Oak wilt

Ceratocystis fagacearum

Synonyms

None

Plant Hosts

All *Quercus* species. Red oaks are more susceptible than white oaks. The pathogen can also infect chestnuts (*Castanea* spp.), chinkapin (*Castanopsis* spp.), and tanoak (*Lithocarpus densiflorus*).

Symptoms

In red oaks, the disease is characterized by a very rapid wilting of infected trees. Red oaks wilt from the top of the crown down, usually within 2 to 4 weeks. Individual leaves wilt from the leaf tip and the margins to the leaf base, turning bronze or brown in color. The fallen leaves often remain green at the base. In white oaks, the leaf discoloration appears similar to autumn colors, rarely resembling the symptoms seen in red oak leaves. White oaks typically die one branch at a time, taking several years to succumb to the infection. In both red and white oaks, the fungus invades the sapwood of infected trees causing a browning of the vascular tissue.

Images from Dave French and Jenny Juzwik (U of MN)

Transmission

Tree to tree spread is accomplished through root grafts between neighboring oak trees. The fungus also forms sporulating mats underneath the bark of killed red oaks. These mats exude an odor that attracts sap- and bark-feeding beetles. The beetles become contaminated with fungal spores while feeding on the mats. When the beetles leave the mats to feed on wounded oak trees, they carry the pathogen's spores to those wounds.

Geographic Distribution

In the United States, from the Lake states to Texas, and over to the East Coast from Pennsylvania to South Carolina. Oak wilt is also present in Cananda. The fungus has been reported in four European countries (Bulgaria, Poland, Romania and Spain) although none of these reports have been officially confirmed