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Revival of the American elm tree

Ottawa, Ontario (March 29, 2012) – A healthy century old American elm on the campus of the University of Guelph could hold the key to reviving the species that has been decimated by Dutch elm disease (DED). This tree is an example of a small population of mature trees that have resisted the ravages of DED. A study published in the *Canadian Journal of Forest Research (CJFR)* examines using shoot buds from the tree to develop an in vitro conservation system for American elm trees.

“Elm trees naturally live to be several hundred years old. As such, many of the mature elm trees that remain were present prior to the first DED epidemic,” says Praveen Saxena, one of the authors of the study. “The trees that have survived initial and subsequent epidemics potentially represent an invaluable source of disease resistance for future plantings and breeding programs.”

Shoot tips and dormant buds were collected from a mature tree that was planted on the University of Guelph campus between 1903 and 1915. These tips and buds were used as the starting material to produce genetic clones of the parent trees. The culture system described in the study has been used successfully to establish a repository representing 17 mature American elms from Ontario. This will facilitate future conservation efforts for the American elm and may provide a framework for conservation of other endangered woody plant species.

The American elm was once a mainstay in the urban landscape before DED began to kill the trees. Since its introduction to North America in 1930, Canada in 1945, DED has devastated the American elm population, killing 80%–95% of the trees.

The study “In vitro conservation of American elm (*Ulmus americana*): potential role of auxin metabolism in sustained plant proliferation” is published in the April issue of *CJFR*. www.nrcresearchpress.com/cjfr

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Full Reference:

Shukla, M.R., Jones, A.M.P., Sullivan, J.A., Liu, C., Gosling, S., Saxena, P.K. 2012. In vitro conservation of American elm (*Ulmus americana*): potential role of auxin metabolism in sustained plant proliferation. *Canadian Journal of Forest Research*, 42(4): 686–697, doi: 10.1139/X2012-022. [This article is available Open Access at <http://www.nrcresearchpress.com/doi/abs/10.1139/X2012-022>]

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