

Technical Working Party for Vegetables

Fifty-Seventh Session
Antalya, Türkiye, May 1 to 5, 2023

TWP/7/9

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Technical Working Party for Agricultural Crops

Fifty-Second Session
Virtual meeting, May 22 to 26, 2023

Technical Working Party for Ornamental Plants and Forest Trees

Fifty-Fifth Session
Virtual meeting, June 12 to 16, 2023

Technical Working Party for Fruit Crops

Fifty-Fourth Session
Nîmes, France, July 3 to 7, 2023

REVISION OF TEST GUIDELINES

Document prepared by the Office of the Union

EXECUTIVE SUMMARY

1. The purpose of this document is to notify an additional characteristic and a state of expression for consideration by the TWV and present matters for information on revisions of technical questionnaires of Test Guidelines.

2. The TWV is invited to:

(a) note the additional state of expression and characteristics notified to the Office of the Union on the Test Guidelines for Asparagus (document TG/130) and Lettuce (document TGP/13), as set out in Annexes I and II to this document; and

(b) consider whether the additional state of expression and characteristic notified should be posted on the TG Drafters' webpage of the UPOV website

(c) consider whether to initiate a partial revision of the Test Guidelines for Asparagus and Lettuce for including the additional state of expression and characteristic notified.

3. The following abbreviations are used in this document:

- TC: Technical Committee
- TWA: Technical Working Party for Agricultural Crops
- TWF: Technical Working Party on Fruit Crops
- TWM: Technical Working Party on Testing Methods and Techniques
- TWO: Technical Working Party on Ornamental Plants and Forest Trees
- TWPs: Technical Working Parties
- TWV: Technical Working Party for Vegetables

4. The structure of this document is as follows:

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ADDITIONAL CHARACTERISTICS / STATES OF EXPRESSION

Procedure for notification of additional characteristics and states of expression

5. Document TGP/5 Section 10 “Experience and Cooperation in DUS Testing” states that “proposals for additional characteristics and states of expression notified to the Office of the Union by means of document TGP/5 Section 10, will be presented to the relevant TWP(s) at the earliest opportunity with information on the extent of use of the characteristic. The characteristics will then, as appropriate, be posted on the TG Drafters’ webpage of the UPOV website (https://www.upov.int/resource/en/tg_drafters.html) on the basis of comments made by the relevant TWP(s), and/or the TWP(s) may initiate a revision or a partial revision of the Test Guidelines concerned.”

Additional characteristic and states of expression for consideration

6. The Office of the Union received notifications of the following additional characteristics or states of expression since the fifty-seventh session of the Technical Committee (notified by the European Union):

Asparagus

Additional state of expression: TG/130/4 Asparagus
- Char. 16: Type of flowering (see: Annex I to this document)

Lettuce

Additional characteristic: TG/13/11 Lettuce
- Char. “Resistance to *Bremia lactucae* (Bl) Isolate PT2036” (see: Annex II to this document)

7. The additional characteristics or states of expression notified will be presented to the TWV, at its fifty-seventh session, for consideration on whether these should be posted on the TG Drafters’ webpage of the UPOV website and/or whether to initiate a revision or partial revision of the documents.

8. *The TWV is invited to:*

(a) *note the additional state of expression and characteristics notified to the Office of the Union on the Test Guidelines for Asparagus (document TG/130) and Lettuce (document TGP/13), as set out in Annexes I and II to this document; and*

(b) *consider whether the additional state of expression and characteristic notified should be posted on the TG Drafters’ webpage of the UPOV website*

(c) *consider whether to initiate a partial revision of the Test Guidelines for Asparagus and Lettuce for including the additional state of expression and characteristic notified.*

REVISION OF TECHNICAL QUESTIONNAIRES OF TEST GUIDELINES

9. The background to this matter is provided in document TWP/6/10 “Revision Test Guidelines”.

10. The TC, at its fifty-sixth session¹, agreed to invite the Office of the Union to consult interested members of the Union to explore for which Test Guidelines it would be feasible to propose partial revisions that would

¹ Held via electronic means on October 27 and 28, 2020

enable members of the Union to follow a revised UPOV Technical Questionnaire (see document TC/56/23 “Report”, paragraph 79).

Relationship between Asterisked, Grouping and TQ characteristics

11. Document TGP/7 “Development of Test Guidelines”, GN13, establishes that characteristics in the Technical Questionnaire should, in general, receive an asterisk in the Table of Characteristics and be used as grouping characteristics. Information provided by UPOV members on requested technical questionnaires demonstrates that more characteristics are used in authorities’ technical questionnaires than those currently provided in the Technical Questionnaires of UPOV Test Guidelines.

12. The TWPs, at their sessions in 2021, agreed not to consider the addition of asterisks where the proposed new TQ characteristics do not currently have an asterisk in the table of characteristics and consider the addition of asterisks at the next full revision of the Test Guidelines concerned.

13. The TWPs, at their sessions in 2021, were invited to consider whether to revise the guidance in document TGP/7 “Development of Test Guidelines” concerning the relationship between asterisks in the Test Guidelines and TQ characteristics on the basis of the information received by members of the Union.

14. The TWPs, at their sessions in 2022, noted that no proposals had been received to revise document TGP/7 “Development of Test Guidelines” to clarify the relationship between asterisks in the Test Guidelines and characteristics in the technical questionnaires. (see documents TWA/51/11 “Report”, paragraph 64; TWF/53/14, “Report”, paragraph 112; TWM/1/26 “Report”, paragraph 8, TWO/54/6 “Report”, paragraph 23; and TWV/56/22 “Report”, paragraph 101).

15. The TC, at its fifty-eight session, noted that no proposals had been received to revise document TGP/7 “Development of Test Guidelines” to clarify the relationship between asterisks in the Test Guidelines and characteristics in the technical questionnaires (see document TC/58/31 “Report”, paragraph 109).

Proposals for partial revisions of test guidelines

16. The TC, at its fifty-seventh session², agreed that the following Test Guidelines be partially revised for the inclusion of characteristics in the Technical Questionnaires:

- TWV

TG reference	Test Guidelines Common Name	Document
TG/2/7	Maize	TWV/57/4
TG/13/11	Lettuce	TWV/57/12
TG/49/8 Corr.	Carrot	TWV/57/6
TG/55/7 Rev. 5	Spinach	TWV/57/11
TG/61/7 Rev. 2	Cucumber, Gherkin	TWV/57/5
TG/104/5 Rev.	Melon	TWV/57/22
TG/119/4	Vegetable Marrow, Squash	TWV/57/23
TG/142/5	Watermelon	TWV/57/14
TG/294/1 Corr. Rev. 2	Tomato Rootstocks	TWV/57/19

- TWO:

TG reference	Test Guidelines Common Name	
TG/11/8 Rev.	Rose	Adopted TC/58

² Held via electronic means on October 25 and 26, 2021

- TWA:

TG reference	Test Guidelines Common Name	Document
TG/2/7	Maize	TWV/57/4 – TWA/52/4
TG/3/12	Wheat	Adopted TC/58

17. The proposals for partial revision of Test Guidelines for inclusion of characteristics from the Table of Characteristics in the Technical Questionnaires are presented in the TWP documents indicated in the preceding table.

[Annexes follow]

NOTIFICATION OF ADDITIONAL STATES OF EXPRESSION

Test Guidelines for Asparagus: TG/130/4

Submitting Authority:	CPVO (QZ)	Contact Expert:	Name:	Morineau Céline
Date:	28/07/2022	Organization:	CPVO	
		Tel.:	+33 (0) 2.41.25.64.00	
		E-mail:	morineau@cpvo.europa.eu	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	Note/ Nota
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[Existing characteristic: to be reproduced in full from UPOV Test Guidelines (including characteristic number, type of expression, method of observation, states, example varieties and notes)]

16	VG	Type of flowering	Type de floraison	Blühtyp	Tipo de floración		
(+)		plants with male flowers and plants with female flowers	plantes avec des fleurs mâles et plantes avec des fleurs femelles	Pflanzen mit männlichen Blüten und Pflanzen mit weiblichen Blüten	plantas con flores masculinas y plantas con flores femeninas	Andreas	1
(*)		plants with male and female flowers	plantes avec des fleurs mâles et des fleurs femelles	Pflanzen mit männlichen und weiblichen Blüten	plantas con flores masculinas y femeninas	Argenteuil, Desto	2
QL		plants with androhermaphrodite flowers and plants with male flowers with style rudiments	plantes avec des fleurs androhermaphrodites et plantes avec des fleurs mâles avec rudiments de style	Pflanzen mit männlich-zwittrigen Blüten und Pflanzen mit männlichen Blüten mit Griffelrudimenten	plantas con flores hermafroditas masculinas y plantas con flores masculinas con estilo	Backlim, Gijnlim	3

[Characteristic with new state(s) of expression (including all information as above)]

16	VG	Type of flowering	Type de floraison	Blühtyp	Tipo de floración		
(+)		plants with male flowers and plants with female flowers	plantes avec des fleurs mâles et plantes avec des fleurs femelles	Pflanzen mit männlichen Blüten und Pflanzen mit weiblichen Blüten	plantas con flores masculinas y plantas con flores femeninas	Andreas	1
(*)		plants with male and female flowers	plantes avec des fleurs mâles et des fleurs femelles	Pflanzen mit männlichen und weiblichen Blüten	plantas con flores masculinas y femeninas	Argenteuil, Desto	2
QL		plants with androhermaphrodite flowers and plants with male flowers with style rudiments	plantes avec des fleurs androhermaphrodites et plantes avec des fleurs mâles avec rudiments de style	Pflanzen mit männlich-zwittrigen Blüten und Pflanzen mit männlichen Blüten mit Griffelrudimenten	plantas con flores hermafroditas masculinas y plantas con flores masculinas con estilo	Backlim, Gijnlim	3
		female					X

Explanation / Illustration (including extent of the use of the characteristic(s)): /

[Annex II follows]

NOTIFICATION OF ADDITIONAL CHARACTERISTICS

Test Guidelines for Lettuce: TG/13/11 Rev.2

Submitting Authority:	CPVO (QZ)	Contact Expert:	Name:	Morineau Céline
Date:	28/07/2022	Organization:	CPVO	
		Tel.:	+33 (0) 2.41.25.64.00	
		E-mail:	morineau@cpvo.europa.eu	

		English	français	deutsch	español	Example Varieties/ Exemples/ Beispielsorten/ Variedades ejemplo	[iii] Note/ Nota
New 1.	VG	Resistance to <i>Bremia lactucaae</i> (BI) Isolate PT2036	Résistance à <i>Bremia lactucaae</i> (BI) Isolât PT2036	Resistenz gegen <i>Bremia lactucaae</i> (BI) Isolât PT2036	Resistencia a <i>Bremia lactucaae</i> (BI) Aislado PT2036		
	QL	absent	absente	fehlend	ausente	Green Towers, Odra	1
		present	présente	vorhanden	presente	Templin	9

- [i] indicate type of expression (QL, PQ, QN)
 [ii] indicate method of observation (VG, VS, MG, MS)
 [iii] example varieties to be provided for at least 2 states.

Explanation / Illustration (including extent of the use of the characteristic(s)):Resistance to *Bremia lactucaae* (BI) isolate PT2036

- | | |
|-------------------------------------|--|
| 1. Pathogen | <i>Bremia lactucaae</i> |
| 2. Quarantine status | no |
| 3. Host species | lettuce - <i>Lactuca sativa</i> L. |
| 4. Source of inoculum | Naktuinbouw (resistentie@naktuinbouw.nl) |
| 5. Isolate | PT2036 |
| 6. Establishment isolate identity | test on differentials (see table below) |
| 7. Establishment pathogenicity | test on susceptible varieties |
| 8. Multiplication inoculum | |
| 8.1 Multiplication medium | lettuce plantlets |
| 8.2 Multiplication variety | susceptible variety, for example Green Towers. |
| 8.3 Plant stage at inoculation | cotyledon to first leaf |
| 8.4 Inoculation medium | tap water |
| 8.5 Inoculation method | spraying a spore suspension |
| 8.6 Harvest of inoculum | washing off from leaves |
| 8.7 Check of harvested inoculum | counting spores |
| 8.8 Shelf life/viability inoculum | 2 hours at room temperature; 2 days in fridge |
| 9. Format of the test | |
| 9.1 Number of plants per genotype | at least 20 |
| 9.2 Number of replicates | - |
| 9.3 Control varieties (informative) | differentials (see table below) |
| 9.4 Test design | - |
| 9.5 Test facility | climate room |
| 9.6 Temperature | 15°C-18°C |

9.7 Light	adequate for good plant growth; seedlings should not etiolate. option: reduced light 24 hours after inoculation
9.8 Season	-
9.9 Special measures	plants may grow on wet blotting paper with or without a nutrient solution, on sand, or on potting soil (see point 13). high humidity (>90%) is essential for infection and sporulation.
10. Inoculation	
10.1 Preparation inoculum	washing off from leaves by vigorous shaking in a closed container
10.2 Quantification inoculum	counting spores; spore density should be $3 \cdot 10^4$ - $1 \cdot 10^5$
10.3 Plant stage at inoculation	cotyledon stage
10.4 Inoculation method	spraying till run-off option: reduced light 24 hours after inoculation
10.5 First observation	beginning of sporulation on susceptible varieties (around 7 days after inoculation)
10.6 Second observation	3-4 days after first observation (around 10 days after inoculation)
10.7 Final observations	14 days after inoculation two of these three observations may be sufficient; the third notation is optional for observation of evolution of symptoms in case of doubt. The day of maximum sporulation should occur in this period.
11. Observations	
11.1 Method	visual observation of sporulation and necrotic reaction to infection
11.2 Observation scale	resistant
	0 no sporulation, no necrosis
	1 no sporulation, necrosis present
	2 weak sporulation (much less than susceptible control) with necrosis
	3 weak sporulation (less than susceptible control and not evolving between second and third observations) with necrosis
	4 very sparse sporulation (not evolving between second and third observation) without necrosis
	5 reduced sporulation (compared to susceptible control) without necrosis
	6 normal sporulation without necrosis
11.3 Validation of test	on standards. In case of normal sporulation (same level as susceptible control) with necrosis, another test on bigger plants or other substrate must be undertaken.
12. Interpretation of data in terms of UPOV characteristic states	class 0, 1, 2, 3 and 4: resistant class 5 and 6: susceptible
13. Critical control points	Reaction of standards (the infection pressure may vary between experiments, leading to slight differences in sporulation intensity); when the reactions are not clear the experiment should be repeated. The sowing on soil can be used to see necrosis, but weak sporulation (much less than susceptible control) can appear; when testing on sand, spores can be confused with grains of sand. In case of use of nutritive solution on blotting paper, a fungicide can be added to avoid contamination by saprophytes

	GreenTowers	Dandie	R4T57D	UC Dm14	NunDm15	CGDm16	Colorado	FrRsal-1	Argelès	RYZ 2164	RYZ910457	Bedford	Balesta	Bartoli	Design	Kibrille	Fenston	Bataille	RYZ20007	Set	D sextet code
		Dm3	Dm4	Dm14	Dm15	Dm16	Dm18	Rsal-1	R38												
ID	0	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18		
Sextet value		1	2	4	8	16	32	1	2	4	8	16	32	1	2	4	8	16	32		
PT2036	+	-	+	+	+	-	+	+	+	+	+	-	-	-	+	+	-	-	+	D	46-15-38

[End of Annex II and of document]