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

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| Technical Working Party for Vegetables  Fifty-Eighth Session Virtual meeting, April 22 to 25, 2024 | TWV/58/7  Original: English  Date: March 22, 2024 |

Partial revision of the Test Guidelines for Lettuce

Document prepared by an expert from France

Disclaimer: this document does not represent UPOV policies or guidance

The purpose of this document is to present a proposal for a partial revision of the Test Guidelines for Lettuce (document TG/13/11 Rev. 2).

The Technical Working Party for Vegetables (TWV), at its fifty-seventh session[[1]](#footnote-2), agreed that the Test Guidelines for Lettuce (*Lactuca sativa* L.) be partially revised (see document TWV/57/26 Corr. “Report”, Annex II).

The following changes are proposed:

1. Revision of the grouping characteristics in chapter 5.3
2. Deletion of characteristics 38 to 47 “Resistance to *Bremia lactucae* (Bl) Isolates Bl:16EU to BL: 27EU”
3. Revision of characteristic and explanation Ad. 55 “Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 1”
4. Addition of new characteristic “Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 4” at the end of the table of characteristics
5. Changes to the Technical Questionnaire

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

## Revision of the grouping characteristics in chapter 5.3

### Current wording:

|  |  |
| --- | --- |
| 5.3 | The following have been agreed as useful grouping characteristics: |
|  | |  |  |  | | --- | --- | --- | |  |  |  | | |  | | --- | | (a) | |  | |  | | --- | | Seed: color (characteristic 1) | | | |  | | --- | | (b) | |  | |  | | --- | | Leaf: anthocyanin coloration (characteristic 11) | | | |  | | --- | | (c) | |  | |  | | --- | | Time of beginning of bolting (characteristic 35) | | | |  | | --- | | (d) | |  | |  | | --- | | Resistance to *Bremia lactucae*(Bl) Isolate Bl: 16EU (characteristic 38) | | |

[…]

### Proposed new wording:

|  |  |
| --- | --- |
| 5.3 | The following have been agreed as useful grouping characteristics: |
|  | |  |  |  | | --- | --- | --- | |  |  |  | | |  | | --- | | (a) | |  | |  | | --- | | Seed: color (characteristic 1) | | | |  | | --- | | (b) | |  | |  | | --- | | Leaf: anthocyanin coloration (characteristic 11) | | | |  | | --- | | (c) | |  | |  | | --- | | Time of beginning of bolting (characteristic 35) | | | |  | | --- | | (d) | |  | |  | | --- | | Resistance to *Bremia lactucae*(Bl) Isolate Bl: ~~16~~ 29EU (characteristic ~~38~~ 49) | | |

[…]

## Proposed deletion of characteristics 38 to 47 “Resistance to *Bremia lactucae* (Bl) Isolates Bl:16EU to BL: 27EU”

|  |  | English | | français | | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **~~38.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 16EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 16EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 16EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 16EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Argelès~~ | ~~9~~ |
| **~~39.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 17EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 17EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 17EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 17EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Argelès~~ | ~~9~~ |
| **~~40.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 20EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 20EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 20EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 20EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~FrRsal-1~~ | ~~9~~ |
| **~~41.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 21EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 21EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 21EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 21EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Argelès, Colorado~~ | ~~9~~ |
| **~~42.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 22EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 22EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 22EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 22EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~FrRsal-1~~ | ~~9~~ |
| **~~43.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 23EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 23EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 23EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 23EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Green Towers~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Colorado~~ | ~~9~~ |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **~~44.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 24EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 24EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 24EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 24EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Argelès, Colorado~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Dandie, NunDm15, UCDm14~~ | ~~9~~ |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **~~45.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 25EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 25EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 25EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 25EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Colorado~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Argelès~~ | ~~9~~ |
| **~~46.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 26EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 26EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 26EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 26EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Colorado~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~Balesta, Bedford~~ | ~~9~~ |
| **~~47.~~** |  | **~~QL~~** | **~~VG~~** | **~~(+)~~** |  |  | | | |
|  |  | |  | | --- | | **~~Resistance to~~ *~~Bremia lactucae~~*~~(Bl)  Isolate Bl: 27EU~~** | | | |  | | --- | | **~~Résistance à~~ *~~Bremia lactucae~~*~~(Bl)  Isolat Bl: 27EU~~** | | | |  | | --- | | **~~Resistenz gegen~~ *~~Bremia lactucae~~*~~(Bl) Isolat Bl: 27EU~~** | | |  | | --- | | **~~Resistencia a~~ *~~Bremia lactucae~~*~~(Bl) Aislado Bl: 27EU~~** | |  |  |
|  |  | ~~absent~~ | | ~~absente~~ | | ~~fehlend~~ | ~~ausente~~ | ~~Balesta, Colorado~~ | ~~1~~ |
|  |  | ~~present~~ | | ~~présente~~ | | ~~vorhanden~~ | ~~presente~~ | ~~FrRsal-1~~ | ~~9~~ |

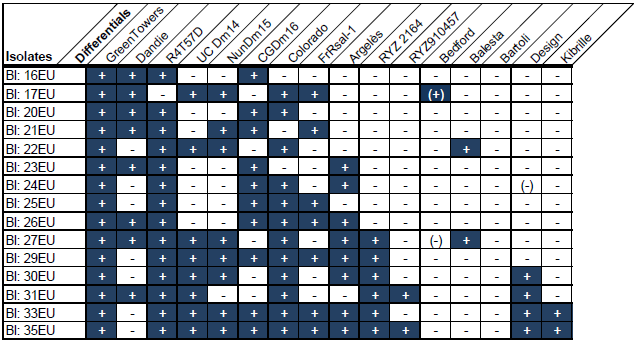
### Current wording:

Ad. 38 to 52: Resistance to *Bremia lactucae* (Bl), several isolates

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Bremia lactucae* |
| 2. | Quarantine status | no |
| 3. | Host species | lettuce - *Lactuca sativa* L. |
| 4. | Source of inoculum | GEVES[[2]](#footnote-3) (FR) or Naktuinbouw[[3]](#footnote-4) (NL) |
| 5. | Isolate | Bl: 16EU,17EU, 20-27EU, 29-31EU, 33EU, 35EU |

[…]

For reference: The International Bremia Evaluation Board (IBEB) produces regular updates of the host differential reaction table. The most recent table is available through ISF at http://www.worldseed.org/our-work/plant-health/other-initiatives/ibeb/. Pictures for the observation scale are also provided.



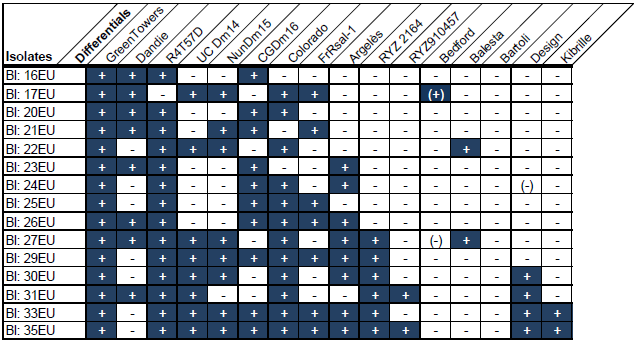
### Proposed new wording:

Ad. 38 to 52: Resistance to *Bremia lactucae* (Bl), several isolates

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Bremia lactucae* |
| 2. | Quarantine status | no |
| 3. | Host species | lettuce - *Lactuca sativa* L. |
| 4. | Source of inoculum | GEVES[[4]](#footnote-5) (FR) or Naktuinbouw[[5]](#footnote-6) (NL) |
| 5. | Isolate | Bl: ~~16EU,17EU, 20-27EU,~~ 29-31EU, 33EU, 35EU |

[…]

For reference: The International Bremia Evaluation Board (IBEB) produces regular updates of the host differential reaction table. The most recent table is available through ISF at http://www.worldseed.org/our-work/plant-health/other-initiatives/ibeb/. Pictures for the observation scale are also provided.





Legend: (+) indicates slightly reduced sporulation, (-) indicates no sporulation with necrosis or very weak sporulation, as defined in the harmonized scale given in Fig. 1. on https://worldseed.org/our-work/disease-resistance/other-initiatives/ibeb/

## Revision of characteristic 55 “Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 1”

### Current wording:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | English | | | français | | | deutsch | | español | | Example Varieties Exemples Beispielssorten Variedades ejemplo | | Note/ Nota |
| **55.** |  | | **QN** | | **MS/VG** | **(+)** | |  |  | | | | | | | |
|  |  | | |  | | --- | | **Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 1** | | | | |  | | --- | | **Résistance à *Fusarium oxysporum* f.sp. *lactucae* (Fol)**  **Race 1** | | | | |  | | --- | | **Resistenz gegen *Fusarium oxysporum* f.sp. *lactucae* (Fol) Pathotyp 1** | | | |  | | --- | | **Resistencia a *Fusarium oxysporum* f.sp. *lactucae* (Fol) Raza 1** | | |  | |  | |
|  |  | | susceptible | | | sensible | | | anfällig | | susceptible | | Cobham Green, Patriot | | 1 | |
|  |  | | moderately resistant | | | modérément résistante | | | mäßig resistent | | moderadamente resistente | | Affic, Fuzila, Natexis | | 2 | |
|  |  | | highly resistant | | | hautement résistante | | | hochresistent | | muy resistente | | Costa Rica No. 4, Romasol | | 3 | |

### Proposed new wording:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | | English | | | français | | | deutsch | | español | | Example Varieties Exemples Beispielssorten Variedades ejemplo | | Note/ Nota |
| **55.** |  | | **QN** | | **MS/VG** | **(+)** | |  |  | | | | | | | |
|  |  | | |  | | --- | | **Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 1** | | | | |  | | --- | | **Résistance à *Fusarium oxysporum* f.sp. *lactucae* (Fol)**  **Race 1** | | | | |  | | --- | | **Resistenz gegen *Fusarium oxysporum* f.sp. *lactucae* (Fol) Pathotyp 1** | | | |  | | --- | | **Resistencia a *Fusarium oxysporum* f.sp. *lactucae* (Fol) Raza 1** | | |  | |  | |
|  |  | | ~~susceptible~~  absent or low | | | ~~sensible~~ absente ou faible | | | ~~anfällig~~ fehlend oder gering | | ~~susceptible~~ ausente o baja | | Cobham Green, Patriot | | 1 | |
|  |  | | ~~moderately resistant~~ medium | | | ~~modérément résistante~~ moyenne | | | ~~mäßig resistant~~ mittel | | ~~moderadamente resistente~~ media | | Affic, Fuzila, Natexis | | 2 | |
|  |  | | ~~highly resistant~~  high | | | ~~hautement résistante~~ élevée | | | ~~hochresistent~~ hoch | | ~~muy resistente~~ alta | | Costa Rica No. 4, Romasol | | 3 | |

## Addition of new characteristic “Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 4” at the end of the table of characteristics

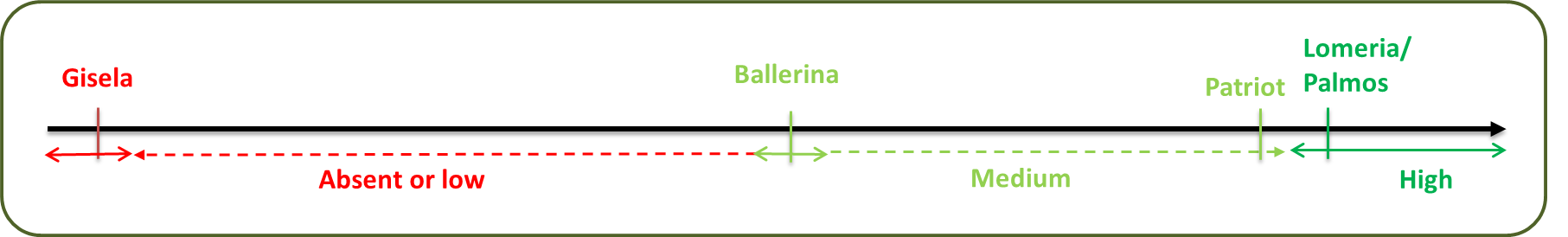
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | English | | | français | | | deutsch | | español | | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota | |
| **NEW** | |  | **QN** | | **MS/VG** | **(+)** | |  |  | | | | | | | | |
|  | |  | |  | | --- | | **Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 4** | | | | |  | | --- | | **Résistance à *Fusarium oxysporum* f.sp. *lactucae* (Fol)**  **Race 4** | | | | |  | | --- | | **Resistenz gegen *Fusarium oxysporum* f.sp. *lactucae* (Fol) Pathotyp 4** | | | |  | | --- | | **Resistencia a *Fusarium oxysporum* f.sp. *lactucae* (Fol) Raza 4** | | |  | | |  |
|  | |  | absent or low | | | absent ou faible | | | fehlend oder gering | | ausente o baja | | Costa Rica No. 4, Gisela | | | 1 |
|  | |  | medium | | | Moyenne | | | mittel | | media | | Ballerina, Patriot | | | 2 |
|  | |  | high | | | élevée | | | hoch | | alta | | Lomeria, Palmos | | | 3 |

Ad. NEW: Resistance to *Fusarium oxysporum* f.sp*. lactucae* (Fol) Race 4

|  |  |
| --- | --- |
| 1. Pathogen | *Fusarium oxysporum* f.sp*. lactucae* |
| 2. Quarantine status | NO : EPPO alert list |
| 3. Host species | lettuce - *Lactuca sativa* L. |
| 4. Source of inoculum | e.g. GEVES[[6]](#footnote-7) (FR) |
| 5. Isolate | Fol: 4, e.g. isolate 04750888 reference strain validated in an interlaboratory test[[7]](#footnote-8) |
| 6. Establishment isolate identity | The most recent table of differential set is available through ISF at https://worldseed.org/our-work/disease-resistance/differential-hosts/ |
| 7. Establishment pathogenicity | use lettuce susceptible standard |
| 8. Multiplication inoculum |  |
| 8.1 Multiplication medium | on liquid medium (e.g. Potatoes Dextrose Broth) |
| 8.6 Harvest of inoculum | 15 days |
| 9. Format of the test |  |
| 9.1 Number of plants per genotype | at least 30, in case of doubt 60 |
| 9.2 Number of replicates | at least 2 |
| 9.3 Control varieties | susceptible: Gisela |
|  | moderately resistant: Ballerina and Patriot (Ballerina is the lowest level of moderate resistance) |
|  | resistant: Lomeria, Palmos |
| 9.4 Test design | include control varieties |
| 9.5 Test facility | greenhouse or climate room |
| 9.6 Temperature | 23-26°C |
| 9.7 Light | under natural day length |
| 10. Inoculation |  |
| 10.1 Preparation inoculum | spores are harvested |
| 10.2 Quantification inoculum | adjust to 106 sp/ml |
| 10.3 Plant stage at inoculation | cotyledons to 2 or 3 leaves appearing |
| 10.4 Inoculation method | soaking roots and hypocotyl for 5 to 15 min in the inoculum suspension |
| 10.5 First observation | - |
| 10.6 Second observation | - |
| 10.7 Final observations | 20-25 days post inoculation |
| 11. Observations |  |
| 11.1 Method | visual and/or counting number of plants with symptom. |
| 11.2 Observation scale |  |

|  |
| --- |
| **inoculation by soaking seedlings** |
| 0: plant without symptoms and healthy vessels  note 0 |
| 1: plant with brown vessels only below the cotyledon without yellowing and wilting |
| 2: plant with brown vessels above the cotyledon, without yellowing and wilting  Note2bis |
| 3: plant yellowing and wilting, brown vessels  Une image contenant pythium, Pathologie végétale  Description générée automatiquement |
| 4: dead plant  Une image contenant sol, plein air, terre, compost  Description générée automatiquement |

|  |  |
| --- | --- |
| 11.3 Validation of test | results should be compared with results of controls and are depending of the aggressiveness of the test and the distribution of the plants over the categories. |



|  |  |
| --- | --- |
| 12. Interpretation of data in terms of UPOV characteristic states | compare the distribution over the categories with the result of the controls. |

## Changes to the Technical Questionnaire

### Current wording:

|  |  |  |  |
| --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
|  |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 7.3 | Other information  […]  Resistances:  (38)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 16EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (39)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 17EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (40)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 20EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (41)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 21EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (42)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 22EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (43)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 23EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (44)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 24EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (45)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 25EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (46)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 26EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (47)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 27EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (48)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 29EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (49)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 30EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (50)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 31EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (51)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 33EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (52)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 35EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (53) Resistance to Lettuce mosaic virus (LMV) Pathotype II  not tested 0  [   ] absent 1  [   ] present 9  [   ]  (54) Resistance to Nasonovia ribisnigri (Nr) Biotype Nr: 0  not tested 0  [   ] absent 1  [   ] present 9  [   ]  (55)      Resistance to *Fusarium oxysporum* f. sp. *lactucae* (Fol) Race 1              not tested 0  [   ] susceptible 1  [   ] moderately resistant 2  [   ] highly resistant 3 [ ] | | | | |  |  |  |  |  | |

### Proposed new wording:

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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 7.3 | Other information  […]  Resistances:  ~~(38)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 16EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(39)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 17EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(40)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 20EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(41)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 21EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(42)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 22EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(43)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 23EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(44)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 24EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(45)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 25EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(46)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 26EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  ~~(47)        Resistance to~~ *~~Bremia lactucae~~* ~~(Bl) Isolate Bl: 27EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]~~  (48)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 29EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (49)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 30EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (50)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 31EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (51)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 33EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (52)        Resistance to *Bremia lactucae* (Bl) Isolate Bl: 35EU                not tested 0  [   ] absent 1  [   ] present 9  [   ]  (53) Resistance to Lettuce mosaic virus (LMV) Pathotype II  not tested 0  [   ] absent 1  [   ] present 9  [   ]  (54) Resistance to Nasonovia ribisnigri (Nr) Biotype Nr: 0  not tested 0  [   ] absent 1  [   ] present 9  [   ]  (55)      Resistance to *Fusarium oxysporum* f. sp. *lactucae* (Fol) Race 1  ~~not tested 0  [   ] susceptible 1  [   ] moderately resistant 2  [   ] highly resistant 3 [ ]~~  not tested 0  [   ] absent or low 1  [   ] medium 2  [   ] high 3 [ ]  (NEW) Resistance to *Fusarium oxysporum* f.sp. *lactucae* (Fol) Race 4  not tested 0  [   ] absent or low 1  [   ] medium 2  [   ] high 3 [ ] | | | | |  |  |  |  |  | |

[End of document]

1. held in Antalya, Türkiye, from May 1 to 5, 2023, in hybrid format [↑](#footnote-ref-2)
2. matref@geves.fr [↑](#footnote-ref-3)
3. resistentie@naktuinbouw.nl [↑](#footnote-ref-4)
4. matref@geves.fr [↑](#footnote-ref-5)
5. resistentie@naktuinbouw.nl [↑](#footnote-ref-6)
6. matref@geves.fr [↑](#footnote-ref-7)
7. See ISF EG DRT Fol: 4 resistance in lettuce <https://worldseed.org/document/isf-final-report-fol-race-4-lettuce/> [↑](#footnote-ref-8)