

# PEST SURVEY REPORT

## COMMUNITY GARDEN SOLANACEOUS VIRUS SURVEY

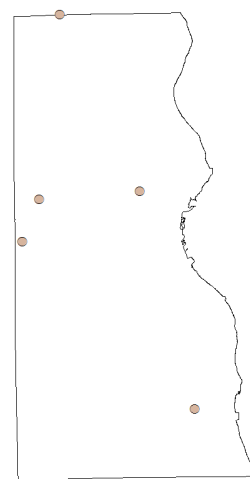
# 2024

PLANT INDUSTRY BUREAU LAB

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION

In 2024, Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) plant pathologists conducted a survey at five community gardens in Milwaukee County (Figure 1) for tomato brown rugose fruit virus (ToBRFV), a pathogen of tomato and pepper; and potato spindle tuber viroid (PSTVd), a pathogen of potato, tomato, and pepper. Though ToBRFV has never been detected in Wisconsin and PSTVd is considered eradicated, they could come into the state through infected plant matter such as seed, tubers, and vegetable plantlets. If introduced, either disease would severely impact growers. Diseased plants have reduced yields and harvested vegetables can be discolored or misshapen, which can cause rejection or downgrading at market.

Tomato brown rugose fruit virus is a newly identified 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. Tomato brown rugose fruit virus infections are systemic and cannot be treated. 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 1.** A map of the survey sites in Milwaukee County, Wisconsin.



**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. It is believed to be eradicated from the United States but is still found in other countries around the world. 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. Potato spindle tuber viroid 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.

In the 2024 DATCP survey in Milwaukee County, 50 samples were collected. Each sample was composed of one or two leaves from every potato, pepper, and tomato plant in one selected community garden plot. All 50 samples were tested for PSTVd and ToBRFV at the DATCP Plant Industry Bureau Lab with no detections of ToBRFV or PSTVd. A similar survey conducted by DATCP in Dane County community gardens in 2023 also yielded no detections of ToBRFV or PSTVd.

Although there were no detections of ToBRFV or PSTVd at any of the community gardens surveyed, gardeners and growers should remain alert for symptoms of these pathogens. 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).

## AUTHORS

Elly Voigt  
Plant Pathologist, Plant Industry Laboratory

Sam Fieweger  
Plant Pathologist Lead, Plant Industry Laboratory

## PEST SURVEY PROGRAM

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION  
2811 Agriculture Drive, P.O. Box 8911, Madison, WI 53708-8911 | <https://datcp.wi.gov>

 <https://www.pestsurvey.wi.gov>  pest hotline: 866.440.7523

