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## OAK WILT UPDATE IN MICHIGAN

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Oak wilt is a vascular tree disease that infects oaks growing in both the ornamental landscape and forested environments. Within recent years, new "pockets" of oak wilt have been identified near Higgins Lake, Interlochen, St. Helen and Wellston in the northern Lower Peninsula and in the Shaky Lakes area near Stephenson in the Upper Peninsula. Oak wilt is probably also present in other areas of Michigan but other agents such as gypsy moth or drought may be masking its presence.

The experience in Minnesota, where oak wilt is a very serious problem, has shown that this disease is more easily controlled through prevention rather than trying to "cure" infected trees. Therefore, in Michigan, foresters, landscapers, utility and road commission crews and other practitioners who are working around trees in the spring should become familiar with oak wilt disease and how to minimize its spread.

### **What is Oak Wilt?**

Oak wilt is a fungal disease that attacks the water conducting system of oak trees. To block the spread of the fungus, a tree produces gums and resins which plug these vessels and the tree wilts and dies.

This is mainly a problem of red oak trees. This group includes northern red oak, black oak and pin oak. Red oaks will die within a few weeks after becoming infected. White oaks are more resistant and the disease progresses more slowly. As a result, white oaks usually take several years to die from this disease.

### **How Does Oak Wilt Spread?**

Oak wilt is spread from diseased tree to healthy tree by root grafts. Sap-feeding picnic beetles may also carry the fungal spores from infected trees to healthy ones, however, root graft transmission is the most common way for trees to become infected. Transmission of this disease by picnic beetles is nonetheless important because they spread the oak wilt fungus into areas not previously infected. It is important to note that oak wilt, similar to other pests like gypsy moth or Dutch elm disease, has been inadvertently brought into an area by unsuspecting people. Firewood infected with oak wilt is probably the most common way in which this disease has been introduced into new areas, allowing picnic beetles access to the fungus.

### **Preventing the Spread of Oak Wilt**

If there is no oak wilt in your immediate vicinity, then the insect poses the greatest danger for introducing the fungus into your area. Oak trees are only susceptible to insect infection during the spring, when rapid new growth is occurring. Because picnic beetles cannot chew through the bark

of trees, fresh wounds are necessary to successfully introduce the fungus into a tree's water conducting system. Thus, any wound made by pruning or mechanical injury to an oak tree during the spring creates an entry point for infection.

As a result, prevention is easy to accomplish - simply do not injure or prune oak trees during May or June. Remember, once a single tree becomes infected, the fungus will begin to spread to nearby oaks through interconnected (grafted) root systems. Root grafts between oak trees of the same species are very common and have been reported to occur between trees up to 50 feet apart. Consequently, prevention is critical. It is much easier, cheaper and more effective to practice prevention than trying to control the spread of the disease between infected and healthy trees.

### **Controlling the Spread of Oak Wilt in Infected Areas**

Controlling the spread of the oak wilt fungus between healthy and infected trees is simple in theory but difficult and expensive in practice. The key to stop the fungus from spreading is to create barriers by severing the root grafts between healthy and infected trees. Removing infected trees is simply not enough because by the time the wilt is evident within an oak tree, the fungus has already spread throughout the tree and roots. In fact, removing an infected tree BEFORE the root grafts have been severed can actually speed the movement of the fungus into surrounding trees.

Vibratory plows (also called cable plows) or trenchers with 5 foot blades or booms are the most effective way to break interconnected root systems. Some success has also been achieved in severing root grafts by using chemical pesticides that kill roots which creates a barrier against the spread of the disease. The most common pesticide used for this purpose is Vapam or SMDC.

Whichever method is used, the placement or location of these barriers is extremely important to their effectiveness. Two lines of barriers should be made around the infected tree (see illustration in enclosed publications). The primary barrier is the one placed in the outermost ring or circle between living trees growing next to obviously diseased ones and the outer ring of trees that are healthy. A secondary barrier, placed on the inside ring or circle between diseased and apparently healthy trees may not be adequate by itself in controlling the spread of the oak wilt fungus. Often, these apparently healthy trees are already infected by the disease.

### **Summary**

While oak wilt disease has been detected in Michigan for many years, recent, rapidly moving outbreaks are cause for concern. Since oak wilt is very difficult and expensive to control once it is detected prevention is the key to successfully dealing with this disease problem. The first step for tree practitioners is to educate themselves about this disease and implement the necessary changes in their operations to prevent oak wilt from establishing itself in their area.

For more information concerning oak wilt, contact: Mr. Roger Mech, Forest Pest Specialist, MDNR Region II Headquarters, P.O. Box 128, Roscommon, MI 48653, Telephone: (517) 275-5151.