Summary of Oak Wilt Presentation – July 15, 2008

Note: Most of the information below is taken from the U.S. Dept. of Agriculture/Forest Service brochure on How To Identify and manage Oak Wilt in Texas.

Oak Wilt is one of the most destructive diseases in the U.S. It is currently killing oak trees in Texas at an epidemic proportion. The City Arborist has told us that Oak Wilt is currently affecting trees in the northeast corner of our neighborhood (in the Malone area). There are also signs of Oak Wilt in other areas close to our neighborhood – the Kellywood area; by the new apartments across from Bowie High School; and around the Veloway.

Additional Oak Wilt Information. For those desiring additional information on Oak Wilt, please consult the following:

Texas Forest Service website: www.texasoakwilt.org

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Identification of Oak Wilt. Foliar symptoms, patterns of tree mortality, and the presence of fungal mats can be used as indicators of oak wilt. However, laboratory isolation of the fungus is recommended to confirm the diagnosis. A trained expert should be consulted when in doubt.

Most live oaks defoliate and die over a 1- to 6-month period following initial appearance of symptoms. Some live oaks take longer to die and a few untreated trees may survive many years in various stages of decline. A few live oaks in oak wilt centers escape infection or may be resistant to the fungus and apparently remain unaffected by the disease.

Red oaks seldom survive oak wilt and often die within 3 to 4 weeks following the initial appearance of symptoms. During summer months, diseased red oaks often can be spotted from a distance because of their bright autumn-like coloration in contrast to the surrounding greenery.

Foliar Symptoms. Leaves on diseased live oaks often develop chlorotic (yellow) veins that eventually turn necrotic (brown), a symptom called veinal necrosis. Defoliation may be rapid, and dead leaves with brown veins often can be found under the tree for months after defoliation. Leaves may exhibit other patterns of chlorosis and necrosis such as interveinal chlorosis, marginal scorch, or tip burn, but these symptoms are less reliable than veinal necrosis for diagnosing oak wilt in live oaks.

Foliar symptoms of oak wilt on red oaks are less distinct. In early spring, young leaves simply wilt, turning pale green and brown. Mature leaves develop dark green water soaking symptoms or turn pale green or bronze, starting at the leaf margins and progressing inward.

Fungal Mats. Fungal mats are reliable indicators for diagnosis of oak wilt. These specialized spore-producing structures most often form in spring on red oaks that developed advanced symptoms of oak wilt the previous late summer of fall. Red oak infections in late spring and summer usually do not give rise to fungal mats due to high temperatures and low soil moisture conditions. Fungal mats can be found by looking for inconspicuous narrow cracks in the bark of dying red oaks leading to hollow areas between the bark and wood. They often have a distinctive odor similar to fermenting fruit. Fungal mats can be exposed for inspection by chopping away the lose bark.

Laboratory Diagnosis. Oak wilt diagnoses may be confirmed by isolating the fungus from diseased tissues in the laboratory. Samples can be submitted to:

Texas Plant Disease Diagnostic Laboratory
1500 Research Parkway, Suite A130
Texas A&M University Research Park
College Station, Texas 77845

A county extension agent, Texas Forest Service forester, or trained arborist should be consulted for proper collection and submission of samples.

For pictures, please refer to the Texas Forest website: www.texasoakwilt.org.

Spread of Oak Wilt. Red oaks appear to play a key role in the establishment of new infection centers. The oak wilt fungus may be spread over land by insect vectors and by man through movement of wood from infected red oaks to other locations. Fungal mats form beneath the bark of certain diseased red oaks in late fall and especially in spring, but do not form on live oaks. Individual fungal mats produce spores for only a few weeks. The fruity odor of fungal mats attracts many kinds of insects, the most important of which are believed to be sap-feeding nitidulid beetles. The fungus possibly may be transmitted by these small beetles as they emerge from mats and visit fresh wounds on healthy trees, both red oaks and live oaks. Fungal mats are most commonly formed on standing trees, but they can also develop on logs, stumps, and fresh firewood cut from diseased red oaks.

In live oaks, oak wilt may be transmitted from one tree to another through their interconnected root system. As a result, patches of dead and dying trees (infection centers) are formed. Infection centers among live oaks in Texas expand at an average rate of 75 ft. per year, varying from no spread to 150 ft. in any one direction.

Occasionally, the oak wilt fungus is transmitted through connected roots between red oaks, but movement through roots is slower in red oaks and occurs over shorter distances than in live oaks.

Oak Wilt Management. Early detection and prompt action are essential for successful management of oak wilt. The specific measures taken depend on several circumstances, but should include combinations of the following:

Prevent New Infections

- Cut and dispose of diseased red oaks immediately.
- Avoid wounding oak trees, including pruning, from February through June, and paint all wounds and fresh stumps regardless of season.
- Handle oak firewood cautiously, burn all firewood before spring, and never store unseasoned oak wood from infected trees near healthy oaks.
- Cover unseasoned firewood (from infection centers and unknown origins) with clear plastic, and bury the edges of the plastic.

Stop Spread Through Roots

- Install a trench at least 4 ft. deep and 100 ft. beyond the perimeter of infection centers to break up root connections.
- Cut or uproot all trees within the 100-ft. barrier (except those injected with fungicide).

Inject High-Value Oaks with Fungicide

- Identify susceptible, high-value oak trees in proximity to expanding oak wilt infection centers.
- Consult a trained and licensed arborist (with certified applicator's license) for treatment of susceptible trees with injections of propiconazole.

Plant Resistant Trees

- Plant trees resistant or immune to oak wilt.
- Favor a diversity of tree species in the landscape by planting trees that are adapted to central Texas
- Avoid wounding susceptible oaks during planting.