



from the Plant Materials Center, Bismarck, North Dakota

by Mike Knudson, Forester

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Who We Are

The Bismarck Plant Materials Center (PMC) is one of 27 PMCs operated by the United States Department of Agriculture, Natural Resources Conservation Service. The Bismarck PMC serves the States of North Dakota, South Dakota, and Minnesota. 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 Duckwitz
PMC Manager

Mike Knudson
Forester

Nancy Jensen
Agronomist

Dwight Tober
Plant Materials Specialist

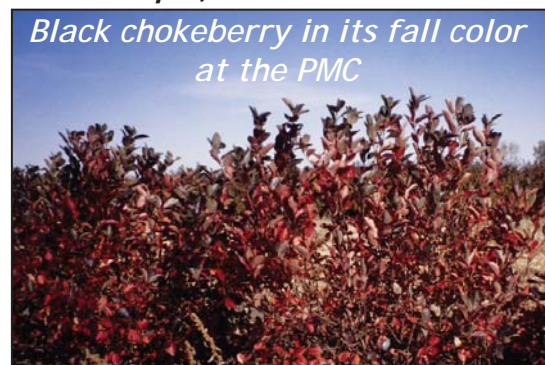
USDA-NRCS
Plant Materials Center
3308 University Drive
Bismarck, ND 58504
(701)250-4330

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

The Plant Materials Center (PMC) staff wishes to thank all the conservation nurseries who have cooperated in the growing of seedlings of PMC releases. The PMC plans to release more new cultivars in the future. The information below highlights the woody plants currently being tested.

Black chokeberry (*Aronia melanocarpa*) to be released

This plant is sometimes known in the nursery trade as Aronia. In 1976, the Bismarck PMC received an accession of black chokeberry (PI 323957) from the USDA-ARS Plant Introduction Station at Ames, Iowa. After 30 years of planting and observing its performance in the Northern Plains, the PMC is ready to release this accession as a cultivar. It will be named 'McKenzie' black chokeberry, and should be formally released in the spring of 2008. In the past, seed and bare root seedlings of this accession have been provided to conservation nurseries. Seed and bareroot seedlings are currently available through the PMC. If interested in obtaining seed or bare root plants for a seed orchard, please contact the PMC.



Black chokeberry in its fall color at the PMC

'Prairie Red' plum (*Prunus* sp.) - a popular new fruit cultivar



Fruit of Prairie Red plum

In 2006, the PMC released a large-fruited plum cultivar. This selection of plum was first made available for field plantings in 1989 as ND-1134 select or American plum. The origin of this plum is from root suckers collected from a specimen tree called 'apricot plum' by Wilfred Hermann of Miller, South Dakota. On the most favorable sites, it may reach heights in excess of 15 feet. White flowers bloom in mid-May and the fruit begins to ripen by late summer. The fruit size may be as large as 1.5 inches, depending on moisture availability. Moister sites should have larger fruit. Prairie Red plum is available from conservation nurseries in our region.

Hackberry (*Celtis occidentalis*) - looking for northern seed source

Several years ago, we received some requests for hackberry seed. At that time, we did not have any seed on hand of our cultivar 'Oahe' hackberry. We decided to take another look at a hackberry provenance study established in 1990 near Mandan, North Dakota, by the USDA-ARS Northern Great Plains Research Laboratory. This study consisted of 180 different accessions of hackberry planted in four-tree plots with five replications. The accessions came from throughout the Great Plains. After the trees were measured in 2005, several seed sources were identified as being taller and having better form than the examples of Oahe hackberry included in the planting. Among the better accessions were collections from Barnes and Cass Counties of North Dakota and Polk County, Minnesota. After 15 years, the Polk County source averaged four feet taller than Oahe. In 2006, hackberry seed was recollected from the original trees, as it was a good seed year. The PMC is developing plans for increasing these superior seed sources. We hope to have a better northern source of hackberry available in the future.



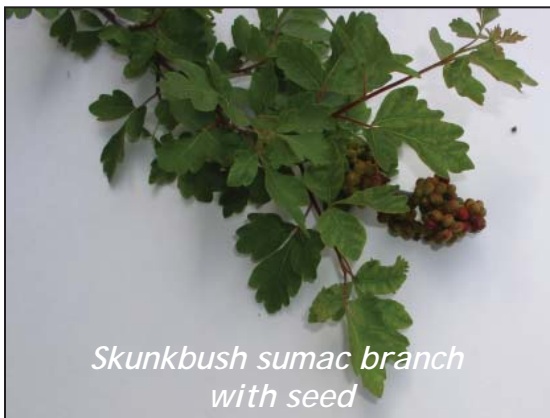
Hackberry near Olivia, Minnesota

Seed production was good in 2007. The seed crop on Oahe hackberry was excellent. The PMC now has seed of the 2007 crop of Oahe on hand. Contact the PMC if interested.

Bur oak (*Quercus macrocarpa*) - new releases being planned

In the early 1990s, the NRCS field office personnel helped collect bur oak seed from throughout the Great Plains. In 1993, selected seedlings were planted at the USDA-ARS Northern Plains Research Laboratory near Mandan, North Dakota. Ninety accessions were planted in two-tree plots with eight replications. After 15 growing seasons, the trees were measured by Dr. Mohammed Iddrisu and Chuck Flakker. The tallest accession is from Cass County, North Dakota, with one of the trees being almost 20 feet tall. The PMC at Bridger, Montana, plans to release a cultivar of bur oak in the near future. They have established a seed orchard which includes some of the same seed sources as are in the planting near Mandan. Acorns can be obtained from the Bridger PMC.

Skunkbush sumac (*Rhus trilobata*) - seed collection for evaluation nursery



*Skunkbush sumac branch
with seed*

In 1957, a selection of skunkbush sumac was collected south of Basin, Wyoming, where the annual precipitation is around seven inches per year. In 1973, this selection was released by Los Lunas (New Mexico) PMC as 'Bighorn' skunkbush sumac. The Bismarck PMC began looking for a seed source from the Dakotas where the precipitation is much greater. The PMC is interested in developing a release for the central Dakotas. Seed has been collected from various places in North Dakota, including the Badlands, White Butte, Arroda Lake, and Dunn County, east of the Killdeer Mountains. In South Dakota, collections have come from near Bullhead, Onida, and Fort Thompson. The PMC will stratify these seed lots this winter and use the seedlings to establish a spaced-plant nursery.

Round-leaved hawthorn (*Crataegus chrysocarpa*) to be tested in field plantings

The round-leaved hawthorn is sometimes known as fireberry hawthorn. This selection (9076686) is a composite of five accessions collected in the 1970s in Butte, Marshall, Day, Hamlin, and Harding Counties of South Dakota. A seed orchard of this composite has been established at the PMC, and seed has been distributed to several conservation nurseries. Currently, seedlings have been provided for testing in field plantings in the Northern Plains. Seedlings are also available from Big Sioux Nursery, Watertown, South Dakota.



'Scarlet' Mongolian cherry (*Prunus fruticosa*) to be discontinued

In 1984, the Bismarck PMC released the cultivar 'Scarlet' Mongolian cherry. For a number of years, this release was popular. However, in recent years the seed orchards for this accession died out, and seed of it is no longer harvested or grown. Therefore, the Bismarck PMC is planning to make a formal request in 2008 to discontinue production of this cultivar. Plants of Mongolian cherry may still be available from some conservation nurseries, but Scarlet will no longer be grown unless it is in use by nurseries and there is a demand for it. Please contact the PMC with any information regarding current production of Scarlet Mongolian cherry.

PMC Releases

The PMC has released the following trees and shrubs. Brochures for most of these releases, giving origin information and a general description, have been published. Copies of the brochures can be requested from the PMC. A brochure has not been developed yet for the Prairie Red plum, which was recently released.

- Midwest Manchurian crabapple (1973)
- Cardan green ash (1979)
- Oahe hackberry (1982)
- Sakakawea silver buffaloberry (1984)
- Centennial European cotoneaster (1987)
- McDermand Ussurian pear (1990)
- Homestead Arnold hawthorn (1993)
- Regal Russian almond (1997)
- Legacy villosa lilac (1999)
- Silver Sands sandbar willow (2005)
- Survivor false indigo (2005)
- Prairie Red plum (2006)

Nurseries are encouraged to establish their own seed orchards. If interested in establishing a seed orchard of any of these releases, please contact the PMC. Either seed or bare root seedlings can be used to start the seed orchard. Some of the releases are relatively new, but the species have been in use for many years. Nurseries may already be using some of the original plants for seed production and not be aware of it. The PMC encourages those nurseries that grow or sell any of the releases to use the release name with the species on their availability lists. Contact Mike Knudson with questions at (701)250-4330 or via email at Mike.Knudson@nd.usda.gov.