

'Alma'

blue grama

Bouteloua gracilis (H.B.K.)
Lag. ex Griffiths



'Alma' blue grama

'Alma' blue grama [*Bouteloua gracilis* (H.B.K.) Lag. ex Griffiths] was released by the New Mexico State University's Los Lunas Agricultural Science Center, the Colorado State University, and the USDA Natural Resources Conservation Service (NRCS) Los Lunas Plant Materials Center.

Description

'Alma' blue grama is a composite composed of 'Lovington,' 'Hachita,' and PM-K-1483 (a composite of accessions from Kansas and Texas). 'Alma' blue grama was selected for heavier seed weight, seedling emergence from a deeper planting depth, seedling vigor, and both seed and forage production.

'Alma' blue grama was developed from three cycles of recurrent selection. Recurrent selection is the process of selecting individuals and allowing them to inter-pollinate to produce the next generation. Individuals within each generation were selected for vigor and for the longest subcoleoptile internode. The subcoleoptile internode is one of the first areas of the seedling root to develop and extends from the seed up to the developing coleoptile (shoot). The longer the subcoleoptile internode, the deeper in the soil a seed may be planted and still become established as a seedling.

In each of the three cycles of recurrent selection, a gain of 7mg to 8mg/100 seeds (caryopsis) occurred, so that the population was advanced from 48mg to 65mg/100 caryopses, or a 35% increase in weight. With more seed reserves and larger seedling organs, the larger caryopses showed improved seedling emergence from planting the seed at a deeper depth, and more capacity for root development to aid establishment by rapid growth rates after rainfall events occur.

Notable characteristics of 'Alma' blue grama are robust upright growth and good seedling vigor.

Source

'Lovington' blue grama seed was collected 10 miles east of Lovington, NM, and 'Hachita' blue grama seed was collected 32 miles southwest of Hachita, NM. PM-K-1483 is a composite of accessions from Kansas and Texas.

Conservation Uses

'Alma' blue grama is a principal component in warm-season mixes for rangeland improvement where adapted. It is suitable for use in mixtures designed for erosion control and surface mined revegetation. It is recognized as an important low maintenance turf (requires less water than bluegrass) and properly managed, it is suitable for low maintenance recreation areas. As a warm-season grass it becomes dormant in fall and greens up in mid-spring.

Area of Adaptation and Use

'Alma' blue grama is most adapted to the Great Plains with 12 to 16 inches precipitation, primarily in late spring and summer. It tolerates moderate salinity and alkalinity. It will not tolerate dense shade, flooding, high water tables or acid soils. It occurs in association with buffalograss, western wheatgrass, needlegrass, and Sandberg bluegrass. It escapes drought by becoming dormant and tolerates fire only in its dormant state.

Establishment and Management for Conservation Plantings

To establish 'Alma' blue grama as a pasture or range grass, the seeding rate should be 1½ to 2½ pounds per acre (1.7 to 2.8 kg/ha) of pure live seed between June 15 and August 15. For a lawn, broadcast 1 pound per 1,000 square feet (49 kg/ha) and mulch with straw. The development of larger seed size resulted in an increase in the percentage of emergence.

Ecological Considerations

'Alma' blue grama's high palatability to livestock makes it a choice forage species. Because it cures well on the ground by retaining as much as 50 percent of its nutritive value, it makes good fall and winter forage. It also withstands grazing.

Seed and Plant Production

For seed production it is recommended that supplementary water be given only after July 1, so that the principal flush of flowering does not coincide with the hottest part of the summer.

Comparison of 'Alma' and 'Hachita' (a very vigorous southwest New Mexico type of blue grama) showed that 'Alma' blue grama:

- Usually had better in emergence in Colorado dryland trials
- Was not significantly different in forage productivity when grown in 30 cm rows, either alone or alternated with legume rows
- Had no difference in crude protein percentage

Availability

For conservation use: If you are interested in using 'Alma' blue grama in a lawn, pasture, or range planting, contact your local County Extension Service or your local USDA–NRCS Office for information on where to buy seeds and how to use and plant them.

For seed or plant increase: Breeder seed is produced by the USDA-NRCS Los Lunas Plant Materials Center. Limited quantities of foundation 'Alma' blue grama seed are available to seed growers through New Mexico State Seed Certification Program.

For more information, contact:
Los Lunas Plant Materials Center
1036 Miller Road SW
Los Lunas, NM 87031
Tele: 505-865-4684
FAX: 505-865-5163

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

Citation

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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://www.plant-materials.nrcs.usda.gov/>>



This is a joint release among New Mexico State University's Los Lunas Agricultural Science Center, the Colorado State University, and the USDA Natural Resources Conservation Service Los Lunas Plant Materials Center.

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