



**National Plant Protection Organization**  
POBox 9102  
6700 HC Wageningen  
The Netherlands

## October 2019 PEST Report - THE NETHERLANDS

### 1.1 Official suspicion of Tomato brown rugose fruit virus (ToBRFV) in *Solanum lycopersicum* at one professional fruit production company (closed conditions) in municipality Westland.

#### 1.2 Executive summary

This report concerns the official suspicion of ToBRFV at a fruit production company of *Solanum lycopersicum* in the Netherlands on October 7 2019, based on DAS-ELISA, bio-assay and real-time PCR testing results. Suspicious symptoms were observed on 1 October by the inspector, as part of a specific survey amongst fruit production companies in the Netherlands. The specific survey is almost complete. The origin of the finding is unknown. Trace-back will be carried out to investigate the possible source of the outbreak.

The organism is regulated as part of EU Commission implementing decision 2019/1615.

Identity of the pest (scientific name) Tomato brown rugose fruit virus.

Categorization of the pest EU Commission implementing decision 2019/1615.

Location: municipality Westland.

Reason of the notification: First report.

How the pest was found (1) pest related official survey;

Information on the infested area, severity and source of the outbreak – summary

Visual symptoms were observed on approximately 8% of plants in a fruit production site of 2.8 ha. Fruits of affected plants showed a delay in ripening.

Official phytosanitary measures - summary

At the fruit production site, strict hygiene measures are applied including restricting access, disinfection or replacement of clothing, machines, equipment, surfaces and packaging material. For any fruits harvested from the production place, specific hygiene measures are applied both at the fruit production place as well as the packing station, including cleaning and disinfection of packaging material.

Following removal of the crop and cleaning of the greenhouse, the production site will be monitored, including testing, to verify absence of the virus in the succeeding crop.

Specific surveillance will be intensified both targeting fruit companies in the vicinity as well as fruit companies making use of the same packaging station.

<b>1.3 Type of notification</b>	(1) partial notification (first notification within 8 working days)
<b>2.1 Single Authority</b>	Notification from the National Plant Protection Organization of the Netherlands – Netherlands Food and Consumer Product Safety Authority
<b>2.2 Official contact</b>	M.B. de Hoop. +31651584878 Email: <a href="mailto:m.b.dehoop@nvwa.nl">m.b.dehoop@nvwa.nl</a>
<b>3. Location of presence of harmful organism</b>	Municipality: Westland
3.2 Map of the location.	

<b>4. Reason of the notification and pest status</b>	(1) First presence of the harmful organism
<b>4.3 Previous Pest status</b>	(8) Absent: no pest records
<b>4.4 Current Pest status</b>	(15) Transient: actionable, under eradication.
<b>5. Information relating to the finding.</b>	(1) pest related official survey.
5.2 Date of finding.	Suspicious symptoms at the production site were observed on October 1, 2019. The suspicion of ToBRFV was confirmed by DAS-ELISA, bio-assay and real-time PCR on 7 October 2019.
5.3 Sampling for laboratory analysis	Leaf samples of the infected plant were analysed by the accredited laboratories of NPPO and Naktuinbouw and tested positive in DAS-ELISA, bio-assay and real-time PCR (ISHI test protocol).
5.4 Laboratory	Mr Maikel Aveskamp Tel: +31 65 124 7175 Email: m.m.aveskamp@nvwa.nl National Reference Centre - NPPO of the Netherlands
5.5 Diagnostic method.	See 5.3 Leaf samples were screened for ToBRFV by DAS-ELISA and bio-assay at the laboratory of the NPPO. Additionally, leaf material of the same sample, was sent to the Laboratory of Naktuinbouw for confirmation by real-time RT-PCR adopted from International Seed Federation protocol for "Detection of infectious tomato brown rugose fruit virus in Tomato and Pepper seed", September 2019. ( <a href="https://www.worldseed.org/wp-content/uploads/2019/09/Tomato-ToBRFV_2019.09.pdf">https://www.worldseed.org/wp-content/uploads/2019/09/Tomato-ToBRFV_2019.09.pdf</a> ). Definite identification of ToBRFV through next generation sequencing followed by sequencing analysis on material of the original sample plant is ongoing.
5.6 Date of official confirmation of the harmful organism's identity	The suspicion of ToBRFV was confirmed by DAS-ELISA and realtime PCR testing results on 7 October 2019. Definite identification of ToBRFV through next generation sequencing followed by sequencing analysis on material of the original sample plant is ongoing.
<b>6. Information related to the area, severity of</b>	(1) infested surface (2.8 ha); 8 %

the finding and source of the finding	
6.2. Characteristics of the infested area and its vicinity.	(3) Physically closed conditions (3.1) greenhouse; Plants for planting for fruit production of <i>Solanum lycopersicum</i> .
6.3. Host plants in the infested area and its vicinity.	There are many professional fruit production companies of <i>Solanum lycopersicum</i> en <i>Capsicum</i> spp. in the immediate vicinity.
6.4. Infested plant(s), plant product(s) and other object(s).	Fruit production company of <i>Solanum lycopersicum</i> .
6.5. Vectors present in the area.	Not relevant.
6.6. Severity of the outbreak.	Visual symptoms were observed on approximately 8% of plants in a fruit production site of 2.8 ha. Some fruits of affected plants showed a delay in ripening. Plants are also infected with Pepino mosaic virus. Symptoms may also be caused by this virus or a mixed infection of this virus together with ToBRFV.



Figure 1: Some fruits of ToBRFV and PepMV-affected tomato plants showed a delay in ripening.  
(NPPO of the Netherlands, 20191007)



Figure 2: Mosaic symptoms in the young leaves of ToBRFV and PepMV-affected tomato plants  
(NPPO of the Netherlands, 20191007)

	 <p>Figure 3: Narrowing of young leaves, typical symptoms of several tobamoviruses in tomato plants. (NPPO of the Netherlands, 20191007)</p>
<p>6.7. Source of the outbreak.</p>	<p>Not known. Trace-back is ongoing including the source of the seeds and nursery.</p>
<p><b>7. Official phytosanitary measures</b></p>	
<p>7.1. Adoption of official phytosanitary measures.</p>	<p>(1) Official phytosanitary measures in the form of chemical, biological or physical treatment, have been taken; At the fruit production site, strict hygiene measures are applied including restricting access, disinfection or replacement of clothing, machines, equipment, surfaces and packaging material. For any fruits harvested from the production place, specific hygiene measures are applied both at the fruit production place as well as the packing station, including cleaning and disinfection of packaging material.. Following removal of the crop and cleaning of the greenhouse, the production site will be monitored, including testing, to verify absence of the virus in the succeeding crop. Specific surveillance will be intensified both targeting fruit companies in the vicinity as well as fruit companies making use of the same packaging station.</p>

7.2. Date of adoption of the official phytosanitary measures. In case of temporary measures, indication of their expected duration.	7 October 2019.
7.4. Objective of the official phytosanitary measures.	(1) eradication;
7.5. Measures affecting the movement of goods. Indication of one of the following options	(1) measures affect import into or movement within the Union of goods; In the case of option (1), description of the measures. As of 4 October 2019, every suspicion of the presence of the virus should be reported by professional operators (including laboratories) to the NPPO. National measures will be implemented as of this date in line with EU Implementing Decision 2019/1615.
7.6. Specific surveys.	A trace-back survey will be conducted in particular targeting the nursery and the seed lot of the affected plants. Specific surveillance will be intensified both targeting fruit companies in the vicinity as well as fruit companies making use of the same packaging station.
<b>8. Pest risk analysis/assessment</b>	(1) Pest risk analysis is not required (harmful organism is listed in Annex I or Annex II of Directive 2000/29/EC, or is subject to measures adopted pursuant to Article 16(3) of that Directive);
<b>9. Links to relevant websites, other sources of information.</b>	<a href="https://english.nvwa.nl/topics/pest-reporting/contents/pest-reports">https://english.nvwa.nl/topics/pest-reporting/contents/pest-reports</a>