

2022 CAPS Combined Survey Plan

Cooperator:	The Connecticut Agricultural Experiment Station
State:	CT
Project:	Combined Survey
Project Funding Source:	Pest Detection/CAPS Survey
Coordinator:	Gerda Magana
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This Work Plan reflects a cooperative relationship between the Connecticut Agricultural Experiment Station (the Cooperator) and the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ). It outlines the mission-related goals, objectives, and anticipated accomplishments as well as the approach for conducting a Combined Survey and the related roles and responsibilities of the parties [e.g., APHIS role(s) and Cooperator role(s)] as negotiated.

Objectives and Need for Assistance

I - What relevant need or problem within the cooperator's mission area requires a solution in carrying out a public purpose of support or stimulation authorized by a law of the United States? How does the need or problem align with the mission area and strategic goals of APHIS?

The nursery and greenhouse industry in Connecticut is the largest agricultural production sector in the state, accounting for 42% of agricultural product sales (Economic Impact of Connecticut's Agricultural Industry, UConn, 2015). According to the CT Nursery and Landscape Association, the industry grosses more than \$800 million annually. Many of these nurseries and greenhouses are adjacent to forested areas with black cherry (*Prunus serotina*) being one of the common native plant. This creates a high potential for exotic *Prunus sp.* pest introduction into adjacent neighborhood streets lined with ornamental *Prunus sp.* trees, and also introduction of these pests into Connecticut orchards. *Adoxophyes orana*, summer fruit tortrix moth, has become a serious pest in stone fruit (*Prunus sp.*) and apple trees in Europe. The larvae feed on both foliage and fruit and secondary fungal infections are common where insect damage has occurred. *Grapholita funebrana*, plum fruit moth, is able to develop on many wild and cultivated stone fruits and is an important pest of plums throughout northern Europe. This pest has many potential wild hosts in the United States in the family Rosaceae and has been captured many times at U.S. ports of entry. *Thaumatotibia leucotreta*, false codling moth larval feeding and development affects fruit development at any stage, causing premature

ripening, fruit drop, and secondary infections by bacteria and other organisms. False codling moth infestations could result in significant economic losses. *Thaumatotibia leucotreta* can become a significant production and quarantine issue for numerous agricultural commodities. There is also a great concern in Connecticut for box tree moth, *Cydalima perspectalis*, being introduced into the state. In spring of 2021, during a traceforward form Canada, a box tree moth caterpillar was found in the shipment of boxwoods. The box tree moth has become a serious invasive pest in Europe. The caterpillars feed mostly on boxwood and heavy infestations can defoliate host plants. Once the leaves are gone, larvae consume the bark, leading to girdling and plant death. *Anoplophora glabripennis*, Asian longhorned beetle, is an insect pest of hardwood trees. Larvae of this insect primarily feed on birch, maple, elm, and willow trees. This beetle is a native of China and it poses a serious threat to forests and maple syrup production. *Ceroplastes japonicus*, Japanese wax scale, is an ornamental plant and fruit tree pest, with infestations occurring on foliage, stems, and branches. Heavy infestations result in chlorotic spotting, premature shedding of leaves, wilting, and dieback of stems. In addition to the direct feeding damage, the honeydew secreted by Japanese wax scales creates conditions for black sooty mold to develop, which impairs plant photosynthesis. Sooty mold reduces the market value of plants and produce. Scientists from the Connecticut Agricultural Experiment Station (CAES) have confirmed that Beech Leaf Disease (BLD), first detected in CT in 2019, is now widespread and prevalent in the environment on American beech (*Fagus grandifolia*). We would like to survey nurseries for this disease to see if BLD also entered nursery industry. The purpose of these surveys is to determine if any of these invasive pests have been introduced to the state of Connecticut and whether Connecticut is free of these exotic pests. Demonstrating area freedom is an important phytosanitary measure that will allow the United States to continue to export at-risk stock from regions of the country that are determined to be free from these pests.

Results or Benefits Expected

II - The Cooperator seeks to conduct a program which is expected to result in:

- A. Determining whether *Adoxophyes orana*, *Anoplophora glabripennis*, *Ceroplastes japonicus*, *Cydalima perspectalis*, *Grapholita funebrana*, *Thaumatotibia leucotreta*, and Beech Leaf Disease are present in Connecticut nurseries.
- B. Increase outreach and awareness to Connecticut stakeholders and industries about the pests of concern.
- C. Knowledge regarding the presence or absence of these pests will assist in decision making regarding management of these pests.

Survey Summary

III - What is the plan of action or approach to the work?

Nursery and Retail Plants Pest Survey

Scientific Name	Common Name	Method	Start	End
<i>Adoxophyes orana</i>	Summer fruit Tortrix moth	Paper Delta Trap - 2 sticky sides - Orange	2022-06-01	2022-09-30
<i>Anoplophora glabripennis</i>	Asian longhorned beetle	Visual	2022-08-01	2022-09-30
<i>Ceroplastes japonicus</i>	Japanese wax scale	Visual	2022-08-01	2022-09-30
<i>Cydalima perspectalis</i>	Box tree moth	Visual	2022-08-01	2022-09-30
<i>Grapholita funebrana</i>	Plum fruit moth	Wing Trap Kit - Paper	2022-06-01	2022-09-30
<i>Litylenchus crenatae</i>	Leaf gall nematode	Visual	2022-08-01	2022-09-30
<i>Thaumatotibia leucotreta</i>	False codling moth	Large Plastic Delta Trap Kit - Orange	2022-06-01	2022-09-30

Cooperator Responsibilities

III-A.1 - By function, what work is to be accomplished?

- a. Cooperator will conduct moth trapping surveys from June to September.
- b. Cooperator will conduct visual surveys for Asian longhorned beetle (*Anoplophora glabripennis*), Japanese wax scale (*Ceroplastes japonicus*), and beech leaf disease in each of the twenty-five high-risk sites in September.
- c. Cooperator will also conduct outreach to the nursery growers and other stakeholders at their annual meetings and as survey sites are arranged with them. Nursery employees will be educated about pest management so as to minimize any possible negative impact on their business.

III-A.2 - What is the quantitative projection of accomplishments to be achieved?

III-A.2(a) - By activity or function, what are the anticipated accomplishments by month, quarter, or other specified intervals.

- Data management and reporting will occur throughout the survey season into an approved APHIS database (for all pest except beech leaf disease) from June to December, after taxonomic evaluations.
- Pest risk and pathway analysis will be used to select survey sites in nurseries and other high-risk areas containing prominent target pest hosts during January through May.
- Surveys will be undertaken when pest symptoms are expressed and/or adult stages are flying: summer fruit Tortrix moth, box tree moth, plum fruit moth, and false codling moth - June to September; Asian longhorned beetle, Japanese wax scale, and beech leaf disease –

September. Paper delta traps, plastic bucket traps, paper wing traps, and large plastic delta traps will be checked every two weeks as per survey guidelines.

- Samples will be sent to appropriate identifiers throughout the survey period from June to September and completed as needed in the fall.
- Cooperator outreach and risk communication will occur throughout the season at survey locations and at grower meetings.
- Work plans, survey results, and pest information will be submitted to the CAES webmaster on an ongoing basis throughout the year. A semi-annual report will be submitted in July, and an annual report will be submitted in January.

III-A.2(b) - What criteria will be used to evaluate the project? What are the anticipated results and successes?

- Pest detection surveys and outreach are completed in the manner and time frame outlined in Section III.A.1 above.
- All data collected from the pest detection surveys will be entered into APHIS PPQ approved database (NAPIS) as outlined in Section V below.
- PPQ site visits conducted at least once a year of planned survey activities.

III-A.3 - What numbers and types of personnel will be needed and what will they be doing?

- One seasonal worker will be trained to run trap and visual surveys, in sorting and sending samples for identification, and to recognize symptoms of infestation of exotic moths, beetles, scales, and beech leaf disease. The worker will be supervised by the State Survey Coordinator (SSC) and will assist with trap installment, insect collection, and visual inspections. The seasonal worker will be hired for the summer of 2022. All position will be paid positions.
- Gerda Magana, the SSC, will coordinate the surveys, ensuring all necessary supplies are obtained and the objectives are met. She will also assist in survey, sorting, and outreach activities.

III-A.4 - What equipment will be needed to perform the work?

III-A.4(a) - What equipment will be provided by the cooperator?

Cooperator will provide large format printers and state vehicle.

III-A.4(b) - What equipment will be requested from APHIS on loan?

None.

III-A.4(c) - What equipment will be purchased in whole or in part with APHIS funds?

None.

III-A.4(d) - How will the equipment be used?

Large format printers will be used for producing outreach materials; state vehicle will be used to conduct survey and for travel to meeting and outreach events.

III-A.4(e) - What is the proposed method of disposition of the equipment upon termination of the agreement/project?

N/A

III-A.5 - Identify information technology equipment, e.g., computers, and their ancillary components.

IT equipment currently used by SSC:

- Laptop – purchased with APHIS funds from previous agreement.
- LCD Projector – purchased with APHIS funds from previous agreement.
- GPS Unit – purchased with APHIS funds from previous agreement. IT equipment currently used by all personnel.
- Access to CAES computers, access to Internet through CAES and CAES computer network.

III-A.6 - What supplies will be needed to perform the work?

III-A.6(a) - What supplies will be provided by the Cooperator?

Office supplies.

III-A.6(b) - What supplies will be requested from APHIS (list supplies)?

Traps and lures for moth traps prior to start of survey as requested by the SSC through the PPQ Survey and Supply database (IPHIS).

III-A.6(c) - What supplies will be purchased in whole or in part with APHIS funds?

For outreach: printing supplies/postage for printing and distributing grower information packet. For survey supplies: zip ties, stakes for hanging bucket traps, shipping materials and boxes, plastic bags for trap and sample collections, and cardboard cups for bucket trap moth collections.

III-A.6(d) - How will the supplies be used?

- a. Supplies will be used to conduct surveys and outreach, conduct initial sorting, and shipping of specimens to identifiers for screening and identification.

III-A.6(e) - What is the proposed method of disposition of the supplies with a cumulative value over \$5,000 upon termination of the agreement/project?

N/A

III-A.7 - What procurements will be made in support of the funded project and what is the method of procurement (e.g., lease, purchase)?

Materials are purchased through the approved system of state contract vendors. Purchases are made with a credit card billed directly to the appropriate account at CAES.

III-A.8 - What are the travel needs for the project?

III-A.8(a) - Is there any local travel to daily work sites?

Local travel to survey sites for moth site establishment and trapping will occur biweekly from June through September. Local travel to survey sites for visual surveys will take place in September. Cooperator will provide vehicle for local travel as state allows.

III-A.8(b) - What extended or overnight travel will be performed (number of trips, their purpose, and approximate dates)?

No extended or overnight travel is anticipated for this project. Dr. Jason White and Mr. Michael Last approve all travel.

III-A.9 - All Reports will be completed in ezFedGrants. Reports include:

III-A.9(a) - Narrative accomplishment reports in the frequency and time frame specified on the Agreement Award Face Sheet.

III-A.9(b) - Federal Financial Reports, SF-425, in the frequency and time frame specified on the Agreement Award Face Sheet.

III-A.10 - Are there any other contributing parties who will be working on the project?

III-A.10(a) - If so, list other participating institutions/agencies who will work on the project.

N/A

III-A.10(b) - Describe the nature of their effort.

N/A

APHIS Responsibilities

III-B.1 - Outline the Agency's (USDA APHIS PPQ) substantial involvement.

III-B.1(a) - Include any significant Agency collaboration and participation

- Providing any new information that becomes available on survey pests, provide appropriate forms and review data.
- Providing the following resources: funds to the Cooperator to cover costs outlined in the financial plan. In addition, specific appropriated funding, in the level authorized by APHIS Field Operations, will be dedicated to the delivery of CAPS objectives listed above.
- Making arrangements for confirming identification of suspect moth and beetle samples.

III-B.1(b) - Project oversight and performance management

- The State Plant Health Director, USDA APHIS, will provide information support, review performance, and federal guidance.

- The Pest Survey Specialist, USDA APHIS, will assist in developing CAPS pest survey protocols, pest risk analysis, IPHIS training, work plan and budget development, and other related activities.

II-B.1(c) - Provide the equipment requested by the cooperator in III-A.4(b) and III-A.4(c).

III-B.1(d) - Provide the supplies requested by the cooperator in III-A.6(b) and III-A.6(c).

Geographic Location of Project

IV-A - Is the project statewide or in specific counties?

All eight Connecticut counties where high-risk sites are identified: Fairfield, New Haven, Middlesex, New London, Litchfield, Hartford, Tolland, and Windham.

IV-B - What type of terrain will be involved in the project?

Wholesale and retail nursery land, including growing yards.

IV-C - Are there any unusual geographic features which may have an impact on the project?

None.

Data Collection and Maintenance

Taxonomic Support

VI -

VI-A - Person(s) or Institution that will perform preliminary identification of samples as defined above.

Nursery and Retail Plants Pest Survey

Scientific Name	Common Name	Contact Name	Title	Affiliation
<i>Adoxophyes orana</i>	Summer fruit Tortrix moth	Richard Worth	Insect Pest Prevention Lab	Oregon Dept. of Agriculture
<i>Anoplophora glabripennis</i>	Asian longhorned beetle	Gerda Magana	State Survey Coordinator	CT Agricultural Experiment Station
<i>Ceroplastes japonicus</i>	Japanese wax scale	Gerda Magana	State Survey Coordinator	CT Agricultural Experiment Station
<i>Cydalima perspectalis</i>	Box tree moth	Richard Worth	Insect Pest Prevention Lab	Oregon Dept. of Agriculture
<i>Grapholita funebrana</i>	Plum fruit moth	Richard Worth	Insect Pest Prevention Lab	Oregon Dept. of Agriculture
<i>Litylenchus crenatae</i>	Leaf gall nematode	Gerda Magana	State Survey Coordinator	CT Agricultural Experiment Station
<i>Thaumatotibia leucotreta</i>	False codling moth	Richard Worth	Insect Pest Prevention Lab	Oregon Dept. of Agriculture

VI-B - Request for taxonomic support

Signatures

Victoria Lynn Smith 14 March 2022

ROAR, Date

ADODR, Date

FY2022 Financial Plan

COOPERATOR NAME

The Connecticut Agricultural Experiment Station

TIME PERIOD

May 01, 2022 to April 30, 2023

Item	APHIS	Cooperator	Total
Personnel			
State Survey Coordinator: 750 hrs. @ \$27.34/hr.	\$20,505.00	\$0.00	\$12,303.00
Seasonal Worker: 480 hrs. @ \$13.00/hr.	\$6,240.00	\$0.00	\$15,600.00
Subtotal	\$26,745.00	\$0.00	\$27,903.00
Fringe Benefits			
85 % of salary of Permanent Employees	\$17,429.00	\$0.00	\$10,458.00
48 % of salary of Durational Employees	\$2,995.00	\$0.00	\$7,488.00
Subtotal	\$20,424.00	\$0.00	\$17,946.00
Travel			
State Vehicle @ \$400/month for 4 months	\$1,600.00	\$0.00	\$2,400.00
Subtotal	\$1,600.00	\$0.00	\$2,400.00
Equipment			
Subtotal	\$0.00	\$0.00	\$0.00
Supplies			
Outreach and survey supplies	\$2,809.00	\$0.00	\$2,808.00
Subtotal	\$2,809.00	\$0.00	\$2,808.00
Contractual			
Subtotal	\$0.00	\$0.00	\$0.00
Other			
Subtotal	\$0.00	\$0.00	\$0.00
Total Direct Costs	\$51,578.00	\$0.00	\$51,057.00
Indirect Costs: 45.00% of Personnel	\$12,035	\$0	\$12,556
Total	\$63,613	\$0	\$63,613
Cost Share Information	100.00%	0.00%	100.00%