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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Biocontrol program poised to surpass last year's efforts

To date in 2002, a total of 71,000 wasps of the exotic parasitoid species *Gonatocerus triguttatus* (from southeast Texas) have been released in several GWSS infested counties in southern California and Kern County.

The number released in 2001 for the entire year totaled 112,000.

At this pace, the biocontrol program is well on its way to surpassing last year's effort. Another advantage over last year is that large releases have been made much earlier than last season. This aids in establishing the new species, since the released wasps are more likely to find GWSS egg masses not parasitized by native species early in the year.

Last year at this time, rearing systems at Oswell and Riverside had just been started and were not yet producing many wasps.

Encouraging results. The benefits of releasing large numbers of parasitoids early in the season are already starting to pay off. Several recoveries of *G. triguttatus* have been made in Riverside and Orange counties. Recoveries of wasps from sleeve cages in Ventura County have also been noted.

These are important observations that show that *G. triguttatus* can effectively search, oviposit and develop in California. Only once before, in Ventura County on June 4, 2001, have we recovered *G. triguttatus* from the field in California.

Many 2002 pre-release samples of egg masses have been collected in Kern, Ventura and the rest of Southern California. These are being examined to determine if any *G. triguttatus* have survived over the winter from releases in 2001.

Testing parasitoid performance. In other work, a field-cage trial testing the performance of the native *Gonatocerus* species versus *G. triguttatus* attacking GWSS on citrus was started with the release of wasps into the cages.

There are four separate release treatments: *G. triguttatus*, *G. morrilli*, *G. ashmeadi* and *G. triguttatus* + *G. ashmeadi*. The response variables measured will include the percentage of parasitism of both egg masses and eggs, and survivorship of F1 offspring.

Information from these studies should help determine if there are any constraints to the establishment of *G. triguttatus* when in competition with native species. It may also help in the selection of the best parasitoid species to use if augmentative biocontrol strategies against GWSS are pursued.

A continuation of last year's work with the green lacewing (*Chrysoperla rufilabris*), a commercially available predator of GWSS, will begin in June. Trials in sleeve and large field cages as well as releases of lacewings onto entire trees are planned.

Work in the laboratory and in field cages from last year showed that second and third instar green lacewing could effectively attack GWSS eggs and all nymphal stages.

Work this year will focus on determining efficacious release rates, if releases of lacewing eggs are effective, and if GWSS adults are susceptible to predation.

—CDFA & USDA personnel, Oswell and Riverside (Mt. Rubidoux) Biological Control Facilities

Kern County pilot project monitors citrus red mites, other secondary pests

Several insect pests other than the glassy-winged sharpshooter are being monitored as "secondary pests" in the Kern County GWSS Pilot Project.

Our aim is to document the population trends of citrus red mite, cottony cushion scale, California red scale, citrus thrips and peel miner during the testing of area-wide control efforts for GWSS.

One of the primary goals of the pilot project is to control GWSS populations, without trading one significant insect pest for another. If control of secondary pests was significantly disrupted, causing a pest outbreak, GWSS management strategies would have to be modified. Further, corrective treatments to bring the pest outbreak back into control would have to be implemented.

Citrus red mite sampling. The graph at right shows the average number of citrus red mites (CRM) per leaf during 2001. A sample was collected from 10 trees per 40 acres, with each sample consisting of counts from five leaves per tree.

Sampling was biased to leaves that showed stippling damage from mite feeding. This sampling method differs from standard sampling methods where leaves are selected at random to assess mite numbers. Our sampling method was biased towards high numbers because we sampled leaves that obviously were infested with mites. This approach was taken to identify the worst case scenario.

CRM numbers show an overall decreasing trend across all of the groves sampled, with one exception. One grove showed initial average numbers at 3.5 mites per leaf in April, increasing to 19 per leaf in May, and then decreasing to zero in June. The trend for the remainder of the citrus groves shows CRM numbers fading to zero in June as well.

Behind predator population spikes. The initial increase and final decline in CRM numbers is most likely due to the natural control of the pest by the predatory mite, *Eusieus tularensis*. Many predator/prey relationships exhibit initial pest population spikes, until the predator increases its numbers proportionally, ultimately bringing the pest population under control.

Consultations with PCAs and growers who manage about 1,000 acres in the pilot project area indicate that the CRM trends observed during 2001 and so far in 2002 are similar to previous years.

These observations, coupled with the population trend data, suggest that CRM did not flare as a result of GWSS control strategies implemented in the pilot project.

Population trends of the other pest insects identified above will be presented in future editions of *GWSS Update*.

— Matthew Ciomperlik, Entomologist, USDA APHIS

Find GWSS program maps online

Maps for the Kern Pilot Project and Area-wide Management Program are available online at: ftp://ftp.netxn.com/pub/agcom/gwss/fromCDFA/May17maps. (FYI: These are large files.)

Kern-Tulare GWSS Task Force to meet June 5

The GWSS Task Force of Kern and Tulare Counties will meet at 1:30 p.m., Wednesday, June 5 at the Kern County Agricultural Commissioner's Office in Bakersfield.

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