

2006 Progress Report – Study of Woody Plants Evaluated at the NDSU Dickinson Research Extension Center

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INTRODUCTION:

Five species were planted in 2006 at the Cooperative Woody Plant Evaluation Program site at the Dickinson Research Extension Center include:

1. *Betula nigra* 'BNMTF' –Dura –Heat River Birch
2. *Betula* x 'Penci 2' – Royal Frost Birch
3. *Cercis Canadensis* (Morgenson-NDSU selection) Redbud
4. *Elaeagnus* x 'Jeffmorg' – Silverscape Olive
5. *Fraxinus excelsior* – European Ash

RESULTS AND DISCUSSION:

Fifteen-year data show 28% survival rate for *Amelanchier laevis* (Allegheny Serviceberry). This species has done very well at the Minot Research/Extension Center and it may hold promise for wider usage in conservation plantings. Plants of *Prunus serotina* (Black Cherry) grew very well for the first few years at the DREC site but plants experienced major dieback or death over time and only 12% were still alive after 15 growing seasons. Of the three *Cornus sericea* (Redosier Dogwood) cultivars planted in 1992, 'Bergeson Compact' had the greatest survival (58%) compared with 'Cardinal' and 'Isanti', each with 33% survival. 'Bergeson Compact' has performed very well at several test sites around the state. All plants of a seedling *Fraxinus Americana* (White Ash) group failed to establish due to lack of hardiness for the seed source.

Ten-year data showed 33% survival for plants of *Betula pendula* (European White Birch). Survival for three seedling-grown accessions of *Gymnocladus dioica* (Kentucky Coffeetree) was very low with most plants dead at the end of the ten-year period. The Hannover, IL source had the highest survival at 25%. The few remaining coffeetrees were still struggling to grow and flourish after ten growing seasons.

Five-year data showed 92% survival for *Betula papyrifera* 'Varen' – Prairie Dream Paper Birch. This new NDSU cultivar shows promise for wider

usage throughout the state. It has shown no bronze birch borer damage to date after 30 years of evaluation at the NDSU Horticulture Research Farm. As with all birch, efforts need to be made to keep the plants from getting stressed which can predispose them to borer attack. Mulching and providing needed water during periods of drought can help reduce stress conditions for any birch planting.

After five years, *Euonymus hamiltonianus* var. *maackia* (Maack Burning Bush) showed 100% survival. This large shrub has performed well at all test sites and may hold promise for adding to the diversity of shelterbelt species used commonly throughout the state. *Euonymus alatus* 'Koreana' (Korean Winged Euonymus) showed 92% survival through five growing seasons. The Korean strain of winged Euonymus has shown better adaptability at other North Dakota sites compared to the cultivar 'Compacta' which tends to be less adapted, often resulting in branch dieback or death.

A planting of four species of *Larix* (Larch) at a second cooperating site in Dickinson has performed satisfactorily during early observations. Of special note was the performance of *Larix Americana* (American Larch). This species had high survival and produced the greatest growth after three years. *Larix occidentalis* (Western Larch) had the lowest survival of the group and appears to be less adapted to southwest North Dakota conditions compared to Siberian, European or Western Larch.

Four new elm hybrids are also being evaluated at the second test site. Initial growth was rapid and trees of all four cultivars were doing very well through two growing seasons. Included in this group were: Accolade, Danada Charm, Morton Glossy, and Vanguard. A late winter ice storm, however, caused extensive damage to the elms in 2005. Corrective pruning was attempted to correct the damage but some were possibly damaged beyond repair.