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

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Partial revision of the Test Guidelines for Cucumber, Gherkin

Document prepared by an expert from the Netherlands

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 Cucumber, Gherkin (document TG/61/7 Rev. 3).

The Technical Working Party for Vegetables (TWV), at its fifty-eighth session[[1]](#footnote-2), considered a proposal for a partial revision of the Test Guidelines for Cucumber, Gherkin (*Cucumis sativus* L.) on the basis of documents TG/61/7 Rev. 3 and TWV/58/6 “Partial revision of the Test Guidelines for Cucumber, Gherkin” and proposed the following changes (see document TWV/58/11 “Report”, paragraph 66):

1. Addition of new Characteristic 52 “Resistance to *Cucumber green mottle mosaic virus* (CGMMV)” at the end of the Table of Characteristics
2. Addition of an explanation Ad. 52 “Resistance to *Cucumber green mottle mosaic virus* (CGMMV)” in Chapter 8.2 “Explanations for individual characteristics”

The proposed new wording is presented below.

Proposed addition of new Characteristic 52 “Resistance to *Cucumber green mottle mosaic virus* (CGMMV)” at the end of the Table of Characteristics

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|  |  | English | français | Deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
| **52**.  **(+)** | VS | Resistance to *Cucumber green mottle mosaic virus* (CGMMV) | **Resistance au *Cucumber green mottle mosaic virus* (CGMMV)** | **Resistenz gegen *Cucumber green mottle mosaic virus* (CGMMV)** | **Resistencia a *Cucumber green mottle mosaic virus* (CGMMV)** |  |  |
| QL |  | absent | absente | fehlend | ausente | Topspin | 1 |
|  |  | present | présente | vorhanden | presente | Bonaire, Bluesbrother | 9 |

Proposed addition of an explanation Ad. 52 “Resistance to *Cucumber green mottle mosaic virus* (CGMMV)” in Chapter 8.2 “Explanations for individual characteristics”

Ad. 52: Resistance to *Cucumber green mottle mosaic virus* (CGMMV)

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| 1. | Pathogen | *Cucumber green mottle mosaic virus* (CGMMV) |
| 2. | Quarantine status | - |
| 3. | Host species | *Cucumis sativus* L. |
| 4. | Source of inoculum | Naktuinbouw (NL)[[2]](#footnote-3) |
| 5. | Isolate | e.g. nt280  Other validated isolates may be used, as long as producing the same results on the differential set. |
| 7. | Establishment pathogenicity | Test on susceptible plants |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | Living plants |
| 8.2 | Multiplication variety | Susceptible variety e.g. Topspin |
| 8.3 | Plant stage at inoculation | Cotyledon or first leaf (ca. 7 days old) |
| 8.4 | Inoculation medium | PBS 0,01 M |
| 8.5 | Inoculation method | Rubbing cotyledons with abrasive added to buffer |
| 8.6 | Harvest of inoculum | Soon after the symptoms appear (ca. 14 days after inoculation), first true leaves |
| 8.8 | Shelf life/viability inoculum | Fresh longer than 1 day, desiccated longer than 1 year |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | At least 20 plants |
| 9.2 | Number of replicates | - |
| 9.3 | Control varieties | Resistance absent: Topspin  Resistance present: Bonaire (minimum resistance level)  Bluesbrother has higher resistance than Bonaire |
| 9.5 | Test facility | Glasshouse or climate room |
| 9.6 | Temperature | 24/22°C day/night |
| 9.7 | Light | At least 12 hours |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | 1 g leaf with symptoms with 10 ml 0,01 M PBS or similar buffer. Homogenize, add abrasive to buffer (1 g/30 ml) |
| 10.3 | Plant stage at inoculation | Cotyledon (ca. 7 days old plant) |
| 10.4 | Inoculation method | Gentle rubbing with abrasive added to buffer |
| 10.5 | First observation | 2 weeks after inoculation |
| 10.6 | Second observation | 3 weeks after inoculation |
| 10.7 | Final observations | When Topspin has symptoms predominantly in class 5 |
| 11. | Observations |  |
| 11.1 | Method | Visual |
| 11.2 | Observation scale | 1) No virus symptoms  2) Isolated yellow spots  3) Mild, localized lesions  4) Wide distribution of mosaic and mottling  5) Strong mosaic, yellowing and distortion of leaf shape |

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| A close-up of a plant  Description automatically generated | | |
| 1: no symptomes | 3: mild, localized lesions | 5: strong mosaic, yellowing and distortion of leaf shape |

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| 11.3 | Validation of test | On three controls: Topspin, Bonaire, Bluesbrother. The presence of Bluesbrother (and not only Bonaire) is necessary to validate the aggressiveness of the test. |
| 12. | Interpretation of data in terms of UPOV characteristic states | [1] Resistance absent: comparable with Topspin  [9] Resistance present: comparable with Bonaire and Bluesbrother  A variety with a lower level of resistance than Bonaire (note 9), will be described as note 1. |
| 13. | Critical control points | • The first symptoms will appear relatively late, compared with other cucumber viruses. When symptoms appear before day 11 after inoculation, it may be another virus.  • CGMMV is contagious, and stable, also outside the plant. Avoid touching the plants. Use gloves. Do not combine CGMMV testing with other cucumber resistance tests in one compartment, if possible.  • Aphids may transmit CGMMV as well as other viruses that may contaminate the CGMMV strain. Test should be in aphid-free compartment. |

[End of document]

1. held by electronic means, from April 22 to 25, 2024. [↑](#footnote-ref-2)
2. resistentie@naktuinbouw.nl [↑](#footnote-ref-3)