United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Forestburg' Switchgrass

Panicum virgatum L.

A Conservation Plant Release by USDA NRCS Plant Materials Center, Bismarck, North Dakota

'Forestburg' switchgrass, *Panicum virgatum* L., has been released cooperatively by the Natural Resources Conservation Service (NRCS) and the Agricultural Research Service (ARS) of the United States Department of Agriculture (USDA) and by the North Dakota, South Dakota, and Minnesota Agricultural Experiment Stations in 1989.

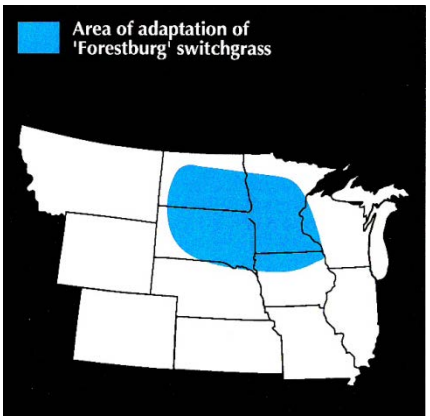
Description
Switchgrass grows 3 to 5 feet in height. It can be distinguished from other native grasses by the dense patch of hairs at the point where the blade attaches to the sheath, even as a young plant. The stem is round and usually has a reddish tint. The seedhead (panicle) is spreading and open. The plant spreads by short underground rhizomes. Forestburg is typical of the species with regard to these characteristics.

Source
It is a composite of four accessions collected in Sanborn County near Forestburg, SD, in 1956 and 1961. It was tested as accession SD-149 (PI-478001).

Conservation Uses
Switchgrass, a native perennial, warm-season, sod-forming grass, is a major component of the tall grass vegetation which once dominated the prairies of the central and eastern United States. It can be used singly or in mixtures for livestock forage on rangeland, pastureland, and hayland. In addition, switchgrass is excellent for wildlife habitat, critical area seeding, roadside cover, and erosion control.

Cool-season grasses, such as smooth bromegrass, predominate in many areas, often resulting in a short supply of high quality forage during summer months. Sudangrass or sorghum-sudan hybrids are productive alternatives for midsummer forage; however, they must be re-established each year. Switchgrass grows rapidly from June 1 until late summer and provides large quantities of forage for livestock grazing when high temperatures retard the growth of cool-season species. Proper grazing management and fertilization can maintain high performance indefinitely.

Area of Adaptation and Use
The known climatic adaptation of Forestburg is shown on the shaded area of the map below. It is best suited to light or medium-textured soils and will tolerate moderately saline or alkaline soils. It will withstand droughty conditions and can be used on such sites for ground cover, but it is better suited to deep, well-drained or moderately wet soils for seed and forage production. Precipitation for its area of adaptation ranges from 15 to 30 inches.



Establishment
Switchgrass and other warm-season grasses require a soil temperature of above 50 degrees F for satisfactory germination. In the area of adaptation, the optimum time to plant is early May to late June. The seed is smooth, free·flowing, and easily seeded with most grass drills. Recommended seeding rate is 4 to 5 pure live seed (PLS) lb/acre. The planting site should be free of perennial or noxious weeds. A moist, firm seedbed is essential. Firming the soil with a roller packer before seeding helps ensure that the seed is placed at the recommended seeding depth of ¼ to ½ inch. Broadcast packer-seeders or drills equipped with disk openers and depth bands provide the best results. Companion crops are not recommended. Grazing should be deferred during the establishment year. The application of fertilizer at seeding time is not

recommended because it will stimulate weed growth. Herbicides have effectively controlled weeds during the establishment year at the PMC.

Management
If well-established stands of switchgrass are properly managed and maintained, they should not require replanting. Poor stands can be rejuvenated by using proper management practices such as controlled grazing, application of recommended rates of herbicides and fertilizer, and prescribed burning before spring growth begins. Phosphorus and potassium fertilizer should be applied according to soil tests. Nitrogen should be applied at the rate of 50 to 75 lb/acre when regrowth in the spring has reached 4 to 6 inches. Forage quality will remain high until the seedhead emerges. Grazing should begin from mid-to-late June when grasses reach height of 12 to 16 inches. Overgrazing can cause stands to decline; therefore, grazing should be stopped when plants are grazed to within 8 to 12 inches of the ground. If more than 12 inches of regrowth takes place, plants can be regrazed to within 6 inches of the ground. Leaving 12 inches of stubble before frost allows plants to store carbohydrates and ensures the production of vigorous plant growth in the spring.

Performance
The phenology, forage quality and quantity, palatability, and wildlife habitat potential of Forestburg have been documented in advanced evaluation studies and field plantings under conditions of actual use in North Dakota, South Dakota, and Minnesota. Forestburg has demonstrated outstanding winter hardiness and seed production. Forage production exceeds that of the northern source Dacotah and is equal to, or greater than, Nebraska-28. Production at 9 locations over an 11-year period averaged 6,000 lb/acre. At northern sites, the cultivars 'Summer', 'Pathfinder', 'Blackwell', and 'Cave·ln·Rock' from southern origins produce more forage in short·term plantings. Over a period of several years, however, pressure from grazing, drought, and winter injury reduces stands and decreases forage production of the southern cultivars in northern areas. In a 3-year grazing study at the University of Minnesota, West Central Experiment Station, Morris, MN, average daily gain from Forestburg was 1.8 lb/day. Flowering (anthesis) data recorded at Fergus Falls, MN, show Forestburg to be 24 to 27 days later than the northern source Dacotah, 3 days earlier than Nebraska-28 and Sunburst, and 30 days earlier than Pathfinder, Blackwell, and Cave-In-Rock.

Seed Production
Stand establishment usually can be accomplished in one growing season. Seed production can be expected the second year and will continue indefinitely. The fields should be established in rows 30 to 42 inches apart. Broadleaf weeds and cool-season grasses have been successfully controlled at the PMC with herbicides. Apply irrigation water at the boot and immediately after the flowering stages. Apply 60-80 lb/acre nitrogen, and phosphorus and potassium according to soil tests. Seed matures in September. Harvesting can be done by windrowing when the seed is in the hard dough stage; or direct combining when the seed has fully matured. When direct combining, seed should be dried as soon as possible to prevent damage from heating. Switchgrass has small, heavy, smooth seed that makes harvesting and cleaning easy. Average purity and germination is 95 and 85 percent, respectively. Seed yields average 300 PLS lb/acre under irrigation at the NRCS Plant Materials Center, Bismarck, ND.

Availability
For conservation use: For more information on availability and use of Forestburg switchgrass, contact the local NRCS or conservation district office.
For seed increase: The NRCS Plant Materials Center maintains the foundation seed.

For more information, contact:
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Bismarck, ND 58504
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http://Plant-Materials.nrcs.usda.gov

Citation
Release brochure for Forestburg switchgrass (*Panicum virgatum*). USDA Natural Resources Conservation Service, Plant Materials Center. Bismarck, ND. Published August 1988, revised August 2012.

For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office (www.nrcs.usda.gov) or Conservation District and visit the PLANTS Web site (www.plants.usda.gov) or the Plant Materials Program Web site (www.plant-materials.nrcs.usda.gov).