



The Plant Doctor's LANDSCAPE TIPS

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Don't Let Your "OAK WILT"

INTRODUCTION:

Oak Wilt, caused by the fungus *Bretziella fagacearum* (formerly *Ceratocystis fagacearum*), is a devastating vascular wilt disease of oak trees (Photo 1). Although not proportionally epidemic as Dutch Elm Disease or Emerald Ash Borer, oak wilt is nevertheless **locally** destructive and costly to control. Oak Wilt is a difficult disease to understand, diagnose and control. It is suggested that professional help be obtained if Oak Wilt is suspected.

DIAGNOSIS AND SYMPTOMS:

Oak Wilt is recognized by several symptoms. Member of the red oak family, (pointed leaf lobes; examples-red, scarlet, pin) are generally more susceptible than members of white oak family (rounded leaf lobes; examples-White, Swamp White and Burr). One of the first signs of oak wilt is premature leaf fall during the summer months (Photo 2). Depending on how rapid the wilt occurs, the leaves may also wilt, turn brown/tan and hang on the tree. The ultimate symptom is death (Photo 1). Once members of the red oak family encounter the fungus, death is usually rapid, on the order of 4-6 weeks or less. If oaks are near one another, the disease may spread from tree to tree through the interconnecting root systems. Generally, in woodlots and dense oak landscapes, one tier of trees is killed every year as the fungus moves out from the original infection center in a radial pattern. The disease may be confused with other oak diseases; Anthracnose, Two-Lined Chestnut Borer, Cynipid Wasp Gall and herbicide toxicity are a few maladies frequently confused with Oak Wilt. Lab tests are often recommended to confirm Oak Wilt but are sometimes inaccurate.

DISEASE CYCLE:

The fungus resides short term beneath the bark in killed oak trees as fungal mats, also known as pressure pads (Photo 3). Various sap beetles, including the common picnic beetle (Photo 4), are attracted to the fruity odors emanating from the fungal mats, from which they haphazardly pick up some of the fungal mat spores. Sap beetles are also attracted to recent injuries on live oak trees to which they inadvertently transfer fungal spores. Injury usually occurs from storms and inappropriate pruning of oak trees during the warm season. Members of the red oak family die quickly, while members of the white oak family tend to die more slowly or may recover. Although the primary risk period for Oak Wilt transmission via sap beetles is in the Spring (April, May and June), some of us believe that the disease may also be spread during other times of the warm season. Once a tree becomes infected by sap beetle transmission to wounded trees, the fungus may spread (Underground) through root grafts to other nearby oak trees. This spread in a radial pattern is called an epicenter and is difficult to stop.

OAK WILT MANAGEMENT:

Once introduced into a forest, woodlot or landscape, Oak Wilt is lethal to oak trees and is usually quite costly and difficult to control. On occasion, whole neighborhoods may be affected. Hence, understanding Oak Wilt may help prevent the disease from becoming established in various locales. Following are some tips that should help manage the disease.

Avoidance: No Warm Season Pruning: Owners of oak trees need to be well advised that if necessary, pruning should only be done during the dormant, cold season. If trees must be pruned during the warm season, wounds should immediately be dressed with tree paint or wound dressing that acts as a barrier to transmission by sap beetles. Also, be cautious of dead-wooding oak trees; prune dead wood as though branches are live.

Prompt Storm Repair: If limbs are damaged during storms, they should be repaired within 12-24 hours. Repair includes clean-cutting jagged edges, possibly one to several feet from the injury, depending on time from the incident, followed by immediate application of a wound dressing barrier to prevent fungal transmission by sap beetles.

Fungicide Injections: Tree Injections with the fungicide propiconazole, sold under various trade names, using high volumes has proven to be effective in protecting red oak family trees from infection by root grafts. The fungicide will "cure" some white oak family members infected with the oak wilt fungus but will likely not cure infected red oak family member trees.

Trenching: Deep trenching, at least 5-6 feet in depth, can be a highly effective method to stop the spread of oak wilt through interconnecting root systems (root grafts), particularly in red oaks. Placement of trench lines can be an art and to cause as little root damage as possible while obtaining the maximum efficiency from trenching, it is advisable to seek professional assistance. A new "chemical trench" technique called "Glyphosate/Stump Cup" has been developed by the author and found to be highly effective and economical in some Oak Wilt situations.

If anyone has any questions or comments about oak wilt, please feel free to contact the author by phone (248/320-7124) or email (treedoctordave@gmail.com).

Author's Note: This One-Page Fact Sheet was designed to be distributed to inform Michiganders and Midwesterners of the dangers of the lethal disease Oak Wilt.



Photos 1: Large stands of oaks may be killed by the oak wilt fungus very quickly. At this location, oak wilt was transmitted "Overland" to oak trees by sap beetles after the oaks had been pruned. Only the lone oak on the left was not pruned but is still in jeopardy due to root graft transmission.



Photos 2: Premature leaf drop during the spring and summer is a strong indicator of oak wilt ... but may be caused by other maladies as well.



Photos 3: After members of the red oak family have been killed by the Oak Wilt fungus, fungal mats (pressure pads) often form beneath the bark. These fungal mats serve to spread the disease "Overland" by sap beetles.



Photos 4: The common picnic beetle, one species of sap beetle, can transmit the oak wilt fungus. The picnic beetle receives its name from its common intrusions into picnic events where it is attracted to odors emanating from potato salad, beer, wine, etc.