Photo 1: Premature leaf fall during the spring and summer is a strong indicator of oak wilt.

Photo 2: Large stands of oaks may be killed by the oak wilt fungus. In this location, oak wilt was transmitted to oak trees by sap beetles after the oaks had been pruned.

Photo 3: The common picnic beetle, one species of sap beetle, can be effective in transmitting oak wilt. 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.

Photo 4: In this particular situation, the oak wilt fungus advanced into this landscape from an adjoining property through root grafts.

The Plant Doctor's LANDSCAPE TIPS

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OAK WILT

INTRODUCTION:

Oak Wilt, caused by the fungus Ceratocystis fagacearum, is a devastating vascular wilt disease of oak trees. 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. Members 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. 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. Once members of the red oak family come in contact with the fungus, death is usually rapid, on the order of 4-6 weeks or less. If oaks are in close proximity to 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; numerous recent inquiries suggest that oak wilt is often confused with anthracnose on white oak species. Lab tests to confirm oak wilt are often inconclusive.

DISEASE CYCLE:

The fungus resides short term in killed oak trees as fungal mats, also known as pressure pads. Various sap beetles, including the common picnic beetle, are attracted to the fruity odor given off by the fungal mats, and pick up some of the fungal matter before haphazardly visiting live oak trees that have been recently injured. Injury usually occurs from storms and inappropriate pruning of oak trees during the warm season. Upon visiting recently wounded oak trees, sap beetles may inadvertently transfer some of the fungal matter to the wounded oak tree. 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 time 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 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.

Prevention: 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.

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: Injection of the fungicide propiconizole, sold under various trade names such as Alamo, 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, 3-4 feet in heavy clay soils and 5-6 feet in light sandy soils, can be a highly effective method to stop the spread of oak wilt through interconnecting root systems (natural grafts), particularly in red oaks. Placement of trench lines can be an art and in order to cause as little damage as possible while obtaining the maximum efficiency from trenching, it is advisable to seek professional assistance.

For more information, please feel free to email me at robertsd@msu.edu or contact a professional plant health care provider. The author, MSU or MGIA do not endorse any particular products. If using pesticides, be sure to read and follow label directions.

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