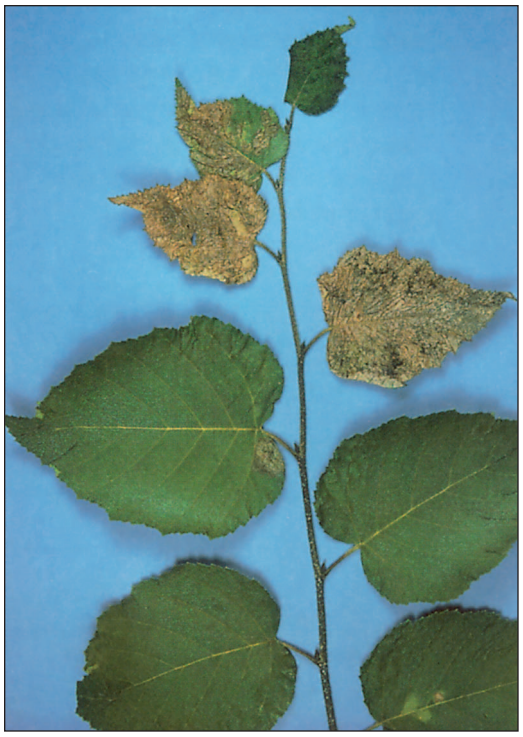
A2117

# Birch leafminer

P.J. PELLITTERI

Birch leafminers are insects that can destroy leaves of all ornamental birch varieties grown in Wisconsin. While European, white, gray and paper birches are most susceptible, yellow and river birches are also affected. Not only do these insects destroy the tree's ornamental beauty, but repeated birch leafminer attacks weaken the birch tree's resistance to bronze birch borers.



Severe birch leafminer injury. The three affected leaves are light brown and papery.

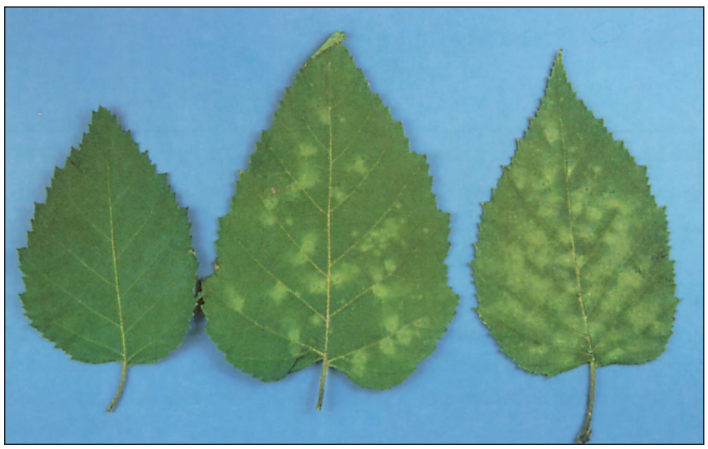
## Symptoms and life cycle

Birch leafminer larvae overwinter in cocoons combined with soil particles 1–2 inches below the soil surface. They emerge in early May as black sawfly adults about 3/16 inch long, and females deposit eggs *only* in new expanding leaves. Larvae do not develop in mature leaves. Small, flattened, white larvae appear 7–10 days later.

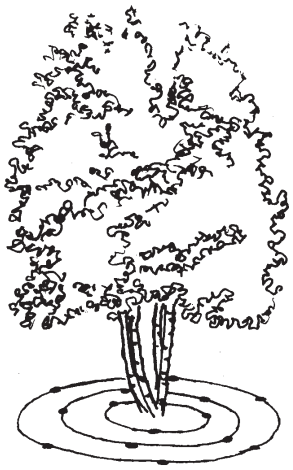
The first symptoms of birch leafminer attack are the feeding marks from the young larvae—small, blistered, translucent spots on new leaves. For 10–12 days they mine leaves, consuming tissue between the upper and lower leaf surfaces. Leaves turn brown and papery and finally drop off.

After 10–15 days, the mature larvae cut a hole in the leaf, fall to the ground and pupate. During the summer they spend 15–20 days in the soil and re-emerge as adults. They repeat this cycle producing three to four generations from May to August.

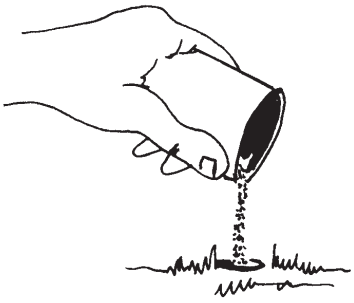
The first or spring infestation of birch leafminer is the most serious. All of the leaves can be affected, making the tree look blighted. Weakening of the tree at this time also increases the chances of bronze birch borer injury. Because the birch leafminer attacks only new foliage, each succeeding attack becomes less severe and damage is frequently limited to tree tops or newly developing leaves on young sprout growth.



The leaf on the left is uninfested. The middle leaf is lightly infested and will develop brown blotches if left untreated. The leaf on the right is heavily infested—it was treated with a systemic insecticide which killed the larvae shortly after hatching.



Space holes under the tree as far out as branch pattern extends.



A small can will help you gauge the proper amount of systemic granules to place in each hole.

## Control

### Cultural

There are no non-chemical controls for birch leafminer at this time. Several natural enemies live in Wisconsin but are not abundant enough to reduce infestations to acceptable levels. Research into the pest's natural predators and parasites in its native home (Europe) is needed with the possible goal of importing additional natural enemies.

If you do not use chemical controls, be sure to maintain tree vigor and reduce injury by other pests.

### Chemical

You can control the insect with chemical sprays if you apply them *thoroughly* when the first, tiny, pale yellow spots appear on leaves in spring. Controlling the spring generation is critical for maintaining tree health and tree appearance. Homeowners can use one of the following insecticides: Diazinon, Dimethoate, Di-Syston, Isotox, Malathion, Orthene, or Sevin. Commercial applicators can also use Dursban.

An alternative method of controlling leafminer involves applying a granular systemic insecticide, such as Di-Syston or Merit, to the soil. The granules release insecticide which is absorbed through the roots and circulates with the sap throughout the tree. The treatment kills any leafminers or other insects that feed on the leaves, but does not affect beneficial insects. Apply Di-Syston in early May, before the tree begins growth. Merit should be applied in the fall to be effective. The applications must be followed by rain or watering.

To apply, measure the needed dosage and distribute equally in 8–12 holes. Make the holes 4–6 inches deep, in a pattern around the tree, midway between the trunk and dripline (see illustration). "Heel" the holes shut after application and water the ground thoroughly. Because leafminers must feed for a short time before the chemical takes effect, heavily attacked trees may show several small yellow dots on each leaf. These dots are egg-laying sites where larvae have hatched, and begun to feed before being killed.

References to products in this publication are for your convenience and are not an endorsement or criticism of one product over other similar products. You are responsible for using chemicals according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from chemical exposure.

UW Extension



**Author:** P.J. Pellitteri is distinguished outreach specialist of entomology, College of Agricultural and Life Sciences, University of Wisconsin-Madison and University of Wisconsin-Extension, Cooperative Extension. Produced by Cooperative Extension Publications, University of Wisconsin-Extension.

**University of Wisconsin-Extension, Cooperative Extension,** in cooperation with the U.S. Department of Agriculture and Wisconsin counties, publishes this information to further the purpose of the May 8 and June 30, 1914 Acts of Congress; and provides equal opportunities and affirmative action in employment and programming. If you need this material in an alternative format, contact the Office of Equal Opportunity and Diversity Programs or call Cooperative Extension Publications at 608-262-8076.

**This publication is available** from your Wisconsin county Extension office or from Cooperative Extension Publications. To order, call toll free 877-WIS-PUBS or visit **cecommerce.uwex.edu**.

**A2117 Birch Leafminer** R-09-97