2014

Fruit Scars By Viruses

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Fruit Scars Caused by Viruses

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October 2014

This summer we confirmed two virus diseases new to our state: Tobacco Streak Virus (TSV) and Blueberry Shock Virus (BlShV). Both viruses are relatively new to the cranberry industry and we have only recently begun to understand details about their spread, transmission, and potential impact on cranberry. Here we provide some general characteristics about TSV and BlShV and what we have learned about them so far.

TSV has a very broad plant host range and is generally spread by infected pollen and planting material, insects such as thrips, and seed. Initial studies on cranberry suggest that pollen and propagation material, rather than seed, are the main modes of dispersal. BlShV is a problem only in blueberries and it is also spread via pollen and shipping of nursery stock. Patty McManus from University of Madison-Wisconsin has been working on TSV and BlShV of cranberry since 2012. Preliminary findings indicate that TSV- or BlShV-infected plants do not necessarily show symptoms every year. Similar to BlShV in blueberry, we believe that fruit scarring caused by these viruses is due to a 'shock' reaction on newly infected cranberry plants. In the following year(s) after infection, uprights may produce healthy-looking berries, but given that virus-infected plants rarely recover, asymptomatic plants can continue to test positive for TSV or BlShV. Based on WI data, it appears that TSV and BlShV may have little or no effect on total yield, but it's too early to rule them out as potential disease threats to production.

Symptoms. In MA, we have only observed scarring symptoms on fruit (picture to the right), but according to the McManus lab, TSV can also cause flower and tip blight. TSV- or BlShV- infected berries can have multiple, deep, tan- to dark brown- colored scars that can severely distort the shape of the berry. These symptoms are unlike any fruit scarring associated with fungicide phytotoxicity or insect damage (picture below). Early infections can lead to completely shriveled berries and it is not uncommon to observe several symptomatic berries/upright next to a healthy-looking upright. It is not possible to differentiate TSV and BlShV based on a visual analysis and special testing will be required to tell them apart.

Fruit scarring caused by TSV or BlShV

If you suspect TSV or BlShV please contact the Station and we will provide you with more information about testing services available.

Superficial fruit scars caused by fungicide phytotoxicity

Management. At this point we can only make precautionary recommendations to avoid further spread of these viruses. It is important to document the presence of the virus(es) in each bed, especially since asymptomatic propagation material taken from infected plants can continue to spread these diseases. When renovating, make sure all propagation material comes from virus-free sources. Given that infected pollen is suspected to spread and transmit both viruses, consider minimizing traffic from infected to healthy beds, especially during bloom period. If possible, work on infected beds last or disinfest (10% bleach) any equipment and shoes before entering a healthy bed.