

March 12, 2004

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).

Integrating Admire® treatments for GWSS with citrus IPM

Managing insect and mite pests in citrus requires a delicate balance between utilizing biological control and augmenting that control with insecticides. Unfortunately, due to the nature of insecticides, every time we intervene we inadvertently affect our allies, the biocontrol organisms.

Mitigating the effects of "friendly fire" can be accomplished but requires an understanding of the interactions between pest and beneficial organisms. It can only be done using the right insecticide in the right place at the right time.

During the first year of coordinated GWSS treatments in Kern County in 2001, nobody was sure what effects these treatments would have on pest and beneficial insects in citrus. In fact, they weren't even sure how well the treatments would control the glassy-winged sharpshooter (GWSS). Basic research on pesticide efficacy on pests and beneficials, as well as research on optimal application timing, were in their infancy. It was also anticipated that the control program would have to be repeated each year for many years to keep this pest in check.

Since the early days of the program, we have learned a lot about GWSS and the insecticides we use to control it. The spring portion of the control program is now based on the use of Admire® (soil-applied imidacloprid). This product is generally considered soft on beneficials compared to the broad-ranging effects of organophosphates, carbamates and pyrethroid insecticides because it is applied systemically through the irrigation system. Yet, this nerve toxin is not completely benign to all beneficial insects.

Protecting the vedalia beetle. Admire is highly toxic to vedalia beetle. When vedalia feeds on cottony cushion scale that have taken up the Admire into their bodies, the vedalia beetle dies. Admire treatments should be timed to not disrupt this valuable biocontrol organism. Vedalia beetle is most active and suppresses cottony cushion scale from March through May, and then disperses or declines in the summer heat.

If more than 5 percent of the trees in an orchard have live cottony cushion scale, Admire treatments should not be made until af-

ter petal fall. Treatments applied shortly after late April or early May will begin to take effect after Vedalia has finished controlling the scale. As long as applications are not made too long after petal fall, they will still be effective against GWSS by killing the nymphs before they develop wings and disperse to neighboring crops.

Continuing *Aphytis* release programs. Augmentation of biocontrol of California red scale through releases of *Aphytis* wasps has been a valuable tool for many citrus growers. In the past, reliance on *Aphytis* has decreased in locations with insecticide programs for GWSS. Primarily, this was due to a general belief that treatments would be recurring and so disruptive that *Aphytis* control programs would be obliterated. Fortunately, this has not been the case and many of these growers are returning to *Aphytis* programs.

Growers should not be afraid to continue, or return to, *Aphytis* release programs. When relying on this program, it is critical to establish *Aphytis* in orchards in early spring (February-March) when third instar scale are available for parasitism. These early releases are creating small insectaries that will later expand throughout the orchard.

Growers in areas being targeted for GWSS treatments this spring, such as southern Tulare County, should also continue their programs. That's primarily because most growers won't know if their groves will be targeted for treatment until some time between late March and the end of May.

In the case where GWSS treatments with Admire are used in a grove, growers can expect that *Aphytis* populations will be reduced but not eliminated. Those that remain will continue to reduce populations of scale. *Aphytis* releases can then be resumed immediately after an Admire treatment. Since Admire is most effective against scale infesting leaves and fruit, these parasites are particularly important for controlling scale infesting wood and twigs. The combined effects of the insecticide and parasite can provide control of this pest.

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- www.co.kern.ca.us/kernag/
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