

SAND BLUESTEM

Andropogon hallii Hack.

Plant Symbol = ANHA

Contributed by: USDA NRCS Kansas Plant Materials Center, Manhattan



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Department of Systematic Biology-Botany

Uses

Erosion control: Sand bluestem is often used in erosion control plantings on sandy, loamy sand or sandy loam sites. It establishes quickly on blowouts where its rhizomes aid in stabilizing sandy soils. Generally, it is planted as part of a mixture with other warm season grasses.

Conservation Practices: Sand bluestem, because of its growth habit, is used with certain conservation practices; however, conservation practice standards and specifications vary by state. By going to the e-FOTG website for your state you can read if this grass is applicable to your needs. However, for specific county data it is best to consult the local NRCS Field Office.

Forages: Sand bluestem is a good to excellent forage due to its palatability and high yield. It is an important component of many native hay meadows

and range pastures. The nutritive value of sand bluestem rises and falls with the growing season. It is high in crude protein and palatability until just prior to seed head formation. After seed heads are formed the nutritive value and palatability decreases significantly.

Wildlife: Sand bluestem is good to excellent forage for all browsing wildlife species. Because it frequently grows in large clumps and retains an upright structure throughout the winter it makes an excellent nesting habitat for many upland birds and small mammals. Wildlife also use the seeds as a food source.

Ornamental Landscaping: As xeric landscaping becomes more popular the use of sand bluestem has increased in yard plantings. Because of its height and erect growth form many consider it an excellent plant for lawn and flowerbed borders.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at <http://plants.usda.gov/>. Please consult the Related Web Sites on the Plant Profile for this species for further information.

Description

General: Grass Family (Poaceae). Sand bluestem is a native, perennial, warm season bunch grass. Plants are glaucous; culms robust, often growing in large tufts, with prominent rhizomes reaching 4 to 8 inches in length and conspicuous hairy pedicels, rachis joints and seed heads. In the best growing conditions it can reach 7 feet in height. It has a J-shaped stem base, and the culms are solid, and grooved on one side. The leaf blades have margins with none to few hairs, have prominent midribs, strongly ridged on the upper surface but not below. The leaf collar is often hirsute. Most leaves are found near the base.

Distribution: Sand bluestem occurs predominantly west of the Mississippi River to the Rocky Mountains and from Canada to Mexico. For current distribution,

please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Sand bluestem is found on sandy, loamy sand or sandy loam soils. It is found as part of a climax plant complex under good grazing or native hay meadow management. It is not generally found where annual precipitation is less than 14 inches, greater than 30 inches or on soils with a high clay component.

Distribution:

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Sand bluestem is climatically adapted throughout the mid-west and Great Plains Region on sandy, loamy sand or sandy loam soils.

Establishment

Sand bluestem should be seeded in the spring just prior to the start of the growing season. A drill specifically built for seeding native grasses should be used. It is best if the grass is seeded into a weed free cover crop. The seeding rate can vary from 6 to 12 pounds Pure Live Seed (PLS) per acre. The local NRCS Field Office should be consulted prior to ordering any seed to ensure the right amount and planting mixture is used. Broadcast seeding will result in significantly fewer viable seedlings. Broadcasting should only be done on small acreages where drilling is **not** physically feasible. Applying commercial fertilizers to native grass seedings is more likely to result in competitive weed growth rather than improve grass establishment. If the pH is below 5.5, lime should be incorporated into the soil prior to planting. When possible a named variety suitable for your growing area should be used. If this is not possible, a seed source closer than 400 miles to the south, 150 miles to the north or an elevation increase of 1,500 feet should be used. Sand bluestem has relatively weak seedling vigor compared to weeds and cool season grasses; therefore, control of competition is necessary for successful stands.

No harvest of bluestem during the establishment period should be allowed. After initial establishment, harvesting by controlled pasturing or haying is possible on good stands. The first harvest should not commence until the bluestem is 20 inches tall. It should be grazed (5 days maximum duration) or cut no lower than 8 inches and then protected from use until 20 inches in height is reached again. No cropping should occur below 8 inches or within 1 month of anticipated frosts. After a killing frost stands which have deep roots may be grazed. High mowing (above the bluestem seedlings) should be done when the weeds reach a height of 6 to 8 inches. Herbicide applications for weed control should be considered when weeds create more than 50 percent

of the canopy. All pesticides used must be Federally and locally registered and applied in accordance with authorized registered uses, directions on the label, and other Federal or State policies and requirements.

Prescribed burning can help remove weed mulch and standing vegetation from shading small seedlings and warm the ground in the early spring. It is recommended a prescribed burning plan be made with your local NRCS Field Office prior to any actual burn.

Management

Native Hay Meadow: Meadows where sand bluestem is an important component of the plant community should be cut no closer than 4 inches above the soil. Generally, it should be cut 1 to 3 weeks before seed head formation. During seed head formation the nutrition and palatability of sand bluestem decreases significantly. It is also important for the grass to be allowed to store carbohydrates in its root system for the next growing season. Cutting late does not permit adequate regrowth of the leaf blades prior to frost for this to occur. Regrowth is determined by the mowing date and weather conditions. The meadow must be mowed before boot stage if significant regrowth can occur. If the cut meadow is grazed livestock should only be placed on it after the first killing frost.

Livestock Grazing: Cattle and horses prefer sand bluestem over many other grasses and forbs it is normally associated with. When sand bluestem is repeatedly overgrazed closer than 6 to 8 inches during the growing season it decreases in population and is replaced by less productive and desirable vegetation. The old rule of thumb, "Take half and leave half", works well when dealing with sand bluestem. Large creeping rhizomes help this grass endure overgrazing to some extent. However, continual abuse causes this decrease grass to lose health, develop a prostrate growth habit, and finally die out. At the end of the grazing season the average height of sand bluestem plants in a well managed prairie should be at least 6 inches. If the pasture is to be grazed during the winter the grass should be at least 8 inches tall to help trap snow and as a forage reserve.

Prescribed burning can be a tool used to maintain or improve prairie ecosystems. Fire can reduce competition from competitive cool-season grasses and remove many woody plant invaders. However, because sand bluestem predominantly grows on sandy soils this must be taken into account or "blowouts" may occur. When burning is planned it should be done when new spring shoots are 1/2 to 2 inches long.

Environmental Concerns

Sand bluestem is an important part of prairie ecosystems. Due to land use changes much of the virgin prairie has disappeared. When grass mixtures

are recommended for erosion control, or wildlife habitat, sand bluestem can be a vital portion of the native habitat and should be included in all native prairie grass seedings.

Seeds and Plant Production

Sand bluestem is a poor viable seed producer in its native habitat. The main way this grass spreads is by its rhizomes. The rhizomes grow from axillary buds during June and July, turn upward in late summer, and then remain dormant until the next spring growing season.

Cultivars, Improved, and Selected Materials (and area of origin)

'Elida' was selected at the NRCS Plant Materials Center (PMC) in Los Lunas, NM, and released cooperatively with the NM Agriculture Experiment Station in 1963. It is adapted to Land Resource Region (LRR) G and H and Plant Hardiness Zone (PHZ) 5.

'Garden' was released by the Soil Conservation Service in 1960, and produced at the USDA-NRCS PMC in Manhattan, KS. It is adapted to LRR G and H and PHZ 4b.

'Goldstrike' was developed cooperatively by the Nebraska Agriculture Experiment Station (AES) and USDA- Agriculture Research Service (ARS) in 1973. It is adapted to LRR G and H, and PHZ 4 and 5.

'Woodward' was released cooperatively by Oklahoma and Kansas Agricultural Experiment Stations and USDA-ARS in 1955. It is adapted to the southern Great Plains.

Cottle County Germplasm was released by USDA-NRCS James E. "Bud" Smith PMC in Knox City TX in 2002. It is adapted to LRR H and J, and PHZ 6 and 7 of the southern Great Plains.

'Centennial' was released cooperatively by the USDA-ARS and NRCS in 2013. It is adapted to PHZ 5b, 6 and 7a of the central and southern Great Plains.

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

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