

Cooperative Agricultural Pest Survey - Annual Report

Year : 2004

State : Rhode Island

Agency : RI Department of Environmental Management, Division of Agriculture and Resource Marketing

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NAPIS Database submissions:

<u>Program Pest</u>	<u>Date(s) of Submission</u>
SOD	11/17, 11/24, 12/01
CWR	12/06
GHW	12/08
EAB Bait Log	12/07
EAB Visual Tree Survey	03/05
EAB Warehouse Visual Survey	03/05
ALB Tree Survey	12/07
ALB Trapping Survey	03/05
ALB Warehouse Visual Survey	03/05
RHPBB Trapping	03/05
SBB Trapping	03/05
EWW Trapping Survey	03/05
EWW Soil Sampling	03/05
JPS Trapping	03/05
FTTM Trapping	03/05
LBAM Trapping	03/05

CAPS Survey Activity

A. Survey Methodology (trapping protocol)

A range of sampling methods were utilized throughout the surveying period and in all five Rhode Island counties during 2004. All traps were checked on a strict biweekly basis adhering to the stipulations of the work plans. Information on the RICAPS program as well as individual surveys were disseminated at all sites. For all surveys visual inspections for signs of the pests were performed on a regular basis in the course of checking traps.

Heracleum mantegazzianum

Survey sites for Giant Hogweed were found through public outreach.

Throughout the season at nurseries, garden centers, farms, and agriculture events CAPS literature was made available to the public. Five sightings were examined whereby samples of the plant and numerous digital photographs of leaves, stems, flowers and entire plants were taken.

Puccinia horiana

Chrysanthemum White Rust surveys were performed where “Mums” were found for sale and being grown at a host of different locations throughout the state. Visual surveys of all Chrysanthemums at specific sites were performed by teams of two or more interns, literature pertaining to the signs and symptoms of the fungus *Puccinia horiana* were handed out throughout the course of the survey.

Agriotes lineatus, A. obscurus, A. spumator

The Exotic Wireworm and Click Beetle surveys were implemented through the use of Vernon Beetle Traps baited with two specific lure types pertaining to two of the three target species. *Agriotes lineatus* and *A. obscurus* were both sampled for with the Vernon traps while there was no lure available *A. spumator*. Soil core samples were taken at all sites and sifted in an effort to locate wireworms, the larval stage of the Click Beetle. After all 35 sites had been sampled twice only one wireworm had been found.

Archips podana

The Fruit Tree Tortrix Moth survey was conducted in all five counties with the cooperation of local orchard owners. Twenty-five Universal Moth Traps baited with pheromone lures were suspended from selected fruit trees. The traps were examined on a bi-weekly basis throughout the specie’s active season.

Epiphyas postvittana

The Light Brown Apple Moth survey was conducted employing the same orchards as the FTTM survey. This specie is active later in the season and a different trap was used. The Delta Wing Trap is equipped with a lure and a removable adhesive panel.

The panels were examined and/or replaced on a bi-weekly basis throughout the active season.

Ips typographus, Anoplophoro glabripennis, Monochamus alternatus, Hylurgus ligniperda, Agrilus planipennis

The Wood Boring Bark Beetle Warehouse Survey was executed using two methods. The trapping of insects consisted of the employment of the Eight-tiered Lindgren Funnel Trap. Two traps were placed at each site, as different combinations of lures were needed to effectively attract suspect insects. One trap was baited with both a three- component pheromone lure and an Alpha Pinene lure in an effort to attract the European Spruce Bark Beetle (*I.t.*). This lure combination is also appropriate for attracting the Red-Haired Pine Bark Beetle (*H.l.*), which is active later in the season. The second trap was baited using a single Ethanol UHR lure acting as both a general attractant for wood boring/bark beetles, and an effective attractant for the Japanese Pine Sawyer (*M.a.*).

Together with the trapping of insects, visual surveys were also completed. Solid wood packing materials within and surrounding all WBBWS sites were initially examined for signs of wood boring insects, specifically the Asian Long-Horned Beetle, and the Japanese Pine Sawyer. Visual tree surveys were conducted during the middle of the season. Over 1100 potential host trees surrounding the established warehouse sites were inspected.

The visual survey also included the deployment of freshly cut Ash logs at each site in an effort to attract the Emerald Ash Borer, as no pheromone lure is available to be placed in funnel traps. The logs measured approximately three feet in length and one foot in diameter. The bait logs were examined bi-weekly together with the funnel traps.

Phytophthora ramorum

The survey for Sudden Oak Death was carried out at 48 sites, where potential hosts were likely to be present. Because of the complexity of the survey, field interns were extensively trained to become proficient in sampling protocol, host and symptom identification, sample protection and labeling, decontamination procedures and the importance of information dissemination. At each site a minimum of 100 host plants, or 2% of each host present were visually inspected. Of those a minimum of 40 symptomatic samples were retrieved. Digital photographs were taken of the symptomatic plant parts, the entire plant itself, and the entire plant block or area surrounding the plant. Surveys extended to the perimeter of each nursery to include native host vegetation.

An additional 7 sites were inspected by R. M. Green, SSC, D. Martin, And PPQ official D. Fernandes. One nursery, 3 Lowe's stores and 3 Wal-Mart stores had received stock from Hines Blooming Farm Nursery in Oregon, which had tested positive for *P. ramorum* infestation. All stock had been sold with the exception of one *Rhododendron spp.* discovered at the nursery. No records were kept to identify those purchasing these plants, rendering them lost. Four private homes were also visited to inspect Bonsai plants that were mail-ordered from Monrovia Nurseries in CA. No symptoms were observed on these plants. No samples were taken.

B. Rationale Underlying Survey Methodology

The survey methodologies utilized in FY04 to determine the existence of CAPS target pests in Rhode Island were formulated using previous studies and the FY04 CAPS guidelines. Survey species were chosen from the lists of pests targeted by The Eastern Region Pest Survey Committee and the National CAPS Committee. Pests were selected based on availability of host material, tolerance to climate and their potential impact to our local environment and economy. In considering these factors, a survey plan was developed and sampling sites carefully chosen. A detailed explanation of the individual survey rationales follows.

Wood Boring/ Bark Beetles are routinely intercepted at US ports of entry during inspection of solid wood packing and storage materials. Although there are stringent regulations prohibiting the import of wood materials with bark still attached, many of these pests travel in the larval stage deeply embedded within clean- grained wood. Despite these inspections, some exotic and invasive species have escaped detection and established themselves in the US, as we have seen with the Asian Long-Horned Beetle in New York. Trapping and visual surveying has been conducted at various warehouses that are known to receive and store foreign SWPMs, such as crates, pallets and wire/rope spools.

Various turf farms, vegetable farms and cornfields were selected to conduct the Exotic Wireworm/ Click Beetle survey. Vernon Beetle Traps were placed along the edges of host crops to attract Click Beetles, alluding to the presence of Wireworms, the life stage responsible for the most damage to crops. Wireworms can over winter by migrating deep into the soil, and take up to three years to pupate into an adult. Wireworms are considered to be a serious economic threat due to the wide variety of vegetation that they are known to attack. Therefore, in addition to the adult beetle traps, multiple core soil samples were extracted and examined for Wireworms at each of the sites.

The Fruit Tree Moth Complex survey included two species of exotic fruit tree moths that have already colonized parts of the western US. The Fruit Tree Tortrix Moth and the Light Brown Apple Moth. While both species mainly attack apple varieties, other fruit markets are susceptible. Pheromone baited traps were installed in orchards around the state between May and July for the FTTM, and July through September for the LBAM.

The Chrysanthemum White Rust survey involved visual inspections and information dissemination at garden centers, florists and nurseries. This destructive fungus has been introduced to the US before, but has been successfully controlled due to early detection and aggressive eradication methods. Two of the chosen sites were re-visited after receiving shipments of Chrysanthemum plugs from Central America.

The survey continued throughout the growing season in conjunction with SOD and Fruit Tree surveys.

The Sudden Oak Death survey was carried out at both nurseries and garden centers offering known hosts of this fungus for sale, and private residences. Aside from the nursery inspections, 11 additional sites determined to be at risk were inspected. The SOD survey plan was revised and expanded early in the season to incorporate more comprehensive protocols. All sites previously visited were re-inspected under the new guidelines. Personnel at all sites were interviewed regarding origin of host plants, received literature educating them as to the threat to forest and domestic habitat pertaining to SOD as well as an overview of the CAPS mission.

The Giant Hogweed Survey consisted of information dissemination at every site in conjunction with all other surveys during FY04. Field interns were instructed to look for this weed during their daily course of travel, and educate those they had contact with as to the environmental and public health hazards related to GHW.

C. Survey Dates

	START	END
WBBBWS	3/30/04	10/31/04
EWV	6/01/04	10/08/04
FTTM	5/15/04	8/15/04
LBAM	7/01/04	10/31/04
SOD	4/30/04	8/15/04
CWR	4/01/04	9/30/04
GHW	4/01/04	10/31/04

D. Taxonomic Services

All insect samples collected from traps at Wood Boring/ Bark Beetle Warehouse, Exotic Wireworm and Fruit Tree Moth Complex sites were forwarded to Dr. Kerwin Hyland, Professor Emeritus of the University of Rhode Island for taxonomic identification.

E. Benefits and results of survey.

The objectives outlined in the FY04 workplan have been met and often exceeded. The increase in field personnel and experience gained from previous studies were instrumental in adhering strictly to protocol, accurate record keeping and forging strong relations with members of Rhode Island's green industries. Many growers and business owners have already agreed to participate in the FY05 CAPS program.

None of the samples that were submitted for taxonomic identification have yielded positive results. While this is encouraging for the RI environment, continuous aggressive study is paramount in the nationwide effort to protect the economy, Homeland Security, biodiversity and the vitality of the nation's cropland.

Owing to the success of FY04 surveys, cooperation of land and business owners and the potentially disastrous impact these pests possess, the Wood Boring/Bark Beetle, Fruit Tree Complex, Giant Hogweed and Chrysanthemum White Rust surveys have been incorporated into the FY05 survey plan.

A. Plant Board Statistical Report

Plant Board Annual Report Cooperative Agricultural Pest Survey – CAPS

Target Pest (Common Name if Available)	Number of			Survey Method (Trap type/ Visual)	Findings (+ or -)	NAPIS Entry (+ or -)
	Counties	Sites	Traps			
Wood Boring/Bark Beetle Warehouse Survey—All target pests	5	25	50	Visual Survey & Lindgren Funnel Traps: 30 with 3- component lure plus Alpha pinene; 20 with Ethanol lure	-	+
Asian Longhorned Beetle	5	25	N/A	Visual Inspection	-	+
Japanese Pine Sawyer	5	25	50	Lindgren Funnel Trap/Visual	-	+
Red Haired Pine Bark Beetle	5	25	50	Lindgren Funnel Trap/Visual	-	+
European Spruce Bark Beetle	5	25	50	Lindgren Funnel Trap/Visual	-	+
Emerald Ash Borer	5	25	26	Bait-Log(Ash) /Visual	-	+
Exotic Wireworm/Click Beetle	5	26	52	Vernon Beetle Traps/Soil Samples/Visual	-	+
Fruit Tree Tortrix Moth	5	26	26	Universal Moth Trap/Visual	-	+
Light Brown Apple Moth	5	26	26	Hanging Wing Trap/Visual	-	+
Chysanthemum White Rust	5	45	N/A	Visual/Foliar Sampling	-	+
Giant Hogweed	5	5	N/A	Visual/Plant Sampling	-	+
Sudden Oak Death	5	48 (site visits)	N/A	Visual/Stem and Foliage Sampling	-	+

