Plant Pathology Seminar Series

"Little cherry disease: A recurring problem in the PNW"

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Abstract

Little Cherry Disease (LChD) is a devastating disease that is caused by Little Cherry Virus 1, Little Cherry Virus 2 (LChV-2), Western X phytoplasma, or their combination (Harper et al., 2020). LChV-2 and Western X are both insects- and graft-transmitted. LChV-2 is vectored semi-persistently by apple and grape mealybug, whereas Western X is transmitted by leafhoppers (Wright et al., 2021). LChD manifests in cherry trees over the course of several years, resulting in the production of small fruit with a lack of flavor. The disease has plagued growers in the pacific northwest (PNW) since the 1938 epidemic in the Kootenay Valley of British Columbia, Canada. The severity of the epidemic completely decimated the cherry industry in the Valley. In Washington state, LChD became a problem for the first time in the 1940s, due to Western X phytoplasma. The use of certified nursery stocks, vector control, and tree removal successfully managed the disease until the new LChD epidemics, due to LChV-2, severely affected the cherry industry in Washington in 2010 (Blodgett, 1976; Harper et al., 2020). The novel LChD epidemic ongoing since 2010 has resulted in immense damage to the industry, estimated at $65 million due to tree removal between 2015 and 2020. Lost production from tree removal cost growers approximately $30 million in 2020 alone (Harper et al., 2020). Ongoing research aims to develop effective mitigation strategies that include orchard monitoring and scouting, early molecular detection to help with tree removal, and improved management of insect vectors (Galinato et al., 2019). Since LChD symptoms are difficult to identify as symptomatic fruit only appear to be unripe, molecular assays, such as reverse transcriptase recombinase polymerase amplification assays (RT-RPA) used to identify LChV-2 (Mekuria et al., 2014), provide an effective method for early LChD identification and detection in potentially infected trees. This seminar will focus on the cyclic nature of the disease, current situation in the PNW, and ongoing research efforts aimed at mitigating LChD in Washington.

4:10 pm | November 8th, 2021 | Plant Pathology 515, Fall 2021
Zoom Link: https://wsu.zoom.us/j/94763621072
Meeting ID: 947 6362 1072
Passcode: 3710
Call in number: 1 253 215 8782

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References

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