

Indiana Cooperative Agricultural Pest Survey

2022 Annual Report for Survey

1 January – 31 December



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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Pest Detection / CAPS Survey Accomplishment Report – FY2022

Year:	2022
State:	Indiana
Cooperative Agreement Name:	Indiana Agricultural Pest Surveys (CAPS) 2022
Cooperative Agreement Number:	22-8218-0332-CA
Project Funding Period:	1 January 2022– 31 December 2022
Project Report:	PD / CAPS Survey Report
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Quarterly Report	<input type="checkbox"/>
Semi-Annual Accomplishment Report	<input type="checkbox"/>
Annual Accomplishment Report	<input checked="" type="checkbox"/>

A. Write a brief narrative of work accomplished. Compare actual accomplishments to objectives established as indicated in the work plan. If reporting on a combined surveys work plan, report accomplishments by survey. When the output can be quantified, a computation of cost per unit is required when useful.

Indiana Cooperative Agricultural Pest Survey (CAPS) program in 2022 accomplished three surveys: Field Crops Pest Survey, Nursery and Retail Plants Survey, and Exotic Wood Borer/Bark Beetle Survey. The CAPS surveys were a collaborative effort between the CAPS State Survey Coordinator (SSC), USDA-APHIS-PPQ, Indiana Department of Natural Resources (IDNR) Division of Entomology and Plant Pathology, IDNR Division of Forestry, and the Purdue Plant and Pest Diagnostic Laboratory (PPDL).

The Field Crops Pest Survey was planned and executed by CAPS and the PPDL. This survey consisted of 11 targets, and resulted in 3,434 records uploaded to the National Agricultural Pest Information System (NAPIS). The SSC conducted all aspects of the survey efforts for insect and weed targets, and the PPDL performed all corn disease monitoring. The Indiana Crop Improvement Association (ICIA) collected corn tissue samples for the PPDL. The PPDL screens for CAPS targets on all tissue samples sent into the clinic.

The Exotic Wood Borer/Bark Beetle (EWB/BB) Survey was a collaborative effort with PPQ, CAPS, and IDNR Division of Forestry. This survey targeted seven insect species and produced 1,791 records uploaded to NAPIS. PPQ staff performed all duties associated with beetle trap execution and monitoring, including: survey site selections, trap setup, trap maintenance, and sample collection. PPQ delivered samples to the CAPS lab for processing and screening. IDNR Division of Forestry performed all duties associated with moth trap execution and monitoring. Samples generated from PPQ and IDNR Division of Forestry were sent to the CAPS lab for processing. CAPS personnel cleaned, sorted, and screened all samples. Additionally, the CAPS lab conducted the visual survey portion of the EWB/BB survey. The SSC performed all final taxonomic screening for target species, and forwarded potential targets to the PPQ identifier.

The Nursery and Retail Plants Survey was a collaborative effort of CAPS, IDNR Division of Entomology and Plant Pathology, and the PPDL. This survey was comprised of four targets (two insects and two diseases), and resulted in 594 records uploaded to NAPIS. IDNR set and serviced insect traps, and obtained foliar samples for disease screening. CAPS staff set additional insect monitoring traps. PPDL collaborated with the collection of foliar disease samples and performed all disease screening.

The SSC coded and uploaded all data from the CAPS program to NAPIS. Survey data from PPQ (khapra beetle) and IDNR PPA 7721-Specialty Crops were also coded/uploaded by the SSC.

IN CAPS Program 2022 Accomplishment Summary

	Funding Amount	Records	Mean Cost Per Unit
Proposed	\$31,013	3,236	-
Actual	\$31,013	5,819	\$5.36

1. Field Crops Pest Survey

a. Survey methodology

The methodology report for the Field Crops Pest Survey is divided into three sections below according to survey type (visual searches, bucket traps for moths, or tissue sampling for diseases).

i. Visual Surveys

Pest common name	Scientific name
Yellow witchweed	<i>Alectra vogelii</i>
Cucurbit beetle	<i>Diabrotica speciosa</i>
Asiatic witchweed	<i>Striga asiatica</i>

CAPS staff conducted visual surveys for the species listed above at six locations with high densities of corn and soybean. At each location, five sites separated by at least 100 meters were walked on foot for four minutes (5 areas x 4 minutes = 20 minutes per site), in a zig-zag pattern, and scanned for visual evidence of the pests. All species were searched simultaneously. Sites were surveyed three times, at 3-4 week intervals, during the survey season.

	Proposed	Actual
Sites	6	6
Visits	3	3
Counties	6	6
Search dates	1/Jul/22 – 30/Sep/22	29/Jun/22 – 2/Sep/22

Survey Dates by County

County	Number of Sites	Actual survey dates
Tippecanoe	1	29/Jun/22, 25/Jul/22, 23/Aug/22
La Porte	1	03/Jun/22, 28/Jul/22, 26/Aug/22
Randolph	1	01/Jul/22, 27/Jul/22, 25/Aug/22
Knox	1	29/Jun/22, 27/Jul/22, 31/Aug/22
Whitley	1	30/Jun/22, 26/Jul/22, 26/Aug/22
Jennings	1	29/Jun/22, 25/Jul/22, 02/Sept/22

ii. Moth Surveys

Pest common name	Scientific name
Silver Y moth	<i>Autographa gamma</i>
Golden twin spot moth	<i>Chrysodeixis chalcites</i>
Old World bollworm	<i>Helicoverpa armigera</i>
Egyptian cottonworm	<i>Spodoptera littoralis</i>

The SSC selected six sites with high corn and soy densities selected for trap placement. Plastic bucket traps (green/yellow/white) with the appropriate lures and kill strips were used to survey all species. At each location, one trap per species was placed at five sites separated by at least 100 meters. Thus, 5 traps per species were placed at each location (5 sites per species x 6 locations = 30 total sites per species). Traps were set in early June and were serviced weekly for 12 weeks (until early September).

	Proposed	Actual
Sites	30 per species	30 per species
Traps	30 per species; 120 total	30 per species; 120 total
Visits	12	12
Counties	6	6
Survey date range	01/May/22 – 31/Aug/22	1/Jun/22 – 2/Sep/22

Survey Dates by County

County	Number of Sites	Actual survey date range	
		Start	End
Tippecanoe	5	1/Jun/22	23/Aug/22
La Porte	5	3/Jun/22	26/Aug/22
Randolph	5	2/Jun/22	25/Aug/22
Knox	5	6/Jun/22	31/Aug/22
Whitley	5	2/Jun/22	26/Aug/22
Jennings	5	7/Jun/22	2/Sep/22

iii. Disease Surveys

Pest common name	Scientific name
Late wilt of corn	<i>Magnaportheiopsis maydis</i>
Philippine downy mildew	<i>Peronosclerospora philippinensis</i>
Corn tar spot	<i>Phyllachora maydis</i>
Bacterial leaf streak	<i>Xanthomonas vasicola pv. vasculorum</i>

The PPD staff conducted surveys corn diseases. Samples sent to the clinic for analysis were screened for exotic diseases during the diagnostic process. As such, sites were not pre-selected, but were determined based on corn sample submission in-season. Samples were screened visually for signs of pathogens and confirmed with molecular/serological techniques. A total of 215 tissue samples from 64 counties were screened from June 2022 through November 2022.

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	Proposed	Actual
Sites	100	215
Samples	100	215
Counties	20	64
Sampling date range	1/May/22 – 31/Aug/22	1/Jun/22 – 28/Nov/22

Survey dates and positive records

County	Date(s) or date range of sample submission	Total # samples	# positive for <i>P. maydis</i>	Dates of positive sample submission
Bartholomew	7/Sep/22 – 8/Sep/22	4	0	
Benton	8/Aug/22 – 19/Sep/22	3	1	8/Aug
Blackford	31/Aug/22, 19/Sep/22	3	2	29/Aug, 31/Aug
Boone	12/Sep/22, 19/Sep/22	2	0	
Brown	2/Sep/22	1	0	
Carroll	6/Jun/22	2	0	
Cass	19/Sep/22	1	0	
Clark	7/Sep/22, 8/Sep/22	6	0	
Clay	7/Jul/22 – 14/Oct/22	3	0	
Clinton	19/Aug/22 – 8/Nov/22	5	0	
Crawford	2/Sep/22, 8/Sep/22	2	1	6/Sep
Daviess	11/Aug/22 – 1/Oct/22	3	1	11/Aug
Dearborn	31/Aug/22	1	0	
De Kalb	9/Aug/22	1	1	9/Aug
Dubois	22/Aug/22, 2/Sep/22	2	0	
Elkhart	7/Jul/22, 15/Aug/22	3	0	
Floyd	7/Sep/22	1	0	
Fountain	24/Aug/22	1	1	24/Aug
Fulton	4/Aug/22, 17/Aug/22	3	0	
Gibson	7/Sep/22	2	0	
Greene	19/Sep/22	1	0	
Hamilton	30/Jun/22, 31/Aug/22	3	0	
Hancock	24/Aug/22, 19/Sep/22	2	0	
Harrison	7/Sep/22	1	0	
Huntington	22/Jul/22, 29/Aug/22	2	0	
Jackson	13/Oct/22	1	1	13/Oct
Jasper	27/Jun/22 – 12/Sep/22	7	0	
Jay	17/Aug/22	2	0	
Jennings	10/Aug/22 – 31/Aug/22	3	2	29/Aug, 31/Aug
Johnson	24/Aug/22, 23/Sep/22	4	2	24/Aug, 23/Sep
Knox	8/Jun/22 – 8/Sep/22	7	2	22/Aug, 8/Sep
Kosciusko	2/Aug/22 – 30/Sep/22	4	0	
La Porte	21/Jul/22 – 30/Sep/22	11	2	21/Jul, 30/Sep
Lagrange	7/Sep/22 – 26/Sep/22	16	0	
Lake	7/Sep/22	1	0	

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Lawrence	30/Jun/22 – 8/Sep/22	4	0	
Madison	27/Jun/22	1	0	
Martin	2/Sep/22	1	0	
Monroe	14/Jun/22 – 19/Sep/22	6	0	
Montgomery	5/Sep/22, 12/Sep/22	7	0	
Orange	2/Sep/22, 8/Sep/22	2	1	8/Sep
Perry	24/Aug/22, 2/Sep/22	2	0	
Pike	7/Sep/22	1	0	
Porter	19/Sep/22, 27/Oct/22	3	0	
Posey	19/Jun/22, 7/Sep/22	2	0	
Pulaski	8/Jul/22, 19/Sep/22	2	0	
Putnam	31/Aug/22	1	1	31/Aug
Scott	8/Sep/22	1	1	8/Sep
Shelby	9/Jun/22 – 30/Sep/22	4	1	30/Sep
Spencer	24/Aug/22, 2/Sep/22	2	0	
St Joseph	30/Sep/22	1	1	30/Sep
Starke	19/Sep/22, 29/Sep/22	4	1	29/Sep
Sullivan	12/Aug/22, 24/Aug/22	2	1	24/Aug
Tippecanoe	20/Jun/22 – 2/Dec/22	24	4	19/Sep
Tipton	8/Aug/22 – 31/Aug/22	11	1	25/Aug
Vanderburgh	7/Sep/22	1	0	
Vermillion	16/Sep/22	1	1	16/Sep
Vigo	7/Jun/22 – 8/Sep/22	4	1	8/Sep
Wabash	21/Jun/22	1	0	
Warren	5/Aug/22, 8/Sep/22	2	0	
Warrick	7/Sep/22, 17/Oct/22	2	1	17/Oct
Washington	7/Sep/22	1	0	
White	17/Aug/22 – 12/Sep/22	7	1	17/Aug
Whitley	29/Aug/22	1	0	
Total positive for <i>P. maydis</i>			32	

b. Benefits and Results of the Survey

	Funding Amount	Total Records	Negative Records	Positive records	Mean Cost Per Unit
Proposed	\$10,888	1,800	-	-	-
Actual	\$10,888	3,434	3,402	32	\$3.17

The Field Crops Survey provided invasive species data for eleven exotic insect, weed, and disease species that are a threat to corn and soybean in the United States. A total of 3,434 records were uploaded to NAPIS; these records reflect a unique data entry for each species, trap, and date of trap monitoring. With the exception of corn tar spot (*P. maydis*), all records were negative for the surveyed species. Negative records for Indiana facilitate the trade and export of our commodities.

Corn tar spot was confirmed at 32 sites in 22 counties, resulting in 5 new county records: Crawford, Jackson, Jennings, Orange, and Scott Counties. Monitoring the spread of corn tar spot is necessary to establish distribution of this disease, and to create a historical record of its presence throughout the state.

2. Exotic Wood Borer and Bark Beetle Survey

a. Survey methodology

The Exotic Wood Borer and Bark Beetle (EWB/BB) Survey was a collaborative effort between USDA-APHIS-PPQ, CAPS, and the IDNR Division of Forestry. The methodology report for the EWB/BB Survey is divided by the survey type (visual searches, multi-funnel trap for beetles, or wing trap for moths).

i. Visual Survey

Pest common name	Scientific name
Asian long-horned beetle	<i>Anoplophora glabripennis</i>

CAPS staff conducted visual searches for Asian long-horned beetle (ALB) at six forested areas with high densities of maple trees. Trees were scanned with binoculars for signs of ALB infestation and presence of adults. Sites were walked in a zig-zag pattern while scanning trees for twenty minutes. Three searches per site were completed between May and September 2022.

	Proposed	Actual
Sites	6	6
Visits	3	2 - 3
Counties	6	6
Survey date range	1/Jul/22 – 30/Sep/22	8/Aug/22 – 28/Oct/22

Survey Dates by County

County	Number of Sites	Actual Search dates
Tippecanoe	1	8/Aug/22, 23/Aug/22, 27/Oct/22
La Porte	1	11/Aug/22, 26/Aug/22, 17/Oct/22
Randolph	1	11/Aug/22, 25/Aug/22, 24/Oct/22
Knox	1	16/Aug/22, 30/Sep/22
Whitley	1	11/Aug/22, 26/Aug/22, 24/Oct/22
Jennings	1	18/Aug/22, 2/Sep/22, 28/Oct/22

ii. Beetle Trap Surveys

Pest common name	Scientific name
Large pine weevil	<i>Hylobius abietis</i>
Six-toothed bark beetle	<i>Ips sexdentatus</i>
European spruce bark beetle	<i>Ips typographus</i>
Japanese pine sawyer	<i>Monochamus alternatus</i>
Oak Ambrosia beetle	<i>Platypus quercivorus</i>

USDA-APHIS-PPQ staff set, monitored, sampled, and maintained a total of 94 multi-funnel (12 funnel, wet) traps across 57 sites in 24 counties. Traps contained one of the following lures: Monochamol + alpha-pinene UHR + ethanol (MAPE), *P. quercivorus*, or *Ips* tri-lure.

PPQ selected sites by recognition of apparent risk of receiving target pests through commerce and/or by vulnerable habitat. Trap placement at each site was one of the following: 1) two traps, one trap each with MAPE lure or *Ips* tri-lure, or 2) one trap with *P. quercivorus* lure. MAPE and *Ips* tri-lure traps were placed at 37 high-risk sites, and *P. quercivorus* traps were placed at 20 sites with high concentrations of oak trees.

PPQ staff monitored traps every 2-4 weeks from March to October 2022. CAPS staff received samples for sorting and screening of specimens. The SSC performed final screening, and any potential targets were forwarded to the PPQ taxonomist for identification.

	Proposed	Actual
Sites	60	57
Traps	85	94
Visits	7	5 - 14
Counties	20	24
Survey date range	1/Mar/22 – 30/Sep/22	14/Mar/22 –17/Oct/22

Survey Dates by County

County	Number of sites	Actual date range	
		start	end
Boone	2	6/Jun/22	19/Aug/22
Clark	2	18/Mar/22	13/Oct/22
Dubois	1	24/Mar/22	10/Oct/22
Elkhart	2	15/Mar/22	6/Oct/22
Floyd	1	31/Mar/22	17/Oct/22
Gibson	1	24/Mar/22	10/Oct/22
Hendricks	3	19/May/22	23/Sep/22
Jackson	1	23/Mar/22	11/Oct/22

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Jefferson	1	23/Mar/22	11/Oct/22
Johnson	3	29/Apr/22	27/Sep/22
La Porte	4	15/Mar/22	6/Oct/22
Lake	1	15/Mar/22	8/Oct/22
Lawrence	2	29/Mar/22	12/Oct/22
Marion	6	27/Apr/22	15/Sep/22
Martin	3	22/Mar/22	12/Oct/22
Orange	1	31/Mar/22	17/Oct/22
Pike	3	25/Mar/22	14/Oct/22
Porter	11	14/Mar/22	8/Oct/22
Ripley	1	23/Mar/22	11/Oct/22
Scott	2	18/Mar/22	13/Oct/22
Shelby	2	4/May/22	18/Aug/22
St. Joseph	1	22/Mar/22	9/Oct/22
Starke	2	15/Mar/22	12/Oct/22
Warrick	1	31/Mar/22	17/Oct/22

iii. Moth Survey

Pest common name	Scientific name
Oak processionary moth	<i>Thaumetopoea processionea</i>

IDNR Division of Forestry set plastic wing traps for *T. processionea* at two ports of entry (Porter and Vanderburgh counties) and three railroad yards (Allen, Hendricks, and Elkhart counties) where international wood products are received and/or staged. IDNR visited each site approximately every 2-3 weeks from June until September 2022. At each visit, the trap was replaced, and the collected specimens were delivered to the CAPS lab for screening.

	Proposed	Actual
Sites	5	5
Traps	5	5
Visits	6	3 - 6
Counties	5	5
Survey date range	1/Jun/22 – 31/Aug/22	27/Apr/22 – 9/Sep/22

Survey dates by County

County	Number of sites	Trapping date range	
		Start	End
Allen	1	27/Apr/22	13/Jul/22
Hendricks	1	1/Jun/22	10/Aug/22
Elkhart	1	26/May/22	17/Aug/22
Vanderburgh	1	27/May/22	16/Aug/22

Porter	1	3/Jun/22	9/Sep/22
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b. Benefits and Results of the Survey

	Funding Amount	Total Records	Negative Records	Positive records	Mean Cost Per Unit
Proposed	\$3,553	742	-	-	-
Actual	\$3,553	1,791	1,791	0	\$1.98

Monitoring for invasive forestry pests is vital to the protection of our natural environments and the industries that rely on these resources. The EWB/BB Survey provided data for a total of seven exotic invasive species in Indiana. High risk sites such as international airports, shipping ports, rail yards, lumber yards, warehouses, and major retailer distribution centers were monitored for entry of these targets. Due to staffing challenges that resulted in fewer records than expected in 2021, the proposed plan for 2022 was adjusted to a more conservative estimation of traps and records. However, despite continued challenges from staffing shortages and competing interests in the state, this survey exceeded expectations. A total of 1,791 negative records were uploaded to NAPIS as a result of this survey. This number reflects an individual entry into NAPIS for each trap and date of monitoring.

3. Nursery and Retail Plants Survey

a. Survey methodology

The Nursery and Retail Plants Survey was a collaborative effort between IDNR Division of Entomology and Plant Pathology, CAPS, and the PPD. IDNR integrated this survey with their annual plant nursery and retail outlet inspections. The methodology report for this survey is divided into two sections based on the survey type (sample/visual for diseases or moth traps).

i. Moth Surveys

Pest common name	Scientific name
Box tree moth	<i>Cydalima perspectalis</i>
Old World bollworm	<i>Helicoverpa armigera</i>

The moth species listed above were surveyed by IDNR and CAPS staff using plastic bucket traps with the appropriate lures and kill strips. IDNR selected 9 sites in 9 counties to survey for *C. perspectalis*, and 46 sites in 31 counties to survey for *H. armigera*. A single trap was placed at each site for the species being surveyed. CAPS staff set single traps for *C. perspectalis* in 4 sites in 4 counties (3 nurseries and 1 residential location) with boxwood plants present. Traps were monitored bi-weekly from May through September 2022. Trap catch

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was sent to the SSC for screening; potential targets were forwarded to PPQ taxonomists.

	<i>C. perspectalis</i>		<i>H. armigera</i>	
	Proposed	Actual	Proposed	Actual
Sites	-	13	45	46
Visits	6	6 – 8	6	5 – 8
Counties	-	13	-	31
Survey dates	1/May/22 – 31/Aug/22	13/May/22 – 27/Sep/22	1/May/22 – 31/Aug/22	13/May/22 – 27/Sep/22

Survey dates per county for *C. perspectalis*

County	Number of sites	Trapping date range	
		Start	End
Allen	2	31/May/22	26/Aug/22
Clark	1	18/May/22	13/Sep/22
Delaware	1	13/May/22	19/Aug/22
Elkhart	1	16/May/22	2/Sep/22
Hendricks	1	17/May/22	12/Sep/22
Johnson	1	15/Jun/22	9/Aug/22
La Porte	1	24/May/22	29/Aug/22
Marion	1	17/May/22	14/Sep/22
Monroe	1	16/May/22	2/Sep/22
Sullivan	1	14/Jun/22	7/Sep/22
Tippecanoe	1	10/Jun/22	23/Aug/22
Warrick	1	24/May/22	27/Sep/22

Survey dates per county for *H. armigera*

County	Number of sites	Trapping date range	
		Start	End
Allen	5	31/May/22	18/Aug/22
Boone	2	17/May/22	9/Sep/22
Clark	2	18/May/22	13/Sep/22
Delaware	2	13/May/22	19/Aug/22
Dubois	1	31/May/22	26/Sep/22
Elkhart	5	16/May/22	2/Sep/22
Floyd	2	18/May/22	13/Sep/22
Hancock	1	3/Jun/22	26/Sep/22
Harrison	1	18/May/22	31/Aug/22
Hendricks	4	17/May/22	12/Sep/22
Johnson	1	3/Jun/22	14/Sep/22
La Porte	1	23/May/22	29/Aug/22
Madison	3	13/May/22	16/Sep/22

Marion	1	3/Jun/22	14/Sep/22
Monroe	4	16/May/22	4/Aug/22
Montgomery	1	16/May/22	4/Aug/22
Porter	4	23/May/22	30/Aug/22
Ripley	2	3/Jun/22	15/Sep/22
Vanderburgh	4	24/May/22	27/Sep/22

ii. Disease Surveys

Pest common name	Scientific name
Boxwood blight; Leaf and stem blight	<i>Calonectria pseudonaviculata</i>
Ramorum blight; Sudden oak death	<i>Phytophthora ramorum</i>

IDNR nursery inspectors visually searched foliage of ornamental boxwood cultivars, *Buxus* spp. for boxwood blight at nurseries in 12 counties. A total of 24 tissue samples were taken and submitted to the PPDL for diagnosis.

IDNR also inspected a wide range of susceptible perennial plant foliage for sudden oak death symptoms at 34 sites in 19 counties. Samples from symptomatic and asymptomatic tissues were collected and sent to the PPDL for diagnosis. Lesions were tested for *P. ramorum* using an enzyme/linked immunosorbent assay (ELISA) consistent with the USDA/APHIS *Phytophthora ramorum* protocols. An APHIS-approved lab at Michigan State University (East Lansing, MI) performed confirmation tests via PCR.

	<i>C. pseudonaviculata</i>		<i>P. ramorum</i>	
	Proposed	Actual	Proposed	Actual
Samples	20	24	200	202
Counties	-	12	-	19
Survey dates	1/Jun/22 – 31/Aug/22	17/Mar/22 – 30/Sep/22	1/Jun/22 – 31/Aug/22	5/Apr/22 – 28/Sep/22

Survey dates per county for *C. pseudonaviculata*

County	Number of samples	Date or date range of sample submission
Bartholomew	4	16/May/22 – 23/Aug/22
Brown	1	28/Mar/22
Elkhart	1	25/May/22
Franklin	1	8/Sep/22
Hamilton	1	17/Mar/22
Johnson	1	29/Jun/22
La Porte	1	3/Jun/22
Madison	1	2/Jun/22
Marion	10	1/Apr/22 – 21/Sep/22

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Tippecanoe	1	29/Apr/22
Warrick	1	30/Sep/22
Wayne	1	8/Jun/22

Survey sites/dates per county for *P. ramorum*

County	Number of sites	Number of samples	Date or date range of sample submission
Boone	1	2	7/Sep/22
Clark	2	18	11/Jul/22
Delaware	1	2	22/Apr/22
Dubois	1	16	1/Sep/22
Elkhart	3	27	27/Jun/22 – 26/Aug/22
Fountain	1	1	27/Sep/22
Gibson	1	4	30/Aug/22
Grant	1	22	14/Jul/22
Hamilton	3	29	12/Jul/22 – 30/Aug/22
Hendricks	2	4	12/May/22
Howard	1	3	28/Sep/22
Johnson	1	6	12/Apr/22
Lake	1	12	9/Jul/22
Madison	1	5	2/Sep/22
Marion	7	15	20/Apr/22 – 25/Aug/22
Monroe	4	20	31/May/22
Porter	1	10	27/Jun/22
Shelby	1	1	5/Apr/22
Warrick	1	5	28/Sep/22

b. Benefits and Results of the Survey

	Funding Amount	Total Records	Negative Records	Positive records	Mean Cost Per Unit
Proposed	\$16,572	694	-	-	-
Actual	\$16,572	594	594	0	\$27.90

The Nursery and Retail Plants surveyed four important invasive pests which threaten nurseries and landscapes. A total of 594 negative records were generated and uploaded to NAPIS as a result of this survey. Negative data benefits the nurseries and retail outlets in the state, and helps prevent spread of these pests via sale of infected material to consumers.

The relatively high cost of the Nursery and Retail Plants survey was due to laboratory supplies and labor required for disease screening and confirmation.

4. Database submissions

All data from the CAPS surveys were uploaded to NAPIS.

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

All objectives for reporting period 1 January 2022 to 31 December 2022 were met.

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

There were no cost overruns.

D. Supporting Documents (if applicable).

None attached.

**indicates information is required per 7 CFR 3016.40 and 7 CFR 3019.5*

Approved and signed by

Megan L. Abraham (Cooperator) (ROCR)

Date: _____

Jason Allen (SPHD/ADODR)

Date: _____