

CAPS Infrastructure Report

Year:	2012
State:	Connecticut
Cooperative Agreement Name:	Cooperative Agricultural Pest Survey
Cooperative Agreement Number:	12-8209-0327
Project Funding Period:	1 Jan 2012 – 31 Dec 2012
Project Report:	CAPS Infrastructure Report
Project Document Date:	3/14/2012
Cooperators Project Coordinator:	
Name:	Rose T. Hiskes
Agency:	The Connecticut Agricultural Experiment Station
Address:	123 Huntington Street
City/State/ Zip:	New Haven CT 06511
Telephone:	203 974 8483; 860 683 4977
E-mail:	Rose.Hiskes@ct.gov

Annual Accomplishment Report	x <input type="checkbox"/>
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1. 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.

- **Activities**

- SSC maintained contact with CT PPQ office and state CAPS committee
- SSC planned and led June 8 state CAPS committee meeting
- SSC attended Eastern Plant Board/CAPS breakout session in Burlington, VT
- SSC began developing and finalized 2013 workplans
- SSC participated in conference calls with other Eastern region SSCs and PSS'
- Met with SPRO, deputy SPRO, PSS and acting SPHD to develop 2013 pest list
- SSC attended IPHIS training given by PSS
- SSC planned and led December 10 state CAPS committee meeting

- **Data Management**

- SSC worked with Susan Schechter, CERIS Purdue, to get the new biocontrol of lily leaf beetle project into NAPIS
- SSC entered first state EAB record after working with Nichole Carrier and Susan Schechter to get *Cerceris* into NAPIS as an approved survey method for EAB
- SSC entered African Fig Fly find into NAPIS

- **Outreach and Education**

- Victoria Smith, CAES:**

19 March 2012: with Sharon Douglas, was a guest on the Wayne Norman morning show on WILI Radio, to discuss boxwood blight.

21 March 2012: with Sharon Douglas and Vickie Bomba-Lewandoski, staffed the Experiment Station booth on Boxwood Blight at Agriculture Day, held in the State Capitol in Hartford.

20 June 2012: participated in the spring Twilight Meeting of the CT Pomological Society, held at Rogers Orchards in Southington, with a brief presentation on survey activities (LBAM, EVGM, and Tortricids; *Phytophthora ramorum*) and pest conditions; approximately 60 participants.

- Rose Hiskes, CAES:**

4 and 5 Jan 2012: with Katherine Dugas staffed a CAPS booth at the winter meeting of the Connecticut Nursery and Landscape Association.

19 Jan 2012: with Katherine Dugas staffed a CAPS booth at the winter meeting of the Connecticut Tree Protective Association.

24 Jan 2012: with Katherine Dugas staffed a CAPS booth at the meeting of the Connecticut Grounds Keepers Association.

24, 25 and 26 Feb 2012: With Katherine Dugas and Diane Riddle, staffed a CAPS and Ramorum booth at the Connecticut Flower Show in the Convention Center in Hartford.

11 July: With Katherine Dugas, staffed a CAPS table at the Connecticut Nursery and Landscape Association's summer meeting at Lockwood Farm of The Connecticut Agricultural Experiment Station in Hamden.

19 July: With Katherine Dugas, staffed a CAPS table at the Connecticut Tree Protective Association's summer meeting in Farmington.

17 Sept.: Gave an emerald ash borer update to the Connecticut Grounds Keepers Association meeting in Windsor.

Donna Ellis, UCONN

Teaching

Ornamental and Turf Short Course, North Haven, CT, December 11, 2012. Invited speaker to teach entomology and exotic invasive species to students preparing for pesticide applicator license certification. 12 students.

Presentations

Cornucopia-Fest 2012, Storrs, CT, September 23, 2012. Question-and-answer sessions on Integrated Pest Management and exotic invasive plants and insects. Approximately 5,000 attendees.

Conducted 14 Integrated Pest Management (IPM) bi-weekly training sessions and hands-on field demonstrations from July through September 2012 with nursery and garden center staff in New London County, CT. The training sessions included information on exotic insects and plants. 10 participants.

K-8 School Grounds Ornamental Plant Management Workshop, Hebron, CT, August 15, 2012. Outdoor, hands-on field demonstration on identification and management of exotic insect and plant species. 65 attendees.

Plant Science Day, The Connecticut Agricultural Experiment Station, Hamden, CT, August 1, 2012. Staffed exhibit on exotic invasive plants and insects and answered questions during day-long event. 1,000 attendees.

Food, Land, and People Annual Meeting, Madison, CT, July 31-August 2, 2012. Presented exhibit on exotic invasive plants and insects and Integrated Pest Management for national meeting. 50 attendees.

Conferences, Symposia, Workshops, and Other Presentations

Joshua's Trust and MassConn Sustainable Forest Partnerships Workshop, "Barberry, Bobolinks, and Board Feet", May 19, 2012, Mansfield, CT. Invited speaker for presentation on exotic invasive plants and their control, followed by an outdoor invasive plant class for land easement owners and others involved in land management. 35 attendees.

Invasives 101 Forum, sponsored by the Town of Newington Conservation Commission, Newington, CT, May 1, 2012. Invited speaker to present a forum on exotic invasive plants to Conservation Commission members and the public. The forum was broadcast live on Newington Community Television and a video of the forum was posted online. An exhibit on invasive plants was also presented at the forum. 40 attendees.

Nature Festival, Whiting Lane Elementary School, West Hartford, CT, April 26, 2012. Invited participant for presentation on exotic invasive plants. 200 attendees.

Legislative Reception at the State Capitol Building, Hartford, CT, April 25, 2012. Informal presentations to Connecticut legislators, legislative aides, lobbyists, and the public on IPM and exotic invasive plants. Also presented exhibit on invasive plants. Approximately 150 attendees.

Trout Unlimited Meeting, Bozrah, CT, April 17, 2012. Invited speaker for presentation, "Invasive Species – Update for 2012" on exotic invasive species. 40 attendees.

The Living Earth Environmental Studies School, Federated Garden Clubs of Connecticut, Inc., New Haven, CT, April 3, 2012. Invited speaker to teach a class on "Plants – Biodiversity". 20 attendees.

7th International Integrated Pest Management (IPM) Symposium, "IPM on the World Stage", Memphis, TN, March 27-29, 2012. Presentation on the University of Connecticut IPM Curriculum, "IPM – It's Not Just for Farmers Anymore" as part of a workshop presented by members of the Northeast School IPM Working Group entitled, "Educating the Next Generation: Strategies to Promote IPM Literacy". 70 attendees.

Northeast Invasive Plant Species Forum, "Building a Competitive Future for Invasive Plant Species Research in the Northeast", Beltsville, MD, March 21-22, 2012. Served as a member of the Northeast Invasive Plant Species Working Group to plan and present the forum, which was attended by 32 scientists and extension professionals to discuss exotic invasive plant research and educational outreach collaborative opportunities in the Northeast.

University of Connecticut Garden Conference, Storrs, CT, March 16, 2012. Served as a member of the Ornamental Plant Extension Team to plan and present the 10th annual conference, which was attended by 300 garden enthusiasts, which included Master Gardeners, garden club members, and home gardeners. Also presented an exhibit on exotic invasive plants developed by the Connecticut Invasive Plant Working Group (www.hort.uconn.edu/cipwg) and answered questions from the attendees during the conference.

University of Connecticut Perennial Plant Conference, Storrs, CT, March 15, 2012. Served as a member of the Ornamental Plant Extension Team to plan and present the 17th annual conference, which was attended by 315 professional horticulturists from garden centers, the green industry, landscape designers, landscape maintenance firms, retail and wholesale greenhouses, and retail and wholesale nurseries. Also presented an exhibit on exotic invasive plants developed by the Connecticut Invasive Plant Working Group (www.hort.uconn.edu/cipwg) and answered questions from the attendees during the conference.

Adjusting to Pesticide Ban Legislation: K-8 School Grounds Ornamental Plant Management Workshop, West Hartford, CT, March 2, 2012. Planned and presented by the Connecticut School Integrated Pest Management (IPM) Coalition. Invited speaker for presentation on Integrated Pest Management for ornamental plant pests and exotic invasive plants on school grounds. 122 attendees.

Connecticut Flower and Garden Show, Hartford, CT, February 23-26, 2012. Set up and staffed exhibit on exotic invasive plants and their alternatives and answered questions from the public. 35,000 attendees.

Connecticut Flower and Garden Show, Hartford, CT, February 23-26, 2012. Invited speaker for the Flower Show Seminar Series to give a presentation on exotic invasive plants. 25 attendees.

West Hartford Garden Club, West Hartford, CT, January 5, 2012. Invited speaker for presentation on exotic invasive plants and native alternatives. 80 attendees.

Connecticut Nursery and Landscape Association Winter Symposium and Expo, Wallingford, CT, January 4-5, 2012. Served as a member of the Winter Symposium Planning Committee. Participated as a conference exhibitor; served as a moderator for one presentation, staffed exhibit on exotic invasive plants and their alternatives, disseminated literature, and answered questions. 569 attendees.

Volunteer Network of Master Gardeners for CAPS Outreach

The volunteer network of UConn Master Gardeners to help promote the mission and goals of the CAPS program continued during the reporting period. Many exotic pests, such as Asian Longhorned Beetle, Emerald Ash Borer, *P. ramorum*, giant hogweed and other non-native invasive species are being included as part of Master Gardener training and outreach programs. Donna met with Rose Hiskes in the spring to discuss strategies for enhancing the volunteer network and how the reporting process can provide more information on the many and varied activities that Master Gardener interns, Certified Master Gardeners, and Advanced Master Gardeners conduct each year statewide. Additional meetings occurred with Leslie Alexander, Master Gardener Coordinator, regarding the volunteer network and increasing involvement with the Master Gardeners. Donna created a reporting form for CAPS and other exotic pest outreach information and sent it to Leslie and the eight Master Gardener Program Coordinators, requesting that they submit outreach activities on a monthly basis, beginning in June (Note: The Master Gardener training program begins in January each year, with classroom lectures ongoing

through April and outreach activities beginning in late spring and continuing through summer into early fall).

Donna researched and gathered CAPS and USDA APHIS PPQ program materials and pest lists. She also received items for handouts from Rose. Donna assembled packets of materials for Master Gardener volunteers that contained information on the CAPS program, pest lists for the state, fact sheets, and other items to be used as handouts for the Master Gardeners to disseminate when they contribute volunteer hours working at local or regional events. The packets were distributed to the eight Master Gardener Program Coordinators who mentor the Master Gardeners in the eight UConn Cooperative Extension county offices and a ninth location at the Bartlett Arboretum in Stamford.

To date, one report has been submitted by the Fairfield County Master Gardener Program Coordinator. The detailed report provided summary information on exotic pest outreach conducted by active Certified and Advanced Master Gardeners and the Master Gardener interns. Nearly all of the 65 active Master Gardener volunteers in Fairfield County are involved in planning for a large gardening fair to be held next month. Forty-five of these Master Gardeners also conducted educational outreach projects in Fairfield, Litchfield, and New Haven Counties during the reporting period, with many projects including exotic pest outreach. Several activities occurred statewide. The educational outreach included presentations and publications to educate gardening organizations and the public; research support and/or work with invasives and native alternatives; projects in support of youth, the elderly, or the disabled; and support of gardens in public areas. These activities occurred at town and county fairs, libraries, schools, community gardens, museums, town and state parks, open space properties, land trusts, garden centers, commercial nurseries, community gardens, garden clubs, and other events. In addition, Donna conducted outreach education for exotic plant pests to approximately 37,300 people during the reporting period (please see Outreach Activities below; other outreach activities are described in a separate USDA APHIS PPQ semi-annual accomplishment report for Mile-a-minute Weed Biological Control).

Developing a Volunteer Network of Master Gardeners (July – December)

UConn Master Gardeners participated in a volunteer network during 2012 to help promote the mission and goals of the CAPS program. Many exotic pests, such as Asian longhorned beetle, emerald ash borer, lily leaf beetle, *P. ramorum*, giant hogweed, mile-a-minute weed, and others are being included with CAPS target pests as part of Master Gardener training and outreach programs. Donna maintained contacts during the reporting period with Rose and Leslie Alexander, the Master Gardener Program Coordinator regarding the Master Gardener volunteers providing outreach on CAPS to the general public. These volunteers included Master Gardener Interns, Certified Master Gardeners, and Advanced Master Gardeners. Donna assembled packets of materials for the volunteers, and the packets were distributed to the nine Coordinators who work with Master Gardeners at UConn Cooperative Extension county offices and the Bartlett Arboretum in Stamford.

Requests were made periodically during the reporting period to the Master Gardener Coordinators for participation by Master Gardeners in the volunteer network. Four of the Coordinators from Fairfield (Fairfield County Extension and the Bartlett Arboretum), Litchfield,

and New London Counties provided summary information on exotic pest outreach conducted by their Master Gardener volunteers. The participating Master Gardener Coordinators reported that 117 Master Gardener volunteers provided outreach on exotic pests to more than 83,200 citizens at approximately 70 events, including municipal celebrations and meetings, regional and county fairs, CAES Plant Science Day, museums, garden centers, community gardens, state parks, garden clubs, professional society meetings, weekly farmers' markets and work days. In addition, Donna and her technician conducted outreach education on exotic plant pests during the reporting period to approximately 6,100 people.

***Please note:** Accomplishments and additional educational outreach activities for Mile-a-minute Biological Control, Lily Leaf Beetle Biological Control, and Forest Pest Outreach and Survey are reported in separate Final Accomplishment Reports to USDA APHIS PPQ.*

Nursery Pathway and Risk Analysis

Work continued during 2012 to examine grower information on origin of nursery stock outside of Connecticut in order to gather data regarding where plants are shipped from and associated potential pest risks from the state or country of origin. University of Connecticut (UConn) undergraduate student Sebastien Depestre worked on this outreach project on a part-time basis during the fall of 2012, under the supervision of Donna Ellis.

Rose Hiskes made arrangements with Peter Trenchard to provide copies of 2012 registration forms from nursery dealers (retail/outlets) and nursery firms (wholesale nursery growers, retail nurseries, greenhouses, garden centers, and Christmas tree growers) who are registered in Connecticut through The Connecticut Agricultural Experiment Station (CAES). The forms were received from CAES on August 30, 2012. Information on each business, including the location of outlets and where the plant material was grown, was entered into Excel spreadsheets. For nursery dealers, plant material was categorized as broadleaf evergreens, deciduous trees and shrubs, coniferous evergreens, vines and groundcovers, roses, and other stock. Plant categories reported as 'other stock' included annuals, perennials, vegetables, roses, cut flowers, hanging baskets, Easter lilies and other bulbs, poinsettias, tropical plants, bedding plants, seed packets, etc. Data reported by firms included major types of plants grown or marketed. If the business was a greenhouse, plant materials were categorized as general houseplants, chrysanthemums, orchids, geraniums, African violets, and other plant types. Not all businesses that buy and sell plant materials are registered in CT, but they are encouraged to do so.

The following information has been gathered and summarized from the information provided by the dealers and firms: During 2012, plants shipped to Connecticut's registered nursery dealers and firms originated from 33 states throughout the US (**Note:** in 2011, plants were shipped from 27 states): AL, CA, CO, CT, FL, GA, IL, KY, MA, MD, ME, MI, MN, MO, MS, MT, NC, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SC, TN, TX, VA, VT, WA, and WI. Plant material was also shipped to Connecticut from Canada, including British Columbia. Almost half of the plant material sold in CT during 2012 originated from CT, followed by NJ (11.3%), NY (10.5%), OR (4.8%), MA (3.8%), and PA (3.2%).

- **Meetings**

- A State CAPS Committee Meeting was held in New Haven, CT on Friday June 8th. Fifteen people were in attendance. See minutes in Section D.
- A State CAPS Committee Meeting was held in Windsor, CT on Monday, December 10. Nineteen people were in attendance. See minutes in Section D.

- **Training**

Donna Ellis, UCONN:
Ornamental and Turf Short Course, West Hartford, CT, January 31, 2012. Invited speaker to teach entomology and exotic invasive species to students preparing for pesticide applicator license certification. 21 students.

Master Gardener Training Program: February 24 and 29, March 6 and 19, and April 5, 2012; instructor for five full-day classes on exotic invasive plants to the 2012 class of Master Gardeners at the Litchfield, North Haven, Norwich, Stamford, and Tolland County Cooperative Extension System locations in Connecticut. 250 students.

- **Equipment**

N/A

- **Other**

Development of CAPS Website:

The updated website went live on 06/06/2012. CAPS fact sheets for Asian longhorned beetle (ALB), emerald ash borer (EAB), rough shouldered longhorned beetle (RSLB), light brown apple moth (LBAM), summer fruit tortrix (SFTM), European grape vine moth (EGVM), and spotted wing drosophila (SWD) are available on the website. The new CAPS website address is: www.ct.gov/caes/caps.

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

All objectives have been met for this work plan.

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

N/A

4. Supporting Documents

**STATE CAPS COMMITTEE MEETING
New Haven, CT
Friday, June 8, 2012; 10:00 a.m. – 12:00 p.m.**

MINUTES

PRESENT: Kevin Grady, Chris Donnelly, Patty Douglass, Jane O'Donnell, Ron Olsen, Kate Aitkenhead, Kevin Sullivan, Claire Rutledge, Nichole Campbell, Robert Marra, Kirby Stafford, Victoria Smith, Sharon Douglas, Katherine Dugas, Rose Hiskes

Welcome

Updates of 2012 CAPS and PPQ surveys and outreach programs

Surveys conducted by The Connecticut Agricultural Experiment Station (CAES):

- Victoria Smith, CAES, reported on the nursery bundle survey: The *Phytophthora ramorum* sampling in 15 nurseries will start next week. Traps for Summer Fruit Tortrix (SFTM), European Grape Vine Moth (EGVM) and Light Brown Apple Moth (LBAM) will be installed in ten nurseries and five vineyards beginning in July. The visual surveys for the emerald ash borer (EAB), Asian longhorned beetle and rough shouldered longhorned beetle will begin in June and July respectively.
- Donna Ellis, UConn, reported on the cooperative Mile-a-Minute (MAM) biological control project between CAES and UConn: Releases of beneficial weevils will begin this week. This year 6,000 will be released, resulting in a total of 24,000 weevils being released over a four year period. Lots of outreach has been happening asking the public to look out for and report MAM. There are two new towns, Madison and Prospect, with MAM in 2012 so far. Large MAM population areas make for good biocontrol release sites. The team needs sites with easy access and few flood issues. So far they are using Audubon, CL&P and DOT land.
- Donna Ellis, UConn, reported on the new lily leaf beetle biological control project being done in conjunction with Lisa Tewksbury at the University of Rhode Island (URI). The lily leaf beetle (LLB) is a major pest of all true lilies. Three species of wasps will be released. Donna has identified nine release sites and three control sites in CT. The parasitoids have already been released in RI, MA, ME. Good levels of parasitism have been reported in other states. LLB larvae will be collected and sent to URI to be examined for parasitism. Rose Hiskes reported that a graduate student from Montreal is asking for adult LLB's from CT for DNA analysis to investigate the progression of the LLB invasion.

Surveys conducted USDA APHIS PPQ:

- Nichole Campbell, APHIS PPQ, reported on their bundled moth survey: They are trapping for the Oak Processionary Moth, Summer Fruit Tortrix Moth, False Codling Moth, and Rosy Moth. Traps have been put up at nurseries and orchards at 20 different sites. Trapping will continue through September.
- Nichole also reported on their *Cerceris* wasp biosurveillance survey for buprestid wasps that will be done at ten sites. Fifty prey beetles will be collected per site. She is coordinating with Claire Rutledge, CAES. PPQ is not actively looking for new sites but focusing on existing sites.
- Tom Worthley, UConn Forestry, will be placing 590 EAB purple panel traps in CT this year. There was a lot of press coverage in May when news came out that EAB had crossed to the east side of the Hudson River. The traps will be out through the end of

August. No checks have happened yet. CT just hit the amount of degree days necessary for EAB emergence.

Outreach Report – Donna Ellis, UConn, reported on her pathway analysis work. New 2012 nurseries/dealer registration forms are coming in now. Rose Hiskes will get these updated forms to her. Donna is tracking the origin of plants sold in CT so we can target the CAPS surveys. Vicki Smith reported that the nursery/dealer registration may be paperless next year, which will make it easier to collect information. For CAPS outreach, the Master Gardener volunteer network, includes interns and 250 new students. Master Gardeners do office work with public and staff information tables at outreach events. Donna is working with Leslie Alexander and the nine county Master Gardener coordinators. Donna has developed an Excel reporting sheet that she will collect monthly that should help us get more feedback from coordinators this year. Donna has sent the master gardener coordinators packets of CAPS pest information. Hopefully we'll get more numbers and feedback this year.

CAES staffed outreach tables at the winter meetings of CNLA, CTPA, and CGKA. Thank you, Chris Donnelly, CTPA and Kevin Sullivan, CNLA, for the free tables! The new CAPS website hosted on the CAES website has gone live this week: www.ct.gov/caes/caps. We hope to get a reporting feature implemented eventually.

2013 CAPS Guidelines

- Funding and Program Changes: Rose Hiskes, CAES, reported that for 2013 we will need to prepare two budgets: one with the amount of money static, the other with a 22% cut in funding. Nichole Campbell, PPQ, reported that due to the pending federal budget and debt ceiling limit, the worst case scenario will be a 22% cut across the board to all federal programs. Outreach will be narrowed for 2013 to only include the growers, wholesalers, retailers in the nursery and Christmas tree industry.
- Many surveys are no longer being funded through CAPS as they are now funded through the Farm Bill. Ramorum survey is now funded through Farm Bill as are the grape, and stone fruit surveys. Sharon Douglas, CAES, reported that the Jenkins Laboratory is being remodeled and the certified Ramorum lab will not be available for several years
- Priority Surveys can be bundled according to a site or group of pests that make sense for the individual state in 2013. These need to address priority pests of national concern.
- State Pest and Survey Lists: (Starred pests will be surveyed for as money allows), (number equals ranking, with 1 being most important to CT). Pests on State Priority Pest List must either be on CAPS list or be a 'Pest of Regulatory Concern.'
 - **From 2012 list remove:** Bleeding Canker of Horsechestnut, Beech Bleeding Canker, Winter Moth, Tremex Woodwasp, Mile-a-Minute Vine, BMSB, European Oak Borer.
 - **From 2012 list keep:** Bee Mite(5), *Brown Spruce Longhorn Beetle, Plum Pox Virus, Ramorum Blight(4), Asiatic Brown Rot, Asian Gypsy Moth, EGVM, LBAM, ALB(3), RSLB, EAB(2), Oak Splendor Beetle, *SFTM.
 - **New Pests being added for 2013:** Boxwood Blight (1), *Oak Ambrosia

Beetle, *Variegated Golden Tortrix, Lesser Spruce Shoot Beetle, False Codling Moth, *European Hardwood Ambrosia Beetle, *Black Spruce Beetle, Japanese Pine Sawyer, *Green Oak Tortrix, Large Pine Weevil.

Other old or new business

- Next State CAPS Committee meeting will be fall 2012 in Windsor.
- Sandra Anagnostakis, CAES, reported that the exotic Asian chestnut gall wasp, *Dryocosmus kuriphilus*, is becoming established in CT. This wasp was brought into a Georgia orchard in 1974 from Japan. The orchard was destroyed in 10 years. The wasp was found on American chestnuts on the Appalachian Trail in GA in 1993 and now it is here in CT. Galls differ depending on species of chestnut parasitized. Terminal buds that are infested result in shoot termination. There is some resistance and it may be possible to introduce resistance into orchard stock. Sandy believes one more cross may accomplish this.
- Patricia Douglass, APHIS PPQ, reported on the Forest Pest Outreach and Survey Project which was funded by Farm Bill at around \$40,000 per state. Delaware and West Virginia have been added to the program. The forest pest program will be transitioning to a new regional program manager, Ron Weeks. Patty also reported on the reorganization at PPQ. They are getting rid of regional offices (now they are 'hubs') to bring all programs under a national field of operations for consistency. Headquarters is now structured around policy management. CPHST labs and IT support groups are now under a new group called 'Science and Technology.' Locally we will not see much change.
- Chris Maier, CAES, reports that one SWD male was caught in four vinegar baited traps in Guilford in April, 2012. Rich Cowles, CAES, is doing major trapping. So far the summer strawberry crop is not affected.
- Chris also reports that Brown Marmorated Stink Bug specimens continue to be found in homes. There has been no crop damage and no catches in a continuously operated black light trap at Lockwood Farm.

**USDA APHIS COOPERATIVE AGRICULTURAL PEST SURVEY (CAPS)
PROGRAM**

**STATE CAPS COMMITTEE MEETING
Windsor, CT**

Monday, December 10, 2012; 10:00 a.m. – 12:00 p.m.

MINUTES

1. Rose Hiskes, CAES and Chairperson, welcomed new members Joan Allen, Diagnostician at UConn's Home and Garden Education Center and Mary Concklin, UConn Fruit IPM specialist. Also attending were: Katherine Dugas, CAES; Tia Blevins, CAES; Sharon Douglas, CAES; Jane O'Donnell, UConn; Vicki Smith, CAES; Kevin Sullivan, CNLA; Ron Olsen, Dept. of Agriculture; Kevin Grady, DEEP Forestry; Nichole Carrier, USDA APHIS PPQ; Claire Rutledge, CAES; Kirby Stafford, CAES; Patty Douglass, USDA APHIS PPQ; Ralph Scarpino, DEEP Forestry; Donna Ellis, UConn IPM.

2. Updates of 2012 CAPS and PPQ surveys and outreach programs

Surveys conducted by The Connecticut Agricultural Experiment Station (CAES):

CAES conducted a nursery bundle survey looking for one disease, three moths and three beetles. For *Phytophthora ramorum*, Sudden Oak Death or Ramorum Blight, 15 sites were surveyed and 180 samples were taken. Of those, 61 were ELISA positive for *Phytophthora* but negative for *Phytophthora ramorum*. Due to the dry spring fewer samples were positive this year. One trace forward was received from USDA. It turned out to be negative. For the light brown apple moth, summer fruit tortrix, and European grape vine moth five vineyards and 10 nurseries were samples. No positives were found for each of these moths. The visual survey for emerald ash borer, Asian longhorned beetle and rough shouldered, aka citrus, longhorned beetles 50 sites with host materials were survey with no positives found.

Donna Ellis, UConn, reported that the Mile-a-Minute (MAM) biological control program, run by UConn and CAES, released 6,944 weevils at ten sites in 2012. Total number of weevils released over the four years of the program is now approximately 25,000. Mile-a-minute was discovered in the towns of Groton, Old Saybrook, Branford, Middlefield, Prospect, Milford, Madison and Stratford this year. A map of towns positive for MAM was handed out.

Donna Ellis, UConn, also reported on the lily leaf beetle biological control she is running in conjunction with Lisa Tewksbury of Rhode Island. Four hundred sixty eight parasites were released in ten different towns over five counties. Larvae from these sites were sent to Lisa to check for possible parasitism and all specimens were negative.

Surveys conducted by USDA APHIS PPQ:

Nichole Carrier, PPQ, reported on the bundled moth survey for false codling, summer fruit tortrix, oak processionary moth and rosy gypsy moth. All 20 sites in orchards and large nurseries were negative.

Nichole Carrier also reported on the *Cerceris* wasp biosurveillance project that was conducted to look for *Agrilus* species that are oak pests. Of the 19 sites checked, only 17 had *Cerceris* colonies. Of those, 50 beetles were collected at only 15 sites. Overall 411 beetles were collected and screened. To be considered negative for targets, 50 beetles need to be collected at a site. No new state positives were found.

For the Asian longhorned beetle (ALB) 35 ALB intercept panel traps with experimental lures were hung at 22 sites. This lure has collected ALBs at traps in other locations such as Worcester. Volunteers from CAES, CT DEEP Forestry and UConn Cooperative Extension serviced the traps biweekly. No ALBs were caught, though a lot of yellowjackets were.

Surveys conducted UConn:

Tom Worthley, UConn Forestry, again conducted an emerald ash borer survey using 590 purple panel traps. All have been removed. Three traps were positive. Additional traps were put up after the positive finds in July.

EMERALD ASH BORER UPDATE: EAB was found in Prospect, CT by *Cerceris* this year. This is the first time an initial detection in a new state has been made by *Cerceris*. CAES had 20 *Cerceris* sites where over 50 beetles were caught. Claire Rutledge has a wasp watcher network of 54 volunteers. The UConn Master Gardener program helped with volunteers, who earned hours through doing wasp watching. EAB was caught at Prospect and Beacon Falls. There were 10 negative *Cerceris* sites in Litchfield. Five towns are now EAB positive overall either via trap, infested trees, or *Cerceris*. There are emergency firewood regulations and federal and state quarantines on New Haven County, where all detections are located. It is a 9 month process to get new permanent firewood regulations through the legislature. If permanent regulations aren't passed, emergency regulations will sunset in February 2013. A delimiting survey team is in place, but there is no funding yet. The focus will be on 5 mile circles around EAB detections. A goal is to search in neighboring counties as well. Dutchess County NY is now under federal quarantine. One EAB was found in one trap in Berkshire County, MA. There are kilns in Bridgeport and Norwalk that are in the process of getting USDA certification to treat firewood. DEEP forestry girdled ash trees in the spring and then peeled 264 ash logs in the fall. All were negative for EAB.

Outreach/Website/Risk Analysis Update Report.

Rose Hiskes, CAES, reported that she and Katherine are continuing to educate nursery and landscape workers about the CAPS programs at their summer meetings. They will be updating the CAPS website.

Donna Ellis, UConn, received nursery registration forms electronically from Pete Trenchard, CAES. We ask nurseries to tell us where they get their stock from. The idea is to see what state or country materials are being moved in from. So far material has come from 20 - 24 different states, and a couple of countries such as Canada. Half of the plant material originates in Connecticut. Donna is still compiling data.

3. 2013 CAPS Survey Plans, pending a federal budget.

Rose Hiskes reported that CAES will conduct four surveys in 2013. Dr. Claire Rutledge, CAES, will conduct surveys for EAB, the goldspotted oak borer and oak splendor beetle using the native *Cerceris* wasp and a volunteer network. CAES will also conduct visual surveys for the Asian longhorned, emerald ash and rough shouldered beetles in nurseries. Third, CAES will conduct a trap and lure survey for the European hardwood ambrosia and oak ambrosia beetles in forests. This will start in March and finish at the end of July. The last survey will be conducted by subcontractor Donna Ellis, UConn. This survey will look for the brown spruce longhorned and the black spruce beetles in Christmas trees. Chris Maier, CAES, warned this trap and lure combination may catch a lot of natives.

There will NOT be any formal *P. ramorum* survey due to lack of funding and the loss of the certified lab due to building renovations. Trace forwards, etc. from USDA will still take place.

Nichole Campbell reported that PPQ is tentatively planning three surveys. The first will survey for the oak ambrosia and European hardwood ambrosia beetles at larger importers with solid wood packing and wood processors. A second survey will look for the Asian defoliators, non and rosy gypsy moth at the ports of New London and New Haven. Lastly they will also run a *Cerceris* survey looking for EAB, the gold spotted oak borer and the oak splendor beetle. Sites

will be coordinated with CAES. One of these surveys will be dropped if summer help positions are not filled.

4. Other old or new business

- a. Spotted Wing Drosophila: Chris Maier handed out a report from the Northeast IPM Spotted Wing Drosophila Working Group. Rich Cowles reported that traps for SWD were put out too late in 2012. SWD has been found in kousa dogwood and pokeweed fruit in the wild. Apple cider vinegar traps will attract SWD from a five meter area. Mass trapping worked to protect blueberries but raspberries are much harder to protect. Spinosyns, such as Delegate and Entrust give the best control but can only be used twice in a season before having to rotate to another class of insecticide. For organic growers, there are no known effective options with which to rotate. Assail is the neonictinoid with the lowest toxicity to honey bees, the shortest residual within plants and translocates the fastest.
- b. Chris Maier reported that a sex pheromone trap may be available for the brown marmorated stinkbug next year.
- c. Rich Cowles also reported on a new pest drosophilid fly, *Zaprionus indianus*, also known as the African fig fly, which he found in his spotted wing drosophila traps in field tomatoes earlier this fall.
- d. Boxwood Blight: Concerns were raised about non-nursery stock inoculum (snipped ends, etc.), as there is no regulatory notification of these. Industry concerns with big box and budget job lot stores importing boxwood stock. Blight has majorly affected the boxwood industry, both import and export.
 - Next State CAPS Committee meeting will be spring 2013

Respectfully submitted,

Rose Hiskes
CAPS State Survey Coordinator

Fact sheets developed by Rose Hiskes and Katherine Dugas of CAPS and other pests.

Attached as separate documents

- Asian longhorned beetle
- Emerald ash borer
- Rough shouldered longhorned beetle
- Light brown apple moth
- Summer fruit tortrix
- European grape vine moth
- Spotted wing drosophila

Newspaper Articles

“Cedar Mountain in Danger From Invasive Plants”. Article written by Erica Schmitt for the New Britain Herald and the Newington Town Crier on April 26, 2012.

“Commission Considers Plans to Address Invasive Plant Species in Newington”. Article written by Mark Spencer for the Hartford Courant on April 18, 2012.

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

Approved and signed by

Cooperator

Date: March 14, 2013

ADODR

Date: _____

Appendix A. Connecticut 2013 Pest List

Scientific Name	Common Name	General Organism Type
<i>Adoxophyes orana</i>	Summer fruit tortrix moth	insect
<i>Agrilus biguttatus</i>	Oak splendor beetle	insect
<i>Agrilus planipennis</i>	Emerald ash borer	insect
<i>Anoplophora chinensis</i>	Rough shouldered longhorned beetle	insect
<i>Anoplophora glabripennis</i>	Asian longhorned beetle	insect
<i>Archips xylosteana</i>	Variegated golden tortrix	insect
<i>Cylindrocladium pseudonaviculatum</i>	Boxwood Blight	pathogen
<i>Epiphyas postvittana</i>	Light brown apple moth	insect
<i>Hylobius abietis</i>	Large pine weevil	insect
<i>Hylurgops palliatus</i>	Lesser spruce shoot beetle	insect
<i>Lobesia botrana</i>	European grape vine moth	insect
<i>Lymantria dispar (Asian strain)</i>	Asian gypsy moth	insect
<i>Monilia polystroma</i>	Asiatic brown rot	pathogen
<i>Monochamus alternatus</i>	Japanese pine sawyer	insect
<i>Phytophthora ramorum</i>	Ramorum Blight	pathogen
PLUM POX	PPV	pathogen
<i>Platypus quercivorus</i>	Oak ambrosia beetle	insect
<i>Tetropium castaneum</i>	Black spruce beetle	insect
<i>Tetropium fuscum</i>	Brown spruce longhorn beetle	insect
<i>Thaumatotibia leucotreta</i>	False codling moth	insect
<i>Tortrix viridana</i>	Green oak tortrix	insect
<i>Tropilaelaps clareae</i>	Bee mite	insect
<i>Trypodendron domesticum</i>	European hardwood ambrosia beetle	insect



Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Founded in 1875

Putting science to work for society

Email: Rose.Hiskes@ct.gov; Katherine.Dugas@ct.gov

Website: www.ct.gov/caes

ASIAN LONGHORNED BEETLE (*Anoplophora glabripennis*)

The Asian longhorned beetle (ALB) is an invasive species in the family Cerambycidae. Native to China, Korea, and Japan, it is likely that the ALB first came to North America via international trade as larvae inside wooden pallets and packing materials. It was first detected in the United States in 1996 in Brooklyn, NY. As of 2011, ALB infestations have been found in five states in the United States: New York, Illinois, New Jersey, Massachusetts, and Ohio. Its primary host in North America is maple (*Acer*), however ALBs have also been found to feed on birch (*Betula*), and elm (*Ulmus*), horsechestnut (*Aesculus*), willow (*Salix*). Additional secondary hosts can be found at the website listed below. As infestations always results in tree death, ALB is considered a serious risk to Connecticut's native hardwood forests, wildlife habitats, as well as the lumber, tourist, and maple syrup industries.

Adult ALBs are approximately 1 to 1.5 inches long, have a shiny smooth black body, and long black and white banded antennae. Their elytra, or wing covers, are covered in white spots. The white hairs on the feet often reflect a bluish color. Generally males are smaller than females,

with antennae longer than their body. Adult females chew a small slit or pit in the bark of the host tree, and lay a single egg about the size of a grain of rice directly under the bark onto the conducting tissue. The adult female can lay upwards of 60 eggs in her lifetime. After about two weeks, the egg hatches into a larva which feeds on the sugars and nutrients in the host tree's vascular system for the first two instars or stages. As the larva matures, it feeds on the tree's heartwood leaving the tree structurally weak. Larvae survive the winter protected inside the heartwood. The following spring, the mature larva will create a pupal chamber, where it will pupate for a month. Adults will chew their way out of the tree in the summer around the time Rose of Sharon is in bloom. Exit holes are perfectly round between 3/8 and 5/8" diameter. Adult beetles feed on the veins and blades of leaves as well as on the bark of young twigs before mating and laying eggs. The beetleless will infest the upper parts of host trees first and then work their way down over multiple generations. In certain cases, tree decline and death due to ALB infestation may take up to 10 years.



The ALB is moved to new locations primarily through the movement of larvae-infested firewood. Although ALB can fly, its flight is erratic and is not an effective method of dispersal. Comprehensive survey and eradication efforts are underway in all parts of the US where known ALB infestations exist. USDA enforced quarantine zones restrict the movement of wood materials out of infested areas. ALB infestations in Illinois and parts of New York and New Jersey have been declared successfully eradicated.

Information Sources:

Beetle Busters Website: www.beetlebusters.info





Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

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EMERALD ASH BORER (*Agrilus planipennis*)

The emerald ash borer (EAB) is an invasive beetle in the buprestid family that is native to Asia. First discovered in 2002 in Detroit, this metallic wood-boring beetle has since rapidly spread to 15 US states; it is now found as far south as Tennessee, as far west as Minnesota, as far north as the upper peninsula of Michigan and as far east as the Hudson River in New York State. It has also crossed north and east into Ontario and south of Montreal, Quebec. Likely an accidental introduction from eastern Asia in wood-packing materials, EAB has spread so quickly in part due to the ease of accidental transport of beetles by humans in everything from firewood to rustic crafts. It is a strong flier and capable of spreading on its own.

Adult EABs are metallic green, about ½ inch long, and feed exclusively on ash trees in the genus *Fraxinus*. Tiny, flat, round 1mm long eggs are laid in bark crevices. Seven to 10 days later, the eggs hatch and the young larvae begin to feed on the tree's conducting tissues. As they feed and grow, the larvae create distinctive tightly-winding 'serpentine galleries.' This feeding can very quickly stress and girdle an ash tree. The mature larvae overwinter in a pupal chamber and pupate in the spring. Adult beetles emerge, chewing themselves a

distinctive 4 mm wide D-shaped exit hole. Adults feed on the margins of ash foliage prior to mating. The adult's lifespan is 4-5 weeks, during which time a single female may lay upwards of 60 eggs.

Manually surveying Connecticut's ash trees for this invasive pest can be difficult due to the small size of the insect and the large amount of general ash decline in the state. Therefore, trapping methods such as the use of purple panel traps are a much more effective way of monitoring for EAB. These traps are hung in ash trees during peak adult activity, and are baited with manuka oil to attract beetles. In 2011, over 800 were set throughout Connecticut. Another method of monitoring for EAB is known as 'biosurveillance.' Scientists and volunteers monitor the nests of a native wasp that specifically hunts for buprestids, including EAB. If the invasive beetle is in the area, it is likely that the wasp would capture some and bring it back to their nest.

Information Sources:

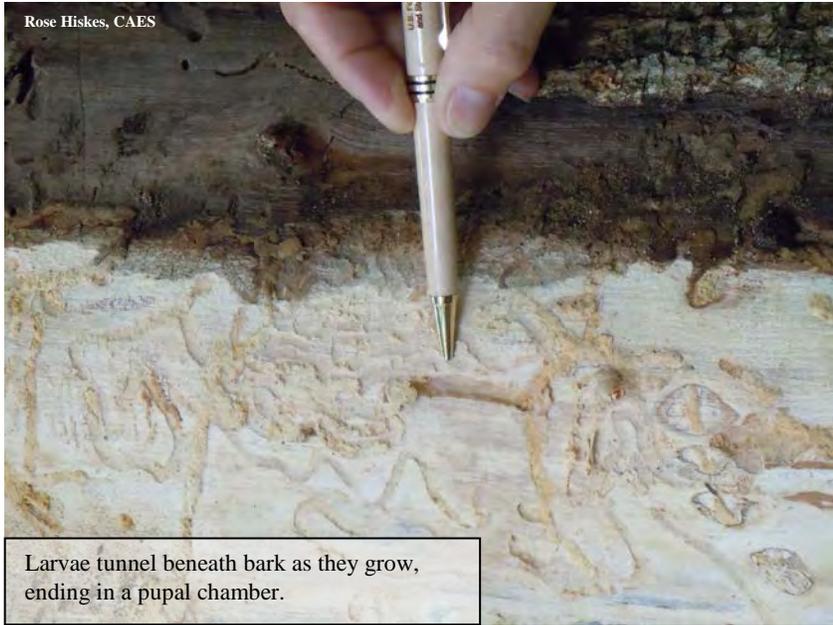
Emerald Ash Borer website -

www.emeraldashborer.info

Biosurveillance website - www.cerceris.info



Rose Hiskes, CAES



Larvae tunnel beneath bark as they grow, ending in a pupal chamber.

David Cappaert, Michigan State University, Bugwood.org



Larvae are flat, broad and segmented, reaching a length of 1 inch at maturity.

David Cappaert, Michigan State University, Bugwood.org

UGA1460071



Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

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Website: www.ct.gov/caes

EUROPEAN GRAPE VINE MOTH (*Lobesia botrana*)



http://www2.nrm.se/en/svenska_fjarilar/Lobesia_botrana.html

Also called the grape berry moth (not to be confused with *Eupoecilia ambiguella*, the European grape berry moth), this moth is primarily a pest of grape, but has also been found on blackberry, currants, cherry, plums, and carnations. It is native to Italy, but found throughout Europe, the Mediterranean, the Middle East, and in parts of Africa and Asia. A significant portion of the continental United States, including Connecticut, is suitable for its establishment. It was first detected in the United States in Napa County, California vineyards in 2009.

Flat, tiny eggs are laid singly instead of in clusters. Newly hatched larvae are about 0.04 inch long but grow up to 0.5 inch by the fifth and final instar. There are three generations a year in California's climate; two in more temperate zones. The first generation larvae feed on flowers, the

second on forming berries, and the third generation on mature berries. All three generations cause damage, however feeding in the third generation is the most destructive, as feeding exposes the grapes to rot and fungi. Secondary arthropod pests may also be attracted to damaged fruit.

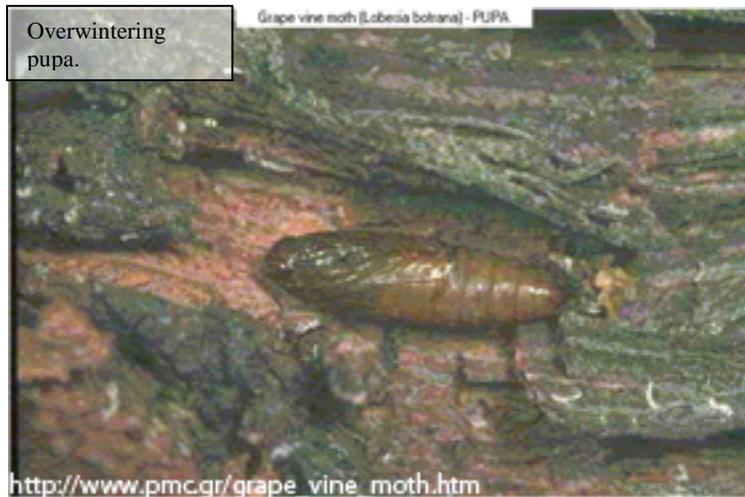
Pupae overwinter in silk cocoons hidden underneath vine bark or in cracks of nearby trellis posts. Adults emerge once air temperature remains above 50°F for 10-12 days. Adult moths are 0.3 inch long with a 0.5 inch wingspan. Females are slightly larger than males. Their wings have a mosaic-pattern with intermixed tan, cream, gray, brown, and black blotches.

Monitoring methods for European grape vine moth include female sex pheromone traps to determine the presence of flying males. Control is generally aimed at the second generation, as the first generation has a more prolonged emergence. General control practices for tortricid moths have been recommended, including insect growth regulators, spinosyns, and the insecticidal bacteria *Bacillus thuringiensis*. Parasitoids and predators also have been cited in European literature as an effective natural control method, especially against overwintering pupae.



Information Sources:

Grape berry moth, *Lobesia botrana* (Lepidoptera: Tortricidae) - <http://www.invasive.org/browse/subinfo.cfm?sub=4986>





Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Email: Rose.Hiskes@ct.gov; Katherine.Dugas@ct.gov

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LIGHT BROWN APPLE MOTH (*Epiphyas postvittana*)



The light brown apple moth (LBAM), a tortricid, is considered a major risk to agricultural commodities, with the potential of costing millions of dollars in lost production and added control costs. An Australian native, it has now become established in New Zealand, and Hawaii. In 2007 it was discovered in California, where major eradication efforts are now underway. The main method of LBAM transport is likely on live plants. However, they could also be transported on fresh produce and green waste. It has not been detected in Connecticut.

The LBAM feeds on a wide range of plants; some estimates put the number of hosts around 1,000 species. Some of these include fruit and vegetable crops, such as grape, apple, blueberry, pear, strawberry, tomato, cabbage, corn, pepper, raspberry, and stone and pome fruits.

In Connecticut we may have two or three generations per year depending on temperature. The insect overwinters in the larval stage in foliage in silken webs that they construct. Greenish larvae resume feeding in the spring. Larvae are the only stage that causes damage as they feed on leaves, fruit, and whole young seedlings. Mature larvae pupate in a thin brown cocoon between two leaves. Brown to tan patterned adults are nocturnal and have a $\frac{3}{4}$ inch wingspan. In a 2-3 week period, a female could lay between 120 and 500 eggs. Circular white to light green eggs are laid in groups on leaves, young stems, and fruit. In severe cases, the larvae can damage upwards of 85% of a fruit crop.

There are native tortricids in Connecticut that could be confused with this exotic pest. Monitoring methods include a pheromone lure that attracts males. Regulatory and eradication programs in California also include aerial synthetic pheromone sprays, and pheromone-based traps. Other methods such as sterile male releases are also proving effective in New Zealand.

Information Sources:

Epiphyas postvittana – Bugwood wiki - http://wiki.bugwood.org/Light_brown_apple_moth



Department of Primary Industries and Water, Tasmania Archive, Bugwood.org



Department of Primary Industries and Water, Tasmania Archive, Bugwood.org



Department of Primary Industries and Water, Tasmania Archive, Bugwood.org





Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Email: Rose.Hiskes@ct.gov; Katherine.Dugas@ct.gov

Website: www.ct.gov/caes

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ROUGH-SHOULDERED LONGHORNED BEETLE *(Anoplophora chinensis)*



Sometimes called the citrus longhorned beetle, the rough-shouldered longhorned beetle (RSLB) is native to Asia. Although similar in appearance to the Asian longhorned beetle (ALB), it has an even larger host range and is, therefore, a significant threat to both North American forests and agriculture. Its hosts include a wide range of fruit bearing, hardwood, and ornamental trees; including apple, ash, beech, birch, cherry, citrus, elm, hibiscus, holly, linden, maple, oak, pear, peach, sycamore, poplar, and willow. Several infestations of RSLB have been detected in Europe and eradicated, except for populations in Italy. European introductions have been increasing in the past 10 years.

RSLB is primarily introduced through the movement of wooden packing materials, as well as in bonsai.

Adults are similar in appearance to ALB, though generally smaller in size. RSLB is approximately 1 inch long, with a shiny black body. The elytra are marked with white spots, and their long antennae are banded black and white. RSLB has a white scutellum, the section where the elytra meet on the back at the pronotum. ALB's scutellum is black. Unlike ALB, RSLB has two distinctive bluish-white patches of hair on either side of the base of the pronotum. ALB's pronotum is entirely black. Males generally are smaller than females, and have longer antennae. Females chew small T-shaped slits in the bark of host trees, where they lay small off-white eggs, one egg per slit. After 1-2 weeks, eggs hatch and the small larvae begin to feed in the vascular tissue underneath the bark. As larvae mature, they move deeper into the heartwood. Before pupation, larvae tunnel closer to the surface where they construct a pupal chamber. After overwintering in the chamber, pupae will develop into adults in the early spring, emerging as adults during the summer out of 1 cm (about



½ inch) diameter exit holes. Adults will live for approximately 1-2 months. Unlike ALB, RSLB will oviposit close to ground level or on exposed roots.

In North America, the RSLB has been intercepted in and eradicated from Georgia, California, Washington state, and Wisconsin on infested bonsai stock shipped from Korea and Japan. However, it is established in Hawaii.





Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Founded in 1875
Putting science to work for society

Email: Rose.Hiskes@ct.gov; Katherine.Dugas@ct.gov

Website: www.ct.gov/caes

SUMMER FRUIT TORTRIX MOTH (*Adoxophyes orana*)



The summer fruit tortrix moth (SFTM), a tortricid moth native to Europe and Asia, has not yet been found in North America. However, its favorable prospects for establishment in the Eastern United States climate, coupled with its wide host range, means it has the potential to cause major economic damage to North American agriculture.

There are over 50 host species listed for SFTM, including apple, pear, peach, blackberry, cherry, currant, and grape, along with many native hardwood species. Larvae feed on the foliage and developing fruit. Fruit damaged by SFTM is at risk for invasion by fungi and other secondary pests.

Adults have a 15-22 mm wingspan, and their brownish wings have darker variable markings. Males tend to be more brightly colored. Females lay flattened 3-10 mm

diameter clusters of yellowish eggs on leaves in the early spring. The larvae hatch, feed, and mature (18 – 20 mm in length) in about three weeks. Larvae are greenish with small warts and hairs, with a light brown to yellow head. When disturbed, they may descend on a silken thread to escape. Mature larvae pupate in cocoons between leaves that are tied together with silk and emerge as adults. There can be two generations a year, depending on temperature. The second generation overwinters as a second or third instar caterpillar hidden in silk spinings in bark crevices or in foliage.

United States survey efforts for SFTM rely mostly on pheromone traps. Visual and beat sampling to inspect for eggs and larvae may also take place. Although all surveys for this insect in North America have so far turned up negative, two interceptions in Los Angeles, CA and Anchorage, AK were reported by the USDA.

Information Sources:

Summer fruit tortrix moth, *Adoxophyes orana* (Lepidoptera: Tortricidae) -

<http://www.invasive.org/browse/subinfo.cfm?sub=4937>

Adoxophyes orana - Bugwood wiki -

http://wiki.bugwood.org/Adoxophyes_orana





Joe-Cheon Sohn, Bugwood.org

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Rose Hiskes, Diagnostician and Horticulturist
Katherine Dugas, Entomology Assistant
Department of Entomology
The Connecticut Agricultural Experiment Station
123 Huntington Street, P. O. Box 1106
New Haven, CT 06504

Phone: (203) 974-8600

Fax: (203) 974-8502

Email: Rose.Hiskes@ct.gov; Katherine.Dugas@ct.gov

Website: www.ct.gov/caes

SPOTTED WING DROSOPHILA (*Drosophila suzukii*)



Although there are native species of fruit or vinegar flies in North America, the spotted wing drosophila (SWD) is a relatively new introduction that damages certain fruit crops throughout the country. The SWD was first detected in 2008 in the western United States and it has since rapidly spread eastward. Based upon a survey conducted in fall 2011, the SWD occurs throughout Connecticut, being collected in 86 towns. Fruit crops that may be at risk in Connecticut include raspberry and blackberry, *Rubus*; blueberry, *Vaccinium*; strawberry, *Fragaria*; *Prunus* species such as cherry, nectarine, peach and plum; and grape, *Vitis*.

A tiny, 2-3 mm long fly of Asian origin, SWD is distinguished from native fruit flies by the two black dots on the wings of the male, as well as the female's serrated egg-laying apparatus or ovipositor. This feature allows her to lay eggs in intact fruit just before harvest. Most other fruit fly

species are unable to infest fruit unless they are damaged or overripe. Eggs hatch into maggots, which feed on the inside of the fruit for 5-7 days. As the maggots or larvae grow and feed, the infested fruits will collapse and soften. Larvae pupate inside the collapsed fruit or on the ground; the pupal period lasts 4 - 5 days in warm weather. When adult flies emerge, they begin mating and egg-laying almost immediately, so several generations may take place during a single growing season. The adult overwinters, sometimes flying on cool fall days.

Connecticut has already experienced significant losses in fall-bearing red raspberries and strawberries in 2011 due to SWD. One key to control of this pest is early detection. Traps, baited with apple cider vinegar and a drop of soap or detergent, are good monitoring devices. These traps can be made with inexpensive materials such as closed plastic deli containers or soda bottles with holes drilled along the top of the sides. Near harvest they can be hung near ripening fruit. Trapped flies can be identified, and if SWD is present, management should begin immediately in order to protect undamaged fruit. Currently, scientists are working on the most effective management methods for SWD in Connecticut.



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Larva inside a blueberry



Males have black spots on their wings.



CAES

Spotted wing drosophila mature puparium.



Rich Cowles

Females have saw-like ovipositors that allows them to lay eggs in intact fruit.

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