Honey Bees: (1) Controlling Viruses and Nosema with Essential Oils; (2) Viral Load Relationships to Pests, Parasites, Diseases, and Stress

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PROJECT SUMMARY

Objectives:

- Document if use of specific essential oils reduce viral loads in honey bees as measured by the Integrated Virus Detection System (IVDS). Also assess if essential oils provide Nosema control. Essential oils will be administered to bees via LeFore essential oil patties.
- As a separate project component, measure viral loads using IVDS in the existing USDA/ARS Weslaco Project bee colonies. This project is assessing an integrated approach to controlling hive pests and improving honey bee health. IVDS will be a tool to determine if test practices reduce viral loads.

Background:

One of the most significant challenges currently facing the beekeeping industry is to find ways of controlling the viruses that threaten their colonies and livelihoods. A recent and major development in that regard has been the ability to identify and measure viral loads in honey bees, using the Integrated Virus Detection System (IVDS).

However, although even though viruses are now detectable and identifiable, what is still needed are reliable treatment methods—and especially comparative analyses of their efficacy.

Using IVDS as a tool, one component of this project is designed to document the use of eight specific essential oils to control viruses, using LeFore commercial essential oil patties. The oils will be tested both individually and in different combinations in patties.

The project's other component, will use IVDS to measure viral loads in bees as part of the USDA/ARS Weslaco Project. IVDS is a means to correlate quantitative and qualitative virus data with measures associated with key factors being tested to improve colony heath and productivity.

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- Poster location 43, Pollination Pavilion, Session 3; or on the web (after January 2011) at AlmondBoard.com/AICposters
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