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|  |  | ETC/51/33**ORIGINAL:** EnglishDATE: February 19, 2015 |
| INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS  |
| Geneva |

Technical Committee

Fifty-First Session
Geneva, March 23 to 25, 2015

partial revision of the test guidelines for MANDARIN
(document TG/201/1)

*Document prepared by the Office of the Union

Disclaimer: this document does not represent UPOV policies or guidance*

 At its forty-fifth session held in Marrakesh, Morocco, from May 26 to 30, 2014, the Technical Working Party for Fruit Crops (TWF) considered a partial revision of the Test Guidelines for Mandarin (TG/201/1) on the basis of documents TG/201/1, TWF/45/30, TWF/45/31 Rev., TWF/45/31 Add. and TWF/45/31 Add. 2 Rev.; and proposed to revise the Test Guidelines for Mandarin as follows (see document TWF/45/32 “Report”, paragraphs 85 to 95):

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

Characteristic 25: Anther: viable pollen

*Current wording:*

| **25.** |  | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keim­fähiger Pollen** | **Antera: polen viable** |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **QL** | **(b)** | absent | absent | fehlend | ausente | Owari (SAT) | 1 |
| **[239]** |  | present | présent | vorhanden | presente |  | 9 |

*Proposed new wording:*

| **25.(+)** |  | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keim­fähiger Pollen** | **Antera: polen viable** |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **QN** | **(b)** | absent or very low | absent ou très faible | fehlend oder sehr gering | ausente o muy bajo | Owari (SAT) | 1 |
|  |  | low | faible | gering | bajo |  | 3 |
|  |  | medium | moyen | mittel | medio | Marisol (CLE) | 5 |
|  |  | high | élevé | hoch | alto | Murcott (HMA) | 7 |
| **[339]** |  | very high | très élevé | sehr hoch | muy alto | Fortune (HMA) | 9 |

8. Explanations on the Table of Characteristics

*8.2 Explanations for individual characteristics*

The proposal is to add the following:

Ad. 25: Anther: viable pollen

Method to determine the percentage of viable pollen:

The pollen should be collected when the petals begin to open (but with the anthers closed). The anthers should be introduced into a Petri dish and placed inside a silica gel dryer at room temperature, for 20-48 hours of darkness. When the anthers are open they should be moved to an 8 ºC chamber with a 70‑80 % Relative Humidity for one hour. Afterwards, the pollen should be brushed onto a microscope slide with 2 ml of Brewbacker medium (Brewbaker and Kwack. 1963). Finally, the microscope slide should be placed in a 24 ºC chamber with a 75 % RH for 20 hours.

The percentage of pollen fertilization is calculated as the average of germinated pollen grains observed with a binocular in 15 visual fields from 2 different microscope slides.

(Brewbaker, J.L. and Kwack, B.H. 1963. The essential role of calcium ion in pollen germination and pollen tube growth. Amer. Jour. Botany. 50: 859-865.)

Percentage range indication for the states of expression:

|  |  |  |
| --- | --- | --- |
| Example varieties | Note | Range |
| Owari (SAT) | 1 | ≤ 7% |
|  | 2 | > 7 ≤ 14% |
|  | 3 | > 14 ≤ 21% |
|  | 4 | > 21 ≤ 28% |
| Marisol (CLE) | 5 | > 28 ≤ 35% |
|  | 6 | > 35 ≤ 45% |
| Murcott (HMA) | 7 | > 45 < 55% |
|  | 8 | > 55 < 65% |
| Fortune (HMA) | 9 | ≥ 65% |

 The changes to the Test Guidelines for Mandarin would also be reflected in the overall Table of Characteristics included in the Annex to documents TG/83/4 (Trifoliate Orange (Poncirus) (Citrus L. – Group 5)), TG/201/1, TG/202/1 (Oranges (Citrus L. - Group 2)), TG/203/1 (Lemons and Limes (Citrus L. - Group 3)) and TG/204/1 (Grapefruit and Pummelo (Citrus L. - Group 4)) by means of a partial revision to those Test Guidelines as follows:

*Current wording:*

|  | Group/Groupe/Gruppe/Grupo | English | français | deutsch | español | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| **239.** | 25 | 26 | 29 | 30 | 37 | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keimfähiger Pollen** | **Antera: polen viable** |  |
|  |  |  |  |  |  | absent | absent | fehlend | ausente | 1 |
| **QL** |  |  |  |  |  | present | présent | vorhanden | presente | 9 |

*Proposed new wording:*

|  | Group/Groupe/Gruppe/Grupo | English | français | deutsch | español | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| **239.** | ~~25~~ | 26 | 29 | 30 | 37 | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keimfähiger Pollen** | **Antera: polen viable** |  |
|  |  |  |  |  |  | absent | absent | fehlend | ausente | 1 |
| **QL** |  |  |  |  |  | present | présent | vorhanden | presente | 9 |

|  | Group/Groupe/Gruppe/Grupo | English | français | deutsch | español | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| **339.** | 25 |  |  |  |  | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keimfähiger Pollen** | **Antera: polen viable** |  |
| **(+)** |  |  |  |  |  | absent or very low | absent ou très faible | fehlend oder sehr gering | ausente o muy bajo | 1 |
|  |  |  |  |  |  | low | faible | gering | bajo | 3 |
| **QN** |  |  |  |  |  | medium | moyen | mittel | medio | 5 |
|  |  |  |  |  |  | high | élevé | hoch | alto | 7 |
|  |  |  |  |  |  | very high | très élevé | sehr hoch | muy alto | 9 |

3. The Enlarged Editorial Committee, at its meeting held in Geneva, on January 7 and 8, 2015, made the following comments on document TC-EDC/Jan15/23 “Partial Revision of the Test Guidelines for Mandarin (document TG/201/1)”:

|  |  |
| --- | --- |
| Ad. 25  | to check with Leading Expert whether second paragraph to read “The percentage of pollen fertility ~~fertilization~~ is calculated as the average of germinated pollen grains ~~observed with a binocular in 15 visual fields from 2 different microscope slides~~.”to check with the Leading Expert whether the scale could be reduced (to 5 or 3 notes)*Remark: Reference to 15 visual fields from 2 different microscope slides is not useful because the amount of pollen to be brushed onto the microscope slide is not defined.*  |

4. In response to the comments of the TC-EDC, the Leading Expert provided an amended proposed new wording for Characteristic 25, as set out in the Annex to this document. The Office of the Union issued Circular E-15/026 presenting the amended proposed new wording for Characteristic 25 to the TWF and requesting the TWF’s approval by correspondence. Any replies received to circular E-15/026 will be presented to the TC at its fifty-first session.

[Annex follows]

# amended proposed new wording for Characteristic 25 “Anther: viable pollen”

*Amended proposed new wording for Characteristic 25:*

| 25. |  | Anther: viable pollen | Anthère: pollen viable | Anthere: keim­fähiger Pollen | Antera: polen viable |  | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **QN** | **(b)** | absent or very low | absent ou très faible | fehlend oder sehr gering | ausente o muy bajo | Owari (SAT) | 1 |
|  |  | low | faible | gering | bajo | Clemenverd (CLE), Nero (CLE) | 2 |
|  |  | medium | moyen | mittel | medio | Marisol (CLE) | 3 |
| **[239]** |  | high | élevé | hoch | alto | Fortune (HMA), Nadorcott (TNR) | 4 |

*Amended proposed new wording for the overall Table of Characteristics included in the Annex to documents TG/83/4 (Trifoliate Orange (Poncirus) (Citrus L. – Group 5)), TG/201/1, TG/202/1 (Oranges (Citrus L. – Group 2)), TG/203/1 (Lemons and Limes (Citrus L. - Group 3)) and TG/204/1 (Grapefruit and Pummelo (Citrus L. - Group 4)) by means of a partial revision to those Test Guidelines*

|  | Group/Groupe/Gruppe/Grupo | English | français | deutsch | español | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
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|  |  |  |  |  |  | absent | absent | fehlend | ausente | 1 |
| **QL** |  |  |  |  |  | present | présent | vorhanden | presente | 9 |

|  | Group/Groupe/Gruppe/Grupo | English | français | deutsch | español | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| **339.** | 25 |  |  |  |  | **Anther: viable pollen** | **Anthère: pollen viable** | **Anthere: keimfähiger Pollen** | **Antera: polen viable** |  |
| **(+)** |  |  |  |  |  | absent or very low | absent ou très faible | fehlend oder sehr gering | ausente o muy bajo | 1 |
|  |  |  |  |  |  | low | faible | gering | bajo | 2 |
| **QN** |  |  |  |  |  | medium | moyen | mittel | medio | 3 |
|  |  |  |  |  |  | high | élevé | hoch | alto | 4 |

*Amended proposed new wording for Ad. 25:*

Ad. 25: Anther: viable pollen

Method to determine the percentage of viable pollen:

The pollen should be collected when the petals begin to open (but with the anthers closed). The anthers should be introduced into a Petri dish and placed inside a silica gel dryer at room temperature, for 20-48 hours of darkness. When the anthers are open they should be moved to an 8 ºC chamber with a 70‑80% Relative Humidity for one hour. Afterwards, the pollen should be brushed onto a microscope slide with 2 ml of Brewbacker medium (Brewbaker and Kwack. 1963). Finally, the microscope slide should be placed in a 24 ºC chamber with a 75% RH for 20 hours.

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(Brewbaker, J.L. and Kwack, B.H. 1963. The essential role of calcium ion in pollen germination and pollen tube growth. Amer. Jour. Botany. 50: 859-865.)

Percentage range indication for the states of expression:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Note | Range | Example varieties  |
| absent or very low | 1 | < 7% | Owari (SAT) |
| low | 2 | ≥ 7% ≤ 28% | Clemenverd (CLE),Nero (CLE) |
| medium | 3 | > 28% < 65% | Marisol (CLE) |
| high | 4 | ≥ 65% | Fortune (HMA), Nadorcott (TNR) |

[End of Annex and of document]