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

'Goshen' Prairie Sandreed

Calamovilfa longifolia (Hook.) Scribn.

A Conservation Plant Release by USDA NRCS Bridger Plant Materials Center, Bridger, MT



Goshen prairie sandreed

'Goshen' prairie sandreed *Calamovilfa longifolia* (Hook.) Scribn. is a cultivar released in 1979 in cooperation with the Montana and Wyoming Agricultural Experiment Stations.

Description
Goshen prairie sandreed is a tall, sod-forming, warm-season, native grass. Once established, it is an erect grass with vigorous creeping rhizomes and an extensive fibrous root system. It has rigid, leafy stems that are 2 to 6 feet high. The predominately basal leaves are pale green to straw colored, coarse, mostly flat, up to ½-inch wide and 15 to 24 inches long, tapering to a fine point. The leaf collar lacks auricles, and is hairy inside with a short bristly ligule. The inflorescence is a narrow to semi-open panicle, 6 to 14 inches long. The shiny spikelet is 1-flowered and the floret has a basal ring of white hairs half the length of the lemma.

Origin
Goshen prairie sandreed originates from a seed collection made in 1959, in Goshen County, Wyoming, near Torrington. The area receives 12 to 14 inches of annual precipitation at an elevation of 4,100 feet. Goshen was initially tested for more than 14 years against prairie sandreed collections from Kansas, Montana, Nebraska, North and South Dakota, and Wyoming. Goshen was selected for its leafy biomass production and excellent seed production. The original collection of Goshen was directly increased without selection.

Conservation Uses
Goshen is primarily used in mixtures to stabilize sandy sites on rangeland and roadsides. The sod forming roots form dense colonies that effectively bind the soil and control soil erosion from wind and water. Prairie sandreed is good forage for livestock and wildlife in early spring, late fall, and winter. Goshen prairie sandreed is not suitable as a hay crop due to poor forage quality in summer. It provides excellent cover for wildlife and the seed is eaten by song birds and rodents.

Area of Adaptation
Goshen prairie sandreed is adapted to coarse- to medium-textured soils on overflow, silty, shallow, and limey ecological sites in areas receiving 10 to 20 inches of annual precipitation. Prairie sandreed is very tolerant of cold temperature but southern or low elevation types are not winter hardy when seeded in northern latitudes.



Area of adaptation for Goshen prairie sandreed

Establishment and Management for Conservation Plantings
Goshen can be established by direct seeding. There are 205,900 seeds per pound. For best results, seed should be planted into a firm, weed-free seedbed. The recommended seeding rate in a mix is ¼ to ½ pound pure-live-seed (PLS) per acre, constituting one to two percent of the composition in the mix. Seed should be planted in the spring after the last killing frost to a depth of 1 inch in sandy soils and ½ inch in medium-textured soils. Goshen prairie sandreed can be planted by seed-hay or sprigging methods to improve stand establishment on sand dunes and erosive sites; e.g., in "blowouts." It reproduces by seed and vegetatively by spreading rhizomes. Prairie sandreed grows in slightly acidic to moderately alkaline soils (pH 6.1 to 8.4) and is slightly tolerant of saline (non-sodic) soils with electrical conductivity of 4 to <8 millimhos per centimeter (mmhos/cm). It is strongly resistant to drought and will replace bluestem grasses (*Andropogon* and *Scoparium* species) during extended periods of dry weather. Prairie sandreed is intolerant of

high water tables and early spring flooding. It is intolerant of shade at all stages of growth.



Goshen prairie sandreed seed field at the Plant Materials Center near Bridger, Montana

Ecological Considerations
Goshen prairie sandreed has a low tolerance to close, continuous grazing and can be displaced by blue grama *Bouteloua gracilis*, buffalograss *Bouteloua dactyloides*, and other shortgrass prairie species. Despite its heavy root development, this grass is susceptible to trampling and will disappear from sites where livestock congregate. Prairie sandreed is not considered weedy or invasive. It is susceptible to a variety of foliage pathogens such as leaf mold (*Hendersonia calamovilfae*), leaf spot (*Septoria calamovilfae*), and rust (*Puccinellia* species).

Seed Production
Seed of Goshen prairie sandreed is moderately easy to produce under cultivated conditions. Seed fields should be established at 25 to 30 seeds per linear foot. When planted in rows 2 feet apart, the recommended seeding rate is 2 to 2.4 pounds per acre. When planted in rows 3 feet apart, the recommended seeding rate is 1.3 to 1.6 pounds per acre. Individual rows may be maintained with cultivation. Once rhizomes begin to develop, the rows may be allowed to spread to a solid stand, although the result will be lower seed yields. Irrigated seed production with 80 pounds of actual nitrogen per acre applied in the fall yields an average of 163 pounds PLS per acre for 5 to 7 years. Prairie sandreed processing is difficult due to late maturity, seed shattering, lodging, and a high volume of fluffy material. Seed fields are direct combined when seed is in the hard dough stage. If direct combined, the seed must be dried prior to storage. The average harvest date at the Bridger Plant Materials Center (PMC) is October 1. Prairie sandreed is wind pollinated with a chromosome number of 2n=40.



Direct combining Goshen prairie sandreed

Availability
Goshen prairie sandreed is available on the commercial seed market. Foundation seed is maintained by the USDA-NRCS Plant Materials Center in Bridger, Montana. It is available to commercial growers through the Montana Foundation Seed Program at Montana State University-Bozeman and the University of Wyoming Foundation Seed Service in Powell, Wyoming. Foundation and Certified seed classes are recognized.

For more information, contact:
Bridger Plant Materials Center
98 South River Road
Bridger, Montana 59014
Phone 406-662-3579
Fax 406-662-3428
http://plant-materials.nrcs.usda.gov/mtpmc
http://www.nrcs.mt.usda.gov

Citation
Release Brochure for Goshen prairie sandreed *(Calamovilfa longifolia)*. USDA-Natural Resources Conservation Service, Bridger Plant Materials Center. Bridger, Montana 59014. Revised January 2013.

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