



# Township of Bernards Shade Tree Commission

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## The American Elm (*Ulmus Americana*)

European colonists loved the American elm because of its graceful branching and similarity to the European elm that they also loved. The symmetry of the elm in their minds greatly exceeded that of all other large deciduous shade trees. As cities and towns were built, elms were often planted along the streets to produce an allee of shade. The tree was widely promoted, and as a result it was planted extensively in New Haven, CT which was known as "Elm City", in Detroit (600,000 trees), and in Minneapolis (400,000 trees).

The tree wasn't of any great value for its wood as the close fiber network and twisted contour made it very difficult to split and cut. As mechanical cutting methods were developed some uses were found for building wagon wheels, barrel staves, and automobile frames. The intricate fibers held screws very well.

The natural growth range for the American elm is more in the east extending up into the cold areas of Canada and southward into Texas. It is cold hardy to minus forty degrees below zero and can eke out a living and germinate in disturbed non-fertile sites. Its ability to regenerate is partially due to high seed production and that the seeds germinate while fresh and not needing cold treatment.

It was a shock to have the Dutch elm disease arrive in Maplewood, NJ about 1930 by importation of wood burls and packing material from Holland. The disease quickly spread throughout the country and into Canada. Unlike the chestnut blight it did not kill all the trees but elms have continued to succumb over the years and few remain today.

The disease originally entered Holland from Asia in 1920 hence its name Dutch elm disease (DED). It quickly killed all of the elm trees in the surrounding low countries in Europe. By 1922 a young researcher found that a fungus carried by a bark beetle was the cause of DED. Commercial treatments to kill the beetle have been abandoned because of toxicity to fish and wildlife. Unfortunately once the

tree is infected by the fungus it succumbs within a few months and is not treatable. Fungicidal injections can be administered to valuable American elms to prevent infection. Such injections generally are effective as a preventive measure for up to two years.

But some trees, estimated to be about 1/100,000, have been identified that are immune to DED. Several selections have been made and are being further evaluated. They are known as 'American Liberty' group; the specific cultivars are 'Valley Forge', 'New Harmony', and 'Jefferson'. The most recent test trials began in 2005 at the Rutgers University test plot in Cream Ridge, NJ on Route 539. Some selections have found to be highly resistant. Another DED resistant is 'Princeton' that was identified here in New Jersey about 100 years ago. These cultivars are now available at leading edge nurseries.

An Asian species, lacebark elm (*Ulmus parvifolia*), is highly resistant to DED and is now available in the trade.