Training Educators About Beekeeping, Crop Pollination and Honey Bee Pest Management in Alabama and Tennessee

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Fig. 1. As pollinators of many crops (e.g., those seen in the photo on the right), honey bees are vital to US agriculture. The public should be aware of the honey bee's importance; and beekeepers should be kept up-to-date on the best ways to maintain honey bees and manage their pests.

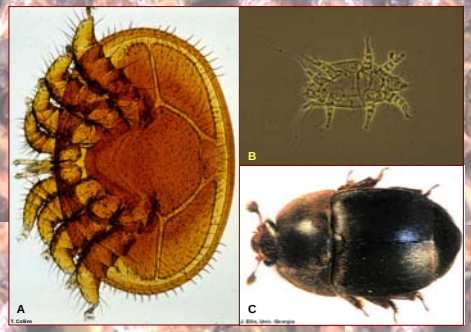

Fig. 2. Trainers such as Extension agents should be aware of the pests that attack honey bees and their damage. The most important pest, the varroa mite (A), kills thousands of colonies yearly. Because its is microscopic and lives within bees, damage by the tracheal mite (B) may be misdiagnosed. A relatively new pest, the small hive beetle (C) feeds on bee larvae and food stores.

Fig. 3. Extension agents and beekeeping leaders should be kept informed of the advances made in the integrated management of the varroa mite. For example, treatment thresholds have been determined using bottom board sticky traps (A). Screened open bottom boards are used to physically exclude fallen mites from a colony (B). Queens expressing resistance are commercially available (C). And several bio-rational treatments, such as Apiguard® (D), are now registered for use against the pest.

Honey bees are essential to US agriculture: The annual value of the increased yield and quality of agricultural products attributable to honey bee pollination was recently estimated to be $14.6 billion. But expanding pest problems (Fig. 2) are making it increasingly difficult to maintain healthy, productive colonies. Techniques and tools exist to mitigate these problems (Fig. 3), but many beekeepers are unaware of them or of their correct use. With funding from Southern SARE, we conducted training sessions for county Extension agents and beekeeper association representatives in Alabama and Tennessee on sustainable honey bee pest management, fundamentals of beekeeping and pollination.

Thirty-six agents and seven beekeepers attended the three training workshops held in Tennessee (at Jackson, Nashville and Knoxville) in summer 2004. Four workshops were held in Alabama in summer 2005 at Tuscaloosa, Dothan, Auburn and Huntsville. Because of restructuring of the Alabama Cooperative Extension System (ACES) and reduced travel funding, fewer agents (10) attended these workshops; however, many more beekeepers participated (76), perhaps because ACES does not have a resident Extension Apiculturist.

Workshops consisted of a 3-hour presentation (Fig. 4) beginning with basic honey bee biology and the fundamentals of beekeeping and pollination. Most lecture time was spent on pest biology and management. Workshops concluded with a 2-hour hands-on inspection of honey bee colonies (Fig. 5). Extension agents were provided new beekeeping protective gear (veil and gloves) and a hive tool; and educational materials: a video on the importance of honey bees as pollinators, and handouts and powerpoint presentations on CD. Pre- and post-workshop tests were completed by participants to determine their comprehension and retention of lecture material. (Not all participants completed the tests.)

Workshops were well received: 94% and 97% of attendees in Tennessee and Alabama, respectively, thought the work-shops were excellent or very good; 100% and 97% rated the materials provided to them as excellent or very good. Improvements in post-workshop test scores indicate participants, except for experienced beekeepers, substantially improved their knowledge of beekeeping, pollination and honey bee pest management (Figs. 6 & 7). Our efforts should improve beekeeping and pest management practices, resulting in more honey bee colonies and pollinators for US agriculture.

Fig. 4. Jim Tew lectures to workshop participants in Tuscaloosa, AL on basic honey bee biology and beekeeping.

Fig. 5. Workshop participants in Jackson, TN watch as John Skinner inspects a honey bee colony. Here he holds up a frame to show where honey has been stored.

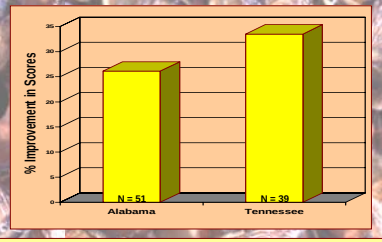

Fig. 6. Average improvement of post-workshop test scores over pre-workshop scores, for all participants combined.

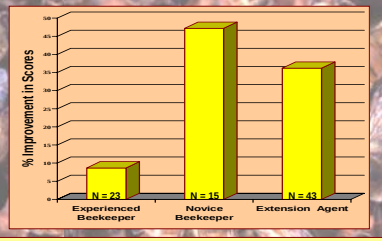

Fig. 7. Average improvement in workshop test scores for Extension agents and experienced and novice beekeepers.

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