

HOME GROUNDS FACT SHEET

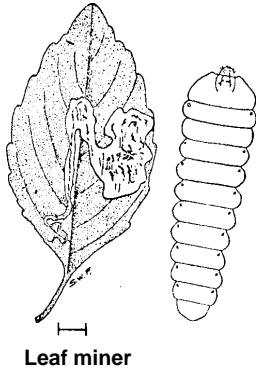
CORNELL

Cooperative Extension
Nassau County



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Birch Leaf Miner



The birch leaf miner is a tiny wasp-like sawfly. Its common name comes from the larval habit of feeding between the upper and lower surfaces of birch leaves. This European insect is well established throughout New York State. Its favorite native food plants are European, paper and grey birches. Yellow and black birch are not known to be attacked.

Symptoms and damage

The partially or completely discolored and translucent leaves on birches are signs of damage by the birch leaf miner. The mining or tunneling of the leaf tissues by the larvae produce conspicuous blotches or blisters on the leaves which later turn brown. Some birches are almost completely browned from top to bottom due to the feeding activity of the insect. However, the tops of the trees are often the most seriously affected portions.

The first generation of the insect, which can have up to four generations in a season, depending upon the locality and climatic conditions, causes the most damage. Adults begin egg laying in the spring at the time the leaves start to unfold. At this time of the year, all leaf tissue is soft and favorable for larval development. Some damage may be done by the second generation, while infestation by succeeding generations may also attack sprout growth, where foliage is soft and new. Old foliage is not attacked by the adult sawflies during their egg laying period.

Normally, a healthy tree can lose part or nearly all of the current crop of leaves without being seriously injured. Repeated leaf losses year after year may kill or seriously weaken the tree, risking attack by fungi or by serious pests such as the bronze birch borer. This borer will kill birch trees.

Description

The adult birch leaf miner is a small, black sawfly. It is about 1/8 inch long, with a wingspread of about 1/4 inch in length. The larvae are small, whitish, and flattened in appearance and when fully grown are nearly 1/4 inch in length. The larvae and black fecal matter are easily seen in the mines when infested leaves are held up to the light. Young larvae have four characteristic black marks on the underside of the body. These marks disappear when full growth is attained.

Life cycle

In the spring, during mid-May, the adult sawflies emerge from the soil and fly to the birch trees. The adults are very short lived and are rarely seen except during periods of egg laying at which time they fly and crawl over the leaf surfaces. Females begin egg laying as soon as the leaves unfold from the bud. The eggs are inserted singly inside the soft, newly expanding leaves. After a week or ten days, the eggs hatch and the tiny larvae begin to feed on the tissue between the upper and lower leaf surfaces. As the larvae feed, the individual blotches or blisters become larger. The mines are often united to form a single large area in which the larvae are mature and have finished feeding. They chew through the leaves and drop to the ground. There they work their way into the soil, spend the winter, pupate and in the spring emerge as adult sawflies. A generation is completed in five or six weeks. Since the life cycle from egg to adult is short, there may be two, three or more generations each year, depending upon location and favorable weather conditions. The second and succeeding generations concentrate on the tops of the trees, on terminal or new leaves, and on sprout growth where the leaves are tender. The last generation of larvae at the end of the season remain in hibernation in a cell in the soil until the following spring.

E-1-3-A DWM reviewed RT 1/03

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Management Options

Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

** A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. insecticide, fungicide, herbicide, etc.*

Control

Do not plant birches in known high hazard areas subject to attack by this insect. For trees already established, keep soil in good condition by the addition of organic matter and fertilizer. Chemical pesticides may be available. If you choose to use a chemical pesticide, contact your local Cooperative Extension office for specific recommendations.

Since larvae are entirely enclosed in leaves, ordinary contact and stomach insecticides will not penetrate leaf surfaces and kill the insects. Control by spraying is most effective when the leaves are half expanded and the small blisters or mines begin to appear.

Natural parasitic enemies of Birch leaf miner have been established and are now being studied.

Do not use a hose-end sprayer for foliar application!

Hose-end sprayers do not dissolve, mix or apply pesticides accurately or evenly. The changing rates of water pressure, different hose diameters and water temperature provide variables that prevent accurate mixing and delivery. A hand pump or powered tank sprayer, where the pesticide is pre-mixed to the proper dilution, allows for the application of a known mixture as per label instructions.

WHENEVER YOU USE A PESTICIDE,
ALWAYS READ THE LABEL AND FOLLOW
THE MANUFACTURER'S INSTRUCTIONS
AND RECOMMENDATIONS.