

Problem: Oak Wilt - *Ceratocystis fagacearum*



Hosts: Oak Wilt is most common on red oaks (including red oak, blackjack oak, pin oak), but it will also cause serious damage on certain other oaks, including shingle oak and post oak.

Description:

Oak wilt is a systemic wilt disease of oaks that is a problem in limited areas or pockets in the eastern third of the state. It has not been reported much west of Manhattan. The disease is usually found in oak woodlots or in urban subdivisions that were built in areas where native oak stands were present. The disease is rare in urban landscapes where pin oaks or other oak species were transplanted. It is highly unlikely you will find oak wilt in the middle of Manhattan, Topeka, Lawrence, Emporia, etc.

Oak wilt symptoms usually start in mid-May to early June and continue throughout the summer. Affected trees initially show a bronzing or wilting of leaves on an individual branch or in a portion of the tree crown. Leaves exhibit a "half-leaf" symptom where the outer half of the leaf scorches and turns red or brown, while the inner half of the leaf (nearest the petiole) remains green. The fungus will sometimes cause a brown streaking of the sapwood, but this symptom is difficult to find in small diameter branches and is not reliable as a diagnostic technique. Within a few weeks, the wilted leaves begin to drop. Wilting spreads throughout the tree canopy during the summer. Most red oaks are killed in one season.

Symptoms of oak wilt are easily confused with other problems including gas leaks, Ganoderma root rot, and Hypoxylon canker. If you suspect oak wilt, collect wood from wilting branches at least one half inch in diameter and 6 inches long. Alternatively, collect root pieces. Do not expose the branches or roots to high temperatures. The fungus is very sensitive to heat. Collect and mail samples on a Monday or Tuesday so they don't sit in the Post Office over the weekend.

The pathogen primarily moves from tree to tree through root grafts. Adjacent oak trees within 50 feet often have a common root system because roots are grafted or "fused" to one another. If one tree becomes infected, it is relatively easy for the fungus to move from tree to tree through a common root system. This root movement is why oak wilt usually occurs in pockets of trees. The oak wilt fungus may also be moved from tree to tree by insects and possibly by small mammals or birds. This method is not very efficient (unlike insect transmission of the Dutch elm disease fungus among elms). Therefore, it is important to concentrate on root-to-root spread of the oak wilt fungus.

Recommendations:

Control measures for oak wilt are similar to those for Dutch elm disease. Diseased oaks cannot be saved and should be removed and destroyed. Wood from diseased trees should not be saved for firewood! The only way the wood can be saved is to split and stack it, then cover the entire stack with 4 mil clear plastic. The plastic must be sealed to the ground (shovel soil over the edges), and no tears or holes should be present. Leave the wood tarped through the summer. To prevent root graft transmission of the fungus, trench to a depth of 3 feet between adjacent healthy and diseased trees. Avoid pruning branches in late spring. The sap weeping from wounds may attract insects carrying the oak wilt fungus.

What about fungicide injection? The fungicide Alamo (propiconazole) is labeled for preventive control of oak wilt but has not proven consistent and must be applied by a trained arborist. Fungicide injections should only be considered for healthy oaks adjacent to oak wilt pockets. Don't routinely inject healthy oaks in areas where oak wilt is not present or try to save diseased oaks with curative injections. Fungicide injections should be used in conjunction with and not as a replacement for other cultural management strategies.

References:

1. Diseases of Trees in the Great Plains, USDA Forest Service Pub RM-129, pg 100
2. [Tree Diseases in Kansas](#) , K-State Research and Extension Pub C-674, pg 16

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