2008 Report
Off-Center Evaluation of Woody Plant Materials
Dickinson, North Dakota

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INTRODUCTION

The Bismarck Plant Materials Center (PMC) was established in 1954 as part of the Soil Conservation Service, now Natural Resources Conservation Service (NRCS). A principal task of the PMC has always been tree improvement. There is a need to evaluate how different trees and shrubs will perform in various conservation plantings, under diverse soils and climate conditions. The PMC is currently testing woody plants at six locations in Minnesota, North Dakota, and South Dakota. The evaluation site at the Dickinson Research Extension Center is the only PMC planting in the western Dakotas, and is the driest site. The care and attention that the site has received over the years is the main reason for its continuation and success.

NRCS first signed an agreement with the North Dakota Experiment Station (now Research Extension Center) at Dickinson in 1977. The current 15-year agreement between NRCS and the NDSU Research Extension Center expires in January 2010.

The PMC started evaluating tree and shrubs at Dickinson in 1978. Since that time, the PMC staff and Field Office staff have planted 113 species of trees and shrubs. At the present time, 66 species are under evaluation. This summary does not contain the complete list of woody plants being evaluated. A separate report containing all data can be found at the NRCS Area Office in Dickinson, or at the Bismarck PMC. Contact Mike Knudson at the PMC for additional species information.

OBJECTIVES

- Conduct evaluation studies to determine the adaptation and performance of woody plant materials for conservation purposes.
- Conduct advanced evaluation and progeny testing of selected strains of woody plant materials.
- Establish seed and plant increase of selected accessions
- Develop, release and promote improved plant materials for public use.

RECENT ACTIVITIES

The soil type at the PMC plot is a Parshall fine sandy loam, which is in Windbreak Suitability Group (WSG) 5. The hybrid poplars that were planted in 1990 grew very well initially, especially with years of above average rainfall in 1993-1995. They have presently reached a point where they need to be removed. In the last several years, a number of the declining poplars have been cut down. Some stumps still need to be

removed. This may take several years to clear the rows and prepare them for new plantings.

On May 8, 2008, PMC staff planted 9082739 ironwood, as well as replacements of American black currant and Korean mountain ash, which grew poorly in 2007. The precipitation during 2008 was considerably below normal (see attached graph of weather published for 2008). The new entries had poor survival, again. Selected trees were measured on September 24, 2008.

RELEASES

Since 1973, the PMC has released 15 new selections or cultivars of woody plants. The following releases are planted at Dickinson. Most of them are doing quite well, and are available from conservation nurseries. Varieties that are doing the best at Dickinson include McDermand pear, Homestead hawthorn, and Regal Russian almond. The McDermand pear seems to have better drought resistance than the Midwest crabapple. The pear does have showy flowers in the spring, and the fruit becomes edible to wildlife after a frost. Deer do not appear to browse or rub on the pear very often. We suggest they be planted as often as possible in various conservation plantings.

PMC releases growing at Dickinson, with release date

‘Midwest’ Manchurian crabapple	1973
‘Cardan’ green ash	1979
‘Oahe’ hackberry	1982
‘Sakakawea’ silver buffaloberry	1984
‘Centennial’ European cotoneaster	1987
‘McDermand’ Ussurian or Harbin pear	1990
‘Homestead’ Arnold hawthorn	1993
‘Canam’ hybrid poplar	1995
‘Regal’ Russian almond	1997
‘Legacy’ late lilac	1999
‘Prairie Red’ hybrid plum	2006
‘McKenzie’ black chokeberry	2008

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