

## PD Research Symposium Registration Opens

The 2011 Pierce's Disease Research Symposium will take place at the Sheraton Grand Sacramento Hotel in Sacramento on December 13-15.

The three-day event brings together researchers and others interested in Pierce's disease research from around the world to discuss their work.

"This is the 11th year of the PD Research Symposium, and over the years it has proven to be a valuable means of facilitating communication and information sharing among researchers and stakeholders on the progress being made in finding solutions to Pierce's disease and its vectors," said Tom Esser of the CDFA's PD Control Program.

Online registration and more information is available at <http://ow.ly/6C1jt>, and attendees can make hotel reservations online or call the hotel's toll-free reservation number at 800-325-3535. Remember to ask for the Pierce's Disease Research Symposium group rate when calling. Registration fees go up after November 10th.

"While the sessions can be pretty technical, winegrape growers are encouraged to attend because it gives them the opportunity to talk directly with researchers involved in PD research, while giving growers and researchers the chance to gain valuable insights from each other," said Esser.

For additional information about the PD Symposium, please contact Dr. Doug West with the PD Control Program at 916-900-5255.



Above and left- Symposium participants get the chance to discuss their work with others during round table discussions.



# PD/GWSS BOARD bulletin

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## Monitoring GWSS Numbers Very Important to Temecula's Grape Industry

By Nick C. Toscano, Ph.D., UC Riverside

In the Temecula Valley, Riverside County, there are approximately 2,000 acres of winegrapes in close proximity to 1,000 acres of citrus, making them particularly vulnerable to Pierce's disease (PD), *Xylella fastidiosa*.

It was in 1999-2000 that Temecula was devastated by the combination of PD and the glassy-winged sharpshooter (GWSS), *Homalodisca vitripennis*. What enabled the PD to spread so fast is that the vineyards in Temecula are located adjacent to citrus groves. Citrus is a key link for GWSS as it is an important year-round reproductive host for the insect. Over the winter months, citrus trees play host to GWSS and enable them to survive when grapevines and many ornamental hosts are dormant.

To deal with the GWSS threat, a program to monitor GWSS in citrus and grapes with weekly trapping and visual inspections was implemented in the Temecula Valley in March 2000.

I put together the original GWSS proposal that the U.S. Department of Agriculture (USDA)

funded. I had extensive knowledge of the insecticides I recommended because of similar projects I worked on in the state involving other crops. But for the program to be successful, it needed the help and support of many of Temecula's key leaders. People like Ben Drake of Drake Enterprises, Mike Rennie of Stage Ranch Farm

### Citrus is a key link for GWSS as it is an important year-round reproductive host for the insect.

Management, Peter Poole of Mt. Palomar Winery, Craig Weaver of Callaway Winery, Gary McMillian of McMillian Farm Management, and the Riverside County Agricultural Commissioner, Jim Wallace, were all key contributors in the beginning of the Temecula program.

Tracking GWSS populations is key to the success of the management program. Approximately 450 yellow sticky traps (6 x 9 inches) are used to monitor GWSS populations and movement. The specific placement of traps is based on a number of factors such as field size, accessibility, surrounding vegetation, GWSS numbers in the area, and grower preferences.

Each trap is assigned a unique designation code specific to the location, crop type, and management practice. All traps are monitored weekly and replaced with a new sticky trap every other week. When an adult GWSS is found on a trap located in citrus or grapes it is recorded by site, which includes trap number



Ben Drake, John Hakrey and Nick Toscano examine a yellow sticky trap for GWSS in a Temecula vineyard.

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## Monitoring GWSS In Temecula - continued from page 1

and field designation. Any GWSS trapped in citrus will trigger a visual inspection of 20 trees in the grove. This consists of walking through the grove and beating branches of 20 citrus trees with a three-foot broom handle while using a sweep net to collect and count any dislodged GWSS nymphs and adults. In addition, citrus leaves are inspected for GWSS egg masses.

Each week the Temecula GWSS data is collected, compiled, sorted, organized, and graphed. I analyze the data and disseminate the information in a newsletter e-mailed each week to stakeholders made up largely of Temecula-area owners and managers of citrus groves, vineyards, and wineries. The newsletter typically contains one or more tables listing sites with GWSS catches, specific traps in each site which had GWSS catches, and the number of GWSS caught on each trap. Graphs show the total number of GWSS caught at each site and a history comparing GWSS catches with previous years. The newsletter also includes comments alerting growers and managers to GWSS buildups at their sites and the need to initiate an insecticide treatment to prevent GWSS from

becoming established in their vineyards. This dissemination of weekly information has been a major factor in the very low to zero incidence of PD in Temecula Valley vineyards.

All the Temecula Valley GWSS information is uploaded to USDA and CDFA servers. The citrus acreage to be treated, treatments, and insecticides used in citrus are determined by me as the Project Director. The insecticides used in citrus are paid for by the USDA, while the Temecula GWSS monitoring is supported by the CDFA.

Over the years, my role has been to assist businesses that provide management or pest management services for vineyards and to be a resource as needed. While from time to time I get people requesting me to evaluate a vineyard for PD and GWSS, I point them towards resources in the UC system or private industry.

Temecula has come a very long way since 2000 thanks to people in the region working together. I'm glad to have been a part of that rebirth, but it's important that we all stay alert because both PD and GWSS are here to stay.

## GWSS Infestations Keep County Ag Commissioners on the Alert

Ever since the glassy-winged sharpshooter was identified as a severe threat to winegrapes statewide, the plan of action has been to keep GWSS from spreading while science worked to find solutions.

While the GWSS infestation has become a fact of life in most of the lower third of California, significant effort has been made to keep the northern two-thirds of the state GWSS-free. It hasn't been easy or cheap, with a cost of roughly \$20 million a year to conduct inspection and trapping programs, and eradicating spot infestations in Northern and Central California. Once an infestation is detected and treated, the area must be monitored and remain GWSS-free for at least one year before the infestation can be declared eradicated.

### Spot Infestations

Over the years, there have been 15 infestations that have been eradicated throughout California. How GWSS found their way to these locations is a matter of speculation. Each probably involved the transport by humans of live plants that hosted live GWSS from infested areas. It might have been as innocent as someone bringing plants from an infested area to a non-infested area. But whatever the source, these spot infestations have kept county ag commissioners on their toes for over a decade and will probably continue to do so for another.

### Current Infestations by County

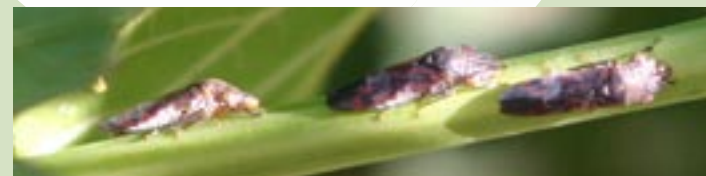
**Fresno** – Through September 30th of this year, there have been 4,350 properties treated in urban and rural residential areas. These are areas along and outside the perimeter of the infestation in Fresno County and often near commercial citrus or grapes. Due to GWSS finds in agricultural areas, 63 acres were treated by growers, and 358 acres of citrus have been authorized for treatment for a total of 421 acres of commercial citrus being treated.

**Madera** – One infested area last year, followed by more finds this summer. State and local agricultural staff are working on a response plan for urban finds and detections.

**Santa Clara** – Two infested areas (Capitol and Meridian) are being carefully watched because of GWSS finds in previous years. There has been one find this year in the county, and 16

properties treated around the positive site.

**San Luis Obispo** – One infested area was discovered last year in the city of San Luis Obispo. There have been three finds in the area this year, two of which occurred after completion of spring treatments. The two post-treatment finds were found on property just next to where the spring treatments had stopped. This led to the treatment of 24 adjacent properties.



**Kern & Riverside** – No treatments in urban area, but there are area-wide treatments being applied in commercial citrus.

**Tulare** – Continuing to monitor GWSS and has conducted some treatments. The GWSS-infested area boundary in Tulare County has not changed since 2004.

**Other Southern California counties** that are generally or partially infested are not treating to control ambient GWSS populations but are conducting regulatory activities and observing treatments conducted to prevent further spread of GWSS on nursery stock and bulk citrus.



## LINKING WITHIN VINEYARDS SHARPSHOOTER MANAGEMENT TO PIERCE'S DISEASE SPREAD

PRINCIPAL INVESTIGATOR: MATT DAUGHERTY  
DEPT. OF ENTOMOLOGY, UC RIVERSIDE

Grape growers frequently use systemic insecticides in vineyards to reduce the threat of glassy-winged sharpshooter (GWSS) spreading Pierce's disease among vines. However, no measurements have been made on how effective these costly insecticide treatments are at curbing disease spread. Researchers are conducting a series of disease surveys in the Temecula Valley to understand whether chemical control of GWSS in vineyards is justified. Results from preliminary surveys indicate that the frequency of disease in vineyards varies greatly, but generally fields that are treated regularly tend to have fewer diseased vines than those that are not treated. Disease surveys will continue over the next few years to fully investigate this question.



## DEVELOPMENT OF EFFECTIVE MONITORING TECHNIQUES FOR SHARPSHOOTERS AND THEIR PARASITIDS

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Glassy-winged sharpshooter (GWSS) populations are partially controlled by tiny parasitic wasps that kill GWSS eggs. It is essential to have the capacity to identify parasitoid species and hosts species quickly to determine the extent of parasitism and to evaluate the effectiveness of these biocontrol agents in the field. Current methods rely on identification of field-collected GWSS egg masses, after long incubations under artificial conditions, during which many do not survive. An accurate and rapid method for identifying the eggs of sharpshooter species, and determining whether the eggs are parasitized, and by which parasitoid species, would help guide the efforts of the biocontrol program. A single-step multiplex real-time Polymerase Chain Reaction (PCR) assay for sharpshooters and their parasitoids is such a method, and its development is being worked on to enhance the understanding and effect of GWSS parasitoids.



## UNDERSTANDING THE DYNAMICS OF NEONICOTINOID INSECTICIDAL ACTIVITY AGAINST THE GLASSY-WINGED SHARPSHOOTER: DEVELOPMENT OF TARGET THRESHOLDS IN GRAPEVINES

CO-PRINCIPAL INVESTIGATORS: FRANK J. BYRNE AND NICK C. TOSCANO  
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The systemic neonicotinoids imidacloprid and dinotefuran are effective insecticides that growers can use for long-term management of glassy-winged sharpshooter (GWSS) populations. Because of the contrasting chemical properties of these insecticides, growers can now choose the most suitable product to meet their pest management needs. Researchers are determining the concentration of dinotefuran that is needed within grapevines to kill GWSS. It has been demonstrated that the toxicity of dinotefuran against GWSS adults is close to that of imidacloprid, and it has also been shown that nymphs emerging from an egg mass are susceptible to dinotefuran before they begin feeding.

