

SANDBERG BLUEGRASS

Poa secunda J. Presl.

Plant symbol = POSE

**Contributed by: USDA, NRCS, Bridger
 Pant Materials Center**

Alternate Names: little bluegrass



Description

Sandberg bluegrass (*Poa secunda* J. Presl.) is a cool-season, perennial bunchgrass that matures early in the growing season. This grass is one of the first to green up in the spring, but is cured and dormant by early summer. The plant usually occurs as small tufts, with soft basal leaves and few to many flowering stalks that are naked except for two small leaves. The leaves have the typical bluegrass characteristics of prow-shaped tip and double groove down the center of the leaf surface. Sandberg bluegrass has a prominent membranaceous, acute ligule. The seeds are glaucous except for short crisp hairs on the lower portion of the lemmas. The flowers are in narrow panicles that are somewhat spreading during anthesis. Plants seldom exceed 60 cm (2 ft) in height. Sandberg bluegrass has

extensive, deep penetrating, coarse, fibrous roots that make it quite drought tolerant and resistant to grazing and trampling. Sandberg bluegrass has approximately 2,000,000 seed per kilogram (925,000 seeds per pound).

Area of Adaptation

This grass is considered an increaser in mid and short-grass prairies, mountain meadows, and foothills of south-central Canada and western United States (Dakotas west to Washington), south to Mexico (Hitchcock 1935) (Hitchcock & Cronquist 1976). It is found at elevations ranging from 300 to 3,650 meters (1,000 to 12,000 ft). It grows well on medium texture soils but is common on badlands, ridge tops, and dry, stony, or sandy soils. It is a pioneer species, one of the first grasses to colonize on surface manipulated sites and other moderate surface disturbances. The primary area of use would include the northern Great Plains (Montana, Wyoming, North Dakota, South Dakota, Colorado), the Great Basin (Idaho, Nevada, Utah), and the Palouse country (Washington, Oregon).

Uses

Sandberg bluegrass is palatable to livestock early in the growing season, becoming less preferred during the summer when cured. By autumn it is frequently selected again. Deer, pronghorn antelope, and mountain sheep utilize Sandberg bluegrass forage and birds and small mammals utilize the seed (Johnson and Larson 1999). Because of the small stature and early maturity, this grass does not provide much usable forage. It is usually a minor component of most grassland communities, but is still considered one of the six most important range grasses of the Intermountain and Pacific Northwest regions (USDA Forest Service 1937). The anticipated use of commercially available Sandberg bluegrass seed is for inclusion in native mixtures for wildlife habitat, reclamation of disturbed sites, restoration of native rangeland, and conservation plantings related to the Farm Bill.

Establishment

For best results, seed should be planted into a firm, weed-free seedbed, preferably with a drill that will ensure a uniform seed placement of about 6 mm (1/4 inch). The small seed can be broadcast seeded, harrowed, and packed for good seed-soil contact; however, in dryland situations good precipitation at the time of germination is critical for emergence and survival. The full seeding rate is 1.7 kg/ha (1.5 lb/ac), but it would seldom be seeded in a pure stand. It would normally be included in a native seed

mixture at a rate of 0.3 to 0.6 kg/ha (1/4 to 1/2 lb/ac). Seeding of this species in early spring is favored over a dormant fall seeding. Sandberg bluegrass is considered a pioneer species and is often the first grass to respond to surface manipulation of deteriorated rangeland. Sandberg bluegrass is a relatively short-lived grass, but often perpetuates itself through prolific seed set and shatter.

Management

Sandberg bluegrass will withstand heavy grazing and trampling, in part, because of its early maturity and apparent dormancy during the summer and fall grazing period. When planted in a native reclamation mix, it will be a minor component of the establishing plant community, therefore management would probably be based on other key species in the mixture. Any new planting should be deferred from livestock grazing the establishment year.

Seed and Plant Production

Seed should be planted in rows using a drill that will ensure a uniform 6 mm (1/4 inch) planting depth. Seeding is best in early spring (April 1 to May 15). Seeding should be done in rows with at least 45-60 cm (18-24 in) spacing on irrigated sites and 75-90 cm (30-36 in) on dryland sites. Seed production should not be attempted on dryland sites receiving less than 380 mm (15 inches) of annual precipitation. Seed of this species matures early, so a long growing season is not necessary. However, seed production should not be attempted in areas that have a high probability of a killing frost past May 15th. Commercial seed production fields of Sandberg bluegrass will not produce seed the first (establishment) year. Seed production fields should be established using a rate of 80 seeds per linear meter of row (25 PLS/ linear foot). This will equate to 0.6 to 1.2 kg/ha (0.5 to 1 lb/ac) of pure live seed. Because of the extremely small seed size, seeding rates are often in the neighborhood of 2.2 kg/ha (2 lb/ac) because of the difficulty in metering such a small volume of seed through a drill. Seeding in rows facilitates weed control and allows for more robust plant development. Close cultivation should occur only during the establishment year. As the stand matures, cultivation should be further away from the row, allowing tillering from the edges and preventing damage to surface roots. There are several broadleaf herbicides that are registered for use in grass seed production fields, however, options are limited for chemical control of annual grassy weeds.

The average harvest date in south-central Montana ranges from June 24 to August 19; the harvest date varying with spring and early summer climatic

conditions. Good seed production can be expected during the second and third year of production with seed production dropping off drastically the fourth year. Expected seed production is 85-175 kg/ha (75-150 lbs/ac) on dryland and 110-445 kg/ha (100-400 lbs/ac) on irrigated sites. Seed ripening is uniform enough that seed can be direct combined, but swathing and combining from a cured windrow is the preferred method of harvest.

Germplasm Release

High Plains Selected Class Germplasm of Sandberg bluegrass was released in 2000 from the Bridger Plant Materials Center. This is the first release of this species to the commercial seed industry. This release is a composite of three accessions originating from the high plains of Wyoming; one each from Natrona (300-350 mm precip., elev. 1,590 m), Campbell (250-300 mm precip., elev. 1,430 m), and Uinta (175-225 mm precip., elev. 1,920 m) counties. G₁ (equivalent to Foundation) seed is available to commercial growers through the Foundation Seed Program at Montana State University and the University of Wyoming. The Montana and Wyoming Seed Certification Programs will recognize G₂ (equivalent to Registered) and G₃ (equivalent to Certified) classes of germplasm.

Environmental Concerns

Sandberg bluegrass is a native perennial grass that is considered an increaser under heavy grazing conditions and is a pioneer (early colonizing species) on rangeland disturbances or surface manipulated sites. This species is a bunchgrass and seed shatter does not travel far from the parent plant. Seeds may be consumed by songbirds, upland game birds, and small mammals and spread through feces. Sandberg bluegrass is not aggressive, and therefore is not considered to be invasive.

References

- Hitchcock, A.S. 1935. Manual of the Grasses of the United States. Miscellaneous Publication No. 200. US Printing Office, Washington D.C.
- Hitchcock, C.L. and A. Cronquist. 1976. Flora of the Pacific Northwest-An Illustrated Manual. University of Washington Press, Seattle, WA.
- Johnson, R.J. and G.E. Larson. 1999. Grassland Plants of South Dakota and the Northern Great Plains. B-566, South Dakota State University, Brookings, SD

USDA Forest Service. 1937. Range Plant Handbook.
U.S Government Printing Office , Washington D.C.

Prepared By:

Mark Majerus, Plant Materials Center Manager,
USDA, NRCS, Bridger, MT

Larry Holzworth, Plant Materials Specialist, USDA,
NRCS, Bozeman, MT

For more information about this and other plants, please contact
your local NRCS field office or Conservation District, and visit the

PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials
Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.