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| --- | --- | --- |
|  |  | E  TWV/49/26  **ORIGINAL:**  English  DATE:  May 18, 2015 |
| INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS | | |
| Geneva | | |

Technical working party for vegetables

Forty-Ninth Session  
Angers, France, June 15 to 19, 2015

PARTIAL REVISION of the Test Guidelines for Spinach (document TG/55/7 Rev.3)

Document prepared by an expert from the Netherlands  
  
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The Technical Working Party for Vegetables (TWV), at its forty-eighth session, held in Paestum, Italy, from June 23 to 27, 2014, agreed that the Test Guidelines for Spinach (document TG/55/7 Rev.3) be partially revised for Characteristic 18 “Resistance to *Peronospora farinosa* f. sp. *spinaciae*” (see document TWV/48/43, Annex IV).

The purpose of this document is to present a proposal for the partial revision of the Test Guidelines for Spinach (document TG/55/7 Rev.3).

The following changes are proposed:

* Revision of Characteristic 18 “Resistance to *Peronospora farinosa* f. sp. *spinaciae*”:
  1. addition of “Race Pfs: 15”, including example varieties and to add to TQ 7.3;
  2. revision of explanation Ad. 18 in Chapter 8.2 “Explanations for individual characteristics”

The changes to Characteristic 18 “Resistance to *Peronospora farinosa* f. sp. *spinaciae*” are presented in highlight and underline (insertion) and ~~strikthrough~~ (deletion).

|  |  | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **18.  (+)** | **VG** | **Resistance to *Peronospora farinosa* f. sp. *spinaciae* (Pfs)** | **Résistance à *Peronospora farinosa* f. sp. *spinaciae* (Pfs)** | **Resistenz gegen *Peronospora farinosa* f. sp. *spinaciae* (Pfs)** | **Resistencia a *Peronospora farinosa* f. sp. *spinaciae* (Pfs)** |  |  |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.1** |  | **Race Pfs: 1** | **Race Pfs: 1** | **Pathotyp Pfs: 1** | **Raza Pfs: 1** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Viroflay, Winterreuzen | 1 |
|  |  | present | présente | vorhanden | presente | Califlay, Resistoflay | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.2** |  | **Race Pfs: 2** | **Race Pfs: 2** | **Pathotyp Pfs: 2** | **Raza Pfs: 2** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Califlay | 1 |
|  |  | present | présente | vorhanden | presente | Resistoflay | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| 18.3 |  | Race Pfs: 3 | Race Pfs: 3 | Pathotyp Pfs: 3 | Raza Pfs: 3 |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Resistoflay | 1 |
|  |  | present | présente | vorhanden | presente | Califlay, Clermont | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.4** |  | **Race Pfs: 4** | **Race Pfs: 4** | **Pathotyp Pfs: 4** | **Raza Pfs: 4** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Califlay | 1 |
|  |  | present | présente | vorhanden | presente | Clermont | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.5** |  | **Race Pfs: 5** | **Race Pfs: 5** | **Pathotyp Pfs: 5** | **Raza Pfs: 5** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Clermont | 1 |
|  |  | present | présente | vorhanden | presente | Califlay, Campania | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.6** |  | **Race Pfs: 6** | **Race Pfs: 6** | **Pathotyp Pfs: 6** | **Raza Pfs: 6** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Califlay, Campania | 1 |
|  |  | present | présente | vorhanden | presente | Boeing | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.7** |  | **Race Pfs: 7** | **Race Pfs: 7** | **Pathotyp Pfs: 7** | **Raza Pfs: 7** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Califlay | 1 |
|  |  | present | présente | vorhanden | presente | Campania | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.8** |  | **Race Pfs: 8** | **Race Pfs: 8** | **Pathotyp Pfs: 8** | **Raza Pfs: 8** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Boeing, Campania | 1 |
|  |  | present | présente | vorhanden | presente | Lazio, Lion | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.9** |  | **Race Pfs: 10** | **Race Pfs: 10** | **Pathotyp Pfs:10** | **Raza Pfs:10** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Boeing, Campania, Lion | 1 |
|  |  | present | présente | vorhanden | presente | Lazio | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.10** |  | **Race Pfs: 11** | **Race Pfs: 11** | **Pathotyp Pfs: 11** | **Raza Pfs: 11** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Lazio | 1 |
|  |  | present | présente | vorhanden | presente | Boeing, Califlay, Campania, Lion | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.11** |  | **Race Pfs: 12** | **Race Pfs: 12** | **Pathotyp Pfs: 12** | **Raza Pfs: 12** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Boeing, Campania | 1 |
|  |  | present | présente | vorhanden | presente | Finch, Pigeon, Red Kitten, Zebu | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.12** |  | **Race Pfs: 13** | **Race Pfs: 13** | **Pathotyp Pfs: 13** | **Raza Pfs: 13** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Campania | 1 |
|  |  | present | présente | vorhanden | presente | Boeing, Lion | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.13** |  | **Race Pfs: 14** | **Race Pfs: 14** | **Pathotyp Pfs: 14** | **Raza Pfs: 14** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Campania, Pigeon | 1 |
|  |  | present | présente | vorhanden | presente | Califlay, Lion | 9 |
|  |  | -------------------------- | -------------------------- | -------------------------- | -------------------------- | ------------------------------ | --------- |
| **18.14** |  | **Race Pfs: 15** | **Race Pfs: 15** | **Pathotyp Pfs: 15** | **Raza Pfs: 15** |  |  |
| **QL** |  | absent | absente | fehlend | ausente | Caladonia | 1 |
|  |  | present | présente | vorhanden | presente | Pigeon | 9 |

It is proposed to add column Pf: 15 to the table of differential varieties to identify races in Ad. 18 “Resistance to *Peronospora farinosa* f. sp. *spinaciae* (Pfs)” (see yellow highlight):

“Differential varieties to identify races

“Races Pfs: 1-8 and 10-15 of *Peronospora farinosa* f. sp. *spinaciae* are defined with a standard set of ‘differential varieties’ according to the following table:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Differential variety** | Pfs: 1 | Pfs: 2 | Pfs: 3 | Pfs: 4 | Pfs: 5 | Pfs: 6 | Pfs: 7 | Pfs: 8 | Pfs: 10 | Pfs: 11 | Pfs: 12 | Pfs: 13 | Pfs:14 | Pfs: 15 |
| Viroflay | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| Resistoflay | R | R | S | S | S | S | S | S | S | S | S | S | S | S |
| Califlay | R | S | R | S | R | S | S | R | S | R | R | S | R | S |
| Clermont | R | R | R | R | S | S | S | S | S | S | S | S | S | R |
| Campania | R | R | R | R | R | S | R | S | S | R | S | S | S | R |
| Boeing | R | R | R | R | R | R | R | S | S | R | S | R | S | R |
| Lion | R | R | R | R | R | R | R | R | S | R | R | R | R | R |
| Lazio | R | R | R | R | R | R | R | R | R | S | S | S | S | R |
| Whale | R | R | R | R | R | R | R | R | S | R | R | S | R | S |
| Pigeon | R | R | R | R | R | R | R | R | R | R | R | R | S | R |
| Caladonia | R | R | R | R | R | R | R | R | R | R | R | R | R | S |

Legend: R= resistance present; S = resistance absent, susceptible”

It is proposed to add Race Pfs: 15 to Chapter 10 “Technical Questionaire”, Section 7.3 (b) (i) as follows:

“7.3 Other information

[…]

“(b) Resistance to pests and diseases (specify)

“(i) Resistance to *Peronospora farinosa* f. sp. *spinaciae*

Race Pfs: 1 [ ] absent [ ] present

Race Pfs: 2 [ ] absent [ ] present

Race Pfs: 3 [ ] absent [ ] present

Race Pfs: 4 [ ] absent [ ] present

Race Pfs: 5 [ ] absent [ ] present

Race Pfs: 6 [ ] absent [ ] present

Race Pfs: 7 [ ] absent [ ] present

Race Pfs: 8 [ ] absent [ ] present

Race Pfs: 10 [ ] absent [ ] present

Race Pfs: 11 [ ] absent [ ] present

Race Pfs: 12 [ ] absent [ ] present

Race Pfs: 13 [ ] absent [ ] present

Race Pfs: 14 [ ] absent [ ] present

Race Pfs: 15 [ ] absent [ ] present

[…]”

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