

Kern/Tulare

GWSS Update



A project of the Glassy-winged Sharpshooter Task Force of Kern and Tulare Counties. Participants: Agricultural Commissioner's Offices of Kern and Tulare Counties, California Department of Food and Agriculture, University of California-Cooperative Extension, U.S. Department of Agriculture (APHIS and ARS Divisions).

Kern research projects increase knowledge of PD control, management practices, epidemiology

Information gathered from two research projects focusing on Pierce's disease in Kern County from 2001 to 2003 should lead to better control and management practices in area vineyards.

The projects were conducted by leaders Jennifer Hashim with the University of California-Cooperative Extension and Barry L. Hill with the California Department of Food and Agriculture (CDFA). The research team also included cooperators Maggi Kelly, David Shari and Alexander Purcell of the University of California at Berkeley.

Their findings were presented at the Pierce's Disease Research Symposium Dec. 8-11 in Coronado, Calif.

The projects monitored vineyards in seven distinct grape-growing areas in Kern County, as defined by the cooperative area-wide pest management of the glassy-winged sharpshooter (GWSS) project. They total 5 percent of Kern County's grape production acreage, and represent various stages in the PD epidemic.

Vineyard locations ranged from the General Beale area — where GWSS was first observed in 1997 and where the epidemic occurred first and has been most severe — to the Highway 65-Delano area, where GWSS was first observed in 2002 and where there is still very little PD.

Hashim noted that extensive data have been obtained about GWSS populations and the effectiveness of various treatments in controlling GWSS. The two projects gained data about the incidence of PD over time in each area, and the control measures and possible epidemiological factors that may affect the epidemic.

Project No. 1 – PD monitoring and control. The first project specifically looked at monitoring and control measures for PD in Kern County. It sought to determine changes in the incidence of PD over

time in the seven distinct grape-growing regions in the county.

Researchers noted that GWSS has been in areas of Kern County since 1997. In the General Beale and north areas, the GWSS populations reached very high numbers in 2000-2001. The south, central and west areas have had much lower but persistent populations. GWSS was detected in 2001 in the Highway 65-Delano area.

This project also demonstrated that monitoring vineyards for PD, testing, removing infected vines and replanting is very inexpensive when PD incidence is low, "in the order of less than \$5 per acre per year," according to Hashim.

Another objective of Project No. 1 was to develop PD monitoring and management techniques and strategies for use by growers to reduce risk and damage. The research team updated and provided educational materials to assist vineyard managers, pest control advisors, other researchers and government agencies involved in advising growers in the area-wide pest management of the GWSS project.

Project No. 2 – epidemiological assessments. The second project studied epidemiological assessments of PD. It evaluated the importance of epidemiological factors such as GWSS population size, vine age, cultivar susceptibility, control practices and GWSS control treatments in vineyards and nearby GWSS hosts or habitat.

This project created a central data processing facility at the Center for the Assessment and Monitoring of Forest and Environmental Resources (CAMFER) on the University of California, Berkeley campus to compile the data from the project in a GIS format. It also shared the resulting data, maps and information with collaborating

(continued on page 2)

Contact:

Don Luvisi
Project coordinator
(661) 868-6226
dluvisi@bak.rr.com

Web sites:

- www.co.kern.ca.us/kernag/
- http://cekern.ucdavis.edu/Custom_Program444/

This project also demonstrated that monitoring vineyards for PD, testing, removing infected vines and replanting is very inexpensive when PD incidence is low, in the order of less than \$5 per acre per year.

GWSS Update to resume after New Year

GWSS Update will break for the holidays and resume publication Jan. 9.



Kern research projects increase knowledge of PD control, management practices, epidemiology

(continued from page 1)

plant pathologists, statistical analysts, agricultural economists and other legitimate researchers.

Projects' motivation. Driving both projects was researchers' recognition that their understanding of how to control PD has been based on limited field data. Information on the characterization of the changes in the epidemiology of the disease when the causal bacterium is transmitted by GWSS also has been insufficient.

The research team was well aware that the epidemiology of PD changed dramatically in California with the arrival of GWSS about 15 years ago. Before that time, the disease caused losses, but the damage accumulated gradually, resulting in the loss of a small percentage of vines.

With the arrival of GWSS, however, PD spread has increased logarithmically, with entire vineyards being destroyed in as little as three to five years. In Kern County, where the disease was previously inconsequential, PD may now threaten more than 88,000 acres of grape production.

To cope with this development, extensive field studies have been conducted to determine effective methods to control the insect vector, the GWSS. However, more understanding of PD has been needed.

Funding for the two projects was provided by the University of California's Pierce's Disease Grant Program, and CDFA's Pierce's Disease and Glassy-winged Sharpshooter Board. ■

In Kern County, where the disease was previously inconsequential, PD may now threaten more than 88,000 acres of grape production.
