Greening Canada's highways: expanding nursery and landscape market opportunities

COHA ACHO
Canadian Ornamental Horticulture Alliance
Alliance Canadienne de l'Horticulture Ornementale

Trees and shrubs growing next to roads or in less than desirable urban environments need resilience to survive Canada's hot and cold weather extremes and thrive without receiving any after-plant care or irrigation.

A major problem at highway and urban planting sites, where top soil is often removed during construction and replaced with lower quality fill-type soil, is soil compaction, making it difficult if not impossible for trees to establish and grow.

Nursery and landscape research scientist Dr. Darby McGrath and colleagues at Vineland Research and Innovation Centre (Vineland) are leading a project in Ontario and Alberta that is looking at tree survivability, soil remediation, and developing best management and recommended practices for remediation techniques.

As part of the project, researchers applied and evaluated six tree planting treatments including amended soil pits, amended and non-amended planting beds in order to develop a method that is ecologically beneficial as well as economically feasible.

McGrath and her team found subsoiling to a depth of almost a meter followed by adding anywhere from 10 – 25 per cent municipal compost helped to overcome the post-transplant inertia common in urban plantings and allowed the trees to become established.

They found that the prescription for remediation is dependent on the physical parameters of the soil in terms of how much organic matter is needed to bring the soil compaction levels to a "rootable" range.

For more information: Darby McGrath, Vineland Research and Innovation Centre – darby.mcgrath@vinelandresearch.com

Test trees

Tree plot trial site

Tree species and treatments are being evaluated at 11 research locations in Ontario and an additional 117,000 trees will be planted alongside the Highway of Heroes.

In Alberta, trial sites are being established in Edmonton, Calgary and Airdrie and four different treatments will be tested at each site including pulp and paper biosolids, which is an economical and available compost source in many parts of the province.

McGrath is also working on a best management and recommended practices manual for remediation techniques. This will ultimately be developed into an online calculator to provide recommendations on the type of soil remediation a specific site might need based on its soil test data and the predictive modelling based on the soil the team has been cataloguing.

Tree lists of species ideal for planting in areas where people can't provide after-care, whether for cost or access reasons, are also being developed for both Ontario and Alberta. This information will also be incorporated into the soil calculation tool to help with proper selection based on the environmental conditions present at a particular site.

The project is being done in close collaboration with the nursery and landscape industry, as well as municipal representatives and the provincial ministries of transportation in both Ontario and Alberta.

Why is this project important to the ornamental horticulture industry?

Through this project, tree and shrub varieties will be identified that can flourish in challenging environments, and a best management practices manual and online calculator for soil remediation will be developed to enable greener Canadian highways and urban areas.

For more information:
Darby McGrath,
Vineland Research and Innovation Centre
darby.mcgrath@vinelandresearch.com

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