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TREE FACTS

OAK WILT

Since the early 1930's, oak wilt has killed tens of thousands of oak trees.

CAUSE & SYMPTOMS

Oak wilt is caused by a fungus, *Ceratocystis fagacearum*, which invades the water – conducting vessels of the sapwood. When the fungus invades the vessels, certain cells develop balloon – like projections called tyloses, which extend into the vessels and plug them. This disrupts sap flow and causes the leaves to wilt. The fungus then can produce spore masses on fungus mats formed under the bark of infected red oaks.

Symptoms – Red Oak Group

Oaks in this group are more susceptible to oak wilt than oaks in the white oak group. Symptoms are usually seen in June and July but are occasionally observed throughout the summer. Leaves at the top of the tree or at the tip of lateral branches wilt first.

A slight curling and dull paling of leaves appear first at tips and edges and progresses towards the base. Leaves gradually turn brown or bronze and defoliation occurs within a few weeks. Trees wilted in late summer may not defoliate until the following spring.

Symptoms – White Oak Group

White and bur oaks are much more resistant to oak wilt. They often remain healthy after surrounding red oaks have been killed. Wilted and bronzed leaves appear only on scattered branches and leaf fall may be light. Infected white oaks may die slowly, and in some cases, they recover.

SPREAD

Oak wilt moves from infected to healthy trees in two ways.

1. *Through connecting root systems.*
Root grafts often unite oaks of the same group growing within proximity of one another. The oak wilt fungus spreads from infected to healthy trees through these root grafts.
2. *Through fresh wounds via insect vectors*
Insects, especially “picnic beetles”, spread the oak wilt fungus by carrying the spores from fungus mats on infected trees to fresh wounds, such as pruning wounds, on healthy trees.

CONTROL

Sever Root Grafts

Sever root connections between healthy and infected oaks to a depth of 4 feet about midway between the diseased and healthy oaks.

Where several oaks are present, place a second root barrier. This is because oaks within proximity of diseased trees may already be infected without showing symptoms. The barrier must be placed ahead of the fungus to do any good. Any device, which cuts or breaks the roots, can be used.

Fungicidal

In cases where mechanical disruption of root grafts is not feasible due to underground utilities or other physical obstructions, treatment with a fungicide is also very successful in limiting the spread of the disease. In cases of extraordinarily high disease pressure or very high value trees, fungicide treatment may be combined with root graft separation for increased protection. **The fungicide (propiconazole) is injected into the root flare of the tree and distributed throughout the vascular system from this point.** In general, protection lasts for two growing seasons, at which time re-treatment is recommended. For oaks in the red oak group, this is strictly a preventative treatment to be used when diseased trees are in close proximity to healthy trees. For oaks in the white oak group, the fungicide can be administered to diseased trees therapeutically with very good success. The decision on whether or not a diseased white oak can be saved depends on how far the infection has advanced and how much living crown will remain once the diseased portions are removed.

Avoid Untimely Wounding

Infection through wounds occurs commonly in spring between bud opening and full leaf development (usually April 15 – June 30). Do not log or prune during this susceptible period. Oak wounds are also susceptible following summer rains, so it is best to log or prune only from October 1 through March 30. If wounding occurs during the susceptible period, treat the wounds immediately with wound treatment compound or thick paint to prevent insect infestation.

Removal of Diseased Trees

In addition to severing root grafts where practical, diseased trees should be killed and removed to prevent the spread of spores from fungal mats on infected trees.

Quick Facts

- ◆ Oak wilt is a fungus.
- ◆ Oak wilt spreads in two ways: through connecting root systems and through fresh wounds.
- ◆ Infection commonly occurs through wounds.