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

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| Technical Working Party for VegetablesFifty-Seventh SessionAntalya, Türkiye, May 1 to 5, 2023Technical Working Party for Agricultural CropsFifty-Second SessionVirtual meeting, May 22 to 26, 2023Technical Working Party for Ornamental Plants and Forest TreesFifty-Fifth SessionVirtual meeting, June 12 to 16, 2023Technical Working Party for Fruit CropsFifty-Fourth SessionNîmes, France, July 3 to 7, 2023 | TWP/7/9Original: EnglishDate: April 24, 2023 |

Revision of Test guidelines

Document prepared by the Office of the Union

# Executive summary

 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.

 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.

 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

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ANNEX II Notification of additional characteristics: Test Guidelines for Lettuce

additional characteristics / states of expression

## Procedure for notification of additional characteristics and states of expression

 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

 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):

### Aspargus

*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)

 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.

 *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

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

 The TC, at its fifty-sixth session[[1]](#footnote-2), 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 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

 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.

 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.

 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.

 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).

 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

 The TC, at its fifty-seventh session[[2]](#footnote-3), 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 |

* 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 |

 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 |
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|  |  |  | E-mail: | morineau@cpvo.europa.eu |
|  |  |  English |  français |  deutsch |  español | Example Varieties/Exemples/ Beispielssorten/ Variedades ejemplo | Note/Nota |
| [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 |
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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  English |  français |  deutsch |  español | Example Varieties/ **[iii]**Exemples/ Beispielssorten/ Variedades ejemplo | Note/Nota |
| **New 1.** | **VG** |

|  |
| --- |
| **Resistance to *Bremia lactucae*(Bl) Isolate PT2036** |

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| --- |
| **Résistance à *Bremia lactucae* (Bl) Isolat PT2036** |

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| --- |
| **Resistenz gegen *Bremia lactucae* (Bl) Isolat PT2036** |

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|  |
| --- |
| **Resistencia a *Bremia lactucae* (Bl) 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 lactucae (Bl) isolate PT2036

1. Pathogen *Bremia lactucae*

2. Quarantine status no

3. Host species lettuce - Lactuca sativa 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 3.104-1.105

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

* 1. 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

 susceptible

 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 class 0, 1, 2, 3 and 4: resistant

characteristic states 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



[End of Annex II and of document]

1. Held via electronic means on October 27 and 28, 2020 [↑](#footnote-ref-2)
2. Held via electronic means on October 25 and 26, 2021 [↑](#footnote-ref-3)