

USDA APHIS Plant Protection and Quarantine
Small Hive Beetle (*Aethina tumida*)
Project Proposal

Title: Small Hive Beetle Detection Survey

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I. Objectives and the Need for Assistance:

The Small Hive Beetle (SHB), *Aethina tumida*, is an imported pest of honey bee colonies and has been found in 7 states, including Florida, Georgia, North and South Carolina, Pennsylvania, Ohio, and Minnesota. To date, SHB has not been found infesting honey bee colonies in Connecticut. The proposed survey would be conducted in conjunction with yearly inspections of honey bee colonies for detection of other pests and diseases, including foulbrood and varroa mites. In addition, an educational outreach component of the program will disseminate pertinent information to commercial and hobbyist beekeepers through presentations at meetings and workshops.

The SHB can be a destructive pest of honey bee colonies, causing damage to comb, stored honey, and pollen. If a beetle infestation is sufficiently heavy, it may cause bees to abandon the hive. The beetles may also be a pest of stored combs and honey (still in the comb) before extraction. Beetle larvae may tunnel through combs of honey, feeding and defecating, causing discoloration, contamination, fermentation, and eventual loss of the honey.

II. Results/Benefits Expected:

The survey results will contribute presence/absence data of this non-native pest of honey bees, and in the case of presence, provide information for use in eradication programs.

Educational outreach will be accomplished by distribution of written information such as fact sheets, to professional and hobbyist beekeepers, through their organizational meetings. Oral presentations will be made to professional and hobbyist beekeepers at their meetings and workshops, as requested. When oral presentations are given, a count will be made of those present in the audience, as a way to assess the impact of these outreach efforts. Attendance at the above mentioned meetings also will be included.

III. Approach:

Outline of project strategy: Surveys for regulated non-native pests are necessary to obtain data on the potentially threatening species so that regulatory agencies can implement eradication programs early before a more extensive infestation occurs.

Data collection: Presence/absence data will be generated during the survey period to develop distribution information on SHB. See Materials and Methods Section.

Data analysis and dissemination of results: Data will be submitted to the National Agricultural Plant Information System (NAPIS) database at the completion of the survey. Distribution data may be mapped by NAPIS staff and made available on the CAPS web site.

Materials and Methods: Each year, during the course of regular apiary inspections, selected hives in CT are examined for presence of American foulbrood, European foulbrood, varroa mites, and tracheal mites. Hives are opened by an experienced apiarist and inspector, and examined visually for signs of these pests and diseases. At this time, the bottom board of the hives will be examined for presence of adult SHB. Suspected SHB adults will be placed in bottles of alcohol, and their identity confirmed by a trained entomologist.

In addition, combs will be examined for presence of burrowing by larvae of the SHB, which is manifested by damaged combs, contaminated honey, and honey running out of the combs due to damaged caps. As stated above, suspected SHB larvae will be captured, placed in bottles of alcohol, and their identity confirmed by a trained entomologist.

Survey records: Survey data will include the following: date of hive inspection, location of hives, name and address of the owner, and pests or diseases detected. Records of SHB finds will be submitted to the NAPIS database.

Timetable: The survey will take place when regular apiary inspections occur, usually beginning in March 2005. Inspections continue through October of each year.

Facilities and Equipment Available: The proposed survey will take place in the State of CT. Hives will be examined visually for the presence of adult SHB, and for signs of infestation by larval SHB. There will be no need to purchase new or additional equipment.

Personnel: Supervisor: to be named, State Entomologist

Ira Kettle: apiary inspector

Personnel are currently employed by The Connecticut Agricultural Experiment Station.

IV. Location of the Project: the state of Connecticut. There are no unusual features that may impact on the proposed survey.