

Disease Crossover in Greenhouse Ornamental and Vegetable Crops

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Many of you have diversified operations including both ornamental and vegetable plant production. Pest issues and interactions between these crops in an operation can lead to significant losses. Margery Daughtrey and Ann Chase co- wrote a very informative article on this topic. The following is an excerpt:

On top of the need to be wary of potential late blight symptoms, being on the alert for Tobacco mosaic virus (TMV) is especially important for petunia growers who also produce tomatoes. Many of the commercial varieties of tomatoes grown today have resistance to TMV (and other diseases) — but the increasingly popular “heirloom” varieties of tomatoes do not have these resistance features. A greenhouse flower grower supplying heirloom tomato transplants to farmers could create a disastrous disease problem if TMV contaminated petunias were brought into contact with the tomatoes during production! TMV-affected tomatoes may have distorted or mottled foliage as well as reduced yield and poor fruit quality, including uneven ripening and gray interior walls. Because TMV is spread merely by handling, it is particularly likely to be moved from flowers to vegetables or vice versa. Many other viruses can infect herbaceous perennials and vegetables, moving freely back and forth and making control strategies very tough to implement. For example, Cucumber mosaic virus (CMV) and Alfalfa mosaic virus (AMV) have both vegetable and flower crops on their menu; if unfamiliar symptoms are seen on a flower crop, diagnosis may be important for the sake of vegetables in the same greenhouse.

Keep edibles separate from ornamentals wherever possible, so that problems will have less opportunity to move from vegetatively-propagated ornamentals to seed-propagated edibles. Separation also makes it easier to use different materials for control in ornamental vs. edible growing areas. Starting vegetables in separate (and very clean) houses might protect them from early contact with Western flower thrips that could be infesting flowering crops elsewhere on your premises. Western flower thrips will move readily between ornamentals and edibles, transmitting TSWV or INSV to bell peppers, for example, if the virus has previously been acquired from a diseased ornamental. Tomato crops should be raised away from flowering solanaceous crops (petunia) as these might be the source for TMV or late blight. Think of vegetable and herb production as a specialty that requires more research and consideration than you might expect, and you will be rewarded with successful culture of these popular crops.

Crossing Over: Vegetable Diseases in the Ornamental Greenhouse A.R. Chase and Margery Daughtrey, Reprinted with permission. Greenhouse Product News, October 2013. The following is a direct link to the full article online <http://www.gpnmag.com/crossing-over-vegetable-diseases-ornamental-greenhouse>

Sanitation is an important step to preventing the spread of TMV and other diseases lurking in greenhouse operations. Nora Catlin’s article in e-GRO is very thorough – with information on ID on petunia and sanitation – including using milk as a sanitizer. <http://e-gro.org/alerts.php>. In addition, suspicious plants can be tested for many diseases including TMV. You can purchase TMV and other test strip kits from Agdia

at https://orders.agdia.com/InventoryD.asp?attribute_Size=5&collection=ISK+57400&loc=IN or send in a sample directly to Agdia for testing.

Another consideration is avoiding spread of TMV and other pathogens during pruning. Sterilizing and disinfecting tools in a dip can be time consuming, however, there are several types of pruners /knives that dispense a sanitizer as you prune. The following are a few options: Metallo Germo Knife; Felco 19 Pruning Shear and Integrated Sprayer.