

## Hybrid Poplar at New Liskeard Agricultural Research Station (NLARS)

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If you are driving east on Hwy 65 [in New Liskeard], you will notice about 10 acres of bare ground with some small trees planted in it. We have established a hybrid poplar clone site trial in conjunction with the Université du Québec en Abitibi -Témiscamingue (UQAT) and the Forestry Research Partnership (FRP).

Hybrids are created by crossing two species of the genus *Populus* that do not normally interbreed, such as *Populus nigra* (Lombardi Poplar) and *Populus deltoides* (Eastern Cottonwood). Crossing two species can result in trees that grow very rapidly, and may reach harvest diameters in 15 -20 years in our climate, 7-8 years in Oregon. Fast growing strains of these hybrids are referred to as 'clones' because they are produced by cuttings rather than seed, and are genetically identical to the tree from which they came. They are not genetically modified.



Rooted stalks of hybrid poplar ready for planting.

There is renewed interest in hybrid poplar; it is seen as a potential source of fibre for the forest products industry, as a renewable source of 'hog' fuel for co-generation plants, as a potential source of feedstock for cellulose-based ethanol production, and as a good sink for carbon dioxide thereby helping to fight global warming. Much work was done on hybrid poplar by MNR and the University of Toronto about 20-30 years ago. Interest waned because many of the clones developed at the time were not very winter hardy.

We established plantations at our research stations in Thunder Bay and Emo in 1999, and in Emo in 2002-2004. The results have been disappointing. These trees are very fussy. They need lots of moisture, but not too much. They do not compete well with weeds for water and nutrients, and require warm soils to develop their root systems; hence, recommendations call for bare ground to be maintained until the tree's canopy closes and shades the ground (5 years). They are also delicious to deer (eat the tops), mice and rabbits (girdle the trunks) and tent caterpillars (eat the leaves).



Hybrid poplar planted at NLARS

So, why are we trying them here in New Liskeard? There has been a lot of work done recently to develop hardier material. Our partners at UQAT and FRP have a great deal of expertise in this area. We are evaluating 18 clones in the trial. Some started as cuttings, some as rooted stalk. The trial has 3 replications and the clones are randomized within each replicate so we can deal with effects of location on tree performance. The trees at

NLARS are planted in a grid 12.5' apart so we can get between them with our cultivation equipment to maintain bare ground.

Northern Ontario has large quantities of underutilized private land that may be suited to production of hybrid poplar. They could be considered as a long-rotation crop for northern farms. We are working to identify the clones that will survive and then develop practical management techniques.