

## Tomato Brown Rugose Fruit Virus (ToBRFV)-Information for home gardeners



Tomato Brown Rugose Fruit Virus (ToBRFV) is an emerging disease issue in tomato crops worldwide. First identified in 2014, a number of outbreaks have since occurred in North America, Europe, the Middle East, and Asia. Natural infection of pepper has also been reported. One report of eggplant infection has been recorded but not verified. Cut-leaf ground cherry (*Physalis angulata*) is also considered to be a host.

ToBRFV is closely related to Tobacco mosaic virus (TMV). Like TMV, ToBRFV is very contagious and can be transmitted from plant to plant by mechanical means such as handling and cultivation tools. This virus does **not** pose any health threat to animals or humans.

The symptoms of ToBRFV on tomato and pepper can vary and include deformed, crinkled leaves, mosaic, mottling, flecking, yellowing, and browning. Fruit symptoms include discoloration and rough brown patches or ringspots. Irregular fruit shape and maturation patterns may also occur. Browning of the veins in the fruit calyx (the leaf-like structures around the attachment point) in the early stages of fruit ripening may also be observed. Symptom expression can vary widely among cultivars: some plants may be infected but remain asymptomatic.

There are currently no ToBRFV-resistant tomato varieties. In peppers, the L genes that confer resistance to TMV and Pepper mild mottle virus (PMMoV) appear to be stable and confer resistance to ToBRFV as well. Pepper varieties lacking these genes are highly susceptible to ToBRFV. The virus may be transmitted from peppers to tomatoes or vice versa.

If you receive notification of a positive ToBRFV test from your seed company, don't panic! There are a few things you will need to do in order to insure that the virus is contained:

- Put all tomato, pepper, and eggplant seedlings in your propagation room into a garbage bag. Include the soil the seedlings were growing in. Put the bag into a second garbage bag, tie it, and place it in the trash. Discard all tomato, pepper, and eggplant seedlings currently in your operation regardless of seed origin. Discard any remaining seeds from the infected lot.
- Disinfect indoor growing spaces, pots, flats, and tools as thoroughly as possible using a 10% bleach solution; this is made by mixing 1 part bleach to 9 parts water. Remove as much soil from pots and flats as possible before disinfecting. Wear disposable gloves and disposable shoe covers while disinfecting and discard these when you are finished.
- Do not start a new batch of tomato, pepper, or eggplant seeds this year.

Angela Madeiras, UMass Extension Plant Pathologist – May-2023