

The American Elm: "It's Back"

By MARK STENNES

Plant Pathologist, ISA Board Certified Master Arborist
S & S Tree Specialists

It's gratifying for this old arborist and shade tree pathologist to be able to report that American elm (*Ulmus americana*) is once again showing up on our pallet of trees to choose from when we have a suitable space.

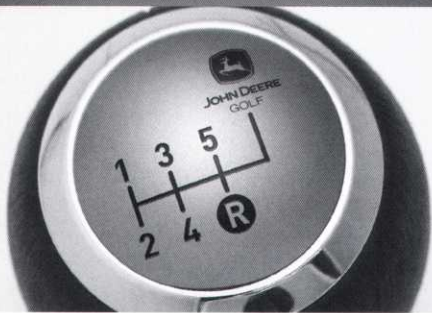
The quest for dependable resistance/tolerance to Dutch elm disease (DED) in American elm was long and hard, and failure a repeated occurrence. Even the best pathologists, like the late Dr. Eugene Smalley from the University of Wisconsin, could not identify dependable resistance within the species by selective breeding. Because of complicating genetic obstacles, it is very difficult to cross it with any other species of elm.

With the relentless selection pressure exerted by Mother Nature in the continuing epidemic of DED across the natural range of American elm, highly unlikely survivors began to appear. While it is true that the vast bulk of "survivors" have been just plain lucky and somehow escaped infections, some rarely occurring individuals seem to possess the necessary combination of genetically inherited defensive strategies to have a high level of tolerance to the disease. Along with some collaborating scientists, Dr. Alden "Denny" Townsend, a geneticist with

the National Arboretum, identified three such individuals by employing extraordinarily intensive artificial inoculation tests on some promising clones. When reporting his results, Dr. Townsend suggested that the likelihood of such tolerance in wild American elm was probably less than one in every 100,000 individuals, hence the difficulty in finding them by breeding. Of the

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three clones Dr. Townsend identified as highly tolerant to DED, 'Princeton' already had a name and an interesting history; its tolerance to DED a delightful accident. 'Valley Forge' and 'New Harmony' were products of his own research at the National Arboretum. All three are available for propagation without restriction.

The only personal experience I have is with 'Princeton' and 'Valley Forge.' Both are standard American elm in every way that can be described botanically. From a structural habit of growth point of view, the 'Princeton' is better disciplined and easier to handle in its youth. I got 120 inches of growth out of one individual during the summer of 2006. With aggressive pruning in its formative years, 'Valley Forge' also develops into a very nice, fast growing tree.

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The tree was named the 'St. Croix' and first cloned in August 2003. Preliminary greenhouse inoculation trials at the University of Minnesota, Department of Plant Pathology were very encouraging, and a repeat of Dr. Townsend's field trials, including the 'St. Croix' and a few others, will be ready to run in May 2009. The research is a collaborative effort between the Department of Horticultural Science and the Department of Plant Pathology, and is substantively supported by the Minnesota Turf & Grounds Foundation.

While we must always be careful about becoming too enamored with any given species, and we must never relent in our cultural struggle with DED in our communities, it is exciting that we can once again employ American elm in our landscape plans. The proposition that we may soon have a local provenance disease-tolerant cultivar is especially encouraging. The American elm is still a superlative ornamental shade tree in many circumstances, and the more disease tolerant cultivars to choose from the better.

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