

# Blue Grama

## Nomenclature

	Registered Names	2018 ACIMS Names
<b>Scientific Name</b>	<i>Bouteloua gracilis</i>	<i>Bouteloua gracilis</i>
<b>Common Name</b>	blue grama	blue grama

ACIMS = Alberta Conservation Information Management System

**Germination.** Blue grama grass produces one sterile floret for every fertile floret. Therefore, harvests have a baseline germination rate of 50% prior to processing. Seed samples must be carefully blown out to remove sterile florets and improve these germination rates.

**Species Description.** A dryland specialist, and one of few C4 grasses found naturally in Alberta, blue grama is a low-growing, rhizomatous grass. This species can tolerate extreme drought conditions, and “greens up” late in the season.



Blue grama has a hairy collar and a horizontally oriented seed head that look like a comb, usually with two seed heads per culm. Each spikelet has one perfect floret and one or more rudimentary infertile florets. At the collar the sheath is split and veiny, the ligule is a ring of hairs, auricles are absent, glumes are unequal. The seed has a very hairy keel, lemmas have three nerves, awn is three pronged and originates from base of the floret (Tannas, 2003).

**Species Ecology.** Blue grama is found in the southern half of the province where dry natural grasslands are common. The proportion of blue grama in a grassland plant community tends to increase under heavy grazing pressure (increaser). Blue grama tends to grow well in soil types ranging from heavy clay to sandy loam.

**Species Agronomy.** To promote establishment in the field, seeds should be covered with a very light layer of soil (i.e., dusted in). The species is prone to bridging – use in a mix, pelletize/coat seed, or seed with a carrier for best results. Seed carriers like chicken grit, sand, or vermiculite help in the flow of seeds through seeders to soil.

No herbicides have been developed for blue grama as a crop. If broadcast spraying, employ herbicides intended for use on forage grasses, ensure the crop is at the five-leaf stage or later, and

test the herbicide on a small area before applying to the entire crop. Spot spray non-selective herbicides within plots for control of rhizomatous weedy grasses.

Blue gramma seed is too small to be adequately handled by traditional harvesting equipment; specialty or modified equipment is required. Combines designed for horticultural flowers with air flow turned down work well. For agricultural production, seed at 1,000 seeds/m<sup>2</sup> for good coverage and establishment. Blue grama is well adapted to low nutrient soils so no fertilizer or soil amendments are recommended. Blue grama establishes well and spreads by short rhizomes, making it a good low-cover plant. It greens up late in the year and seeds are ready for harvest around the end of August.

Because it has a 50% germination rate immediately after harvest (see Germination % History) heavy cleaning must be undertaken to improve sample germination rates. A yield of 49 kg/ha (44 lbs/acre) can be expected annually. A stand should survive for at least 5 years.

**Revegetation Uses.** Blue grama was the 10<sup>th</sup> most frequently included species in reclamation seed mixes as reported in Powter et al. (2018). While blue grama has been developed for native seed mixes used in reclamation and restoration programs, it is also well suited to xeriscaping, beautification, turfgrass, and low maintenance roadside seed mixes.

**Market.** Several Alberta vendors sell common blue grama seed. In 2017, common seed sold for around \$21/lb. There are approximately 1,298,701 seeds/lb (for comparison, oats = 12,285 seeds/lb); therefore, it would cost \$65 per acre at 1,000 seeds/m<sup>2</sup>:

$$4,047 \text{ m}^2/\text{acre} = 4,047,000 \text{ seeds/acre at } 1,000 \text{ seeds/m}^2.$$

$$1,000 \text{ blue grama seeds} \approx 0.35 \text{ g.}$$

$$\text{Therefore, } (4,047,000/1,000) * 0.35 \text{ g} = 1,416 \text{ g} = 1.416 \text{ kg} * 2.2 \text{ lb/kg} = 3.12 \text{ lbs} * \$21/\text{lb} \approx \$65/\text{acre}$$

## Bibliography

Powter, C.B., M. McKenzie and C.C. Small, 2018. Inventory of Native Species Seed Mixes in Alberta: December 2018 Update. InnoTech Alberta, Edmonton, Alberta. 252 pp.

<https://www.cclmportal.ca/resource/inventory-native-species-seed-mixes-alberta-december-2018-update>

Tannas, K. 2003. Common Range Plants of the Western Rangelands. Volume 1. Grasses, Grass-like species. Alberta Agriculture, Food and Rural Development. 356 pp.