



Parks, Forestry & Recreation

Urban Forestry Branch

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Forest Health Care Oak Wilt

Oak wilt, caused by fungus *Ceratocystis fagacaerum*, is a serious disease of oak trees. It attacks the water conducting system, causing branch wilt and tree death. The oak wilt fungus can infect oak trees through roots that are grafted between infected and healthy trees. It can also be spread by two groups of sap and bark feeding insects, which are attracted to any fresh wounds on oaks during the spring and early summer.

The proximity of oak wilt in forests of Central North U.S.A. shows that this serious disease can easily spread to Southern Ontario and Canada.

Host and Damage

This fungus only infects oak trees. The red oak group (e.g. red oak, black oak, pin oak) is more susceptible to infection than the white oak group (e.g. white oak, bur oak, English oak).

The symptoms of the disease are also different on these two groups of oaks:

Red oak group:

- Dieback of the entire crown, from the top and sides.
- Leaves turn yellow or brown from the tips and margins.
- Complete leaf drop in one year. Most trees die within a year.

White oak group:

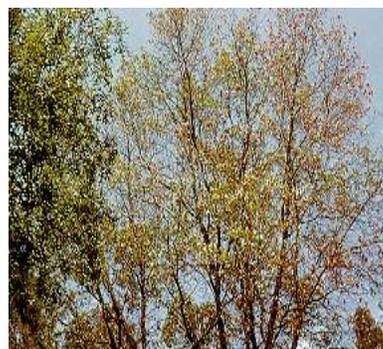
- Localized dieback of one or more branches.
- Leaves appear water soaked, dark green or tan and often remain on the dead branches.
- Death of the entire tree is rare, but may occur after a number of years.



Drying and tanning of leaves from tips to base

Left: red oak group

Right: white oak group



Dieback of the entire crown on red oak from the top and side

Specific Management Practices for Control of the Oak wilt disease:

- Oak wilt is a quarantine pest, not yet reported in Canada. If the disease is reported and it is confirmed by Canadian Food Inspection Agency (CFIA), an eradication program will be initiated by CFIA in co-operation with provincial and municipal Authorities.
- Early detection is the most important step to prevent the spread of this disease. If symptoms are observed, contact the City of Toronto, Urban Forest Health Specialist at 392-1436.
- Avoid pruning oak trees during the growing season, when the sap and bark feeding beetles are active. These insects can spread the oak wilt fungus.
- Guard against wounding oak trees. Wounds can be caused by human activity (e.g. lawn mowers, improper pruning), or by nature (e.g. storms, hail, and ice). Prune and paint these wounds immediately. Nurseries, garden centres and forestry equipment suppliers sell wound paints.
Note: wound paint is recommended only for preventing infection by specific diseases, and is not generally a recommended practice.
- There is quarantine established on oak firewood from the U.S.A. Do not use diseased oak wood for firewood. Undried firewood is an excellent breeding space for bark and sap feeding insects, the vectors of the oak wilt fungus.
- Root connections between infected and healthy oaks should be severed. This is a task for qualified tree care specialists and requires specialized equipment.

General Management Practices to Improve Tree 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.