Arthropod Pest Management in the Lower San Joaquin Valley

Project Leader: David Haviland
University of California Cooperative Extension, Kern County, 1031 S. Mount Vernon, Bakersfield, CA 93307
(661) 868-6215, dhaviland@ucdavis.edu

PROJECT SUMMARY

Objectives:

- Develop practical implications from sixspotted thrips literature
- Evaluate sticky cards for monitoring sixspotted thrips and predatory beetles
- Evaluate seasonal sixspotted thrips abundance and activity patterns in almonds
- Evaluate the impacts of sixspotted thrips on spider mite populations
- Evaluate the effects of miticides on Pacific spider mite
- Evaluate the efficacy and four mating disruption products for navel orangeworm control
- Maintain a University-based research and demonstration orchard for almond pest management research

Background and Discussion:

Sixspotted thrips - In recent years sixspotted thrips has become the dominant spider mite predator in almond orchards in the Southern San Joaquin Valley. Monitoring studies determined that the most effective way to capture sixspotted thrips is with yellow strip traps from Great Lakes IPM. Additional trap studies are in progress and will be reported at the Almond Conference.

We used the yellow strip trap to do season-long monitoring of sixspotted thrips and compared that to mite populations. In the spring thrips activity became prominent from mid-April to mid-May. Growers with thrips should avoid using materials that are toxic to thrips at this time. Thrips captures were minimal in June and July, culminating in resurgence of thrips populations in response to late-season spider mite outbreaks.

In all three commercial orchards under evaluation sixspotted thrips density increased exponentially approximately two weeks after rapid increases in spider mite density.

Data showed that thrips have a population doubling time averaging 3.4 days when ample food is present. This is less than half of the time required by spider mites. Efforts are underway to develop improved monitoring guidelines that incorporate biocontrol into treatment decisions.

Spider mites - During 2017 we evaluated 10 miticides against Pacific spider mite. The most effective products were Nealta, Vigilant, Banter, Magister and Fujimite. Envidor, Kanemite and Biomite also resulted in significant reductions in mite density.

Navel Orangeworm - We conducted large scale trials evaluating mating disruption systems offered by Suterra, Semios, Pacific Biocontrol, and Trécé (not registered). All four mating disruption systems reduced captures of males by approximately 90% compared to adjacent orchards without mating disruption. The impact of mating disruption on kernel damage is currently under evaluation with plans to have data analyzed in time to present at the 2017 Almond Conference.

Research orchard maintenance – We continue to maintain a 7-acre almond orchard in Shafter, CA with partial support from the Almond Board of California. Between the years of 2010 and 2017 this orchard has been used for 65 different trials by multiple investigators.

Project Cooperators: Stephanie Rill, UCCE - Kern County; Suterra; Semios; Pacific Biocontrol; Trécé

For More Details, Visit:

- Poster location 97, Exhibit Hall A + B during the Almond Conference; or on the web (after January 2018) at Almonds.com/ResearchDatabase
- 2016 - 2017 Annual Reports (16-ENTO6-Haviland) on the web at Almonds.com/ResearchDatabase