

Woody Notes

from the Plant Materials Center, Bismarck, North Dakota

February 2012

by Craig Stange, Forester

Who We Are

The Bismarck Plant Materials Center (PMC) is one of 27 PMCs operated by the USDA Natural Resources Conservation Service. The Bismarck PMC serves the States of Minnesota, North Dakota, and South Dakota. It is the mission of the plant materials program to develop plant materials and plant science technology for the conservation of our natural resources. The Bismarck PMC was established in 1954 as part of the Soil Conservation Service, now Natural Resources Conservation Service. 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 climatic conditions.

Staff

Wayne Markegard
Plant Materials Specialist

Wayne Duckwitz
PMC Manager

Craig Stange
Forester

Nancy Jensen
Agronomist

Earl Aune
Biological Science Technician

Rachel Bergsagel
Biological Science Technician

Janet Tanski
Biological Science Technician

Julius Saylor
Office Automation Clerk

3308 University Drive
Bismarck, ND 58504
(701)250-4330

<http://Plant-Materials.nrcs.usda.gov/ndpmc>

Lodgepole Pine Showing Potential

Lodgepole pine *Pinus contorta* var. *latifolia* has performed well with growth rates similar to ponderosa pine and just slightly less than Mongolian Scots pine. There is a slight height difference between seed sources observed in our trials with respect to initial establishment. When not subjected to flooding and deer predation, survival has been good. After four years, this species has looked promising at Hot Springs, SD; Hettinger, ND; and Hebron, ND. However, one must consider that the last four years have been the wettest on record with rainfall throughout the growing season.



5-ft x 20-ft stockade panel protecting tree

Cones were collected from a lodgepole pine provenance study at ARS in Mandan, ND, in the summer/fall of 2007. Clean seed was provided to Towner State Nursery where it was grown in containers in the greenhouse. Seedlings were planted in the spring of 2008. Parent trees came from six different seed sources in British Columbia, Colorado, Montana, and Saskatchewan. Trials will continue.

Seed Orchard Development

ARS, NDSU Extension, NDFS, and NRCS are converting two provenance tests at the Mandan ARS station to seed orchards. Siberian larch *Larix sibirica* and bur oak *Quercus macrocarpa* have been evaluated and cull trees marked for removal. Most of the oak that scored high in the evaluation are from the Dakotas, Manitoba, and Saskatchewan. A few exceptional seed sources came from Iowa, Nebraska, Minnesota, and Montana. Trees were evaluated for survival, vigor, and height as compared to the entire plot and to each seed source. The larch planting is still several years from being a seed orchard as only half the culls were removed to reduce the risk of windthrow to the remaining trees.



Immature Siberian larch cones

Tree Species with Potential

- Douglas fir *Pseudotsuga menziesii* var. *glauca* stands of 2-10 trees located near Williston, Bowman, Mandan, and other areas of North Dakota are 25 to 70 years old and producing seeds. Their long-term survival would indicate adaptability to our climate and the soils on which they were growing. The PMC and NDSU staff plan to collect and propagate seed and evaluate the progeny at our Off Center Evaluation Planting (OCEP) sites.
- Lodgepole pine *Pinus contorta* var. *latifolia* accessions are from ARS. After only four years of field trials, lodgepole pine has performed well. Plans are to collect seed from parent trees at ARS so that seed is available for future plantings of the accessions that hold promise.
- A “pie cherry” from a source in southeastern Montana, which forms dense thickets and yields large amounts of plump fruit, has been quite intriguing. The red, tart cherries are excellent for eating fresh or in pies. Part of the evaluation will be determining the original source and whether seed propagated progeny will yield fruit.

Mongolian Scots Pine

Scots pine has been around for decades. It has become naturalized throughout much of the upper Midwest. However, the commonly available sources have a few negative characteristics such as form, growth rate, disease resistance, etc.

Mongolian Scots pine, tested at OCEP sites, has performed well over the past 14 years. Seed for the original trees planted in America came from selected stock that had completed a portion of a tree improvement program in China. Five accessions were planted at multiple locations in Minnesota, South Dakota, and North Dakota. It exhibits higher vigor ratings and shows more disease and insect resistance than commonly available Scots pines. It grew over 2 feet per year on one of the Minnesota sites. It would be interesting to determine its resistance to the pine wilt that has affected many parts of the Midwest. As a standard of comparison in our lodgepole pine trials, Mongolian pine grew faster than lodgepole and ponderosa. Incidence of winter burn has been similar to that found on ponderosa.



Ginger Kopp measuring 9-year-old Mongolian Scots pine, Morris, MN

PMC Releases

Seeds of the following named releases are available upon request. We only ask that you identify the material by its official release name in brochures, order lists and other publications.

- *Amorpha fruticosa* Survivor Germplasm False Indigo
- *Celtis occidentalis* ‘Oahe’ Hackberry
- *Celtis occidentalis* Prairie Harvest Germplasm Hackberry
- *Cotoneaster integerrima* ‘Centennial’ European Cotoneaster
- *Crataegus arnoldiana* ‘Homestead’ Arnold Hawthorn
- *Fraxinus pennsylvanica* ‘Cardan’ Green Ash
- *Malus mandshurica* ‘Midwest’ Manchurian Crabapple
- *Photinia melanocarpa* ‘McKenzie’ Black Chokeberry
- *Prunus americana* ‘Prairie Red’ Hybrid Plum
- *Prunus fruticosa* ‘Scarlet’ Mongolian Cherry
- *Prunus tenella* ‘Regal’ Russian Almond
- *Pyrus ussuriensis* ‘McDermant’ Ussurian Pear
- *Ribes americanum* Riverview Germplasm American Black Currant
- *Shepherdia argentea* ‘Sakakawea’ Silver Buffaloberry

Small amounts of woody cuttings from *Salix interior* Silver Sands Germplasm Sandbar Willow are also available.

Contact: Craig Stange at (701) 250-4330 or craig.stange@nd.usda.gov