

# PEST SURVEY REPORT

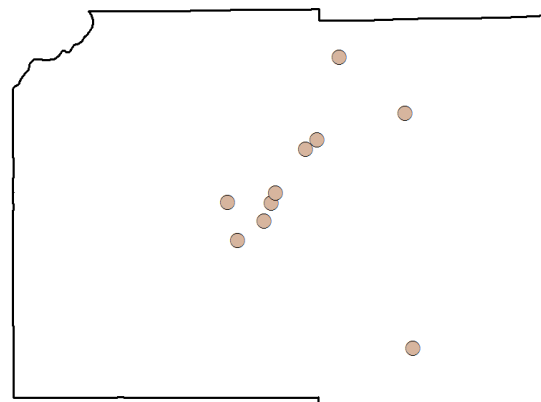
## COMMUNITY GARDEN SOLANACEOUS VIRUS SURVEY

# 2023

PLANT INDUSTRY BUREAU LAB

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE, AND CONSUMER PROTECTION

In 2023, Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) Plant Pathologists conducted a survey for tomato brown rugose fruit virus (ToBRFV), a pathogen of tomato and pepper plants; and potato spindle tuber viroid (PSTVd), a pathogen of potato, tomato, and pepper plants at 10 community gardens in Dane County. Ninety-six composite samples of one or two leaves from each potato, pepper, and tomato plant in each selected plot were collected. (Figure 1). All 96 samples were tested for PSTVd. Ninety-four of the samples were tested for ToBRFV, because at two plots no tomato or pepper plants were present to test for ToBRFV. Samples were tested at the DATCP Plant Industry Bureau Lab and there were no detections of ToBRFV or PSTVd.



**Figure 1.** A map of the survey sites in Dane County Wisconsin.

Tomato brown rugose fruit virus is a serious pathogen of commercial tomato and pepper production. First discovered in 2014 in Jordan and Israel, ToBRFV has since been detected in Argentina, Canada, Morocco, several countries in Asia, the Middle East, and Europe, and several US States. ToBRFV is a member of the Tobamovirus group, which are known for their easy transmissibility and environmental persistence. Like other Tobamoviruses, ToBRFV can easily be transmitted through plant sap, contaminated tools, clothing, seeds, and soil. Symptoms of this virus on tomato and pepper include leaf mottling, mosaic, and chlorosis, as well as fruit discoloration, deformation, necrosis, rugosity, and grooving (Figures 2 and 3).

**Figure 2.** Discolored tomato fruits are a symptom of ToBRFV.

Photo: Professor Salvatore Davino, EPPO



**Figure 3.** Severe mosaic and leaf deformations are typical symptoms of ToBRFV on tomato.

Photo: Professor Salvatore Davino, EPPO



Potato spindle tuber viroid is another pathogen of concern to Wisconsin growers. Viroids are like viruses in that they are made up of RNA, but unlike viruses, viroids do not contain a protective protein coat. The preferred host plants for PSTVd are potato, tomato, and pepper. Potatoes may show stunting, reduced yield, and elongated tubers with roughened skin, cracks, and prominent eyes (Figure 4). Delayed plant emergence from infected seed potatoes may occur. In tomatoes, plants may be stunted, with apical leaf proliferation, and mottled leaves; infected fruits may be smaller and mottled. Symptoms of PSTVd in peppers are subtle with the main symptom being a wavy distorted leaf margin. PSTVd infections are systemic and cannot be treated. The viroid can be transmitted via infected vegetative propagation material, contaminated tools, and infected seed and pollen.



**Figure 4.** Potatoes infected with PSTVd may have elongated tubers. Photo credit: EPPO

There were no detections of ToBRFV or PSTVd at any of the community gardens surveyed, but gardeners and growers should remain alert for symptoms of these viruses. The introduction of either pathogen would have significant impacts to Wisconsin growers. If you suspect your potato, tomato or pepper plants may be infected contact DATCP’s pest hotline at 866-440-7523 or [datcppesthotline@wi.gov](mailto:datcppesthotline@wi.gov).

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## PEST SURVEY PROGRAM

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