

# Dutch Elm Disease

## A Disease That Kills Elm Trees

Dutch elm disease is caused by an aggressive fungus that kills elms regardless of their health. It is considered the most costly shade tree disease in history and will remain active in a community as long as there are susceptible trees. The fungus invades the water transporting vessels of healthy elm trees. The affected vessels are plugged by the tree's defenses in an attempt to stop the advance of the fungus. The result is wilting and tree death as water flow is blocked from its normal flow to the crown of the tree.

## How Dutch Elm Disease Spreads

Female elm bark beetles lay their eggs beneath under 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 spread the disease to new trees when they fly to healthy trees to and feed on 2 - 4 year old branches. Dutch elm disease may also spread through grafted roots. When elms grow close 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.

## Disease Symptoms

- Symptoms begin to develop 4 - 6 weeks after infection.
- Wilting or "flagging" of one or more branches, starting at the branch tip.
- Infected branches turn dull green to yellow, curl, and become dry and brittle.
- Canopy die-back from the top down.

## Preventive Treatment

Injection with Arbotect® Systemic Fungicide can protect your elm from the Dutch elm disease for three growing seasons. We have developed our macroinfusion process to thoroughly distribute fungicide throughout the entire canopy of the tree. Arbotect® fungicide does not protect elms from root graft infection. To protect elms from disease spread by root grafts, it is necessary to sever the root system from neighboring trees by trenching at least 36" below the surface of the ground.



Elm Diseased with Dutch elm disease



Elm Bark Beetle



Macro-Infusion Injection