

The Disease & the Insect

Pierce's Disease

Pierce's disease of grapevines was first noted in California near Anaheim in 1884. The disease is caused by a strain of the bacterium *Xylella fastidiosa* and kills grapevines by clogging up their water-conducting vessels (xylem). Several strains of this bacterium exist, attacking and causing damage to different host plants including grapes, citrus, stone fruits, almonds, oleander, and certain shade trees (including oaks, elms, maples and sycamore). Since its discovery, Pierce's disease has spread to other areas of the state and is currently known to exist in 24 counties. According to a report issued by the University of California, the disease has destroyed over 1,000 acres of grapevines resulting in damages of \$30 million since 1994¹. There is no known cure for the disease.

The Sharpshooter

The glassy-winged sharpshooter, first noted in California in 1994, is native to the southeastern U.S. and northeastern Mexico. It feeds on the xylem fluid of over 70 species of crop and ornamental plants. The glassy-winged sharpshooter builds up large populations on a diverse array of host plants and is an aggressive flyer, traveling greater distances than native sharpshooters.

California's first indication of risk from these two pests occurred in Riverside County in August of 1999 when over 300 acres of grapevines infested with glassy-

winged sharpshooter were rapidly destroyed by Pierce's disease.



Scientists believe that the glassy-winged sharpshooter has the potential to increase both the incidence and severity of Pierce's disease in California. As observed in the Temecula infestation, the sharpshooter:

- Builds to high populations that substantially increase the number of insects vectoring the destructive *X. fastidiosa* bacteria to crops;
- Covers longer distances in a shorter time than other sharpshooters;
- Makes use of more breeding habitats and plant hosts than native Pierce's disease vectors; and
- Transmits the disease from vine-to-vine, resulting in an exponential, rather than linear, increase in disease incidence in vineyards (per Dr. A. Purcell, University of California, Berkeley).

The combination of Pierce's disease and the glassy-winged sharpshooter constitute an unprecedented threat to California's multi-billion dollar grape, wine and almond industries, as well as ornamental and highway plantings of oleanders.

¹ Report of Pierce's Disease Research and Emergency Response Task Force, April 2000.