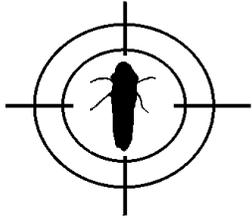


Kern-Tulare

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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GWSS management program to be implemented in Kern

Treatment protocols will follow those developed in pilot project

Plans are being formalized to implement an area-wide management program of GWSS in Kern County this month.

The potential for the current population of GWSS in Kern to expand into areas where it is not yet established is a concern for growers. Grower interest in initiating a program based on the success demonstrated in the General Beale Road Pilot Project has resulted in a request that a program to manage GWSS in Kern be developed.

Currently, the GWSS population in the pilot study is at or near undetectable levels.

"We will take what we've learned in the pilot project and apply it," said Ted Davis, Kern County Agricultural Commissioner.

"This will be a management approach rather than a research project," Davis said. "We hope to reduce significantly GWSS populations in areas of Kern outside of the pilot project, with the hope of stopping the spread of Pierce's Disease."

The new program is a cooperative program set up like the pilot study, which followed a program of trapping, monitoring and treatment.

Program funding. The new program has been funded with \$750,000 in federal money through June 2002, Davis said. Additional funds will be added so

Same agencies to participate

The new area-wide GWSS management program in Kern County involves the same agencies that are participating in the General Beale Road Pilot Project.

They include the Kern County Agricultural Commissioner's Office, the California Department of Food and Agriculture, University of California-Cooperative Extension, USDA's APHIS and ARS Divisions, and the GWSS Task Force of Kern and Tulare Counties.

The new program will be supported by federal funds.

the program can continue through the next fiscal year, which begins in July 2002.

He added that USDA also identified funds to be used for treatments by citrus growers in the Edison area east of Bakersfield, considered most heavily infested with GWSS. Eventually, the treatment funds may be extended to citrus growers across Kern.

The area considered for the area-wide plan is delimited by Seventh Standard Road to the north; the area east of State Highway 33; the area west of General Beale Road; and south by the foothills of the Tehachapi Mountains. This area includes the metropolitan city of Bakersfield and several smaller communities surrounded by agricultural lands.

The predominant agricultural evergreen in this area is citrus, including many perennials found in the urban landscape. These all serve as overwintering hosts for GWSS, and provide an opportunity to begin a management program on a reduced acreage compared to the host range that exists once the spring season begins.

Divided into four zones. The predominant GWSS plant hosts — citrus and grapes — can be divided into four zones, based on crop composition. The Northern Zone (Edison area) exists with a mixture of both citrus and grapes; the Central Zone contains primarily grapes; the Southern Zone is again a mixture of citrus and grapes; and the Western Zone also contains a mixture of citrus and grapes.

The Northern, Southern and Western Zones will have similar program strategies while the Central Zone will be somewhat different, based on the host composition and seasonality.

The Northern Zone presents the most immediate challenge with respect to an expanding GWSS population. As a result, it has been identified as the initial area to begin treatments. The successful treatment protocols developed in the pilot study will be followed. The initial foliar treatments will follow a schedule that begins in an area and moves through the production area, treating groves that meet a threshold of insect population density.

Davis said growers are being contacted individually about the program.

“We’re moving aggressively because of the timing,” Davis said. “GWSS traps will be deployed next week. Treatments are expected to begin in the next two weeks.”

The foliar treatments will be followed with a systemic insecticide to provide the insect population management throughout the season. As demonstrated in the pilot study, this approach, rather than treating individual groves in a random manner, will provide the greatest impact on GWSS populations. A major component of this program is GWSS monitoring throughout the proposed management area. Sticky traps will be used to monitor insect populations to better understand the abundance and distribution in the entire area. The information obtained from these traps will be useful in designing the management strategies in the remaining three zones.

Research shows GWSS attracted to yellow traps

Studies explored hue, trap longevity and effect of temperature and light in vineyards and citrus groves

How effective are the yellow sticky traps that are used extensively to monitor glassy-winged sharpshooters (GWSS)?

Which hue of yellow is most attractive to GWSS? What is the field longevity of a trap before weather and photo degradation affect trap reliability?

These were some of the questions Dr. Raymond Hix of the Department of Entomology at UC-Riverside sought to answer in studies conducted during the past three years. Hix presented his 2001 results at the Pierce's Disease Research Symposium Dec. 5-7 in San Diego.

Seeking answers. While yellow sticky traps have been used extensively in the southeastern U.S. for monitoring leafhoppers, including GWSS in peach and citrus, Hix wondered about the method's reliability in California.

Traps specifically designed for GWSS do not yet exist nor are current trapping methods standardized. Different sizes and shades of yellow sticky traps are used. Furthermore, the relationship of trap catches to actual GWSS populations in grape or citrus remains unknown.

Hix, with working with cooperators Michael McGuire and Gary Puterka of USDA-ARS, tested three trap types last year. The traps were deployed in San Bernardino, Riverside and Kern counties in citrus groves and vineyards, with known high and low GWSS populations.

Trap types tested included flight intercept traps in five colors, plates in 11 colors, and nymph traps in three colors. These were checked weekly, and visual counts of egg masses, nymphs and adults were made.

"Data from the intercept traps and colored plates clearly indicated that GWSS are attracted to yellow as well as orange," Hix said. "Attraction to these colors was statistically significant and demonstrated that even though the AM type trap may have reliability issues, it is clearly not a 'blunder trap.'"

The AM designation on certain yellow sticky traps refers to the apple maggot for which the trap was designed.

Hix noted that the yellow and orange colored plates were very successful in catching adult GWSS. Yellow plates caught statistically more GWSS than AM traps. Orange traps usually caught more than the AM traps.

"What's interesting is that the yellow plates were more reliable at catching GWSS at low population levels than the AM traps," said Hix, whose research in this area is ongoing.

The nymph traps reliably caught first through fifth instar stages of nymphs in moderate to low populations. "These traps are easy to deploy in grape canes in situations where it could take hours of searching to locate nymphs," he said.

Low populations of GWSS nymphs in a vineyard may pose threats of moving *X.fastidiosa* from vine to vine within trellis, Hix pointed out. The fluorescent yellow and canary yellow intercept traps attracted large numbers but the collection mechanism only caught about 15 percent of the bugs that encountered

the panels, which made the traps unreliable. The intercept traps, however, were capable of catching live insects.

The researchers made additional progress in determining that GWSS adults and nymphs are attracted to upper wavelengths of ultraviolet light, and to certain wavelengths in the yellow and orange ranges. The preliminary data indicated relationships between the number of ovipositional — or egg-laying — females caught in the traps and egg-laying in associated vegetation.

— Catherine Merlo

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