



Birch Leafminer : A Toronto Master Gardeners Guide

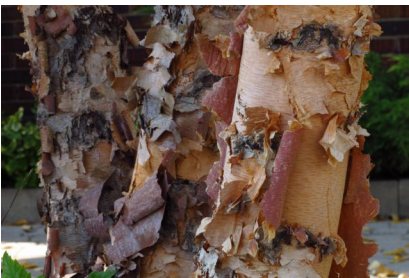
Birch leafminer (*Fenusa pusilla*) is the most common of several larval insects that mine birch leaves. This small sawfly is native to Europe but has become a major pest of birches in North America.

The adult sawfly is a small, black, 4-winged insect. The larvae look like somewhat flattened, creamy white caterpillars when mature. Immature larvae have darkened spots on the lower surface of the thorax. Larvae can be easily seen (together with their fecal matter) living within birch leaves, if the leaves are held up to the light.

The birch leafminer can attack all birches, but the white or paper birch (*Betula papyrifera*), grey birch (*B. populifolia*), and the European white birch (*B. pendula*) seem to be most susceptible.

Symptoms of Birch Leaf Miner

Damage is done primarily at the larval stage. The leaves are 'mined' causing blotched areas on the leaves that eventually turn brown. This damage, repeated through successive generations in one growing season, can cause a tree to appear dead with brown wilted leaves. Severe cases may result in defoliation of the tree. Mature insects can also cut holes into the top of the leaves.



Paper birch (*Betula papyrifera*) is one of the species that is more susceptible to birch leafminer.

Photo: Helen Battersby

Life Cycle and Habits

The insect overwinters in a cocoon in the soil. The adult sawfly emerges in May and flies to the newly expanding birch leaves, where the female deposits her eggs on newly developing or developed leaves. The small larvae hatch 5 to 8 days later. The larvae mine through the leaves and, when mature (7 mm), cut a hole in the leaf. They then drop to the ground, where they pupate and remain in the soil until maturing into the adult sawfly 2 to 3 weeks later, ready to start the cycle again. This cycle can occur 2 to 4 times a season.

Infestations do not usually kill the affected birch trees but may put the tree under stress and leave it more susceptible to other insects and disease organisms. If a tree is already under stress and unhealthy (e.g. under drought conditions), Birch leafminer damage can reduce the tree's vitality and contribute to its death.

Organic Management and Control Strategies

The best strategy for avoiding birch leafminer infestations is to plant birch species that are less susceptible to attack. These include river birch (*Betula nigra*), black birch (*B. lenta*), or yellow birch (*B. alleghaniensis*) – rather than the more susceptible white-barked types listed above.

Birch leafminers prefer sunny areas but will attack susceptible trees almost anywhere. If the infestation is a light one, try removing the infested leaves before the larvae mature. Adults may be sprayed with horticultural soap when they are at the egg-laying stage.

Birches tolerate leafminers best when they are planted in fertile soil with good drainage and adequate moisture. Birch tree roots do not compete well with lawn grasses. Remove any sod from around the trunk and provide a thick layer of mulch and enough water to provide healthy growth.

Following are tips for maintaining healthy birch trees:

- Roots of birch trees need a cool, moist, shady location. Proper site selection contributes to a long, healthy existence.
- Fertilizing is best done in early spring at the onset of the growing season. Lawn fertilizer applications around the tree may be sufficient.
- Prune any dead wood and remove the smaller of any branches that rub together. Birch tree pruning is best done after the leaves are fully developed (June to July).
- During the growing season, provide water during any drought conditions, thoroughly soaking the area around the tree at least once a week.
- To reduce the risk of mechanical damage from lawnmowers, weed eaters, etc. remove sod from around the base of the tree trunk and replace with a layer of mulch.

References

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3. Alford, David V. *A Colour Atlas of Pests of Ornamental Trees, Shrubs and Flowers*. Portland, Oregon: Timber Press, 2003.
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