CAPS Work Plan for Calendar Year 2006

Cooperator: Connecticut Agricultural Experiment Station

State: Connecticut

Project Category: Part III Survey for Small Hive Beetle

Project Coordinator: Victoria Lynn Smith, Deputy State Entomologist, Connecticut Agricultural Experiment Station, 123 Huntington St., New Haven, CT 06504; Victoria.Smith@po.state.ct.us

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 honeybee colonies in Connecticut. The proposed survey would be conducted in conjunction with yearly inspections of honeybee 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 honeybee 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.

In 2004, 306 beekeepers registered 2,374 hives in CT. Though most of the beekeepers are hobbyists, some produce honey for sale, wax for crafts, provide pollination services to the state's orchards and commercial pumpkin growers, and breed queen bees for sale. Beekeeping is a vital cottage industry in CT, and provides income for apiarists on farms, in suburban areas, and in cities. In addition, beekeeping often provides children with their first introduction to agriculture and the practices of animal husbandry.

II. RESULTS/BENEFITS EXPECTED

The Cooperator seeks to conduct a cooperative agricultural pest survey program which is expected to result in:

- Data on the presence or absence of this non-native pest in Connecticut. Early intervention is important in successful eradication of non-native pests. If pests are discovered before they become widespread and established, eradication can be a relatively simple process.

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- 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:

A) The Cooperator and APHIS mutually agree to/that:

i) Maintain a State Cooperative Agricultural Pest Survey Committee that will meet at lease once a year to discuss fostering the goals of CAPS.

ii) Work together in carrying out field surveys, trapping, and data collection, setting emphasis on the pest/diseases particularly identified (**see attached list**), that may post an immediate risk to the agriculture of this state and the United States.

iii) Have representation at National and/or Regional **annual** planning meetings.

iv) Utilize Cooperator and APHIS program funding, as outlined in the Financial Plan, within the authorized parameters to support survey and detection activities. In addition, specific appropriated funding in the level authorized by the PPQ Eastern Region, will be dedicated to the delivery of CAPS objectives listed above.

B) The Cooperator will:

i) **Conduct surveys for Small Hive Beetle (SHB).** 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. Hive inspections take place between March and November each year. On average, 800 of the state's 2,400 hives are opened each year.

ii) 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 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.

iii) **Provide the following resources:**
(1) **Personnel:** One apiary inspector to conduct field survey activities. This person is on staff at the Experiment Station. He will work under the direction of current Station Personnel. A portion of his salary will be paid by APHIS funds.

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(2) Type of equipment provided by Cooperator for personnel: None

(3) Provide office space at 123 Huntington St, New Haven, CT with associated services and utilities, computers, and other office equipment for the use of Cooperator Personnel in entering survey data into the NAPIS database

(4) Vehicles for the Cooperator personnel in conducting field surveys and collecting data.

(5) Supplies:
(a) Laboratory supplies for examination, preservation, and shipping of any bees or comb samples from hives with evidence of SHB.
(b) digital camera to document signs/symptoms of SHB.

iv) **Contracts—**not applicable

v) **Reports**
(1) narrative accomplishment reports **(Accomplishment Report—Appendix H of the ER CAPS Guide)** in the frequency and time frame specified in the Notice of Award, Article 4.
(2) Financial Status Reports, SF-269, in the frequency and time frame specified in the Notice of Award, Article 4.

vi) **Adhere to APHIS ADP security guidelines as referenced in the Notice of Award when entering pest survey data and transmitting it to NAPIS.**

C) APHIS will:

i) Provide any new information that becomes available on SHB, provide appropriate forms, and review the data

ii) Provide the following resources: funds to the Cooperator to cover costs outlined in the Financial Plan.

iii) Make arrangements for Taxonomic support in identification of SHB should this disease is found.

IV) QUANTITATIVE PROJECTION OF ACCOMPLISHMENTS TO BE ACHIEVED

i) The survey will take place when regular apiary inspections occur, usually beginning in March 2006. Inspections continue until completed, usually by November of each year. Hives generally enter winter management at this time, and opening hives then is not recommended. Outreach occurs all year, at hobbyist meetings, at fruit grower meetings, and at functions of the Experiment Station.

V) DATA COLLECTION AND MAINTENANCE

Data on hive inspections is maintained in the office of the Deputy State Entomologist at the CT Agricultural Experiment Station. The Cooperator will provide data to Donna Ellis,

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CAPS State Survey Coordinator, who will enter presence/absence data for all of the small hive beetle inspections. All survey data will be entered as follows:

A) All survey data will be entered into the NAPIS database.
   i) First record for the State and/or County will be entered within **48 hours** of confirmation by a qualified identifier.
   ii) All other required records, both positive and negative, must be entered **within 2 weeks** of confirmation.
   iii) All records are to be entered into the NAPIS database by **December 1** of the year of the survey, so these data are included in the yearly Plant Board Report.

B) Data to be collected for each survey at each apiary: date of apiary inspection, location of nursery, name and address of the owner, and pests or diseases detected.
C) Data will be maintained in the NAPIS database and in files at the Connecticut Agricultural Experiment Station.
D) Criteria to evaluate the project:
   i) Whether survey goals are met
   ii) Whether the Cooperator is able to adequately document signs and symptoms of infection by SHB.

E) Methodology used to determine if:
   i) Identified needs are met: Identified nurseries are sampled and deformed plants examined to determine if SHB is present
   ii) Results and benefits are achieved: evaluation if sampling is adequate to determine whether SHB is present in the hives sampled.

VI) GEOGRAPHIC LOCATION OF THE PROJECT

Surveys will be conducted throughout the state of Connecticut in all eight counties. Data will be provided to the Cooperator's State Regulatory Official (SPRO) for entry into the database.

A) Type of terrain: apiaries, bee yards, garden areas, agricultural areas
   i) Features which may have an impact on the project: none

VII) TAXONOMIC SUPPORT

A) Person/institution that will screen samples and request taxonomic support if suspicious plants are found: Gale Ridge
B) List of target pests by scientific name: *Aethina tumida*
C) Survey dates: March 2006 until completed, by November 2006.
D) Number of survey sites: Approximately 800 hives, usually one hive per apiary.
E) Number of traps, visual surveys, etc.- Approximately 800 hives
F) Number of collections. Twenty to 25 specimens possibly could be collected for identification.

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