Varroa Treatments: Efficacy and Economic Impact

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PROJECT SUMMARY

Objectives:

- Determine the efficacy of various treatments for Varroa control on mite levels.
- Determine the treatment effect on colony strength and behavior.
- Determine the economic impact of the treatments.

Background and Discussion:

Varroa destructor continues to be the number one threat to the beekeeping industry despite its efforts to control it. The repeated application and misuse of registered acaricides over the years led the parasitic mite Varroa to become resistant to these products, and chemical residues have been found in brood combs as well as in apiculture products. Residues of such control agents in hives and their negative effects on bee health have become an important issue and need to be taken into consideration when making management decisions for Varroa control treatments.

The focus of the research project is to test the efficacy of commercially available natural treatments for mite control and their economic impact. The efficacy of treatments was tested against Apivar as a standard. The field study was set up in September 2013 in Monterey County, CA and Mr. Gene Brandi provided 48 colonies. Colony assessment, mite counts and queen marking were performed in all colonies before the treatment application. The treatments were: Apiguard, HopGuard II, Mite Away Quick Strips (MAQS) and Apivar. The first treatment was applied in September 2013. After one month, mite levels had decreased in all treatments and were not significantly different from each other. Colonies overwintered in the same area and were moved in January 2014 to almond orchards. In March 2014, test colonies were graded and overwinter losses replaced. At this time, the first spring treatment was applied followed by the second treatment in May 2014. Colony data and pre-post treatment mite counts were recorded for each application. Colony survivorship was 100% for September-October 2013 and decreased to 67.3% in June 2104. These losses can be attributed to lack of forage and mite infestation. Queen survivorship was also 100% for September-October 2013 decreasing to 27% in June 2014. Test colonies have received one fall treatment in 2013, two spring treatments and two fall treatments in 2014. Mite levels along with frames of bees and brood are being recorded throughout the study and Tukey's repeated-measures statistical analyses for 2013 fall and 2014 spring showed no significant differences among the treatments. The results for 2013 and 2014 treatments will be presented at the Almond Conference in December 2014. We envisioned this information contributing to a "Best Practices Protocol" for beekeepers preparing their bees for almond pollination and overall colony health. As a result, almond growers will benefit from having the adequate number of strong and healthy colonies they need to pollinate their orchards efficiently to produce higher yields.

Project Cooperators and Personnel: Mr. Gene Brandi, Gene Brandi Apiaries, Los Banos, CA; Dr. Gloria DeGrandi-Hoffman, USDA-ARS, Carl Hayden Bee Research Center, Tucson, AZ

For More Details, Visit

- Poster location 5, Exhibit A + B during the Almond Conference; or on the web (after January 2015) at Almonds.com/ResearchDatabase
- 2013-2014 Annual Reports CD (13-POLL9-Ahumada); or on the web (after January 2015) at Almonds.com/ResearchDatabase