

Technical Working Party for Vegetables

TWV/58/6

**Fifty-Eighth Session
Virtual meeting, April 22 to 25, 2024**

Original: English
Date: March 22, 2024

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

1. 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. 2 Corr. 2).
2. The Technical Working Party for Vegetables (TWV), at its fifty-eighth session¹, agreed that the Test Guidelines for Cucumber, Gherkin (*Cucumis sativus* L.) be partially revised (see document TWV/57/26 Corr. "Report", Annex II).
3. The following changes are proposed:
 - (a) Addition of new Characteristic 52 "Resistance to *Cucumber green mottle mosaic virus* (CGMMV)" at the end of the Table of Characteristics
 - (b) Addition of an explanation Ad. 52 "Resistance to *Cucumber green mottle mosaic virus* (CGMMV)" in Chapter 8.2 "Explanations for individual characteristics"

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

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

¹ held in Antalya, Türkiye, from May 1 to 5, 2023, in hybrid format

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)*

1.	Pathogen	<i>Cucumber green mottle mosaic virus (CGMMV)</i>
2.	Quarantine status	-
3.	Host species	<i>Cucumis sativus</i> L.
4.	Source of inoculum	Naktuinbouw (NL) ²
5.	Isolate	e.g. nt280
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	At least 20
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 d/n
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

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11.	Observations	
11.1	Method	Visual
11.2	Observation scale	<ol style="list-style-type: none"> 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



1: no symptoms

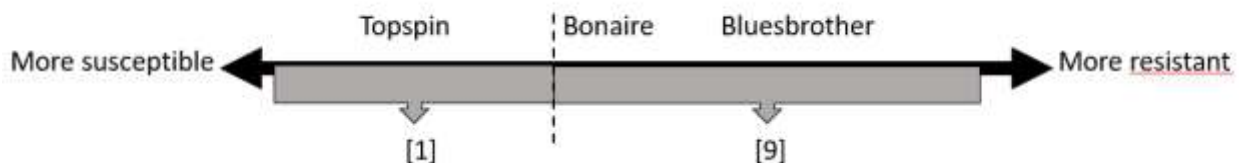


3: mild, localized lesions



5: strong mosaic, yellowing and distortion of leaf shape

11.3	Validation of test	On three controls: Topspin, Bonaire, Bluesbrothers, 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	<p>[1] Resistance absent: comparable with Topspin</p> <p>[9] Resistance present: comparable with Bonaire and Bluesbrother</p> <p>A variety with a lower level of resistance than Bonaire (note 9), will be described as note 1.</p>
13.	Critical control points	<ul style="list-style-type: none"> • 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.



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