

# Silverleaf Disease

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Silverleaf, a disease that kills almond and fruit trees, appears to be spreading throughout Stanislaus County and beyond. I first saw two or three silverleaf-infected trees in 1998 in a young almond orchard in the Salida area. At that time I thought it was no more than a curiosity. Since then I have seen or been told of more than 20 almond orchards with silverleaf in this county. The vast majority of these orchards are in the area between the Stanislaus River and Keyes Road west of Highway 99. However, I have also seen silverleaf in the Patterson area and east of Montpelier Road. This summer silverleaf was confirmed in Escalon, Ripon and Manteca almond orchards as well as peach orchards in Fresno, Madera and Yuba counties. Although most affected orchards I have seen have less than ten infected trees, some orchards have more than one hundred infected trees.

This disease is of major economic importance in Chile, France and New Zealand but has never been a serious problem in California. The disease is caused by *Chondrostereum purpureum*, a fungus that forms leathery fruiting bodies that develop in bracket-like clusters on infected tree trunks and scaffolds. These fruiting bodies may persist for more than two years. During wet weather, the fruiting bodies hydrate and release spores that blow around in the wind. These spores can then infect pruning wounds and grow into the tree.

**Symptoms.** As the fungus grows through the wood of infected trees, toxic compounds are produced and transported in the water-conducting vessels. This causes the upper epidermis of the leaves to separate slightly from the inner tissues. This air-space gives the leaves a silvery appearance in the spring which becomes difficult to see by late summer. Over a period of 2-4 years, the fungus continues to decay the interior of the tree, killing scaffolds and eventually the whole tree.

**Management.** Once trees are infected, there is no method proven to “cure” the tree. Management practices should focus on reducing inoculum and preventing infection. Affected trees should be removed and burned before fruiting bodies form in the fall. We have learned this year that the fungus grows into the roots of infected trees so these should also be removed if possible before replanting.

Trees should be pruned as early in the fall as possible to avoid having susceptible wounds during wet weather. Circumstantial evidence suggests infection is not likely to occur during the first rain of the season when fruiting bodies are still dehydrated from the summer. The best opportunity for infection probably begins with the second rain and continues throughout the winter and spring until the rainy season is over.

Wounds are most susceptible in the first week after pruning. After one month, wounds are pretty well healed and infection rarely occurs. Trees are physiologically most susceptible to infection in late winter and spring. Unfortunately, growers in our area have gotten in the habit of pruning young trees late in the spring. This has arisen from grower experience that indicates bacterial canker symptoms may be lessened by pruning late. Remember, bacterial canker is only a problem in replanted orchards grown in sandy locations. There is no reason to wait to prune unless you are in a bacterial canker situation. Growers in bacterial canker areas will have to weigh risks to decide when to prune. Otherwise, I would prune yesterday.