

Powdery mildew is a common foliar disease of many tree species. The fungi that cause powdery mildew belong to the family *Erysiphaceae*. Most species of these fungi attack only one tree species. The powdery mildew appears as a white growth on the upper surface of the leaves. The powdery appearance comes from a mass of spores of the fungus covering the leaf surface. These spores are able to spread in air currents and cause new infections. The disease is most severe under dry climatic conditions, however high relative humidity is necessary for establishing new infections. Although unsightly, powdery mildew is considered to be a cosmetic problem, since the infection begins late in the summer, usually too late to cause significant damage to trees. The fungus overwinters on fallen infected leaves and on buds of trees.



Powdery mildew on Norway maple leaves



Powdery patches on Norway maple
(var. Crimson King)

Host and Damage

Norway maple is the most common host of powdery mildew in Toronto's urban forest, however the disease can affect almost any deciduous tree species. Some Norway maple varieties, such as Crimson King and Schwedler are highly susceptible to the disease.

The white powdery spots or patches may cover the entire leaf surface. Leaves that are heavily infected may become chlorotic and senesce early. Although unsightly, the disease does not cause serious damage to established trees. The infection varies with weather conditions and the resistance of specific cultivars.

Specific Management Practices for Control of the Powdery Mildew:

- Select varieties resistant to powdery mildew. This will not completely eliminate the problem, but it will reduce disease severity.
- Reduce humidity around the trees. Increased airflow and better exposure to the sun will reduce the infection.
- Clean up and dispose of infected leaves in the fall to prevent the overwintering fungus from producing spores next spring. Leaves may be composted by city composting programs.

General Management Practices to Improve Plant Health

- Water your trees during dry spells. Infrequent, but deep soaking preferably during the early morning hours is recommended. Water absorbing roots are located within the first 25 cm of the surface and extend outward further than the height of the tree.
- Place organic mulch, (e.g. wood chips), or living mulch, (e.g. ground covers) around the tree base to keep the soil moist for longer periods and encourage healthier roots.
- Avoid any unnecessary excavating, grade changes, soil compaction, root cutting or hard resurfacing around trees as these activities destroy vital roots which may lead to tree decline or death.
- Refrain from using high levels of salt or herbicides around trees.

Forest Health Care is a holistic approach to tree care that focuses on improving the health of trees in an urban environment. Our objective is a healthy, sustainable urban forest. Trees in urban forests are often stressed by compacted soil, drought, poor planting and pruning techniques, air pollution, road salt, damage from construction and much more. Trees planted in the right sites and properly maintained are less likely to suffer and are more resistant to pest problems.

Pest problems are managed using a decision making process that considers the following:

- Identification of the host and the pest.
- Monitoring of the host and the pest.
- Selection of the appropriate management strategy.
- Evaluation of the management plan.

Our focus is on pest management programs that are environmentally, socially and economically sound.