



Birch leafminer

Fenusa pusilla

Order Hymenoptera, Family Tenthredinidae;
common sawflies
Introduced pest

Host plants: Gray birch and paper birch are preferred, but black, European white, river and yellow birch are also susceptible.

Description: Adult sawflies are small, black, and 2.5–3.5 mm long, with yellowish brown legs. Mature larvae are 6 mm long, yellowish white in color, and flattened in shape.

Life history: Overwintered larvae pupate in spring in soil under host trees. Adults emerge in mid May and fly to new leaves. Eggs are laid in slits in young leaves. Larvae feed on tissue between the leaf surfaces, initially in individual mines, but these later coalesce to form brown blotches. There are two to three generations a year.

Overwintering: Mature larvae in debris.

Damage symptoms: Larvae feeding singly on tissue between leaf surfaces cause small kidney-shaped mines. As larvae grow larger these areas coalesce to brown, irregular, wrinkled blotches. Heavy infestations can cause browning of all the leaves. Affected trees may be killed but are more commonly weakened, leading to attack by other insects.

Monitoring: Adults emerge when Eastern red bud and crabapple bloom in late April to early May (Herms). Look for adults on new leaves. Yellow sticky traps can be used to monitor adult populations for each generation. Look for the brown kidney-shaped marks that indicate larval mine formation.

Cultural control: Replace susceptible species with more resistant ones, such as *Betula nigra*, river birch.

Chemical control: Soil applied systemic insecticides, such as imidacloprid, should be applied to the soil in the fall to kill adult and larval birch leafminer the following spring. Soil applied systemic insecticides, such as di-syston, should be applied to the soil in spring.

Biological control: The ichneumonid wasps *Lathrolestes nigricolis* and *Grypocentrus albipes* are considered the most important natural enemies. These were introduced into the Northeast from Europe, but have not spread to the Midwest (Guevremont and Quednau 1977). In addition, 17 parasitoids attacking native leafminers also attack this introduced pest (Cheng and LeRoux 1969).

Plant mortality risk: Low

Biorational pesticides: None

Conventional pesticides: acephate, bifenthrin, carbaryl, chlorpyrifos (nursery only), cyfluthrin, deltamethrin, di-syston, fluvalinate, imidacloprid, lambda-cyhalothrin, permethrin



Leaf mining damage caused by birch leafminer larvae. (28)
Photo: Whitney Cranshaw



Leaf mining damage caused by birch leafminer larvae, larvae exposed. (29)
Photo: Whitney Cranshaw



Leaf mining damage caused by birch leafminer larvae. (30)
Photo: John Davidson



Birch leafminer (continued)



Birch leafminer adult resting on leaf. (31)
Photo: Whitney Cranshaw



Birch leafminer adult. (32)
Photo: John Davidson