

Tree Fruit Extension Economics Research Highlight

The Costs of Ignoring Little Cherry Disease

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Little cherry disease (LCD) is caused by one or more of three pathogens, all of which are known to occur in Washington State: little cherry virus 1 (LChV1), little cherry virus 2 (LChV2), and western X phytoplasma (WX). In Washington State, LChV2 and WX are currently the most widespread of the above three pathogens, however this study focuses on LChV2 only. Because there is not known treatment to control or prevent LCD the remedial measure is to remove trees which is causing a major economic effect on the sweet cherry industry in the Pacific Northwest. We analyze two management strategies for LCD. First, the do-nothing strategy, in which the grower is unaware of the presence of LChV2, does nothing to control mealybugs (the insect vector), and assumes the losses of the fruit sent to the packinghouse. The with-management strategy considers that the grower invests in monitoring, sends symptomatic tree samples to be analyzed, implements a pest management program to control mealybugs, and removes the affected trees to prevent further disseminating the disease. Because there is no *a priori* study of LChV2 spread rates, we assumed spread rates of 1%, 3%, and 5% under the do-nothing scenario and 0.5%, 1%, and 2% under the with-management scenario. Our results indicate that the additional costs incurred in monitoring, testing, spraying to control for mealybugs, and removing infected trees are lower than the reduced profit losses compared to the do-nothing scenario. Even when comparing different LChV2 spread rates, management can prevent or lessen the negative economic impacts of higher spread rates. The results from this study illustrate the importance of prevention—particularly monitoring, correct identification and controlling for insect vectors—in preventing the dissemination of a disease, such as LCD, for which tree removal is the only remedial measure.

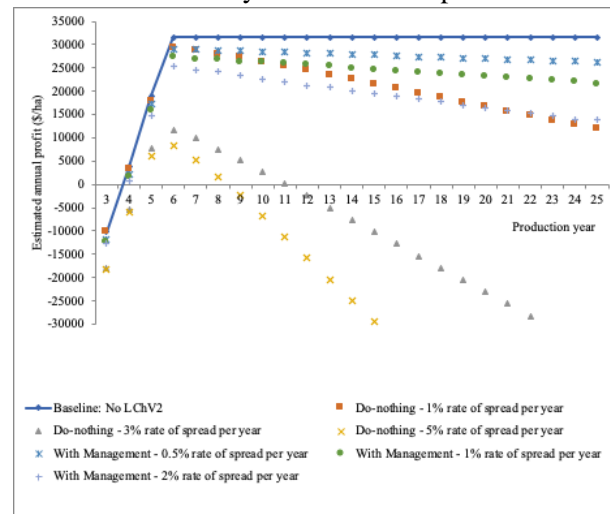


Figure 1. Comparison of management scenarios of a "Sweetheart" orchard infected with LChV2.

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This paper is published in Plant Disease.

Reference: Galinato, S., R.K. Gallardo, E. Beers, A. Bixby-Brosi. 2019. "Developing a Management Strategy for Little Cherry Disease: The Case of Washington State." Plant Disease. Available online: <https://apsjournals.apsnet.org/doi/10.1094/PDIS-12-18-2235-SR>