ ] |
|  | present | | | Calhoun Gray, Charleston Gray | 9[ ] |
|  | not tested | | |  | [ ] |
| **5.18 (37.2)** | **Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 1** | | |  |  |
|  | absent | | | Charleston Gray, Kahô, Sugar Baby | 1[ ] |
|  | present | | | Calhoun Gray | 9[ ] |
|  | not tested | | |  | [ ] |
| **5.19 (37.3)** | **Resistance to *Fusarium oxysporum* f.sp. *niveum –* Race 2** | | |  |  |
|  | absent | | | Calhoun Gray, Kahô | 1[ ] |
|  | present | | | PI 296341-FR | 9[ ] |
|  | not tested | | |  | [ ] |
| **5.20 (38.1)** | **Resistance to *Colletotrichum orbiculare* – Race 1** | | |  |  |
|  | absent | | | Black Diamond, Calhoun Gray, Kahô | 1[ ] |
|  | present | | | Charleston Gray, Congo, Jubilee | 9[ ] |
|  | not tested | | |  | [ ] |

[End of Annex and of document]

1. held in Antalya, Türkiye, from May 1 to 5, 2023 [↑](#footnote-ref-2)