

# Dutch Elm Eisease

## Development, Management and Control

### *Disease development:*

Infected elms may seem to die very suddenly, and many times they do. However, **the relationship between host and parasite is not a simple one.** The traditional view has been that infections and much of the damage done by the pathogen happen in the spring and early summer. While these observations are largely true, recent artificial inoculation studies have shown that a proportionately large number of ultimately deadly infections occur in the late summer and fall, coincident with the presence of large bark beetle populations that can develop when dead and dying elms are present. Fortunately, the vast majority of encounters between bark beetle and tree do not result in infections. Also, most infections that do start are suppressed by the trees' natural defenses. Even when symptoms begin to develop, the trees recover. Many factors are at work, including the vagaries of climate, site conditions, overall tree health and the genetics of host and parasite. The unfortunate bottom line is that most ultimately fatal infections are not discovered until other nearby elms are also in danger because the fungus often moves from infected to healthy trees through common roots that form by grafting when two or more compatible elms grow up together on the same site.

### *Cultural Control by Sanitation and Root Graft Disruption:*

Dutch elm disease management is not an intellectually challenging endeavor. It does not hide behind the door and sneak up on us when we are not looking. It is a contagious disease in every technical sense of the word. Its presence is evident in dead and dying elms. **The critical trick** is to find each and every diseased elm as early in the disease cycle as possible, and promptly deal with it as individually appropriate. If a diseased elm can be found and removed before the fungus becomes systemic and gets into the root system, then both bark beetle transmission and root graft transmission of the fungus is prevented. Indeed, sanitation is the cornerstone of all successful municipal Dutch elm disease control programs, and is principally responsible for the continuing presence of thousands of invaluable mature elms in cities and towns all over Minnesota. Money, trees and vast expanses of time required to grow them have been saved by aggressive municipal programs. When infections do become systemic and root graft transmission is threatened, barriers that cut the common roots can sometimes be dug with a trencher or vibratory plow. However, if the site is not accessible, or barriers cannot be effectively placed, prompt removal of the diseased elm is imperative to prevent bark beetle breeding and subsequent overland transmission of the fungus.

### *Chemical Control by Systemic Fungicide Injection:*

Even under the very best cultural control situations, there will always be some risk of infection for individual specimen elms. Since the late 1970's, particularly valuable landscape specimens, or other trees in imminent danger of infection, have been effectively treated with systemic fungicide injections. **Arbotect 20-S** has a long track record of outstanding efficacy, even under very challenging conditions, but it also kills living parenchyma cells and causes large volumes of defect around and above the injection site. There is now an equally effective product called **Alamo**, which is much easier on the tree's wood near and above the injection site. For a few fortunate elm owners, fungicide injections have even saved trees which were already infected. However, if the pressure is on, waiting for disease to develop is very risky. **Dutch elm disease is a virulent killer! You can look to Top Notch Treecare for dependable information and professional Dutch elm disease management services.**

**References:**

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