Texas Imported Fire Ant Research and Management Project

Final Progress Report - October 2001

Methods that prevent transportation of red imported fire ants in commercial honey bee colonies

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$29,844 for two years (Year 1 = $14,922)
Funding period from September 1, 1999 to August 30, 2001

Summary of Work to be Done:

The movement of commercial honey bee colonies from Texas to California has been hampered due to the risk of introducing imported fire ants. We continue to test simple methods to reduce this risk.

Major accomplishments to date (Sept. 1, 1999 – Aug. 31, 2001)

- The project involved planning and discussion with various parties, including the Texas Department of Agriculture and commercial beekeepers. It also involved assessing the association between fire ants and bees, and the effects of insecticide use on native ants.
- We conducted an experiment to test the association between *Solenopsis invicta* and honey bee colonies. It involved placing bee boxes with and without hives directly on the ground, on single palettes, on double palettes or on legged stands. Several surveys were conducted for *S. invicta* on the ground, and in and on bee boxes.

- We surveyed bee yards in Lubbock for fire ants, and tested the effects of Amdro® on native ants as a part of the project on feasibility of treating bee palettes with insecticide.

Goals achieved:

- Fire ants located and swarmed most of the baits placed on the ground beside hives, but they did not locate those baits placed on hives. These results were the same in each of three surveys regardless of whether bees were present or absent in hives, and regardless of whether the hives were placed directly on the ground, on palettes, or on stands with the hives inaccessible to ants. All hives inspected internally for *S. invicta* were also free of the ants. Although incidences of fire ants in beehives have been noted, the absence of fire ants in and on beehives in this study suggests that the ants do not normally nest in hives. Hitchhiking may more likely occur when queens or small colonies of fire ants hide in clumps of earth clinging to the palettes used to facilitate moving hives onto trucks with forklifts.
- Surveys of native ants on plots treated and not treated with Amdro® did not enable us to document any effects, if any, of the insecticide on the native ant fauna, because extreme drought conditions that kept ants from foraging. Therefore, another application of Amdro® and subsequent survey will be conducted in the spring of 2002. The survey will coincide with the date of the first one of 2001, in which plots were surveyed before application of the insecticide.

Relevance to the Texas Imported Fire Ant Research Management Project:

The primary goal of research funding from the Management Plan is to create and improve technology for suppressing and controlling *Solenopsis invicta.* Our research is relevant to the Plan, for it is designed to test simple methods that inhibit the spread of *S. invicta* (via honey bee colonies) into the western United States. Commercial beekeepers regularly transport colonies from Texas to California to pollinate crops like almonds, and it is critical that these colonies are free of fire ants.

Productivity:

Refereed publication:

Deslippe, R.J. and W.D. Melvin. *In press.* Assessment of ant foraging on beehives in an apiary infested with *Solenopsis invicta* (Hymenoptera: Formicidae). *Southwestern Entomologist*

Presentation:

Deslippe, R.J. 2000. Associations between ants and bees. Annual Meeting of the Texas Beekeeper's Association. Kerrville, TX.

Workshop:

Imported Fire Ant/Texas Beekeeper’s Review. 1999. Texas A&M Research and Extension Center. Lubbock, TX.