

2006 Report
Off-center Evaluation of Woody Plant Materials
Dickinson, ND

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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 eight locations in Minnesota, North Dakota, and South Dakota. The evaluation site at the Dickinson Research Extension Center is the driest site in our three-state area. The PMC first started evaluating tree and shrubs at Dickinson in 1978. The care and attention that the site received over the years is the main reason for its continuation and success. All cooperators have contributed to the maintenance of the site. 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.

Recent Activities

Because of damage caused by a snowstorm in October 2005, considerable pruning was done on the trees, both in the fall and in the spring of 2006. The most damage at the site occurred in the southeast corner where the hackberry trees are planted. PMC staff visited the evaluation site on May 4, 2006 to plant seedlings. Five plants each of **'Silverscape' silverberry hybrid** and **9019593 common juniper** were planted, as well as a number of replacement trees for seed sources planted in previous years. At that same time, some other shrubs and grasses were given to Jerry Larsen to use for landscaping the grounds around the new office building.

In late June, Robert Jones, a summer intern from Oklahoma, and Mike Knudson came to the planting to do additional pruning. On July 13, 2006, the Centennial Field Day was held at the Research Center. The PMC staff prepared a colorful flyer as a handout to all visitors. The flyer included a map showing all the trees and shrubs currently being evaluated. On September 19, 2006, a visit was made to measure the trees at the site. Bonnie Twogood, the Stark County SCD Manager helped Mike Knudson evaluate the trees.

The soils at the PMC plot are a Parshall fine sandy loam, which is in Windbreak Suitability Group (WSG) 5. Some of the trees planted here, such as the hybrid poplars are not recommended for this suitability group. The hybrid poplars that were planted in 1990 grew very well initially, especially with years of above average rainfall in 1993-1995. Now, they have reached a point where they need to be removed. The white poplar seems to be more drought-resistant. Also, the closely related quaking aspen seems to be

doing better than the hybrid poplars. Other trees that are growing well on this fine sandy loam are many of the conifers, especially the Siberian larch and the ponderosa pine.

PMC releases

Since 1973, the PMC has released 14 new selections or cultivars of woody plants. The following releases are planted at Dickinson. Most of them are doing quite well, and most are available from conservation nurseries. Some of the varieties that are doing the best at Dickinson are the McDermant pear, the Homestead hawthorn, and the Regal Russian almond. The McDermant pear seems to have better drought resistance than the Midwest crabapple. The pear does have beautiful flowers in the spring, and the fruit will become edible to wildlife after a frost. Deer do not seem to browse or rub on the pear very often. We suggest that they should be used as often as possible in various conservation plantings.

- 'Midwest' Manchurian crabapple (1973)
- 'Cardan' green ash (1979)
- 'Oahe' hackberry (1982)
- 'Sakakawea' silver buffaloberry (1984)
- 'Scarlet' Mongolian cherry (1984)
- 'Centennial' European cotoneaster (1987)
- 'McDermant' Ussurian or Harbin pear (1990)
- 'Homestead' Arnold hawthorn (1993)
- 'Regal' Russian almond (1997)
- 'Legacy' late lilac (1999)
- 'Prairie Red' hybrid plum (2006)