

# 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:

Provide overall improvements in arthropod integrated pest management (IPM) programs in almonds by:

- Screen new miticides for benefit in IPM programs aimed at Pacific spider mite
- Conduct screening trials to determine the role of application timing on the effectiveness of larvicides for navel orangeworm
- Evaluate the effectiveness of metaflumizone (Altrevin) bait as part of an integrated strategy for southern fire ant management
- Maintain two UC-based research and demonstration orchards in the southern San Joaquin Valley for pest management research

### Background and Discussion

Pacific spider mite - During 2013 there were significant spider mite outbreaks resulting in above-normal levels of miticide use throughout the lower San Joaquin Valley. Elevated mite levels allowed us to conduct several field trials. The first trial evaluated miticides with potential to become registered in almonds. In that trial, two new miticides, Magister and Nealta, provided similar control as the industry standard products Acramite, Envidor, Fujimite, Onager, Vigilant and Zeal. The second trial evaluated additives to four different miticides and showed that the penetrating surfactant Vintre was a viable alternative to 415 Oil whereas the addition of potassium nitrate to miticides produced no improvements in efficacy.

Navel orangeworm - Navel orangeworm continues to be the most significant pest of almonds in the lower San Joaquin Valley. Each year we conduct efficacy trials to help to screen new insecticides and help determine the most

effective use patterns for each product.

In 2013 we evaluated larvicide application timing and efficacy. We conducted field trials in Fresno and Kern Counties to evaluate five different application timings, as well as single versus double applications, of five different insecticides that work primarily as larvicides. An additional trial at the UC Westside Research and Extension Center was used to evaluate the effectiveness of cover sprays of insecticides on the rate of re-infestation of mummy nuts left on the tree.

Ant Bait Trials – During 2013 we conducted a large scale field trial (>300 acres) in cooperation with Paramount Farming Company to evaluate the effectiveness of 9 different baiting strategies for southern fire ant. Incorporated within this trial were a variety of uses of the new fire ant bait (Altrevin). Data for Altrevin showed that suppression of foraging ants can occur within a week, but that the suppression only lasted for about two weeks. This was in contrast to other ant baits that took longer to work but provided long-lasting control.

UC Research Orchards – We maintain two almond orchards for research at the UC Westside Research and Extension Center (Fresno Co.) and Shafter Research Farm (Kern Co.). The goal of these 5- and 7-acre orchards is to improve the quality of pest management research in almonds by allowing research to be done in sites with high pest density (much higher than would be allowed by growers) without causing risk to almond producers (such as using unregistered insecticides). In the past 3 years these orchards have hosted 29 research trials, most of which are in reported through Annual Report CDs and at the Almond Industry Conference.

**Project Cooperators and Personnel:** Stephanie Rill, UCCE- Kern County and Brad Higbee, Paramount Farming Co.

### For More Details. Visit

- Poster location 12, Exhibit Hall A and B during conference; or on the web (after January 2014) at [www.almondboard.com/researchreports](http://www.almondboard.com/researchreports)
- 2012.2013 Annual Report CD (12-ENTO6-Haviland); or on the web (after January 2014) at [www.almondboard.com/researchreports](http://www.almondboard.com/researchreports)
- Related Projects: 12-ENTO7-Zalom; 13-ENTO11-Siegel/Walse