Project Coordinator: Dr. Christopher M. F. Pierce

State: Indiana

Project: Old World Bollworm Survey

Project Category (Part I, II, or III – see page 2-1 of CAPS Guidelines):

Part II

Pests (include survey targets described in Part I, or Core, category):

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
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<tbody>
<tr>
<td>Helicoverpa armigera Hübner</td>
<td>Old world bollworm</td>
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I) OBJECTIVES AND NEED FOR ASSISTANCE:

Old world bollworm, Helicoverpa armigera, larvae feed on several crops important to Indiana agriculture such as corn, soybeans, alfalfa, and tomatoes. About 5.9 million acres of corn, 5.8 million acres of soybeans, 625 thousand acres of alfalfa, and 7,000 thousands of acres of tomatoes are grown in Indiana each season. The objective is to determine if \( H. \) armigera is present in the state of Indiana; and to some degree, what extent it may be present.

II) RESULTS OR BENEFITS EXPECTED:

The Indiana CAPS program seeks to conduct a cooperative agricultural pest survey program which is expected to result in information about the presence or absence of a damaging insect not known to occur in Indiana or the United States. Knowledge of the existence of this pest species would be crucial to Indiana agriculture as the state grows nearly 12 million acres of corn and soybeans (two hosts of \( H. \) armigera); these two principal field crop commodities, corn ($1.7 billion) and soybeans ($1.3 billion), in Indiana have on the average a farm gate value slightly over $3 billion dollars. The production of alfalfa in Indiana averages an annual farm gate value of $140 million dollars. The production of tomatoes in Indiana averages an annual farm gate value of $35 million dollars.

III) APPROACH:

Pheromone traps for \( H. \) armigera will be deployed and serviced in 6 Indiana Counties (Jennings, Knox, Porter, Randolph, Tippecanoe, and Whitley) that contain Purdue Agricultural Centers. Counties were selected using the Old world bollworm MRA criteria and due to the production of corn, soybeans, alfalfa, and tomatoes. Five pheromone traps will be placed and serviced in each of the six counties. Traps will be placed in late June and serviced twice a month for 3 months. Dr. Christopher Pierce will coordinate the survey of Old world bollworm. Traps will be placed and monitored by summer trappers. Dr. Christopher Pierce will be responsible for the identification of samples. Dr. Chris Osato will assist in the identification of samples.

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

i. Maintain a State Cooperative Agricultural Pest Survey Committee that will meet at least once a year to discuss fostering the goals of CAPS.
ii. Work together in carrying out filed surveys, trapping, and data collection, setting emphasis on *Helicoverpa armigera* Hübner that may pose an immediate risk to the agriculture of this state and the United States.

iii. Will provide lures for the survey program.

iv. Have representation at National and/or Regional annual planning meetings.

v. 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. Pheromone traps for *H. armigera* will be deployed and serviced in 6 Indiana Counties (Jennings, Knox, Porter, Randolph, Tippecanoe, and Whitley) that contain Purdue Agricultural Centers. Counties were selected using the Old world bollworm MRA criteria and due to the production of corn, soybeans, alfalfa, and tomatoes. Five pheromone traps will be placed and serviced in each of the six counties. Traps will be placed in late June and serviced twice a month for 3 months. Dr. Christopher Pierce will coordinate the survey of Old world bollworm. Traps will be placed and monitored by summer trappers.

ii. Provide the following resources
   (1) List types of personnel and what they will be doing.
      (a) Are they currently employed? No.
      (b) Will employees need to be hired? Are they full time or part time, and what mechanism will be used to hire them? A full time summer intern will be employed in the Department of Entomology at Purdue University hired by the Indiana CAPS program.
      (c) Are they paid or volunteer? Paid.

   (2) **Type of equipment provided by Cooperator for personnel**
      (a) Identify major equipment needs: N/A
      (b) Use of the equipment purchased: N/A
      (c) Purchased with APHIS funds? N/A
      (d) Method of procurement: N/A
      (e) Method of disposition: N/A

   (3) Provide office space in the Department of Entomology at Purdue University with associated services and utilities, computers and other office equipment to for the use of Cooperator personnel in entering survey data into the NAPIS database

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

   (5) **Supplies**
      (a) Trapping supplies for field surveys? N/A
(b) Special Supplies: N/A
(c) Method of procurement: N/A

iii. Contracts:
   (a) Who will handle contractual needs? Mr. Ryan Selby in the Business Office in the Department of Entomology at Purdue University.
   (b) Cooperator Procurement activities shall be in accordance with A-102 and A-110.
   (c) Special requirements: N/A

iv. Reports – submit all reports to the APHIS Authorized Department Officer’s Designated Representative (ADODR). Reports include:
   (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.

v. 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. List any activities that are specific to APHIS, e.g., provide training, provide forms, review data.
   ii. Provide the following resources:
       (1) List types of personnel and what they will be doing: N/A
       (2) Federal Equipment for its personnel: N/A
       (3) Federal Equipment for use of the Cooperator personnel, e.g. vehicles? N/A
       (4) Funds to the Cooperator to cover costs outlined in the Financial Plan. In addition, specific appropriated funding, in the level authorized by the APHIS Eastern Region, will be dedicated to the delivery of CAPS objectives listed above.
       (5) Provide lures for the survey program.

D) OTHER PARTIES TO WHO WILL WORK ON THE PROJECT

   i. Discuss interaction with other contributing parties to this effort. What is their role? Note that the State and APHIS do not have authority to commit other parties unless they have contracts, subgrants, or other such legally binding authority to do so.
   ii. List all who will work on the project:
       (1) Dr. Christian Oseto
   iii. Describe the nature of their effort:
       (1) Enhance the taxonomic capability of Indiana’s survey.
   iv. Contribution: N/A

IV) QUANTITATIVE PROJECTION OF ACCOMPLISHMENTS TO BE ACHIEVED:
Pheromone traps for *H. armigera* will be deployed and serviced in 6 Indiana Counties (Jennings, Knox, Porter, Randolph, Tippecanoe, and Whitley) that contain Purdue Agricultural Centers. Counties were selected using the Old world bollworm MRA criteria and due to the production of corn, soybeans, alfalfa, and tomatoes. Five pheromone traps will be placed and serviced in each of the six counties. Traps will be placed in late June and serviced twice a month for 3 months. Dr. Christopher Pierce will coordinate the survey of Old world bollworm. Traps will be placed and monitored by summer trappers. Dr. Christopher Pierce is responsible for entering survey data in NAPIS. 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.

V) **DATA COLLECTION AND MAINTENANCE:**

Who has the responsibility for delivering what data and to whom and when.

Dr. Christopher Pierce is responsible for entering survey data in NAPIS. 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.

A) *Follow the guidelines in Appendix D of the ER CAPS Guide for the correct NAPIS language reporting requirements.*

B) *Identify the kind of data to be collected:* Presence or absence of *Helicoverpa armigera.*

C) *How will the data be maintained:* Excel spreadsheet

D) *Establish criteria to evaluate the project:*
   i. **Results:** Completed survey and outreach efforts
   ii. **Successes:** Survey data complete and entered into NAPIS

E) *Methodology used to determine if:*
   i. **Identified needs are met:** Check all data is in database
   ii. **Results and benefits are achieved:** Review data and use for planning further surveys and educational efforts.

VI) **GEOGRAPHIC LOCATION OF PROJECT:**

Surveys will be conducted in the **6 Indiana Counties** (Jennings, Knox, Porter, Randolph, Tippecanoe, and Whitley). Data will be provided to the Cooperator’s State Regulatory Official (SPRO) for entry into the database.

A) **Identify the type of terrain (cropland, rangeland, woodland, etc.):** Cropland

B) **Identify features which may have an impact on the project or activity.**
   i. **Rivers, lakes, etc.:** N/A
   ii. **Wildlife sanctuaries:** N/A

VII) **TAXONOMIC SUPPORT**

In order to assure adequate taxonomic support for the CAPS program, the ER Regional CAPS Committee needs you to address this support in your work plans. The six data items needed to manage identification services are listed below. **Note: All work plans must – provide the following (A – F) for each survey.**
If in A you request taxonomic support the ER CAPS Committee and PPQ’s National Identification Services will use the information you provide in B – F to assign your survey samples to the appropriate taxonomic personnel of institutions.

A) Person/institution that will screen samples for target pests OR request for taxonomic support:
   i. Dr. Christopher Pierce and Dr. Christian Oseto. We request taxonomic support for final confirmation of identification from national identifier for new state and county records.

B) List of target pests by scientific name:

   *Helicoverpa armigera* Hübner                   Old world bollworm

C) Survey dates: Traps will be placed in late June and serviced twice a month for 3 months.

D) Number of traps, visual surveys, etc: Pheromone traps for *H. armigera* will be deployed and serviced in 6 Indiana Counties (Jennings, Knox, Porter, Randolph, Tippecanoe, and Whitley) that contain Purdue Agricultural Centers. Counties were selected using the Old world bollworm MRA criteria and due to the production of corn, soybeans, alfalfa, and tomatoes. Five pheromone traps will be placed and serviced in each of the six counties.

E) Number of collections: Approximately 6 sampling dates