UPOV
International Union for the Protection of New Varieties of Plants

E

Technical Working Party for Vegetables

TWV/59/12

Fifty-Ninth Session
Virtual meeting, May 5 to 8, 2025

Original: English
Date: April 11, 2025

MATTERS TO BE RESOLVED CONCERNING TEST GUIDELINES PUT FORWARD FOR ADOPTION BY THE TECHNICAL COMMITTEE: CUCUMBER, GHERKIN

Document prepared by an expert from the Netherlands (Kingdom of)

1. The Enlarged Editorial Committee (TC-EDC), at their meetings held in January and March 2025, considered the partial revision of the Test Guidelines for Cucumber, Gherkin (document TC-EDC/JAN25/3) and agreed that a technical matter should be addressed by the TWV.

2. The following table presents the list of recommendations made by the TC-EDC on the partial revision of the Test Guidelines for Cucumber, Gherkin (*Cucumis sativus* L). The technical matter to be addressed by the TWF are indicated with "#" (hashtag).

#Char. 52	To check whether to be presented as QN characteristic. The clear cut between absent and present which is typical for a QL characteristic is missing. *Leading Expert: provided new proposal for Ad. 52 to be discussed during the TWV/59 session, as presented in the Annex to this document*
Ad. 52	to add "6. Establishment isolate identity" to read "Resistant and susceptible controls" *Leading Expert: agreed. See Annex to this document*

[Annex follows]

ANNEX

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 *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)

1.	Pathogen	*Cucumber green mottle mosaic virus* (CGMMV)
2.	Quarantine status	-
3.	Host species	*Cucumis sativus* L.
4.	Source of inoculum	Naktuinbouw (NL)[1]
5.	Isolate	e.g. nt280 Other validated isolates may be used, as long as producing the same results on the differential set.
6.	Establishment isolate identity	Resistant and susceptible controls
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 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)

[1] resistentie@naktuinbouw.nl

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	Class 1) No virus symptoms Class 2) Isolated yellow spots Class 3) Mild, localized lesions Class 4) Wide distribution of mosaic and mottling Class 5) Strong mosaic, yellowing and distortion of leaf shape

Class 1: no symptoms

Class 3: mild, localized lesions

Class 5: strong mosaic, yellowing and distortion of leaf shape

11.3	Validation of test	Validation on controls. Expected response of controls: Susceptible control: -most plants in classes 4 and 5, Resistant control: -most plants in classes 1,2 and/or 3
12.	Interpretation of data in terms of UPOV characteristic states	[1] absent: distribution of plants in the classes comparable with the susceptible control [9] present: distribution of plants in the classes comparable with the resistant controls A variety with a lower level of resistance than Bonaire (note 9), will be described as note 1. The decision on which side of a border line a variety is described is made on the basis of side by side comparison with the threshold variety Bonaire. Additionally, statistical analysis could be used to support the decision.
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]