Save Your OAKS from OAK WILT
by Rich Hauer

Oak trees are a valuable resource in the woodlands and landscapes of Minnesota. Oak wilt is a vascular wilt disease that kills thousands of oak trees annually in Minnesota. Oak wilt, while deadly to oaks, is easily controlled and prevented if proper measures are taken. During the last decade great strides have occurred in reducing the incidence of oak wilt at the local level through oak wilt management programs. Cost-share assistance from state and federal funding sources, public education and training community oak wilt practitioners have been part of the solution towards the goal of bringing oak wilt to manageable levels. In the last few years a fungicide called Alamo has been found effective at reducing trees from becoming infected and saving high valued trees in landscapes.

Ever since oak wilt was discovered in the 1940’s several methods to control this disease have been tested. Most of these have focused on preventing transmission through grafted root systems. Underground transmission accounts for approximately 90 percent of new oak wilt infections. Approximately 10 percent of new oak wilt infections occur through sap feeding beetles that transmit the disease overland from diseased to healthy oaks. Overland transmission is how new infection centers start. Control of overland transmission involves the removal of red oaks prior to April that will have infectious fruiting bodies of the fungus in April, May or June, and avoiding wounding any oaks during those three months. In contrast, control of underground transmission has focused on preventing transmission through grafted root systems.

During the last several decades methods to stop the underground transfer of the disease have been implemented and refined. These revolve around disrupting the grafted root systems through mechanical or chemical means. Chemically, Vapam which is a soil sterilent has been used to kill root tissue and stop underground transmission. Unfortunately, the historical success of Vapam has been around 55 percent. Herbicides including 2,4-D based products, Garlon 4, and Stalker have also been experimentally tested. The protocol involves killing healthy oaks that surround diseased oaks in an attempt to form a barrier by killing root tissue and ideally stopping underground disease movement. To date the success has been limited with some protocols and others look promising but final outcomes are yet unknown.

Mechanical root graft separation using tractors that either pull a vibratory plow or a trencher have shown the greatest success at stopping oak wilt and are also the least expensive treatment method. Experience with oak wilt on the Anoka sand plain type soils suggests cutting to a five foot depth has an effectiveness around 90%. This is for trees that are beyond the primary barrier (i.e., most effective barrier), or trees that are approximately 30 to 50 feet beyond actively wilting trees (Figure 1). Healthy oaks closer that are described to be between the secondary and primary barrier (i.e., less effective). Success is less than 90% and often described at approximately 60%. Trees near the diseased oaks, approximately within 10 to 15 feet, have historically been difficult to save with great success. Fortunately the introduction of the fungicide Alamo that is injected into oaks can prevent infections in those trees with promising success.

Figure 1. Root graft barriers to control underground spread of oak wilt.

Solid line = primary barrier
Dashed line = secondary barrier
Adapted from USDA-FS

If the disease has entered the oak through the root system the tree cannot be saved. In addition, red oak member trees (i.e., Northern red oak and Northern pin oak) that become infected cannot be saved. However, white oak member trees that become infected through overland transmission can be treated therapeutically and saved. Over the last several years a 90% success rate with Alamo treatments for oak wilt in Minnesota has been documented.

The primary focus of oak wilt management still focuses around isolating healthy from diseased trees through disrupting interconnected root systems and the sanitation removal of red oak trees that will be infectious in April, May and June. These conventional methods are still the most cost effective. Trees that cannot be isolated through root graft disruption and potentially oak trees within the secondary barrier are the target use of Alamo. Many of these trees historically could not be saved. Further, prevention of oak wilt infections with Alamo is often less costly than the cost and losses associated with tree removal, tree replanting and reductions in property values associated with tree loss.

Alamo is injected into healthy oaks trees before the fungus has entered the tree. The chemical is introduced into the tree through small holes drilled into tissue at the root flare area (Figure 2). The number of holes and amount of chemical to inject are determined by tree size. Alamo, which contains the active ingredient propiconazol, is labeled for use on oaks to treat oak wilt. Practitioners often wonder if the product Banner, which contains propiconazol, can
Facing unstable commodity prices, uncertain weather, and escalating costs of doing business, farmers watch their pocketbooks with a wary eye even in good years.

Minnesota farmers have their own unique set of challenges with which to cope. One major challenge has been the heavy tax burden they carry in comparison with farmers in other states. Although not the only factor, Minnesota’s higher-than-average taxes have contributed to our farmers’ economic problems by inflating production costs for a gallon of milk or a bushel of corn. Because their “break-even point” is higher, farmers with higher production costs are the first to feel the financial pinch of sinking commodity prices.

Early on, Governor Ventura recognized that Minnesota’s high taxes were weighing down our farm economy. That’s why he led the charge to lighten farmers’ tax load. Under a bill he signed recently, property taxes on Minnesota farmhouses and surrounding homestead land will drop an average of 25 percent. Taxes on other agricultural land will drop by an average of 14 percent. According to Minnesota Department of Revenue estimates, the property tax cuts will save Minnesota farmers $68 million in 2002.

The tax cuts closely follow the budget proposal offered last winter by the Ventura Administration. Their enactment has been a high priority in our overall plan for helping Minnesota farmers. Add in the $52 million in permanent property tax breaks passed in 1999, and Minnesota farmers will now have seen their property taxes drop by more than $120 million since Governor Ventura took office in 1999.

Reducing farmers’ tax burden has been a high priority for the Ventura Administration because we realize that when we cut taxes, we have a meaningful impact on farmers’ pocketbooks. Cutting taxes means cutting farmers’ production costs. Lowering production costs makes them more competitive when it comes time to sell their corn, beans or other commodities in markets across the country or around the world. And with 94 percent of the world’s population outside the U.S., states that are not able to compete in export markets will see their agricultural sectors suffer.