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Native Holly Leafminer

Ornamental plantings of holly in Pennsylvania are often damaged by leafmining pests. The native holly leafminer only feeds on the foliage of American holly.

 ARTICLES | UPDATED: MARCH 20, 2017



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Phytomyza ilicicola Loew

Ornamental plantings of holly, *Ilex* spp., in Pennsylvania are often damaged by leafmining pests. One species is the native holly leafminer that only feeds on the foliage of American holly, *Ilex opaca*, and its cultivars. Other leafminers of plants in the genus *Ilex* include the holly leafminer, *P. ilicis* Curtis, a European species that feeds primarily on

English holly, *I. aquifolium*. Additionally, the "inkberry leafminer", *P. glabricola*, infests inkberry, *I. glabra*. The information contained in this fact sheet pertains to the native holly leafminer.

Description

Eggs hatch into tiny maggots or larvae within the leaf mine. The larvae are yellow and when fully grown are 1.5 mm long. The larval stage of the European species, holly leafminer, resembles the native holly leafminer. Adults are small, 0.8 mm-1.6 mm long, black flies.



Figure 1. Serpentine blotch mines in a holly leaf.

Life History

This species overwinters as larvae within the leaf mine. In some cases 12 or more larvae have been found in an individual leaf, but the average number found in a leaf is three. During the spring these maggots pupate. Adults emerge from leaves in May, mate, and females deposit eggs in small slits on the underside of newly developing leaves. The eggs hatch into larvae that start to feed, creating new leaf mines. There is only one generation produced each year.

Damage

American holly foliage is damaged by the feeding activity of larvae that destroy leaf tissue between the upper and lower leaf surfaces. Damage first shows up as slender leaf mines that are seldom over 1.3 cm in length. With continuous feeding, leaf mines broaden and leaves become marred with yellow serpentine or blotch mines (Fig. 1). Heavily infested plants may prematurely drop their leaves and be almost devoid of leaves until new growth begins the following spring.

Females may damage foliage by inserting their ovipositors into leaves. The female jabs the leaf with her ovipositor and plant fluid starts to flow from this wound. Both females and males feed on the plant fluid that exudes from the wound. Leaves seriously damaged by these ovipositor punctures often become stunted and badly distorted. Be careful not to confuse this type of damage with leaves mechanically injured by overlapping holly leaf spines.

Management

Infested holly leaves may drop to the ground before adults emerge. Leaves that have dropped prematurely should be gathered and destroyed. This helps reduce adult populations that may attack host plants in the spring.

Registered insecticides should be applied according to label directions to the foliage in early May.

Registered systemic insecticide formulations may also be effective against this pest when applied according to label directions as soil injections early in the growing season. When using these insecticides be sure adequate soil moisture exists so that optimal uptake of these products is achieved.

Warning

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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April 200

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