

Greenhouse Pest Message, March 20, 2025
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Viruses are an important pathogen group that is found throughout the ornamental trade. Viruses can spread by seed, on cuttings, with mechanical transmission, and via insect vectors. The main virus group in greenhouses is the tospovirus family that includes *Impatiens Necrotic Spot Virus* (INSV) and *Tomato Spotted Wilt Virus* (TSWV). Almost all greenhouse crops are susceptible to varying degrees. Symptoms on infected crops include rings, necrotic leaf spots (impatiens, begonia), mosaic, and stunting. Crops that are notably infected by viruses include mums, rose, carnation, dahlia, freesia, lily, viola, tulip and other bulb crops.

There have been a few instances of viruses appearing recently. Some are common, such as TSWV, while others are less frequently observed. Pansy with viral-like symptoms (yellowing) were observed in multiple greenhouses (photo below). These plants did not have nutritional issues and no pathogens present. The sporadic yellowing seems confined to a couple varieties. These symptomatic plants came back negative in a test for multiple common viola viruses, suggesting something genetic or variety specific.

Viruses observed this early in the season may have come in on cuttings or with plants grown from infected seed. Thrips and aphids are common transmitters of viruses. Tospoviruses are transmitted by thrips, especially WFT. *Thrips parvispinus* is not a recorded vector (UF IFAS). Thrips damage does not always mean the virus is present, however, if there are virus infected plants and thrips pressure in the greenhouse, virus transmission can easily occur. Larvae pick up the virus which persists in the insect. The adult thrips transmits the virus to crops that it feeds on in short periods. Viruses are also propagated on vegetative material such as cuttings and tubers. Not all virus susceptible plants are affected by thrips.



Photo: Symptoms of ivy ringspot-associated virus (IRSaV) on Hedera, with prominent rings. Pansy seedlings and plant with a viral-like symptom (no virus identified).



Photo: Cineraria leaf with confirmed TSWV. Note the light mottling, and ring in the center of the leaf.

Common sources for outbreaks of viruses include: carry-over of crops asymptomatic but harboring the virus, weeds in the greenhouse, and infected stock plants. Viral management requires an integrated approach that focuses on controlling thrips, aphids, and whiteflies. Use sticky cards to monitor for thrips. Follow IPM for thrips control, using chemistries like Mainspring, Overture, or Conserve when thrips pressure is high. There are also biocontrols available (see factsheets).

Viral detection can be done in the greenhouse using Agdia test strips. These are easy to use immunostrips that identify a protein or antigen in the infected leaves or herbaceous stems. They are available for all common viruses. Infected plants can also be sent to a clinic for identification. Visual detection is possible for some crops, however, there can be times that viral symptoms appear similar to leaf spots, making identification difficult.

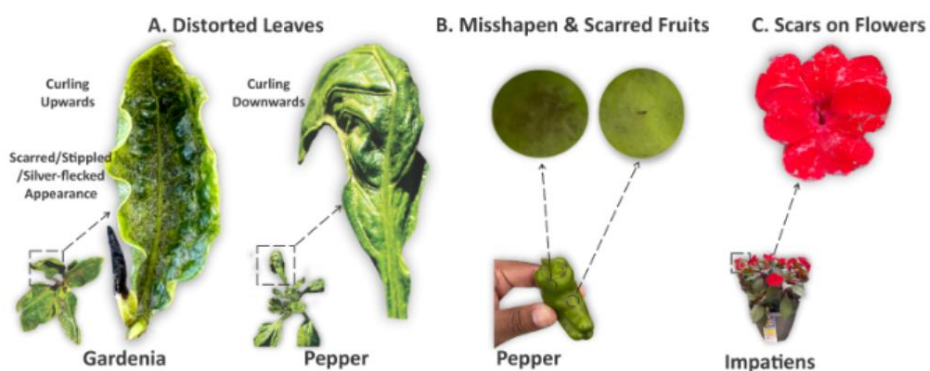


Photo: Thrips damage (no virus present), Source UFIFAS.

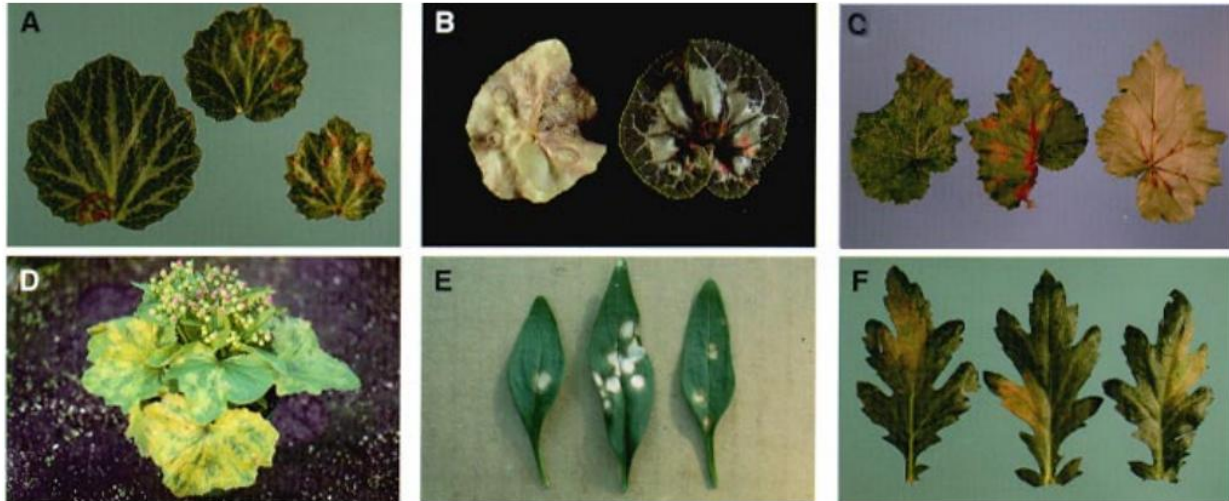


Photo: INSV symptoms on begonia, cyclamen, begonia, cineraria, snapdragon, and mum, showing the diversity of symptoms on common crops. Source, M. Daugherty.

Below are factsheets on different management approaches for viral diseases, and management of insects that can transmit viruses.

Excellent factsheet on viral indicator plants:

https://hortscans.ces.ncsu.edu/uploads/u/s/using_in_51e40c88f288d.pdf

INSV information: <https://ag.umass.edu/greenhouse-floriculture/fact-sheets/impatiens-necrotic-spot-virus-tomato-spotted-wilt-virus>

Managing whiteflies: <https://ipm-cahnr.media.uconn.edu/wp-content/uploads/sites/3216/2024/06/whitefliesghs.pdf>

Thrips management with banker plants: <https://www.growertalks.com/Article/?articleid=26177>