



2007 Report Off-Center Evaluation Planting of Woody Plant Materials Brookings, South Dakota

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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 South Dakota. 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 this site in South Dakota.

This evaluation planting is in cooperation with the Eastern South Dakota Soil and Water Research Farm which consists of 15 Soil and Water Conservation Districts (SWCD) in eastern South Dakota. The purpose of the Research Farm is to promote research of efficient farm production practices that conserve soil and water resources. The Major Land Resource Area is 102A, Rolling Till Prairie. The soils on this farm are characteristic of those found in northeastern South Dakota and west central Minnesota and are similar to soils common to the northern Corn Belt region. Long-term average precipitation is 22.81 inches. The Research Farm consists of 80 acres approximately 1 mile north of the campus of South Dakota State University. The first trees and shrubs were planted at the new site beginning in 2004. The existing ground cover is smooth brome grass sod. Strips to be planted are chemically killed with glyphosate, and then tree fabric is laid down. Holes are punched in the fabric when new entries are added. The trees are spaced 10 feet apart with-in the row, and the shrubs are spaced 5 feet apart with-in the row. The evaluation site is divided into an area for shrubs and an area for medium to tall trees. Measurements and notes are taken at the end of each growing season.

OBJECTIVES

1. Conduct evaluation studies to determine the potential adaptation and performance of new and/or previously untested 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.
5. Promote evaluation site for tours and other educational purposes.

ACTIVITIES IN 2007

Approximately 25 accessions of 22 different species are currently being evaluated. Six new entries of five plants each were delivered to the site on May 7, 2007. Conditions at the time were too wet for planting so they were planted later in the month by field office staff. New entries included 'Cathedral' hybrid elm (*Ulmus x cathedral*), 9092141 nannyberry (*Viburnum lentago*), 9082895 apricot (*Prunus armeniaca*), 9092140 Korean mountain ash (*Sorbus alnifolia*), 9082739 ironwood (*Ostrya virginiana*), and 9091964 skunkbush sumac (*Rhus trilobata*). All plants were bareroot seedlings. Potted stock was used to replace three missing olive hybrids.



Shrub block in August 2007

The construction of a new building in 2006 for the Brookings County SWCD resulted in the loss of much of the Tree Block. Accessions which were lost included 9082885 aspen (2 remaining), 9082886 aspen, 9082892 white poplar, 9091968 Kentucky coffeetree, 9091973 red oak, and 9091974 red oak. Some of the trees were moved with a tree spade into another area. A new planting plan map will be prepared after a permanent location has been identified for the tall trees. The grass strips between the tree rows were kept mowed during the growing season.

Weeds growing in the fabric hole with the trees and shrubs were removed by NRCS field office staff.

NRCS field office staff helped collect data on selected entries on August 13, 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 new planted accessions established well except for the Korean mountain ash and apricot which were rated poor in vigor. Two of the apricot had died. All of the other entries were rated as performing well except for the Russian peashrub, 'Silverscape' olive hybrid, and staghorn sumac. Some of the taller trees had been moved with a tree spade and were showing signs of transplant shock. Information was collected on 20 accession/entries in 2007.

Data 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 Brookings (605) 692-8003. The report is about eight pages in length.



Gray dogwood had abundant fruit

NEW RELEASES

Data collected from this site will be used to support the formal cooperative release of new woody plant materials from the Bismarck PMC.

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