

# Arthropod Pest Management in the Lower San Joaquin Valley

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## 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 at hullsplit to determine the efficacy of experimental and registered insecticides against navel orangeworm (NOW)
- Maintain two UC-based research and demonstration orchards in the southern San Joaquin Valley for almond pest management research

### Background and Discussion

Pacific spider mite - is one of the most common pests of almonds in the lower San Joaquin Valley. Typical management programs include one to two miticide applications per season. Over the past few years we have conducted research on many new miticides to determine their efficacy and optimal use pattern. This research has led to an understanding of how to use products such as abamectin, Zeal, Onager, Envidor, Fujimite and Acramite. During the 2011 season we continued our efforts towards understanding options for control of spider mites. This included screening on new miticides, evaluations of adjuvants and surfactants with potential of improving control, and the effects of new generation pyrethroids on spider mite outbreaks.

Adjuvant studies shows that adjuvants can have a significant impact on miticide efficacy. During 2011 we evaluated Vintre and potassium nitrate as

adjuvants to three or four miticides. Results varied according to surfactant. For example, the performance of Envidor (which must kill mites through contact) was improved with the use of potassium nitrate whereas Zeal (which has translaminar activity and provides a portion of its control through feeding by the mite) had improved control with the addition of Vintre compared to oil. Studies also looked at Vigilant and other new miticides as well as the effects of new pyrethroids (used for NOW) on spider mite populations.

Navel orangeworm - The current project is part of an ongoing program to conduct NOW-oriented screening trials of registered and experimental pesticides. It seeks to identify the compounds most likely to be of benefit in NOW management programs as well as to screen out newer products not worth evaluating in larger-scale trial. Products providing the best results were passed on to larger scale field trials for further evaluation.

UC Research Orchards – The final purpose of this project is to establish two research orchards that can provide long-term benefit for almond research in the lower San Joaquin Valley. As of fall 2011 these orchards (5-acres, 4th leaf, at Westside Research and Extension Center in Fresno Co. and 7 acres, 3rd leaf, Shafter Research Farm in Kern Co.) have already been used for more than 15 insect and weed management trials that have been reported by various investigators to the almond industry. Work at the Shafter orchard evaluated the developmental ant bait metaflumazone.

**Project Cooperators and Personnel:** Stephanie Rill, UCCE- Kern County

### For more details

- Poster location 32, Exhibit Hall, Session 3; or on the web (after January 2012) at [AlmondBoard.com/AICposters](http://AlmondBoard.com/AICposters)
- 2010 - 2011 Annual Report CD (10-ENTO6-Haviland; 10-ENTO8-Haviland; 10-ENTO13-Haviland); or on the web (after January 2012) at [AlmondBoard.com/ResearchReports](http://AlmondBoard.com/ResearchReports)
- Related projects: 11-ENTO7-Zalom; 11-ENTO11-Siegel/Walse