

## Improving Tree Health, One Highway at a Time

Vineland Research and Innovation Centre (Vineland) is screening urban tree species to develop guidelines for the nursery landscape industry, critical to sustain healthy trees along Canadian highways.

There are many types of trees available for planting in urban environments, however, planting near multi-lane highways where follow-up care for trees is limited means that trees need to be robust to overcome the transplant and establishment periods.



To better understand how to create urban plantings that mimic natural systems in terms of moisture retention, root shading and protection from environmental stresses, Vineland has designed two experimental test planting sites, one at its Vineland campus and the other at Fifty Rd on the northbound side of the QEW in Niagara. At each site, eight different tree species including Freeman maple Autumn Blaze®, Kentucky coffeetree, River birch Cully, Triumph elm, Glenleven Linden, Common hackberry, Trembling aspen and Silver maple have been planted. Accompanying the eight varieties are three types of shrubs including Grey dogwood, Nannyberry and Common ninebark.

In preliminary results from the first planting season, Vineland found not all trees classified as urban-tolerant are suitable for planting in unmaintained sites. Nursery stock size is also an important consideration for transplant survival, particularly in areas where weed competition is high and moisture content is variable. The team also discovered shrubs provide important benefits to trees in roadside ecosystems because they are able to acclimate to challenging environments and help surrounding trees adapt to harsh site conditions.

Vineland will continue to monitor the sites for tree survival and growth over the next two seasons. The research will also be expanded next year to examine the benefits of mixed plantings for improving plant growth, water and nutrient retention. The team will at the same time investigate whether mixed plantings can offer trees buffering from root shading, wind and salt spray damage.

This research project is part of Vineland's *Greening the Canadian Landscape*. The program works with a number of partners across Canada including several large Canadian cities along with a number of provincial governments for the establishment and survival of plants to beautify the Canadian landscape and increase the profitability and competitiveness of the Canadian nursery landscape sector. This project was funded in part through *Growing Forward 2 (GF2)*, a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of GF2 in Ontario.

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