



Little Cherry Disease

Background



Compare these 10.5-row healthy cherries (top) with the little cherry samples from an infected tree (bottom).

The cool, wet spring of 2010 provided the perfect conditions for a sleeping virus to wake up and cause concern among some Washington state cherry growers.

Many Washington commercial cherry trees harbor Little Cherry Disease without any obvious impact on yield and/or size. But the record-breaking cool spring of 2010 created the perfect conditions for the virus symptoms to intensify.

Concerned orchardists called on scientists from the Fruit Tree Clean Plant Network (FTCPN) at Washington State University's Irrigated Agriculture Research and Extension Center in Prosser, to identify the cause of small fruit in their orchards.

Plant virologist Ken Eastwell and WSU Extension Educator Tim Smith met with concerned growers and fieldmen then took samples from affected orchards and brought them to FTCPN laboratories for testing. The tests indicated the presence of Little Cherry Virus 2 (LChV2) in many affected orchards. Impacted orchardists are removing trees where necessary to control the virus.

Symptoms



Lambert sweet cherries affected by little cherry disease.

- Trees with the Little Cherry Disease produce small cherries. Ripe fruit is 12 row or smaller, resulting in higher packing house cull percentages.
- The appearance, taste, and sugar content of the cherries are negatively impacted.
- Severity of symptoms is dependent on cultivar, with 'Bing' and 'Sweetheart' being relatively tolerant. After severe symptoms during the first year of infection, fruit size and color of these varieties will return to near normal, but remain reduced. Fruit flavor never recovers.
- Severe symptoms on all varieties will return during every cool spring season after that.

Pathogen

- Little Cherry Disease can be caused by one of two agents: Little Cherry Virus-1 and -2 are distantly related viruses.
- Western X disease appears similar to Little Cherry Disease but is caused by a special group of bacteria.

Transmission



Apple mealybug on a cherry leaf.

Control



It is highly likely that other types of mealybugs, such as the grape mealybugs shown above, can transmit the virus.

- The disease can be transmitted via grafts using non-certified budwood or rootstocks. The best defense against Little Cherry Disease is planting virus-tested trees from certified nurseries. You'll find a list of certified nurseries at:

<http://agr.wa.gov/PlantsInsects/PlantCertification/docs/FruitTreeGrowers.pdf>

- Little Cherry Virus 2 is transmitted by apple mealybug. These insects can be controlled with insecticide spray. It is possible that other mealybug species will also transmit the virus, but this has not been confirmed. To learn how to control apple mealybug go to:

<http://jenny.tfrec.wsu.edu/opm/displaySpecies.php?pn=135>

- Root grafting can also pass the virus to healthy trees adjacent to infected trees.

- Control apple mealybug and other mealybug species that are potential vectors.
- Control wild cherry species (bitter cherry) around the orchard.
- Immediate and proper removal of infected trees is imperative. Surrounding trees must be monitored for the disease for 2 to 3 years after removal of the infected tree.
- Things to consider when considering removal of infected trees:
 - ▶ Unchecked, the pathogen will continue to spread in your orchard and potentially to adjacent properties.
 - ▶ Transmission can be slowed by effective mealybug control, allowing time to implement a workable orchard restoration strategy.
 - ▶ The degree to which the crop is negatively impacted will vary from year to year, depending on weather. Infected trees are never as productive as healthy trees.
 - ▶ To learn about proper removal of infected trees go to:
<http://nrsp5.prosser.wsu.edu/Little%20Cherry%20Virus%20-2%20%20index.htm>

