

Use of a Host Plant Volatile Blend to Monitor Navel Orangeworm (NOW) Populations Under Mating Disruption & Conventional Management in Almond

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PROJECT SUMMARY

Objectives for current year:

- Determine over a multi-year experiment if a recently developed blend of synthetic host plant volatiles (Blend) can efficiently monitor male and female navel orangeworm (NOW) populations during mating disruption studies in almond orchards.
- Using field trapping compare the efficacy of the Blend, almond meal, and the synthetic pheromone blend.

Background and Discussion:

Despite successes with mating disruption (MD) treatments and IPM programs for control of navel orangeworm (NOW), as well as recent advances with the synthetic pheromone blend (*Suterra BioLure*) for monitoring male NOW, many almond orchards continue to be at risk by this insect pest.

Over the last five years a synthetic blend of host plant volatiles (the Blend) has proven more effective than the traditional almond meal for monitoring NOW moths in almond orchards. Unlike almond meal, the host plant volatile blend attracts both female and male NOW and is attractive after hullsplit.

MD-treated orchards should remain a viable option for effective pest control and to ensure NOW do not develop resistance to pyrethroids. Almond meal and the synthetic pheromone blend are the current NOW monitoring tools during MD treatments, though both have efficacy limitations.

This is the third year of study comparing the Blend to other attractants in MD-treated almonds.

The first two years of study have shown the Blend to be an effective season-long attractant during MD treatments of both male and female NOW moths. Results from the third year are consistent with the previous years, thus far.

A consistent and effective monitoring tool for both male and female NOW in MD treatments would provide the almond industry with another method to assist pest management decisions in MD-based IPM programs. Replicates of the Blend, almond meal, and the pheromone blend were evaluated for the ability to attract NOW moths in MD-treated and conventional almond orchards during the 2014-2016 growing seasons.

Because of the mono-sex attractancy of both almond meal and the pheromone blend, the ability of the Blend to attract both male and female NOW moths may provide a unique dimension to monitoring moth populations in MD orchards, in addition to conventional orchards.

Preliminary analysis of data over the course of the project show the Blend consistently outperformed almond meal. These data also suggested a higher resolution was provided by the Blend relative to the pheromone or almond meal-based attractants in a MD environment.

Additionally, the 2015 data suggested a moderate correlation between the Blend moth capture numbers, and %NOW infestation and damage in Nonpareil trees, but lower correlation to pollinizer varieties. Data analysis of the 2016 data and the pooled data are ongoing.

Project Cooperators and Personnel: Bradley S. Higbee, Wonderful Orchards, Ring Cardé, UC Riverside

For More Details, Visit

- Poster location 104, Exhibit Hall A + B during the Almond Conference; or on the web (after January 2017) at Almonds.com/ResearchDatabase
- 2015 - 2016 Annual Reports CD (15-ENTO4-Beck); or on the web (after January 2017) at Almonds.com/ResearchDatabase
- Related Project: 16-ENTO9-Cardé