

Improved Forage Grass Releases by the Bismarck Plant Materials Center and Partners*

*Partners include USDA Agricultural Research Service at Mandan, ND, and Lincoln, NE; North Dakota Agricultural Experiment Station; South Dakota Agricultural Experiment Station; and Minnesota Agricultural Experiment Station

Introduction

The USDA-NRCS Plant Materials Center (PMC) located at Bismarck, North Dakota, cooperatively evaluates and releases forage grasses for improved livestock production. Twenty-two varieties of 14 different grass species have been cooperatively released for the purpose of improving the grazing and haying forage base for livestock operators primarily in the Northern Great Plains and Midwest. The forage types/sites include cool-season pasture and hayland; warm-season pasture and hayland; rangeland; and wet and seasonally flooded areas. Forage quality parameters have been evaluated for many of these releases in cooperation with North Dakota State University.

Warm-Season Pasture and Hayland



Big bluestem

Big bluestem

☐ Tall, sod-forming grass with high palatability and forage quality in mid-summer.

- ♦ **Bison** – earliest maturing variety.
- ♦ **Bonilla** – matures two weeks later than Bison.
- ♦ **Sunnyview** – matures three weeks later than Bison; most productive variety.

Switchgrass

☐ Tall, rhizomatous grass with yield potential of over five tons/acre on good sites. Palatability and forage quality not as good as big bluestem or Indiangrass. Recent information documents potential toxicity to sheep, goats, and horses grazing on pure switchgrass.

- ♦ **Dacotah** – earliest maturing and shortest variety; upland type.
- ♦ **Forestburg** – two weeks later than Dacotah; higher forage yield.

Indiangrass

☐ Tall sod-forming grass with excellent palatability and forage quality. Will not persist on drier sites. Forage production not as good as big bluestem or switchgrass.

- ♦ **Tomahawk** – earliest maturing variety of Indiangrass.

Sideoats grama

☐ Drought tolerant mid-grass that can provide high quality forage on shallow soils and steep slopes. Excellent seedling vigor and establishment.

- ♦ **Pierre** – earliest maturing formal variety.
- ♦ **Killdeer** – informal release; one week earlier than Pierre; no certification.

Prairie cordgrass

☐ Tall, wet site species with strongly spreading, scaly rhizomes. Fair palatability in late spring prior to boot stage.

- ♦ **Red River Natural Germplasm** – only seed propagated release commercially available.



Switchgrass



Indiangrass

Cool-Season Pasture and Hayland



Crested wheatgrass

Crested wheatgrass

☐ Drought tolerant, long-lived bunchgrass with very early green-up.

- ♦ **Nordan** – old variety but still in demand for early season pasture, especially on droughty sites.
- ♦ **NU-ARS AC2** – broadly adapted composite with stable yields.

Creeping foxtail

☐ High forage quality, long-lived sod forming grass that grows best on wet or imperfectly drained soils; the seed is light and fluffy.

- ♦ **Garrison** – matures early and seed shatters readily.

Intermediate/pubescent wheatgrass

☐ Vigorous, fast-growing sod-forming grass that is easy to establish. High forage yields with good digestibility.

- ♦ **Reliant** – good compatibility with alfalfa.
- ♦ **Manska** – improved animal daily gains.
- ♦ **Haymaker** – higher average forage yields.
- ♦ **Manifest** – higher forage yields and persistence under grazing.

Russian wildrye

☐ High forage quality, long-lived bunchgrass with fine basal leaves that is used primarily to extend the grazing season into late fall. Protein content remains at relatively high levels when saved for fall grazing.

- ♦ **Mankota** – selected for improved seedling vigor, leaf disease resistance, and higher forage yields.

Western wheatgrass

☐ Drought resistant, long-lived sod-forming grass with excellent saline tolerance and adaptation to clay soils. Also tolerates flooding. Stands develop slowly from seed but spread quickly by rhizomes.

- ♦ **Rodan** – more productive on coarse textured soils and in higher rainfall areas.

Canada wildrye

☐ Easy to establish, short-lived species with large coarse leaves, excellent seedling vigor, and fair palatability. Performs well on sandy soils and has some flooding tolerance.

- ♦ **Mandan** – an old variety that has experienced renewed interest primarily for its compatibility with native mixtures and its adaptation to sandy soils.

Green needlegrass

☐ Drought tolerant, early maturing bunchgrass adapted to a wide range of soils. Good forage quality. Seed may have a high level of dormancy.

- ♦ **Lodorm** – selected for lower seed dormancy.



Intermediate wheatgrass



Russian wildrye



Canada wildrye

Rangeland and Prairie Restoration



Blue grama

Blue grama

☐ Drought tolerant, warm-season short-grass with excellent forage quality.

- ♦ **Bad River Ecotype** – earliest maturing variety; large caryopsis and excellent establishment.

Canada wildrye

☐ Easy to establish, short-lived cool-season species with large coarse leaves, excellent seedling vigor, and good performance on sandy soils. Reseeds readily if given the opportunity.

- ♦ **Mandan** – an old variety that has experienced renewed interest primarily for its compatibility with native mixtures and its adaptation to sandy soils.

Sideoats grama

☐ Drought tolerant, warm-season mid-grass that performs well on shallow soils and steep slopes. Excellent seedling vigor and establishment.

- ♦ **Pierre** – earliest maturing formal variety.
- ♦ **Killdeer** – informal release; one week earlier than Pierre; no certification.

Little bluestem

☐ Drought tolerant, warm-season mid-grass that performs well on shallow soils and steep slopes. Fuzzy seed may be difficult to plant unless debarbed.

- ♦ **Badlands Ecotype** – early maturing release with primary area of northern adaptation to the Dakotas and westward.
- ♦ **Itasca Ecotype** – early maturing release with primary area of northern adaptation from the Dakotas and eastward.

Western wheatgrass

☐ Long-lived, drought tolerant, cool-season adapted to a variety of sites but performs exceptionally well on clay soils. Stands develop slowly from seed, but fill in quickly from strong rhizomes. Good forage quality. High tolerance to salinity.

- ♦ **Rodan** – more productive on coarse textured soils than other varieties and in areas of high rainfall.

Indiangrass

☐ High forage quality but adapted only to higher moisture sites and drainage areas.

- ♦ **Tomahawk** – earliest maturing variety of Indiangrass.

Green needlegrass

☐ Early season, drought tolerant, cool-season bunchgrass that is highly palatable and adapted to a wide range of soils. Awned seed does not cause livestock injury. Seed may have high dormancy.

- ♦ **Lodorm** – selected for lower seed dormancy.

Big bluestem

☐ High forage quality warm-season grass adapted to higher moisture sites and drainage areas.

- ♦ **Bison** – earliest maturing variety.
- ♦ **Bonilla** – matures two weeks later than Bison.
- ♦ **Sunnyview** – matures three weeks later than Bison; most productive variety.

Switchgrass

☐ High forage producing warm-season grass adapted to higher moisture sites and drainage areas. Recent information documents potential toxicity to sheep, goats, and horses grazing on pure switchgrass.

- ♦ **Dacotah** – earliest maturing variety; upland type with some drought tolerance.
- ♦ **Forestburg** – two weeks later than Dacotah with higher forage production.

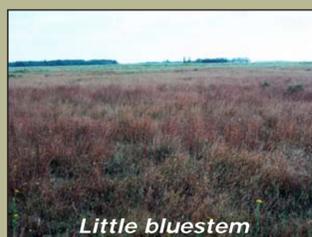
Prairie cordgrass

☐ Adapted to wet sites only.

- ♦ **Red River Natural Germplasm** – only seed propagated release commercially available.



Sideoats grama



Little bluestem



Western wheatgrass



Green needlegrass

Wet and Seasonally Flooded Areas



Creeping foxtail

Canada wildrye

☐ Establishes quickly and adapted to sandy soils. Short-lived cool-season that reseeds readily. Inundation to 20 days.

- ♦ **Mandan** – earliest maturing variety.

Western wheatgrass

☐ Long-lived species with excellent rhizome spread. Well adapted to clay soils. Good saline tolerance. Inundation to 60 days.

- ♦ **Rodan** – performs well on coarser textured soils and in higher rainfall areas.

Creeping foxtail

☐ High forage quality. Spreads aggressively from rhizomes. Light, fluffy seed. Inundation to 45 days.

- ♦ **Garrison** – early maturing and seed shatters readily.

Switchgrass

☐ High biomass potential. Inundation to 30 days. Recent information documents potential toxicity to sheep, goats, and horses grazing on pure switchgrass.

- ♦ **Dacotah** – earliest maturing variety.
- ♦ **Forestburg** – two weeks later than Dacotah and more productive.

Prairie cordgrass

☐ High biomass potential, but gets rank quickly. Inundation to 45 days.

- ♦ **Red River Natural Germplasm** – only seed propagated release commercially available.



Prairie cordgrass

<http://plants.usda.gov>
<http://plant-materials.nrcs.usda.gov>



NRCS is an equal opportunity employer and provider.

Contact information:
USDA-NRCS Plant Materials Center
3308 University Drive
Bismarck, North Dakota 58504
(701)250-4330