



Stone Fruit Commodity-Based Pest Survey



Pear Leaf Blister Moth

Leucoptera malifoliella

Introduction

Pear leaf blister moth is a leaf miner pest of stone fruit that is present in temperate climates throughout much of Europe and Asia. It is not currently known to be present in the United States.

Biology

Depending on the length of the growing season, pear leaf blister moths are capable of producing between one to five generations each year. Females produce approximately 50 eggs, laying them individually on the underside of leaves. Larvae live within and eat (i.e., mine) the upper epidermal layer. As larvae feed on leaf tissue, a spiral pattern containing frass (residue or excrement from the larvae) in concentric rings is produced. Mature larvae emerge from the upper surface of the leaf to search for pupation sites from which they will later emerge as mature moths.

Symptoms

Pear leaf blister moths damage the leaves of host plants. Elevated moth infestation levels can cause premature leaf fall, which can lead to yield reduction. A large amount of tunneling in the leaves may also delay shoot growth and reduce fruit weight. Repeat and heavy defoliation by moths can weaken the host tree's overall health.

Visible damage can be observed in larvae mines up to 2 centimeters wide that appear as circular blotches with concentric rings of frass (Figure 2). On host plants, mines appear brownish at first, turning purplish-brown, and then black. Mines may appear to be blistered or scorched with darker spiral markings and paler margins.

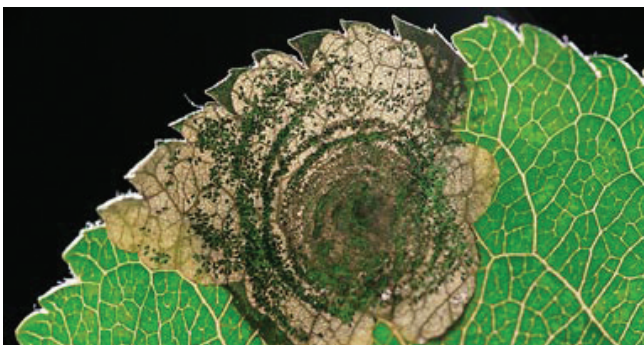


FIGURE 2. Damage by pear leaf blister moth. Photo courtesy of Gyorgy Csoka, Hungary Forest Research Institute, Bugwood.org.



FIGURE 1. Adult pear leaf blister moth (*Leucoptera malifoliella*). Photo courtesy of Vladimir V. Neimorovets, All-Russian Institute of Plant Protection, Russian Academy of Agricultural Sciences.

The moth's eggs can be found on the underside of leaves during spring and autumn. Larvae can also be found in the outer margin of the mines when a black light is used to examine leaves or on silk threads when the pest disperses in search of a site for its third development stage (pupa). Pests in the pupa stage can be found in leaf litter or tree bark as well as on tree fruit near the stem end, or calyx (Figure 3). Adults can be found on the underside of leaves.

Hosts

Major hosts for pear leaf blister moth include: apple (*Malus domestica*), pear (*Pyrus* spp.), quince (*Cydonia oblonga*), and sweet cherry (*Prunus avium*). Minor hosts include: Stone fruit (*Prunus* spp., *P. cerasus*, *P. domestica*, *P. persica*, *P. spinosa*, and *P. vulgaris*), alder (*Alnus* spp.), apple (*Malus* spp., *M. baccata*, *M. prunifolia*, *M. pumila*, *M. sieboldii*, and *M. sylvestris*), birch (*Betula* spp., *B. pendula*, and *B. pubescens*), cerasus (*Cerasus* spp.), cotoneaster (*Cotoneaster* spp. and *C. horizontalis*), European pear (*Pyrus communis*), flowering quince (*Chaenomeles* spp.), hazelnut (*Corylus* spp.), hawthorn (*Crataegus* spp., *C. laevigata*, *C. monogyna*, and *C. oxyacantha*), mespilus (*Mespilus* spp. and *M. germanica*), mountain ash (*Sorbus* spp. and *S. aucuparia*), pistachio (*Pistacia* spp.), quince (*Cydonia* spp.), rose (*Rosa* spp.), and serviceberry (*Amelanchier* spp.).

Distribution

The pear leaf blister moth is currently found in Albania, Armenia, Austria, Belarus, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iran, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Macedonia, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey, Turkmenistan, Ukraine, the United Kingdom, and Uzbekistan.

Identification

This species can be identified by examining its form and structure (morphological characteristics), including adult genitalia. L.W.H. Chang's "Pests Not Known to Occur in the United States or of Limited Distribution," No. 63, includes detailed drawings and descriptions of larvae, pupae, adults, wings, and male genitalia [Chang, L.W.H. 1985. Pests Not Known to Occur in the United States or of Limited Distribution, No. 63: Pear leaf blister moth.

United States Department of Agriculture, Animal and Plant Health Inspection Service, Cooperative Agricultural Pest Survey. Online: http://caps.ceris.purdue.edu/webfm_send/111].

Survey

A trap and lure combination is the common method used to survey for this pest. Details on trap type and lure compounds can be found at <http://pest.ceris.purdue.edu/services/napisquery/query.php?code=cam2012>

What Can We Do?

If you find an insect that you suspect is the pear leaf blister moth, please contact your local extension office or State plant regulatory official to have the specimen properly identified. For contact information, visit www.aphis.usda.gov/StateOffices, www.nationalplantboard.org/member/index.html, or www.nifa.usda.gov/Extension/index.html.

References for the above information can be found on the Cooperative Agricultural Pest Survey (CAPS) Web site at <http://caps.ceris.purdue.edu/stonefruit/references>.

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FIGURE 3. Arrow pointing to silken casing surrounding a pupa of pear leaf blister moth on apple. Photo courtesy of Canada Agriculture and Agri-Food Canada Archive, Agriculture and Agri-Food Canada, Bugwood.org.