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Going Viral:

Highlighting viruses found this production season.

This Alert is a photographic guide to viruses found on a wide array species during the 2023 production season and will aid in the identification of these problems.

Necrotic spotting and ringspots were observed while visiting growers. These symptoms are typical of a virus infection.

To confirm, the first step is to test the plant for impatiens necrotic spot virus (INSV) and then tomato spotted wilt virus (TSWV). From experience, INSV is confirmed twice as much as TSWV, therefore we usually begin with that test.

All of the viruses were confirmed with an enzyme-linked immunosorbent assay (ELISA) test. If you suspect a virus problem, have the plants tested by a diagnostic clinic. You can also conduct in-house testing with ELISA kits [Agdia <http://www.agdia.com/>]. It is important to test multiple leaves from the same plant that is exhibiting symptoms. The total leaf area tested should be around 1 square cm.



Black ringspots are a typical sign of a viral infection. In this case, impatiens necrotic spot virus (INSV) was confirmed. (Photo: Brian Whipker)

Once a plant has INSV or TSWV, there are no treatment options to remove the virus from the plant. Discarding infected plants is the only option, and this will help prevent the virus from spreading further. It is important to note that some plants may be asymptomatic, but still have TSWV or INSV. Since the primary method of spreading these viruses is via Western Flower thrips (*Frankliniella occidentalis*) feeding, it is critical to keep them under control.

Species Highlighted

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Angelonia INSV

Mottled leaves, necrosis, and stunted growth (A, B, C) can occur with an INSV infestation of angelonia. Stem cankers (D) and with advanced symptoms an overall stunting (E). (Photos: Brian Whipker)



Clerodendrum INSV

Leaf mottling was the most common sign of INSV on clerodendrum (A). Necrotic ringspots develop as the disease progresses (B, C, D). (Photos: Brian Whipker)



***Farfugium japonicum* (Leopard plant, Tractor seat plant) Virus**

The plant was tested for both INSV and TSWV and neither Elisa tests were positive. The necrotic ringspots (A, B) indicate a virus infection, but it is important to state that Elisa tests are virus specific. There are many viruses that can infect plants, but usually in greenhouse production we primarily deal with INSV and TSWV. Attempts could be made to identify the specific virus attacking this plant, but it may not be cost effective to have a broad screening done. (Photos: Brian Whipker)



Gomphrena INSV

Mottled leaves, ringspots and stunted growth occurs with an INSV infestation of gomphrena (A-E). (Photos: Brian Whipker)



Impatiens INSV

Necrotic ringspots (A, B, C) and stem discoloration (D) were found on an INSV infected impatiens. (Photos: Brian Whipker)



Heliotropium INSV

Symptoms of INSV on heliotropium were unusual. The initial assessment of the problem did not include a virus problem. Upon testing, it was determined the leaf necrosis (A, B, C, D) was the result of an INSV infection. (Photos: Brian Whipker)



New Guinea Impatiens INSV

Upon inspection of the plants, stunting was observed with scattered pots (A). Twisted growing points (B), necrotic spotting (C, D), distinctive line patterns (E), and ringspots (F) were also denoted. (Photos: Brian Whipker)



New Guinea Impatiens INSV, continued
(Photos: Brian Whipker)



Ranunculus TSWV

Leaf symptoms of TSWV ranunculus were also unusual. Necrotic spotting, necrotic leaves, and stunted growth that resulted in the lack of flowering (A, B) were observed. The initial assessment of the problem did not center around a virus problem, but when the other options did not seem feasible, the plants were tested for TSWV. (Photos: Brian Whipker)



Torenia TSWV

Signs of a TSWV and INSV infection of torenia are unique. Usually the initial indication that there is an issue is stem dieback (A, B, C). Twisted growth, necrotic spotting and distinctive line patterns occur but are not initially as noticeable (D, E, F). (Photos: Brian Whipker)



Torenia TSWV, continued
(Photos: Brian Whipker)



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