

# Deposition Testing and Pattern Refinement for Spray Swath Analysis and Drift Management

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### PROJECT SUMMARY

#### Objectives for current year:

- Minimize off-target movement of pest control materials applied by plane or helicopter by ensuring they are properly calibrated.
- Measure horizontal drift, spray deposition on the orchard floor, in canopy and berms.

#### Background and Discussion:

There are times when an aerial application is the best choice for proper pest control in almonds. With the increased focus on water quality, endangered species, and general concerns about off-site movement of pest control materials, minimizing spray drift is critical to maintain the ability to use aerial applications when appropriate.

Proper calibration and set up can help ensure minimization of spray drift while also enhancing the efficacy of the application. However, for aerial applicators calibration is a complex effort.

For the last 10 years, the group has been working with aerial applicators to help them with calibrating and ensuring their equipment is set up to maximize efficiency and minimize drift. Each year some 40-50 aircraft are tested.

For pattern refinement, Rhodamine dye is placed in the spray tank. The aircraft is then flown over a string system. The string is analyzed with a fluorometer and the pattern is analyzed and adjustments are made if needed.

To measure horizontal drift, droplet cards are placed at 50 foot intervals from the center of the swath out to 300 feet downwind of the application. The cards are then analyzed for percent spray coverage.

For berm, in canopy and orchard floor deposition, cards are placed in the center of the floor, on the berms and within the tree. These are then analyzed for percent coverage.

The benefits derived include:

- a. Knowledge of canopy interception of the spray
- b. How much of the spray is reaching the orchard floor which may present run-off issues
- c. What off target movement might be
- d. Improved distribution of almond crop production products in the orchard

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#### Project Cooperators and Personnel:

JR Gallagher – Valent USA, Deborah Shatley – Dow AgroSciences, Charlie Witrado – American West Ag Aviation, Kevin Collins- Borba Farms, Steve Wilson – American West Ag Aviation

#### For More Details, Visit

- Poster location 42, Exhibit Hall A & B during conference; or on the web (after January 2013) at [www.almondboard.com/researchreports](http://www.almondboard.com/researchreports)
- 2011.2012 Annual Report CD (11.WATER1.Stoltz); or on the web (after January 2013) at [www.almondboard.com/researchreports](http://www.almondboard.com/researchreports)