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Diseases of *Veronica*

The herbaceous perennial, Veronica, is susceptible to many diseases including rust and cucumber mosaic virus.

Veronica spp. (Fig. 1) is an herbaceous perennial with upright, blue-violet-pink-white flower spikes, which blooms in June and July in temperate climates. *Veronica* grows best in Zones 4 through 8, in full sun in well-drained soils. *Veronica* is susceptible to many diseases, including rust and cucumbers mosaic virus.

Veronica Rust

Various species of *Veronica* (*V. longifolia*, *V. Montana* and *V. spicata*) can serve as hosts for rust pathogens. The symptoms of Veronica rust are: red-brown rust pustules on the undersides of leaves, browning of leaf tissue, and plant decline (Fig. 2, 3). Plants are most susceptible to



Figure 2. Browning of leaf tissue from Veronica rust. Photo credit: Keith Eldred, MDARD.

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Figure 1. Veronica 'Pink Goblin' at retail garden center in Michigan. Photo credit: Heidi Lindberg.

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Figure 3. Red-brown rust pustules on the undersides of leaves from Veronica rust. Photo credit: Keith Eldred, MDARD.

rust pathogens when plants are stressed in order to catch disease symptoms early.

There are numerous fungicides that can be used to prevent the spread of Veronica rust. Prior to application, greenhouse growers should always check the label to be sure that the product is labeled for ornamental plants and for its use in greenhouses. Manzate (mancozeb) and Daconil (chlorothalonil) are protectant fungicides that can be used as tank mix partners or in alternation with fungicides that have some systemic properties.

The strobilurin-based fungicides can be absorbed and are moved within the plant in a limited way. The strobilurin-based fungicides that have one active ingredient include products such as Heritage WDG (azoxystrobin), Insignia WG (pyraclostrobin), and Compass O WDG (trifloxystrobin) and could be helpful especially when tank-mixed with a protectant fungicide or used in alternation with other systemic fungicides. Other fungicide products have a strobilurin component and are premixed with another fungicide and include the following: Pageant Intrinsic 38WG (pyraclostrobin/boscalid), Orkestra (fluxapyroxad/pyraclostrobin), Mural (azoxystrobin/benzovindiflupry), and Strike Plus (triadimefon/trifloxystrobin). Other systemic fungicides that could be helpful include Tourney 50WG (metconazole) and Eagle EW/WP (myclobutanil).

Cucumber Mosaic Virus

CMV is a common virus in ornamental plants and has a very wide host range, including many vegetables. The symptoms of CMV on *Veronica* include irregular, yellow blotchy foliage, plant stunting, and wrinkled leaves (Fig. 5, 6). Aphids serve



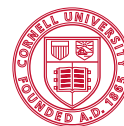
Figure 5. Blotchy, irregular foliage on *Veronica* from CMV. Photo credit: Jan Byrne, MSU Diagnostic Services.



Figure 6. Twisted, chlorotic leaf of *Veronica* caused by CMV. Photo credit: Jan Byrne, MSU Diagnostic Services.

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as the primary vector of CMV, however, the virus is also spread mechanically through taking cuttings and propagation. CMV can be transmitted through the seed within some plant families. As with all viruses, there are no curative treatments for plants that have already been infected. Greenhouse growers should consistently test and disposed of symptomatic plants. In order to prevent the spread of CMV, growers should control aphids. CMV is a non-persistent virus, which means that it can be picked up by the insect quickly and can be spread by the insect for a relatively short time (minutes-hours) after feeding on or probing an infected plant. It is one of the plant viruses that can be spread around quickly as the insects move around in the crop.

According to the [2017 insect management recommendations](#), the following are recommended products to control aphids for this growing season: Aria, azadarachtin + M-Pede (Aza-Direct, AzaGuard, Azatin), Botanigard, Distance, Endeavor, Enstar II, Gaucho, Kontos, Ornazin, Orthene 97, Talstar and Tristar. For those growers who wish to use a neonicotinoid product, imidacloprid, Safari or Flagship are effective as a soil drench and Tristar as a spray. For those not using neonicotinoids, growers in Michigan are reporting that drenching with Kontos has been working especially well, while a spray of Endeavor has been very effective.

Growers should eliminate any weeds in the greenhouse as they can harbor both viruses and the insect vectors that carry them. CMV is not a stable virus like tobacco mosaic virus (TMV) therefore it does not survive on hard surfaces (weed mats or benches) for long periods of time.

**This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned.*

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