TORONTO
Parks & Recreation
Urban Forestry Branch
355 Lesmill Rd
Toronto, Ontario, M3B 2W8

Forest Health Care

Scales

A large number of scales feed on trees by sucking sap from leaves, twigs or stems. These insects vary in size, shape and colour. They form a protective scale, a shield-like body coating, as they mature. These coatings can be soft and waxy or hard and smooth, protecting not only the mother insect but her unreleased offspring as well. Scales are most vulnerable in the period soon after egg hatch, termed the "crawler stage". Young crawlers are mobile, but lose their legs once they find suitable plant tissues to feed on. They suck juices from the plant, using their thin, needle-like mouthpart. Scales overwinter as eggs, or immature females.

Fletcher scale,
Common on coniferous trees

Wooly alder aphid

Oystershell scale,
Common on hardwood trees

Magnolia scale

Hosts and Damage

Scales are often very host specific, attacking only a single or a limited number of host tree species. Others have a wide species range, feeding on numerous different tree species.

The damage to trees caused by scale feeding is usually insignificant, however increased population levels may cause a reduction in plant vigour and result in crown dieback. Feeding damage may be seen as yellow stippled or brown spotted leaves, curled chlorotic or dwarfed foliage and/or distorted plant parts. Heavy feeding over a few consecutive years may cause a steady annual dieback, or in severe cases mortality of the infested tree.

Honeydew produced in the feeding process falls on buildings, cars, sidewalks, shrubbery and landscaping near the infested tree and is often tracked into buildings. In late summer, a black sooty mould develops on this honeydew, staining these surfaces.

Specific Management Practices for Control of Scales:

- A jet spray of water from a garden hose may help to wash off the newly deposited sticky honeydew. Do this in the early morning hours, so the leaves remain dry for the rest of the day. Repeat every 10 days while feeding is heavy.

- If accessible, scales can be scraped or brushed off. By doing this, make sure that the tissue of the plant is not damaged.

- Small localized colonies of scales may be pruned out and destroyed, before infestations spread.

- Predators, parasites and pathogens that act as natural scale controls, may be attracted to your yard by planting ground covers and herbs.

- Most scales can be controlled by using dormant oil, applied after leaf drop in fall or before bud break in spring. Check your local Garden Centre for availability.

- Insecticidal soaps or summer strength oils, applied when the scale is most vulnerable as crawlers, may be used for severe infestations. Check your local Garden Centre for availability.

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 in the upper 25 cm of the soil and extend outward well beyond the canopy dripline.

- Place organic mulch, (e.g. wood chips), or living mulch, (e.g. ground cover plants) around tree bases to keep the soil moist for longer periods and encourage healthier roots.

- Avoid unnecessary excavating, grade changes, soil compaction, root cutting or hard surfacing around trees. These activities destroy vital roots, which may lead to the decline or death of trees.

- Refrain from using 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.

Photo credit: W. T. Johnson and H. H. Lyon, Insects That Feed On Trees and Shrubs, Second Edition, Cornell University Press.