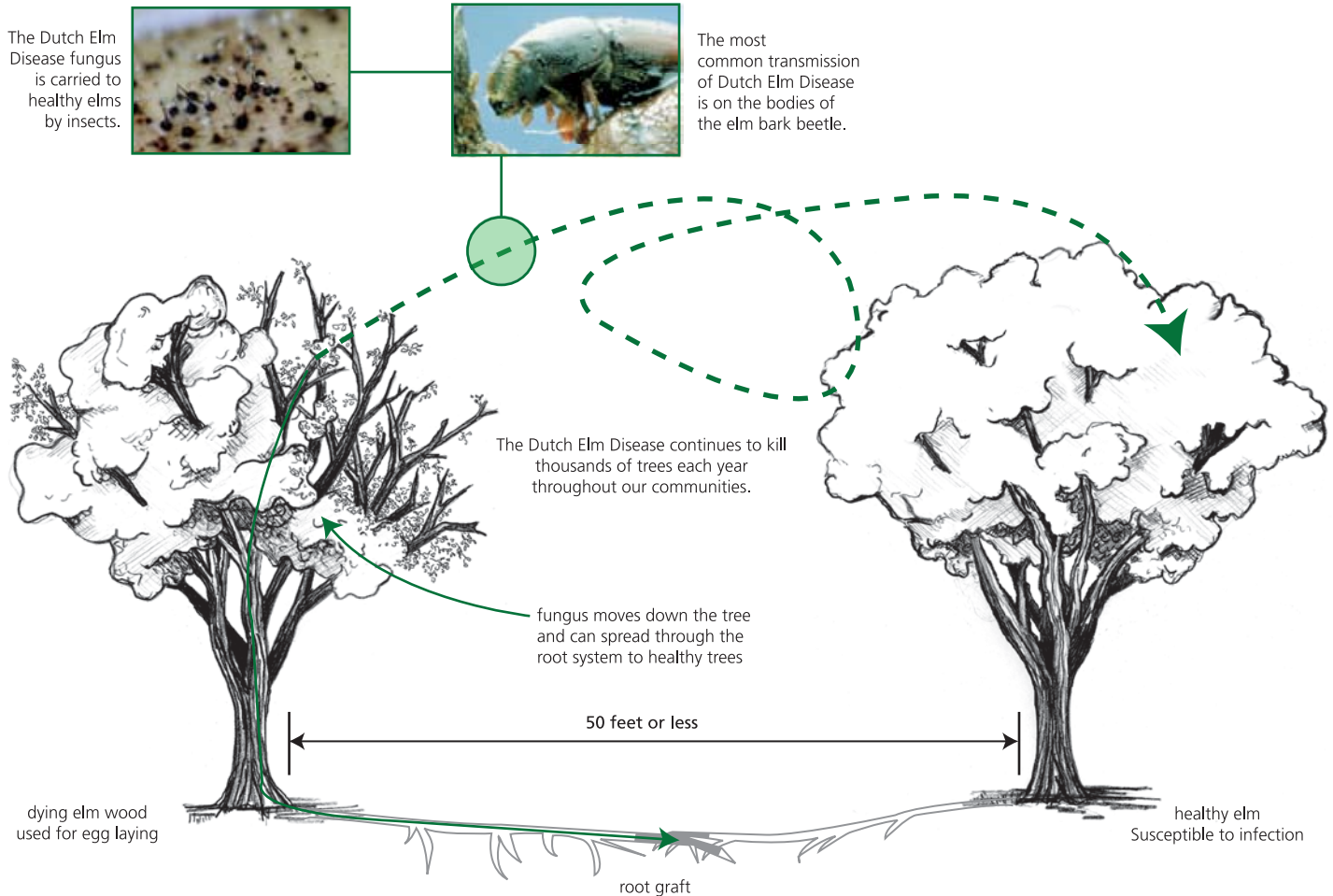


## Facts and protection about Dutch Elm Disease



### What causes Dutch Elm Disease?

Dutch Elm Disease is caused by an aggressive fungus (*Ophiostoma-ulmi*) that kills elms regardless of their health. It is considered the most costly shade tree disease ever and will remain 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 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.

- Two to three generations of elm bark beetles hatch each year
- Thousands of beetles may hatch from a single tree

### What are the symptoms of Dutch Elm Disease?

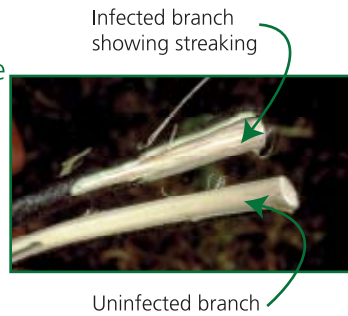
Dutch Elm Disease symptoms begin to develop 4-6 weeks after infection. The first symptoms that result from the fungal occupation of the water conducting vessels is wilting or "flagging" of one or more branches, usually starting at the branch tip. Leaves on infected branches turn dull green to yellow,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



**Flagging** is a grouping of yellow or wilting leaves is an early sign of Dutch Elm Disease

## What can I do if my tree is 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 them.





## Sanitation



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.



## How can I protect my Elm tree?

The goal when protecting elms from 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 (an EPA registered fungicide), must be evenly and completely distributed through-out the 2-4 year old branches.
-  The only way to get even distribution is by macro-infusion of a large volume of solution into the root flares of the tree.

-  Arbotect is a fungicide that protects elms from beetle-transmitted infection, and is the only fungicide that provides three growing seasons of protection.
-  Arbotect does not protect elms from root graft infection.



Typical application time is 60 to 90 minutes



Arbotect® Micro-Infusion System provides three growing seasons of protection from Dutch Elm Disease.

## Scientifically proven and field tested

Arbotect has been shown through research to be effective for the protection of elms from Dutch Elm Disease by the University of Minnesota and the State University of New York. Arbotect alone has the unique ability to move into newly formed sapwood while resisting degradation resulting from cold, heat and other adverse conditions. More arborists and tree care companies across the United States reach for Arbotect fungicide, in the battle against Dutch Elm Disease, than any other product. It keeps saving elm trees year after year. Nothing else comes close.

# Sherdec Tree Service



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