

Indiana Cooperative Agricultural Pest Survey

2012 Semi Annual Report

1 January – 30 June



Department of Entomology at Purdue University
Indiana Department of Natural Resources (IDNR)
United State Department of Agriculture (USDA), Animal and Plant Health Inspection Service
(APHIS), Plant Protection and Quarantine (PPQ)

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13 July 2012

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CAPS 2012 Semi Annual Report

Year:	2012
State:	IND
Cooperative Agreement Name:	Indiana Agricultural Pest Surveys (CAPS) 2012
Cooperative Agreement Number:	12-8218-0332-CA
Project Funding Period:	1 January 2012 – 31 December 2012
Project Report:	CAPS Infrastructure Semi-Annual Report
Project Document Date:	31 July 2012
Cooperators Project Coordinator:	Larry W. Bledsoe
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Quarterly Report	<input type="checkbox"/>
Semi-Annual Accomplishment Report	<input checked="" type="checkbox"/>
Annual Accomplishment Report	<input type="checkbox"/>

A. Compare actual accomplishments to objectives established as indicated in the workplan. When the output can be quantified, a computation of cost per unit is required when useful.

Objective 1. Maintain a State Cooperative Agricultural Pest Survey Committee that will meet at least once a year to discuss fostering goals of CAPS.

1a. State CAPS Primary Committee:

Cooperative Agreement Representative Philip Marshall
 State Plant Regulatory Official (SPRO): Indiana Department of Natural Resources
 Division of Entomology and Plant Pathology
 402 West Washington, Room W-290
 Indianapolis, Indiana 46204

State Plant Health Director (SPHD): Gary Simon
 USDA APHIS PPQ
 1305 Cumberland Ave, Suite 102
 West Lafayette, Indiana 47906

Department of Entomology (Department Head) Dr. Steve Yaninek
 901 West State Street
 West Lafayette, Indiana 47907

Indiana State Survey Coordinator (SSC): Larry W. Bledsoe
 Purdue University, Department of Entomology
 901 West State Street
 West Lafayette, Indiana 47907

1b. Full committee

Name	Organization	Discipline
Bruce Bordelon	Purdue University	Horticulture
Tom Creswell	Purdue University	Plant Disease Diagnostics
Dr. Peter Hirst	Purdue University	Horticulture
Dr. Jeffery Holland	Purdue University	Entomology, Forest Landscape Ecol
Dr. Ray Martyn	Purdue University	Center for Crop Bio-security
Glenn Nice	Purdue University	Weed Science
Dr. Chris Oseto	Purdue University	Entomology/ Identification
Gail Ruhl	Purdue University	Plant Disease Diagnostics
Dr. Cliff Sadof	Purdue University	Ornamental Pests/ Identification
Susan Schechter	Purdue University	National Ag Pest Information Svc
Dr. Robert Waltz	Purdue University	Indiana State Chemist
Cloyce Hedge	IN Dept. Natural Resources	Plant Ecology/ Identification
Ellen Jacquart	The Nature Conservancy	Plant Ecology/ Identification

1c. Committee Meetings:

12 June. Full committee: 2012 review and 2013 planning

Objective 2. Cooperate with agencies carrying out field surveys, trapping, and data collection, setting emphasis on pest/diseases particularly identified that may pose an immediate risk to agriculture. SSC responsible for coding and uploading Indiana information to NAPIS database.

2a. Emerald Ash Borer, *Agrilus planipennis*. (IDNR) Visual surveys

Date Range: 01-01-2012 thru 06-30-2012

Target Pest	Counties	Sites	Pos	Neg
Emerald Ash Borer	11	12	12	0

2b. Gypsy Moth, *Lymantria dispar*. (IDNR and PPQ)

Date Range: 01-01-2012 thru 06-30-2012

No data received during period

Objective 3. Have representation at National and/or Regional annual meetings.

3a. SSC was not able to attend Central Plant Board Annual Meeting, Traverse City, MI (3- 7 June) due to prior commitments.

Objective 4. Utilize Cooperator and APHIS program funding, as outlined in the Financial Plan within the authorized parameters to support survey activities.

4a. Soybean commodity survey:

Estimated data collection for the Soybean Commodity Survey are 4 sites X 4 pests X 5 traps/pest X 12 samples = 960 records. Proposed and actual funding for this survey is \$5,943.*

4a1. Survey Methodology (trapping protocol): Survey methods were adapted from the CAPS Pest Risk Assessment publication by Vennette, et al. 2003. Mini Risk Assessment, Old World Bollworm *Helicoverpa armigera*, Hubner [Lepidoptera : Noctuidae] and the CAPS Soybean Commodity Guidelines (25 July 2007). Four high-risk trap sites (Tippecanoe, Knox, Randolph, and La Porte Counties) that have high concentrations of grain crops (soybean and field corn), vegetable (primarily tomato, sweet bell pepper, and sweet corn), and alfalfa hay were chosen for this survey. Trap numbers and types placed at each site include: five universal bucket traps (green/yellow/white) with lure and kill strips for each of old world bollworm, *Helicoverpa armigera*, Egyptian cottonworm, *Spodoptera littoralis*, and silver Y-moth *Autographa gamma*; five red paper delta traps (2 sides sticky with ends open) with lure for summer fruit tortrix, *Adoxophyes orana*; and five wing traps with lure for golden twin-spot moth, *Chrysodeixis*

chalcites. Traps were set on 14-17 May and have been serviced weekly through the end of the reporting period.

4a2. Survey locations and dates;

1. La Porte Co. Pinney-Agricultural Center, Wanatah, IN, set 14 May.
2. Knox Co. Southwest-Purdue, Vincennes, IN, set 17 May.
3. Randolph Co. Davis-Purdue Agricultural Center, Farmland, IN, set 16 May,
4. Tippecanoe Co. Meigs-Purdue Horticultural Center, Lafayette, IN, set 14 May.

Trap period extends weekly mid May to mid August (12 sample dates).

4a3. Benefits and Results of Survey:

As in previous years, several species of endemic tortricid and noctuid moths have responded to the specific pheromones resulting in large numbers of moths to screen. This has resulted in about 400 specimens for *Helicoverpa spp* alone received that will require screening by 30 June. Morphology and/or dissection screening is underway and requires several months.

4a4. Database submissions:

No target species have been identified as of the end of reporting period-see above.

4b: Risk-based survey for exotic woodborers/bark beetles (in cooperation with PPQ statewide trapping network). Chinese longhorn beetle visual, and European hardwood ambrosia beetle trapping surveys are being informally bundled with the funded wood borer/bark beetle survey.

Estimated data collection for the risk based exotic woodborers/bark beetles survey are 50 sites X 10 visits X (8 pests/3 trap-lures) = 4000 records. Proposed and actual funding for this survey is \$6,169.*

4b1. Survey Methodology (trapping protocol): These surveys were an APHIS-PPQ/CAPS collaborative effort. PPQ set up and sampled traps and CAPS processed, identified, and archived samples. Exotic Woodborer/Bark Beetle National Survey Guidelines, July 2011, were followed. Survey targets are Redhaired pine bark beetle, *Hylurgus ligniperda*; lesser spruce shoot beetle, *Hylurgops palliatus*; sixtoothed bark beetle, *Ips sexdentatus*; European spruce bark beetle, *Ips typographus*, Japanese pine sawyer beetle, *Monochamus alternatus*, Mediterranean pine engraver, *Orthotomicus erosus*; sixtoothed spruce bark beetle, *Pityogenes chalcographus*; pine shoot beetles *Tomicus destruens* and *T. pinniperda*.

- a. One hundred fifty wet cup Lindgren traps were deployed at 50 sites in 28 counties. Sites were identified by recognition of apparent risk of receiving target pests through commerce. Three to four (varies by site) Lindgren funnel traps containing dilute propylene glycol antifreeze were placed at each site. Traps contained one of the following lures: UHR alpha-pinene, UHR alpha-

pinene+ethanol, and IPS Tri-lure. Trap samples dated from 21 March to 22 June have been received and processed, and are awaiting final screen.

- b. Chinese longhorn beetle survey was bundled at 25 sites in 5 counties using unapproved UHR ETOH in Lindgren funnel traps and approved visual methods. Trap samples dated from 30 May to 15 June have been received, processed, and awaiting final screen.
- c. European hardwood ambrosia beetle survey was bundled at 15 sites in 9 counties using Lineatin lure in Lindgren funnel wet cup traps. Trap samples dated from 21 March to 20 June have been received and processed, and are awaiting final screen.

4b2. Survey dates: Traps from the exotic woodborers/bark beetles survey were deployed approximately early March in southern Indiana, mid May in central and northern Indiana. Traps are serviced about every two weeks until early-October.

4b3. Benefits and results of survey: In Indiana, over 4.3 million acres of high quality hardwood forests support an industry which employs 47,000 Hoosiers. These hardwood forests are at risk of exotic invasive bark beetles and other wood boring insects. Businesses and warehouses in Indiana that receive exotic, solid wood packing material (SWPM) represent potential focal points of pest introduction into the United States. The intent of this survey is early detection of threats to the forest products industry. CAPS staff has pinned and pointed specimens from 391 vials as of 30 June. Specimens are being taxonomically evaluated and no results are available.

4b4. Database submissions: No target species have been identified as of the end of reporting period.

- 4c. *Phytophthora ramorum* National Nursery Survey, (Sudden oak death foliar survey). This is a collaborative survey between Indiana DNR (IDNR), Purdue University Plant Pest Diagnostic Laboratory (P&PDL) and CAPS.

Estimated data collections are 400 samples representing 22 counties. Proposed and actual funding for this survey is \$15,791.*

4c1. Survey Methodology: IDNR personnel selected symptomatic parts of *Camellia*, *Rhododendron*, *Viburnum*, *Pieris*, and *Kalmia* (generally) from Indiana nurseries and other landscape plant retail outlets to test for the presence of *P. ramorum*. By 30 June, 277 samples representing 13 counties were shipped overnight to P&PD. Samples were tested using an enzyme-linked immunosorbent assay (ELISA) consistent with the *Phytophthora ramorum* Nursery Survey Manual (Revised April 30, 2007) USDA-PPQ. Confirmation testing (PCR) of suspect positive samples was performed by Michigan State University. Approximately 80 additional samples are expected to finish the survey.

- 4c2. Survey dates: First sample was received 5 April and the last sample in the reporting period was 20 June. Approximately 123 additional samples will arrive through July 2012.
- 4c3. Benefits and results of survey: In Indiana, over 4.3 million acres of high quality hardwood forests support an industry which employs 47,000 Hoosiers. According to the Indiana University Center for Urban Policy and the Environment, the horticulture industry employed over 25,700 employees and paid \$5.66 for every \$1,000 in total Indiana wages paid in 2004. Further, the total economic contribution in 2004 attributable to the horticultural industry in Indiana was nearly \$2.05 billion. If *P. ramorum* is detected in Indiana, rapid response would limit the spread of the pathogen and to prevent its introduction into nursery and forest products industries. As of 30 June, no positive *P. ramorum* samples were found in Indiana.
- 4c4. Database submissions: No target species have been identified as of the end of reporting period.
- 4d. Oak Commodity Survey: This is a survey of the Wabash River and White River watersheds for exotic lepidopteran pests of oak. Public and private land was surveyed. Proposed and actual funding for this survey is \$5,879.*
- 4d1. Survey Methodology: This survey is integrated with a current hardwood pest-monitoring program under the direction of Dr. Jeffery Holland, assistant professor of spatial ecology and biodiversity, Purdue University. Methods were adapted according to the Oak Commodity Survey Guidelines, revised 2010. Ten hardwood sites in 8 counties that had been harvested within the last 2 to 3 years were surveyed. One set of traps was placed at each site. Traps with lure were placed between 10 to 27 May and have been serviced every 2-3 weeks. Appropriate traps (bucket, wing and delta) with lures for exotic lepidopteran pests, summer fruit tortrix, *Adoxophyes orana*; green oak tortrix, *Tortrix veridana*; variegated golden tortrix, *Archips xylosteanus*; and Egyptian cottonworm, *Spodoptera littoralis*, were included at all sites
- 4d2. Survey dates: Traps were placed between 10 to 18 May and are serviced every 2-3 weeks. Last samples will be mid August.
- 4d3. Benefits and results of survey: In Indiana, over 4.3 million acres of high quality hardwood forests support an industry which employs 47,000 workers. Indiana has 22 species of oak that constitute a major component of its hardwood forests. This survey is expected to result in the early detection of exotic oak pests in Indiana hardwoods. Early detection and outreach education are the goals of this survey. As of 30 June, no target species have been detected.

B. If appropriate, explain why objectives were not met.

All objectives for reporting period (1 January to 30 June) were met.

C. Where appropriate, explain any cost overruns or unobligated funds in excess of \$1,000.

Information not available for semi-annual report.

D. Supporting Documents (if applicable)

None attached

**indicates information is required per 7 CFR 3016.40 and 7 CFR 3019.51*

Approved and signed by



Philip T. Marshall (Cooperator)

Date: ____July 17, 2012__

Gary W. Simon (ADODR)

Date: _____