



2007 Report Off-Center Evaluation Planting of Woody Plant Materials Grand Rapids, Minnesota

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INTRODUCTION

The Plant Materials Center (PMC), located at Bismarck, North Dakota, was established in 1954 as part of the U. S. Department of Agriculture's Soil Conservation Service, now the Natural Resources Conservation Service (NRCS). The Bismarck PMC serves the States of Minnesota, North Dakota, and South Dakota. Tree and shrub improvement has always been an integral part of the plant materials program in Minnesota. There is a need to evaluate how different trees and shrubs will perform in diverse soil and climatic conditions. The PMC currently has tree and shrub evaluation sites at seven locations in the three-state area, including three sites in Minnesota.

A long-term agreement, effective through June 13, 2011, has been developed with the USDA Natural Resources Conservation Service (NRCS); the University of Minnesota, North Central Research and Outreach Center at Grand Rapids, Minnesota; the Itasca Soil and Water Conservation District (SWCD); and the Iron Range Resource and Rehabilitation Board, Mineland Reclamation Division, Chisholm, Minnesota. The Major Land Resource Area is 88, Northern Minnesota Glacial Lakes Basins. Soils are Morph and Rosy very fine sandy loams with seasonal high water tables from 1-5 feet. Long-term average rainfall is 28.78 inches. The site is directly across Highway 169 south of the Research and Outreach Center. An earlier site had been established north of the research facility but proved to be too wet. The first trees and shrubs were planted at the new site beginning in 1996. Several entries were moved with a tree spade (noted in the Technical Report) from the old site to the new site. The site is maintained with cultivation and herbicides. Quackgrass and reed canarygrass are the main perennial weeds. Poor performing entries are removed and replaced as needed. Pruning and removal of contaminant species, such as boxelder, is done on a routine basis. New entries planted each year are flagged for hand weeding. Measurements and notes are taken each year in late summer.

OBJECTIVES

1. Conduct evaluation studies to determine the adaptation and performance of woody plant materials for conservation purposes.

2. Conduct advanced evaluation and progeny testing of selected strains of woody plant materials.
3. Establish seed and plant increase of selected accessions.
4. Develop and release improved plant materials for public use.

ACTIVITIES IN 2007

Approximately 82 accessions of 66 different species are currently being evaluated. Two new entries of five plants each were planted on May 10, 2007. They included 9082739 ironwood (*Ostrya virginiana*), and 9092141 nannyberry (*Viburnum lentago*). All plants were bareroot seedlings.

NRCS field and area office staff helped collect data on selected entries on August 16, 2007. Measurements and notes were taken on crown spread and plant height; disease and insect damage; drought and cold tolerance; fruit production; survival; vigor; and animal damage. The two new entries established well and were given good vigor ratings. Newer entries that continue to do well include common juniper, black chokeberry from Bailey Nurseries, bittersweet, dwarf ninebark, and 'Freedom' honeysuckle. Data was collected on 23 accessions/entries in 2007.

Information is summarized annually and documented in the Bismarck PMC Annual Technical Report. Anyone who desires a copy of the latest data summary information can contact me at (701) 530-2075, or the NRCS field office at Grand Rapids (218) 326-6596. The report is about 20 pages in length.





Dahurian larch has performed well on the evaluation site.

NEW RELEASES

Data collected from this site was used to support the formal release of two new shrubs formally released in 2005 cooperatively with the Minnesota Agricultural Experiment Station. ‘Silver Sands’ sandbar willow and ‘Survivor’ false indigo were both planted in 1996. They both had good survival and excellent vigor and overall plant performance. Both species are subject to natural die-back, but generally re-sprout vigorously. A release brochure was completed in 2006 and is available on the Bismarck PMC homepage (<http://Plant-Materials.nrcs.usda.gov>) for these two new releases, or it can be ordered from the Bismarck PMC. ‘McKenzie’ black chokeberry is proposed for formal release in 2008. It was planted in 1996 and has performed well.

SUMMARY OF ACCOMPLISHMENTS

Selected accessions/cultivars that have performed well at the Grand Rapids site and show promise for additional testing and/or promotion for conservation use include the following:

‘Cardan’ green ash	‘Oahe’ hackberry
‘Centennial’ cotoneaster	Scots pine (9076718, 90763158, 9063156, 9069172, 9069164)
‘McDermant’ Ussurian pear	9082610 Siberian larch
‘Indigo’ silky dogwood	Dahurian larch (9063151, 9069162)
9069170 English oak	9063143 tatarian honeysuckle
‘Silver Sands’ sandbar willow	9047238 seaberry

9082667 gray birch	'Survivor' false indigo
9063115 green ash	'Homestead' Arnold hawthorn
9058847 black spruce	9063126 Japanese elm
'Midwest' Manchurian crabapple	9057412 bur oak
9030302 Norway spruce	323957 chokeberry
9006094 wafer ash	ND-2103 European cranberry
9005970 black walnut	9082631 Japanese birch
9076737 black cherry	9069129 Amur chokecherry

Data from this planting has been used to document the cooperative release of the cultivars listed below. These cultivars are generally available from local conservation nurseries and are used in conservation plantings throughout the Northern Great Plains and Upper Midwest. Several more releases are anticipated in the near future. Information gathered concerning plant performance assists cooperating nurserymen and plant researchers in determining the range of adaptation of many other accessions/cultivars also included in the test planting.

Formal Releases with Supporting Documentation from the Grand Rapids Site

'Regal' Russian almond	1997
'Legacy' late lilac	1999
'Silver Sands' sandbar willow	2005
'Survivor' false indigo	2005

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