Insect and Mite Research

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PROJECT SUMMARY

Objectives:

- Purchase traps and lures for UC Cooperative Extension farm advisors for their monitoring efforts.
- Collaborate in evaluating navel orangeworm (NOW) pheromone blends and formulations.
- Collaborate in collecting Tenlined June beetle for pheromone research.
- Evaluate efficacy and May treatment timing for newly registered and candidate insecticides against peach twig borer (PTB).
- Evaluate efficacy and May treatment timing for newly registered and candidate insecticides against navel orangeworm; conduct associated research on applications and NOW biology.
- Determine insecticide side effects on the predatory mite *Galendromus occidentalis.*

Background:

This project continues to address the most significant chronic insect pests of almonds, including navel orangeworm, peach twig borer and Pacific spider mite, and localized pests such as Tenlined June beetle. The research continues decades of finding ways for integrated pest management to work in almonds under changing environmental, regulatory, and market conditions.

Discussion:

A current focus is evaluating efficacy and treatment timing for the navel orangeworm (NOW) and the peach twig borer (PTB) at the May spray timing. Two field studies were conducted that indicated a number of registered and soon-to-be registered products can control either or both insects at this time. The recommended May spray timing overlaps sufficiently such that a well-timed spray using a degree-day model for both insects can render control of the first generation larvae for each.

An associated laboratory study provided evidence that NOW eggs can be somewhat controlled by either Altacor or Intrepid when laid on residue of either product. There was little control afforded by treating older eggs with either product, indicating that perhaps only newly laid eggs are affected. There was also evidence of ovi-larvicidal activity against the hatching larvae as they chew out of the egg.

Some modes of action of these newer products are thought to be 'safe' to beneficial arthropods such as predatory mites. We exposed gravid female predator mites (*Galendromus occidentalis*) to direct contact and residues of six products representing different mode of action classifications to determine if there were direct or indirect effects. Indeed we did find that some products affected the predatory mite females more than did others, and results are presented in the 2009 Annual Report.

Project Cooperators and Personnel: Franz Niederholzer, University of California Cooperative Extension - Sutter/Yuba counties; John Edstrom, UCCE - Colusa County; Joel Siegel, USDA-ARS, Parlier; Kim Gallagher, Sterling Insectary, Delano, CA

For More Details, Visit

- Poster location 31, Exhibit Hall, Session 2 or on the web (after January 2011) at AlmondBoard.com/AICposters
- 2009-10 Annual Report CD (09-ENTO7-Zalom); or on the web (after January 2011) at AlmondBoard.com/ResearchReports
- Related projects: 09-ENTO5-Leal; 09-ENTO2-Leal; 10-ENTO6-Haviland;