



# NORTHERN HARDWOOD NOTES

## Dutch Elm Disease

Since its discovery in the United States in 1930, Dutch elm disease has killed thousands of native elms. The three native elms, American, slippery, and rock, have little or no resistance to Dutch elm disease, but individual trees within each species vary in susceptibility to the disease. The most important of these, American elm, is scattered in upland stands but is more abundant on wetter sites and along river bottoms.

Dutch elm disease continues to spread and intensify. In the past decade, a more aggressive strain of the fungus has appeared in the Midwest, causing additional losses to the remaining elm population. As long as susceptible elms are available, Dutch elm disease will be present in hardwood stands. However, because of the variations in susceptibility, some elms will persist and in future years this disease will become endemic.

Recognizing Dutch elm disease during early to mid-summer is easy. Infected trees have wilted, yellow foliage on one or more branches. At times, an entire crown will wilt all at once. Infected branches develop a brown stain just under the bark. During late summer, Dutch elm disease is more difficult to identify because of color changes associated with natural leaf drop.

Dutch elm disease is spread from infected to healthy trees by root grafts and bark beetles. The most important insect vectors are the native elm bark beetle and the smaller European elm bark beetle. These beetles emerge from infected trees carrying fungus spores that they transmit to healthy trees as they feed. The spores germinate in beetle galleries and the fungus spreads through the tree, eventually plugging the water-conducting system.

Losses to Dutch elm disease in hardwood forests vary in severity. Generally, the more American elms in a stand, and the more concentrated they are, the more severe are losses from the disease. Although elms of all sizes are susceptible to Dutch elm disease, seedlings and saplings are less susceptible than larger trees because they are not attractive to the bark beetles and are less likely to root graft. Control of Dutch elm disease in hardwood stands is generally not feasible, but you should salvage commercial-size American elms if they make up a significant portion of the stand.

## Reference

Stipes, R. Jay; Campana, Richard J., ed. Compendium of elm diseases. St. Paul, MN: The American Phytopathological Society; 1981. 96 p.

*James W. Walters*