



TC/51/33

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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

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1. 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 °C chamber with a 70-80 % Relative Humidity for one hour. Afterwards, the pollen should be brushed onto a microscope slide with 2 ml of Brewbaker medium (Brewbaker and Kwack. 1963). Finally, the microscope slide should be placed in a 24 °C 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%

2. 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	<p>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."</p> <p>to check with the Leading Expert whether the scale could be reduced (to 5 or 3 notes)</p> <p><i>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.</i></p>
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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]

ANNEX

AMENDED PROPOSED NEW WORDING FOR CHARACTERISTIC 25 "ANTHER: VIABLE POLLEN"

Amended proposed new wording for Characteristic 25:

25.	Anther: viable pollen	Anthère: pollen viable	Anthère: pollen viable	Anthère: keimfähiger Pollen	Antera: polen viable	Note/Nota	
QN	(b) absent or very low	absent faible	ou très	fehlend gering	oder sehr	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
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239.	25	26	29	30	37	Anther: viable pollen	Anthère: pollen viable	Anthère: 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	Anthère: 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 °C 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 °C chamber with a 75% RH for 20 hours.

The percentage of pollen fertility is calculated as the average of germinated pollen grains.

(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	$\geq 7\% \leq 28\%$	Clemenverd (CLE), Nero (CLE)
medium	3	$> 28\% < 65\%$	Marisol (CLE)
high	4	$\geq 65\%$	Fortune (HMA), Nadorcott (TNR)

[End of Annex and of document]