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Kern/Tulare

GWSS Update

A project of the Glassy-winged Sharpshooter Task Force of Kern and Tulare Counties. Participants: Agricultural Commissioner 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).

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Imidacloprid proves its worth in reducing GWSS levels

Imidacloprid, the soil-applied systemic known by the trade name, Admire®, plays a significant role in reducing GWSS populations, according to evidence accumulated in recent years.

"In regions of California where imidacloprid has been used in area-wide control programs, populations of GWSS have declined substantially relative to their pre-action levels," says Nick Toscano, entomologist with the Department of Entomology at the University of California at Riverside.

Between April 2001 and April 2002, Toscano and Steve Castle of USDA-ARS in Phoenix, Ariz., served as project leaders in conducting laboratory and field evaluations of imidacloprid and thiamethoxam against GWSS on grapes and citrus. Cooperators included Frank Byrne, Jian Bi and Nilima Prabhaker of UC-Riverside, and Mac Learned of the Bayer Corporation.

Temecula, Kern show proof. Toscano points to Temecula, where imidacloprid has been used to control GWSS. Today, remnant GWSS infestations appear to be associated primarily with untreated tracts of vegetation, such as organic citrus, while their densities in conventional orchards and vineyards stand at extremely low levels.

Similarly, southern Kern County has seen substantially reduced GWSS population densities as an outcome of the General Beale Road Pilot Project.

In contrast, other areas with high populations of GWSS, such as Ventura/Fillmore and Riverside/Redlands, which have not yet participated in area-wide control programs, still retain high GWSS populations.

"The significant reduction of GWSS densities in only those regions where concerted action has been mounted is persuasive, even if it is only indirect evidence of the role that imidacloprid treatments have played in curtailing GWSS populations," Toscano says.

Demonstrating imidacloprid's efficacy. By measuring temporal and spatial dynamics of imidacloprid uptake and distribution in mature citrus trees and grapevines, then relating these data to GWSS densities in treated trees and grapevines relative to untreated ones, the researchers demonstrated the capacity of a single imidacloprid treatment per season to reduce GWSS populations.

In the study, imidacloprid was applied to Valencia oranges through an irrigation system equipped with micro-jet emitters at 32 oz. per acre on April 10, 2001, and April 4, 2002, in Riverside. Xylem samples were then collected every two weeks and analyzed for imidacloprid concentrations. Researchers observed consistently higher titers, or levels, in 2002, compared to the previous year.

"The near-uniform distribution of imidacloprid to all parts of the mature orange trees had a severe impact on GWSS nymphs and adults," says Toscano.

Weekly samples collected from treated and untreated trees revealed a sharp decline in nymph densities approximately six weeks after treatment. The drop persisted through the end of the nymph developmental season.

The emergence of adults in late June and early July, coupled with a frenzy of GWSS flight activity, tended to mask any differences between treated and untreated trees —— save for the large numbers of dead adults observed beneath treated trees. By late July, however, adult densities decreased on treated trees and remained significantly lower than untreated trees through the remainder of the year. ■

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Online maps for GWSS

Maps for the Kern Pilot Project and Areawide Management Program are available at:

ftp://bigfoot.cdfa.ca.gov/

PD/GWSS Symposium set for Dec. 15–18

The annual Pierce's Disease Research Symposium will be held Dec. 15–18, 2002, at the Coronado Island Marriott Resort in San Diego.

For more information, visit http://www.cdfa.ca.gov/phpps/pdcp.