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PARTIAL REVISION OF THE TEST GUIDELINES FOR BRASSICAS

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1. At its forty-ninth session held in Angers, France, from June 15 to 19, 2015, the Technical Working Party for Vegetables (TWV) considered a partial revision of the Test Guidelines for Brassicas on the basis of document TWV/49/23 "Partial Revision of the Test Guidelines for Brassicas" and proposed to revise the characteristics for "Male sterility" in the following Test Guidelines (see document TWV/49/32 Rev. "Revised Report", paragraphs 94 to 97):

- Cauliflower (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *botrytis* L.) (document TG/45/7)
- Cabbage (*Brassica oleracea* L.: *Brassica* (White Cabbage Group); *Brassica* (Savoy Cabbage Group); *Brassica* (Red Cabbage Group)) (document TG/48/7)
- Brussels Sprout (*Brassica oleracea* L. var. *gemmifera* DC.) (document TG/54/7)
- Kohlrabi (*Brassica oleracea* L. convar. *acephala* (DC.) Alef. var. *gongylodes* L.; *Brassica oleracea* L. *Gongylodes* Group) (document TG/65/4)
- Curly Kale (*Brassica oleracea* L. var. *sabellica* L.) (document TG/90/6 Corr.)
- Calabrese, Sprouting Broccoli (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *cymosa* Duch. (including *Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *italica*)) (document TG/151/4)

2. The proposed changes are presented in highlight and underline (insertion) and ~~strikethrough~~ (deletion).

Proposal to Revise the Explanation of Characteristic 28 “Male sterility” of the Test Guidelines for Cauliflower (*Brassica oleracea* L. convar *botrytis* (L.) Alef. var. *botrytis* L.) (document TG/45/7)

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
28. (*) (+)	VG MS/ VS	Male sterility	Stérilité mâle	Männliche Sterilität	Androesterilidad	
QN	absent	absente	fehlend	ausente	Alpha 2, Flora Blanca	1
	partial	partielle	partiell	parcial	Dunvez, Odegwen	2
	total	totale	vollständig	total	Aviron, Bodilis	3

Current wording:

Ad. 28: Male sterility

- Absent = >70% fertile plants (open-pollinated varieties or hybrid varieties produced with self-incompatibility systems)
- Partial = 30% to 70% fertile plants (heterozygotic genetic sterility)
- Total = <30% fertile plants (sterile cytoplasm)

Proposed new wording:

Ad. 28: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

- Absent = >70% fertile plants (open-pollinated varieties or hybrid varieties produced with self-incompatibility systems)
- Partial = 30% to 70% fertile plants (heterozygotic genetic sterility)
- Total = <30% fertile plants (cytoplasmic sterility)

DNA marker test and/or field trial:

All varieties declared total male sterile (state 3) in the TQ can be examined in a field trial or in a DNA marker test¹. In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism), partial sterile or fertile. All varieties declared fertile or partial male sterile are to be tested in a field trial.

In case of a field trial, type of observation is VS. In case of a DNA marker test, type of observation is MS.

¹ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

Proposal to Revise the Explanation of Characteristic 35 “Male sterility” of the Test Guidelines for Cabbage (*Brassica oleracea* L.: *Brassica* (White Cabbage Group); *Brassica* (Savoy Cabbage Group); *Brassica* (Red Cabbage Group)) (document TG/48/7)

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
35.	VS	Male sterility	Stérilité mâle	Männliche Sterilität	Androesterilidad	
(*)	VG/					
(+)	MS					
QL	absent	absente	fehlend	ausente	Winnigstadt (W); Pluton (R); Belvoy (S)	1
	present	présente	vorhanden	presente	Unifor (W); Roderick (R); Emerald (S)	9

Current wording:

Ad. 35: Male sterility

Check presence of pollen on stamen:

- (a) if pollen on stamen is present than male sterility is absent;
- (b) if pollen on stamen is absent than male sterility is present.

Proposed new wording:

Ad. 35: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.

DNA marker test and/or field trial:

All varieties declared male sterile in the TQ can be examined in a field trial or in a DNA marker test². In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism) or fertile. All varieties declared fertile are to be tested in a field trial.

In case of a field trial, type of observation is VG. In case of a DNA marker test, type of observation is MS.

² The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

Proposal to Revise the Explanation of Characteristic 21 “Male sterility” of the Test Guidelines for Brussels Sprout (*Brassica oleracea* L. var. *gemmifera* DC.) (document TG/54/7)

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
21.	VS	Male sterility	Stérilité mâle	Männliche Sterilität	Androesterilidad	
(+)	VG/ MS					
QL	absent	absente	fehlend	ausente	Braveheart, Falstaff	1
	present	présente	vorhanden	presente	Abacus, Eclipsus	9

Current wording:

Ad. 21: Male sterility

Male sterile varieties have flowers with partially developed stamens; the filament is present but not the anther (pollen sack).

Proposed new wording:

Ad. 21: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.

DNA marker test and/or field trial:

All varieties declared male sterile in the TQ can be examined in a field trial or in a DNA marker test³. In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism) or fertile. All varieties declared fertile are to be tested in a field trial.

In case of a field trial, type of observation is VG. In case of a DNA marker test, type of observation is MS.

³ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

Proposal to Revise the Test Guidelines for Kohlrabi (*Brassica oleracea* L. convar. *acephala* (DC.) Alef. var. *gongylodes* L.; *Brassica oleracea* L. *Gongylodes* Group) (document TG/65/4)

The characteristic “Male sterility” is not included in the Test Guidelines for Kohlrabi (document TG/65/4). It is proposed to add this characteristic and an explanation to the Test Guidelines (like in Brussels sprouts, Cabbage and Calabrese):

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24.	VG/	Stérilité mâle	Männliche Sterilität	Androesterilidad		
(*)	MS					
(+)						
QL	absent	absente	fehlend	ausente	Expreß Forcer, Lanro	1
	present	présente	vorhanden	presente	Erika, Morre, Oasis	9

Ad. 24: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.

DNA marker test and/or field trial:

All varieties declared male sterile in the TQ can be examined in a field trial or in a DNA marker test⁴. In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism) or fertile. All varieties declared fertile are to be tested in a field trial.

In case of a field trial, type of observation is VG. In case of a DNA marker test, type of observation is MS.

⁴ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

Proposal to add an Explanation to Characteristic 32 “Male sterility” of the Test Guidelines for Calabrese Sprouting Broccoli (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *cymosa* Duch. including *Brassica oleracea* L. convar *botrytis* (L.) Alef. var. *italica*) (document TG/151/4)

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
32. VG/ (*) (+)	Male sterility	Stérilité mâle	Männliche Sterilität	Androesterilidad		
MS						
QL	absent	absente	fehlend	ausente	Marathon	1
	present	présente	vorhanden	presente	Chevalier, Montop	9

Proposed wording for Ad. 32

Ad. 32: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.

DNA marker test and/or field trial:

All varieties declared male sterile in the TQ can be examined in a field trial or in a DNA marker test⁵. In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism) or fertile. All varieties declared fertile are to be tested in a field trial.

In case of a field trial, type of observation is VG. In case of a DNA marker test, type of observation is MS.

⁵ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.

Proposal to Revise the Test Guidelines for Curly Kale (*Brassica oleracea* L. var. *sabellica* L.) (document TG/90/6 Corr.)

The characteristic “Male sterility” is not included in the Test Guidelines for Curly Kale (document TG/90/6 Corr.). It is proposed to add this characteristic and an explanation to the Test Guidelines (like in Brussels sprouts, Cabbage and Calabrese):

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	<u>VG/</u>	<u>Stérilité mâle</u>	<u>Männliche Sterilität</u>	<u>Androesterilidad</u>		
	<u>MS</u>					
(+)						
QL	<u>absent</u>	<u>absente</u>	<u>fehlend</u>	<u>ausente</u>	<u>Buffalo.</u> <u>Westlandse Herfst</u>	1
	<u>present</u>	<u>présente</u>	<u>vorhanden</u>	<u>presente</u>	<u>Winnetou</u>	9

Ad. 19: Male sterility

To be tested in a field trial and/or in a DNA marker test.

Field trial:

Check presence of pollen on stamen: if pollen on stamen is present then male sterility is absent; if pollen on stamen is absent then male sterility is present.

DNA marker test and/or field trial:

All varieties declared male sterile on the TQ can be examined in a field trial or in a DNA marker test⁶. In the case of a DNA marker test, if the CMS marker appears to be not present, a field trial should be performed to observe whether the variety is male sterile (on another mechanism) or fertile. All varieties declared fertile are to be tested in a field trial.

In case of a field trial, type of observation is VG. In case of a DNA marker test, type of observation is MS.

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⁶ The description of the method to test male sterility for *Brassica* (CMS marker) is covered by a trade secret. The owner of the trade secret, Syngenta Seeds B.V., has given its consent for the use of the CMS marker solely for the purposes of examination of Distinctness, Uniformity and Stability (DUS) and for the development of variety descriptions by UPOV and authorities of UPOV members. Syngenta Seeds B.V. declares that neither UPOV, nor authorities of UPOV members that use the CMS marker for the above purposes will be held accountable for possible (mis)use of the CMS marker by third parties. Please contact Naktuinbouw, Netherlands, to obtain the method and information on the CMS marker for the purposes mentioned above.