

# Nurseries to Give Big-City Test to Cloned Trees

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Cornell Ph.D. candidate Naalamle Amissah prepares oak seedlings for a trial planting at Dickman Farms in Auburn, N.Y. Amissah assisted Nina Bassuk of Cornell's Urban Horticulture Institute with the development of a clonal propagation technique that allows the oaks to develop their own root system. Credit: Nina Bassuk

New York City life is tough on trees. Compacted soil with high pH, low-hanging utility wires, an environment often hot and dry, and the city's harsh winters challenge a tree's survival and colorful foliage.

Project leader Nina Bassuk of Cornell's Urban Horticulture Institute and Cornell Ph.D. candidate Naalamle Amissah have developed a new cloning technique called clonal propagation that allows oaks to develop their own root system, rather than growers having to use the traditional

and difficult grafting method. Nurseries will evaluate the new propagation method for quickly getting the new varieties into commercial production. Growers want trees that are easy to establish at nurseries and to transplant to city settings, said Bassuk.

Since oaks are nearly impossible to root from cuttings, Cornell researchers also have been working with ornamental plant breeder Peter C. Podaras of the Landscape Plant Development Center in Mound, Minn., to improve the trees' rootability. They have been crossing deciduous oaks with evergreen oaks and cross-breeding native northern white oaks with white oak species from the Southeast, southern Midwest, North Africa, Asia and the Mediterranean. Some of the 200 combinations of oaks started at Cornell are already 6 feet tall.

"We have combined native cold-hardy trees with much shorter southern and desert species that can tolerate heat, drought, compacted low oxygen soil, road salt and the concrete-induced high pH soils common to cities," Podaras said. "Smaller-sized trees require less long-term maintenance and do not interfere with power lines. We believe these new extremely vigorous hybrids have excellent potential as the ultimate street trees and for backyard landscaping."

Bassuk added, "If the new clones root well and prove to be tolerant of urban growing conditions, including drought and extreme wet weather, they represent a huge economic market potential for New York nurseries through purchasing by municipal foresters, arborists and homeowners."

Also, maple clones now growing in Cornell horticultural plots are the result of crosses with a Chinese drought-tolerant variety with good color and shorter height to enable the trees to grow in urban settings with overhead utility wires. The clones will be field- and nursery-tested on Long Island and in Western and Central New York this fall.

Trees improve urban life not only by providing natural beauty and shade but also by taking up carbon dioxide, releasing oxygen and helping to reduce greenhouse gases, summer energy consumption with their cooling shade and storm-water runoff, said Andrew Hillman, Ithaca's forester who oversees 14,000 trees. "This year we are seeing trees dying from the effect of last year's stressful hot and dry conditions. This project is producing some interesting oak and maple species that promise to be healthier and long-lived under tough city growing conditions, which will be good for the environment and the economy," he added.

The NYFVI provides New York's farmers and growers with access to a network of production, business planning, marketing and agricultural and horticultural specialists that includes Cornell University faculty and extension educators.

Source: Cornell University

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