

# Inspection Guidelines

## Tomato Brown Rugose Fruit Virus (ToBRFV)

### Target Pest

*Tomato brown rugose fruit virus* (ToBRFV or TBRFV) (Tobamovirus: Virgaviridae)

### Affected Commodities

*Solanum lycopersicum* (tomato)

*Capsicum* spp. (peppers, including chili peppers)



### Distribution

ToBRFV has been reported in Mexico, England, Germany, Greece, Italy, Netherlands, Jordan, Israel, Palestine, Turkey, and China.

### Signs and Symptoms:

Producers and packing houses should thoroughly inspect tomato and pepper shipments for ToBRFV symptoms.

- **Fruit:** Patterns of yellow/green spots and rough, brown, wrinkled patches appear on tomato fruits. There can also be green stripes and brown spots on green tomato fruits. Tomato fruit may appear deformed and/or discolored with various marbling combinations of brown, yellow, red and green. Tomato variety can affect symptom expression. In pepper, fruits display similar symptoms, but can also exhibit green grooves.
- **Leaves:** Tomato leaves could appear discolored or “mottled”, wrinkled, yellowed, and lacking color uniformity.
- **Other plant parts:** This virus causes a pattern of yellow/green spots to develop on the calyx. Peduncle, sepals, petioles, and stems could develop necrotic spots.





## Pest Alert

### Tomato Brown Rugose Fruit Virus (ToBRFV)



Refer to PPQ's Fruit and Vegetables Import Requirements (FAVIR) for other general inspection guidelines. To prevent cross-contamination, gloves should be worn when handling fruit, changed between inspections, and discarded to prevent spread.

### Additional Information

Specific guidelines are available in the Federal Order.

#### Photo Credits

Figure 1: Luria et al., 2017

Figure 2: Luria et al., 2017

Figure 3: Alkowni et al., 2019

Figure 4: Menzel et al., 2019

Figure 5: USDA-ARS

Figure 6: Cambrón-Crisantos et al., 2018

Figure 7: SENASICA

Figure 8: SENASICA