

Oregon Insect Pest Alert

Light Brown Apple Moth

The light brown apple moth, *Epiphyas postvittana* (Walker) (Lepidoptera: Tortricidae), originally from Australia, has become established in Great Britain, Ireland, Hawaii, New Caledonia, and New Zealand. In 2007 its presence was confirmed in California. The California counties where it has been detected include Alameda, Contra Costa, Fresno, Los Angeles, Madera, Marin, Monterey, Napa, Orange, Sacramento, San Benito, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tuolumne, Ventura, and Yolo counties. The light brown apple moth (LBAM) is not known from Oregon. This moth is of particular concern because of its broad host range and ability to survive in a wide variety of climates.



LBAM is reported to attack more than 120 plant genera in over 50 families. Some hosts of concern to Oregon include alfalfa, apple, blackberry, blueberry, *Brassica* spp. (broccoli, cabbage, mustard, etc.), cherry, clover, cottonwood, currant, grape, hops, kiwifruit, peach, pear, poplar, potato, raspberry, strawberry, willow, and even young conifer growth (pines).

Potential risk

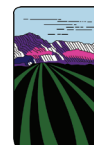
LBAM feeding can damage or kill seedlings and affect the appearance of ornamental plants. It attacks many important orchard and field crops, including alfalfa, apples, blueberries, cherries, clover, grapes, mint, peaches, potatoes, and strawberries by damaging leaves and fruit. It has been reported as an economic pest of apples and grapes in New Zealand and Australia. The moth's presence in Oregon would likely lead to restrictions on shipping of plant material. Several countries, including Chile, Peru, South Africa, and South Korea, list LBAM as a quarantine pest, and Canada lists it as a noxious pest.

Pathways for introduction

Most interceptions of LBAM have been associated with international passenger flights. Fresh fruits and vegetables can harbor viable eggs and larvae. Nursery stock and other live plant material can also transport the pest, since egg masses are especially difficult to find. Due to their attraction to lights, adults may be transported by aircraft.

Signs of infestation

- Young larvae and webbing at base of leaves
- Egg masses on leaves
- Irregular brown areas on fruit surface
- Rolled leaves bound with silk



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Detection

Adults, larvae, and other life stages are similar to other leaf rolling moths. As a result, identification can only be performed by a trained entomologist.

Detection of eggs and larvae on host material is difficult. Egg masses are very small and range from green to brown in color, making them difficult to spot. Early stages of larvae are small and may feed on the underside of leaves, under the calyx of fruit, and less commonly, they can bore into the fruit making detection difficult. Fruit damage is usually restricted to the surface causing irregular brown patches resulting in scarring of the fruit. Pheromone lures are available for adult males to be used in detection. Adults of both sexes will come to black-light traps.

Life cycle

Egg masses contain up to 50 eggs and are generally laid on leaves, although they are sometimes laid directly on fruit. Each egg is approximately 1mm in diameter. The masses are small, flat, and eggs overlap like shingles. They range in color from green to brown. Early instar larvae create a silk shelter on the leaf that they feed under. Later instars often create a rolled leaf shelter typical of the family and will feed on all parts of the leaf except the major veins. The white to pale green larvae pass through five to seven instars and grow to approximately 2cm in length. Over-wintering occurs in the larval stage. The pupal stage lasts two to three weeks inside the shelter of rolled up leaves. Adults fly at dusk and oviposition takes place during the day. Adult wingspan is about 2cm. Oviposition begins when females are two to three days old and can last 21 days. Females can lay over 1,000 eggs, although 100 to 500 is more typical. Up to four generations can occur in warmer regions of Australia.



By S. Turner, HortResearch. <http://upload.wikimedia.org/wikipedia/en/a/a4/Eposlarvae.jpg>

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