

Section I
Surveys of Invasive and Emerging Pests

RESULTS OF 2007 IDAHO SURVEYS FOR EXOTIC LEPIDOPTERA: LIGHT BROWN APPLE
MOTH, *EPIPHYAS POSTVITTANA* (TORTRICIDAE) (LBAM); POTATO TUBERWORM,
PHTHORIMAEA OPERCULELLA, (GELICHIIDAE) (PTW); AND SILVER Y MOTH, *AUTOGRAPHA*
GAMMA, (NOCTUIDAE) (SYM)

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LBAM

LBAM infestations in northern California counties have made survey and detection for this species a national priority. Larvae of this species have a plant host range in excess of 150 plant genera in over 70 families. Potential hosts in Idaho include: nursery stock, cut flowers, stone fruit (peaches, plums, nectarines, cherries, and apricots), pome fruit (apples and pears), and grapes. Information from regions where LBAM is reported (England, New Zealand, Australia) was analyzed by USDA, Plant Protection and Quarantine (PPQ). LBAM has only been reported in USDA Plant Hardiness zones 7 and above. In Idaho areas in the Treasure Valley and around Lewiston ID are classified zone 7. In 2007 ISDA initiated a pheromone trap survey in SW Idaho commercial apple orchards and some selected retail nursery outlets. One hundred and fourteen, 114, Pherocon VI traps were deployed in SW Idaho (Ada, Canyon, Gem Payette, Owyhee, Washington Counties). Lures were provided by the USDA PPQ Otis Methods Lab. No LBAM were captured in this preliminary survey. Some prominent non target species captured included: *Choristoneura sp.*, *Sparganothis sp.* - family Tortricidae and *Achyra occidentalis*, *Pyralis orphisalis* - family Pyralidae. Determinations of the non target microlep species were made by WSDA entomologist Dr. Eric LaGasa.

PTW

There have been infrequent but notable invasions of this pest into Idaho over the last 60 years. The first incident recorded was in July of 1946 when infested potatoes shipped from California to a Burley processing plant threatened the industry in that area of the state. Using area wide treatments of DDT, the infestation was successfully eradicated. The University of Idaho, W.F. Barr Entomology Museum in Moscow recorded a catch of PTW on March 4, 1959 in Boise. The infestation was found in stored potatoes and the collector was R. Portman. That infestation was successfully thwarted. No PTW infestations have been reported since 1959. In 2002 this species emerged as a serious economic pest of

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potatoes in Umatilla County, Oregon and in the Columbia Basin of south central Washington. In 2005 in response to this growing threat, the U.I. initiated a limited survey under the direction of Dr. Juan Alvarez, and funded through a grant from the Idaho Potato Commission. ISDA implemented a more extensive statewide detection surveys of all potato growing areas after a single male PTW was trapped in August of 2005 near Parma. ISDA has run a detection survey for this insect for the last three seasons and results are summarized in the table below. Preliminary screening of suspect gelechiids and final species confirmation was carried out by the authors. Only five adult male PTW were captured in 2007.

Year	Detection Traps (Potato Production Counties)	Total Male PTW Captured	Counties with Positives
2005	461	19	Canyon, Payette, Elmore
2006	468	6	Canyon
2007	491	5	Canyon, Owyhee

Also, USDA, Idaho Agricultural Statistical Service (IASS) conducts a yield survey covering all potato production areas of the state. Fifteen pound sample of tubers were dug from a statistical sample of all potato fields within the state. The sample size was 288 field samples from over 20 potato production counties. IASS staff involved with this yield survey received special training, conducted by ISDA, on recognizing PTW tuber damage signs. No damaged or infested tubers or live larvae have been observed or reported thus far. ISDA plans to reduce its statewide survey and do a limited follow-up detection survey in the Parma area of Canyon County in 2008.

SYM

This exotic moth is native to Europe. A single record of this species in North American is reported from location in Greenland. Adult moths have been reported coming in on cargo and passenger aircraft originating from Europe. The larval stage feeds on more than 200 host plants. USDA, PPQ places the species on the national pest priority list. Potential crop host plants of importance to Idaho include: alfalfa, corn, grapes, dry beans, potato, sugar beets and wheat. ISDA staff placed 211 pheromone traps in 30 southern Idaho counties. A very similar native moth, the alfalfa looper, *Autographa californica*, was captured in high numbers in the survey traps. Dissection of the male genitalia is required to separate the native non-target from the target species. Dissections and species determinations were conducted by the authors. Six hundred and eighty-four (684) individual specimens required dissections in the course of the survey. None of the moths captured were the target species *A. gamma*. The second most common non target species captured in the traps was the celery looper, *Anagrapha falcifera*.