

Protection from Dutch Elm Disease

Dutch elm disease continues to kill thousands of trees each year throughout our communities.

Dutch elm disease is a lethal tree disease caused by an aggressive fungus.



The most common method of transmission of Dutch Elm Disease is on the bodies of the elm bark beetle.

- 2 - 3 generations of elm bark beetles hatch each year
- Thousands of beetles may hatch from a single tree

What is the Cause of Dutch Elm Disease?

Dutch elm disease is caused by an aggressive fungus (*Ophiostoma novo-ulmi*) that kills elms regardless of their health. It is considered the most costly shade tree disease ever and will remain active in a community as long as there are susceptible trees. The fungus invades the water transporting vessels and produces toxins to which the tree reacts. In defense to the toxins the tree produces gums and internal growths designed to block the advance of the fungus. The combination of the toxins and the defense mechanisms of the tree inhibit water flow to the crown, which causes wilting and tree death.

How Does Dutch Elm Disease Spread?

Female elm bark beetles lay their eggs beneath the bark of dead and dying elm trees. If the elm is infected with Dutch elm disease the newly hatched beetles will emerge from the tree carrying the deadly fungus on their bodies. The beetles fly to healthy trees to feed on 2 - 4 year old branches and thereby spread the disease.



Elm infected with Dutch elm disease



Elm bark beetle feeding in 2 - 4 year old branches

Besides beetle transmission, Dutch elm disease may also spread through grafted roots. When elms grow in close proximity to each other, their roots can come into contact and graft together. This common root system provides the fungus with a pathway to spread through an entire stand of healthy elms very quickly.

What are the Symptoms of Dutch Elm Disease?

Dutch elm disease symptoms begin to develop 4 - 6 weeks after infection. The first noticeable symptom that results from the fungal occupation of the water conducting vessels is wilting or "flagging" of one or more branches, usually starting at the branch tip. Leaves on infected branches turn dull green to yellow, curl, and become dry and brittle. As the infection spreads the wood beneath the bark displays a brown discoloration.

Dutch Elm Disease Life Cycle

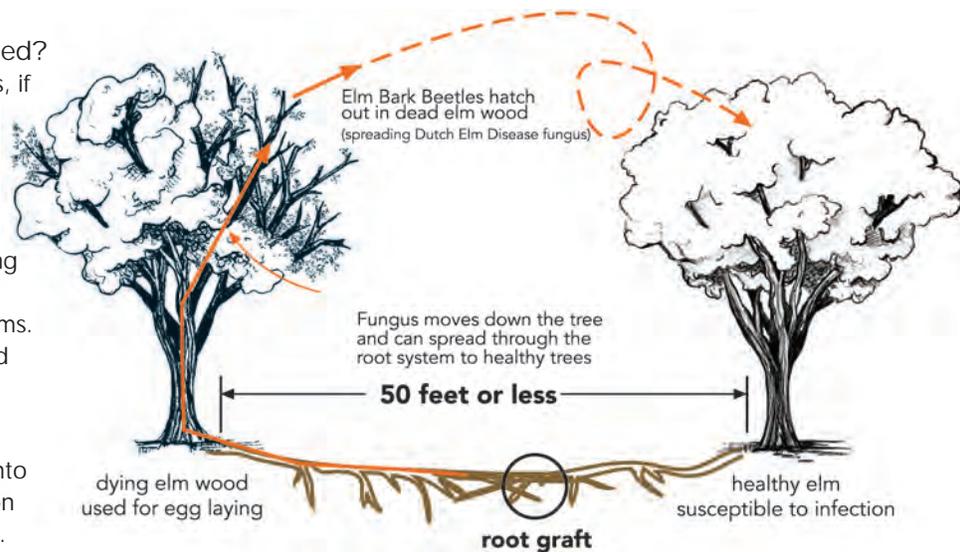
What Can I do if My Tree is Already Infected?

Most infected elms cannot be saved. In rare cases, if the fungus has not moved into the root system, physically cutting out the infected portions of the tree, with a process called tracing, can save the elm.

Sanitation is the most important tool for controlling Dutch Elm Disease on a community-wide basis. It involves identification and removal of diseased elms. Such practices eliminate beetle breeding sites and reduce the number of disease carrying beetles.

Root Grafts

Dutch Elm Disease can pass from infected trees into healthy trees through grafted roots. Macro-infusion of Arbotect does not prevent root graft infections. The only way to reliably prevent root graft transmission of the fungus is to physically sever the common root system.



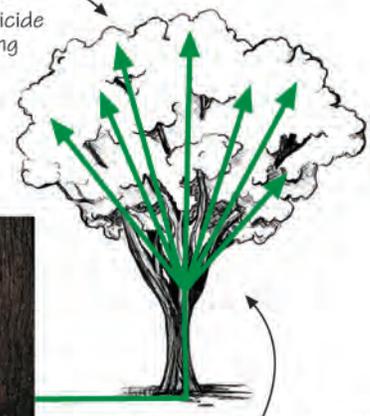
Dutch Elm Disease Protection

How Can I Protect My Elm Tree?

The goal when protecting elms from the Dutch Elm Disease fungus is to evenly and completely distribute a fungicide chemical throughout the entire canopy of the tree.

- To protect a tree from beetle-transmitted fungal infection, Arbotect fungicide must be evenly and completely distributed throughout the 2 - 4 year old branches.
- The only way to get even distribution is by the tree injection method called macro-infusion. Macro-infusion injects a large volume of solution into the root flares of the tree. This solution is then transported throughout the canopy providing a protective fungicide barrier.
- Arbotect fungicide does not protect elms from root graft infection. You need to physically sever the root system from neighboring trees by trenching at least 36" down.

Arbotect is the only scientifically proven fungicide to provide multiple growing seasons of protection.



Arbotect fungicide alone has the unique ability to move into newly formed sapwood, while resisting degradation resulting from cold, heat, and other adverse conditions.