NRCS Natural Resources Conservation Service
Helping People Help the Land

Improved Forage Grass Releases

by the Bismarck Plant Materials Center and Partners*

USDA Natural Resources Conservation Service, Plant Materials Center, Bismarck, North Dakota

**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*

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 fourteen 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 prairie restoration; and wet and seasonally flooded areas. Forage quality and growth pattern characteristics have been evaluated for many of these releases in cooperation with North Dakota State University and are included in two publications titled *Grasses for the Northern Plains, Growth Patterns, Forage Characteristics, and Wildlife Values, Volume I – Cool-season* and *Volume II - Warm-season*.

Warm-Season Pasture and Hayland

Big bluestem

Switchgrass

Indiangrass

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 Germplasm** – only seed propagated release commercially available

Cool-Season Pasture and Hayland

Crested wheatgrass

Intermediate wheatgrass

Russian wildrye

Canada wildrye

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

Blue grama

Sideoats grama

Little bluestem

Western wheatgrass

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 debearded.

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

Rangeland and Prairie Restoration (continued)

Green needlegrass

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 Germplasm** – only seed propagated release commercially available

Wet and Seasonally Flooded Areas

Creeping foxtail

Prairie cordgrass

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

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

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 Germplasm** – only seed propagated release commercially available