

'Vaughn' sideoats grama

Bouteloua curtipendula
(Michx.) Torr.



'Vaughn' sideoats grama (*Bouteloua curtipendula*)

'Vaughn' sideoats grama was released in 1940 by the New Mexico State University's Los Lunas Agricultural Science Center and the Los Lunas Plant Materials Center in Los Lunas, New Mexico.

Description

'Vaughn' sideoats grama is a deep rooted, perennial grass. This cultivar will spread very slowly by means of extremely short, stout rhizomes. A mid-grass in height, it has rather wide leaves and a very distinct inflorescence consisting of a zigzag stalk with small compressed spikes dangling from it at even intervals. The short spikes dangle from one side of the stalk, thus providing the plant with its common name. In the vegetative state the grass is easily recognized by the long, evenly spaced hairs attached to the margins of the leaf near its base. Sideoats grama possesses the C-4 photosynthetic pathway common to warm-season grasses (Waller and Lewis, 1979).

Source

The original seed was collected from native stands in 1935 near Vaughn, New Mexico. The release is described as slightly variable, but all have erect leaves, good seedling vigor and easy to establish

Conservation Uses

- **Forage:** Sideoats grama produces high quality, nutritious forage that is relished by all classes of livestock throughout the summer and fall, and it remains moderately palatable into winter. This makes it one of the most important range grass species.
- **Erosion Control:** Weaver and Albertson (1944) described the role of sideoats grama in the recovery of grasslands following the drought of the 1930's. It was one of the few grasses that covered large areas bared by the loss of other grasses during the drought period. Sideoats grama is recommended in grass mixtures for range and pasture seeding, for earth fill and bank stabilization, and for other critical area plantings. Successful seeding can be obtained in rocky, stony or shallow soil sites. In fact sideoats is often found in nearly pure stands on caliche outcrops, stony hillsides and breaks (Harlan, 1954).
- **Wildlife:** Sideoats grama provides some forage for antelope and deer when actively growing. Elk will use this grass as forage throughout the year. Leithead et al. (1971) indicated that the seed of this species was consumed by wild turkeys.

Area of Adaptation and Use

'Vaughn' sideoats grama is adapted to a broad range of sandy to clayey textured soils; it is least tolerant of loose sands and dense clays. The best stands of sideoats are found on medium-to-fine texture upland soils. This species has shown varying tolerance to soil salinity from weak to moderate. Sideoats is moderately drought tolerant, but less so than blue grama. It is moderately tolerant of semi-shaded conditions and can be found in open woodlands. It will sustain damage from wildfires when actively growing and under drought stress conditions, but is fairly tolerant of fire in a dormant state. It is also fairly tolerant of spring flooding. It probably has the widest range of adaptation of any of the warm-season perennial grass plants. It grows in combination with tall warm-season grasses such as big bluestem (*Andropogon gerardii*) and switchgrass (*Panicum virgatum*) all the way to the short grass plants such as buffalo grass (*Bouteloua dactyloides*) and blue grama (*Bouteloua gracilis*). Thus, it can successfully grow in a variety of climates and habitats in the continental U.S.

Establishment and Management for Conservation Plantings

Seed improved cultivars of this grass no deeper than ¼ inch on fine textured soils and ¾ inch on coarser textured soils. Planting with a grass seed drill on a firm, weed-free seedbed at the rate of 2.5 to 5.0 pounds of pure live seed (PLS) is encouraged. Broadcasting at a higher seeding rate (50 to 100 percent increase) can be utilized on a previously prepared seedbed that will be culti-packed

after seeding is completed. Increased seeding rate should also be used on bare areas, harsh sites, or on areas that require denser or quicker stand establishment. Seeding is more likely to be successful if moisture conditions are good and if mulch is used to retain moisture on the seeding site. Most seed germinates within 7 days under good field conditions. Seedling vigor is good when compared to other warm-season grasses. Field germination, emergence and establishment of this species are better than other grama grasses. Protection from grazing is encouraged while seedlings are in the juvenile stage of growth.

As a mid-grass, sideoats grama is intermediate in many respects between the tall and short grass species. Sideoats grama is not as resistant to grazing pressure as is blue grama due to its taller growth habit. Sideoats seedlings are vigorous and stands tend to establish quickly and can often be utilized for forage production the second year after planting. Sideoats grama is usually included in range mixes and should be managed as native rangeland. Management should include proper livestock stocking rates and correct season of use.

Ecological Considerations

Grasshoppers can be destructive of seedling stands. Some stem and leaf rust occurs in wet years and Mankin (1969) found several leaf spot and root rot fungi occurred on sideoats grama

Seed and Plant Production

Seed production experiments conducted in Nebraska in the 1950's found that sideoats grama response to nitrogen fertilization was dependent on moisture conditions during critical growth periods (Newell et al., 1962). Seed yields measured as whole spikes were substantially increased over unfertilized check plots by all rates of nitrogen applied. Under drought conditions the application of 60 and 90 pounds of nitrogen yielded whole spike yields of approximately equal amounts. Under favorable moisture conditions nitrogen fertilization improved the quality of the caryopsis by increased weight per 1000 caryopsis over unfertilized plots.

Seed of sideoats grama normally found on the open market consists of either whole spikes or individual florets, or mixtures of these, which vary widely in their content of germinable caryopsis. Thus, seeding rates of sideoats must be computed on the basis of purity and viability of the seed lot. Purity analysis of sideoats can be complicated by the inclusion of adhering glumes and spike fragments as part of the seed unit. As long as the seed unit has a germinable caryopsis in the spike it is considered viable and used in the computation of pure live seed by the seed analyst. Thus a spike may contain several germinable caryopses, but is counted only as one for the purpose of germination percentage.

The effect of burning on seed yield was studied by Newell et al. (1962) in fertilized and unfertilized plots. Although the seed yield results were numerically larger from both levels of fertilized plots when burned, the differences could not be proven to be statistically different. This finding is noteworthy since it proves that proper burning, if not conducted too late in the spring, does not reduce seed yield. Burning is a proven method of cleaning the field for the new seed crop year. Burning has also been known to help control cool season weeds and reduce disease inoculums for the new crop.

Thus, sideoats grama may be grown for seed in cultivated rows, and will respond to timely fertilization and irrigation applications.

Availability

Foundation seed is produced by the Los Lunas Plant Materials Center. Foundation seed is available to certified growers through New Mexico State Seed Certification.

For more information, contact:

Los Lunas Plant Materials Center

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<http://plant-materials.nrcs.usda.gov/nmpmc/>

Citation

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