United States Department of Agriculture

A Conservation Plant Released by the Natural Resources Conservation Service
Los Lunas Plant Materials Center, Los Lunas, NM

Tusas Germplasm bottlebrush squirreltail

Elymus elymoides (Raf.) Swezey

Tusas germplasm bottlebrush squirreltail (Elymus elymoides)

Tusas germplasm bottlebrush squirreltail (*Elymus elymoides* Raf. Swezey) was released in 2001 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

Tusas germplasm bottlebrush squirreltail is a cool-season, short-lived, native, perennial bunchgrass. It can obtain a height of 15-20 inches, greens up in mid-to-late February, flowers in April and is ready for harvest by late June.

Source

In 1983, 131 accessions were collected from native stands throughout New Mexico. In 1988, eight of those accessions were selected to form the composite germplasm.

Conservation Uses

Bottlebrush squirreltail displays many qualities which make it a good choice for what has been described as "assisted succession." It is a short-lived, perennial grass which can act as an early-seral species by competing with and replacing annual weedy species following fire. It is thought that after bottlebrush squirreltail establishes, annual weedy species should decrease in frequency and longer-lived, native perennials may be more successfully reseeded and established.

When grown in large, dense stands, bottlebrush squirreltail is helpful in controlling wind and water erosion due to its persistent ground cover.

Bottlebrush squirreltail is considered to be fair-to-desirable forage for cattle, horses and sheep in the spring before seed head development and in the late summer to fall after seed shatter. The long, sharp awns of the florets and glumes can be injurious to grazing animals during mid-to-late spring and into summer. Leaves green up in very early spring and are palatable through the fall, especially following rain. The tendency for some leaves to remain green through the winter makes it an important, though not especially nutritious, winter forage species.

Area of Adaptation and Use

Bottlebrush squirreltail is adapted to a wide range of ecological and topographical conditions. Bottlebrush squirreltail is widely distributed throughout the United States and western Canada. It occurs from South Dakota to British Columbia and south through Missouri, Texas, California and Mexico. Plants can be found from 2,000 to 11,500 ft. elevation in desert shrub to alpine plant communities.

Establishment and Management for Conservation Plantings

Bottlebrush squirreltail's ability to germinate in the late fall and early spring at a wide range of temperatures add to its capability to compete with cheatgrass (*Bromus tectorum*). Studies also indicate that bottlebrush squirreltail can establish in medusahead wildrye (*Taeniatherum caput-medusae*) infested sites. This makes bottlebrush squirreltail one of the more competitive native grasses available for reseeding disturbed rangelands. It is a monecious species which allows it to produce seed despite sparse stands following seeding.

Bottlebrush squirreltail is considered to be one of the most fire-resistant native bunchgrasses. Older plants contain relatively low amounts of dead material when compared with other native bunchgrasses. This allows for hot, quick burns which do not penetrate and damage the crown. During dry years, however, plants can be damaged by severe burns. As an early-seral species, new plants often increase for two to three years following burns.

Seeds germinate in the fall or spring. Plants green-up early and remain green through the fall and into winter. Stands should be protected from heavy grazing, especially during flowering to ensure sufficient seed production to

maintain the stand. New plantings should also be protected from grazing for at least two growing seasons.

Ecological Considerations
Plants are known to be susceptible to rust.

Seed and Plant Production
Plant seeds in rows with a 36-inches spacing between rows. Plant at a rate of 2.4 PLS lbs per acre (30 PLS per foot per row). Keep fields weed free and maintain good field moisture to a depth of at least four inches. Soil should be kept moist throughout the germination phase (about 14-28 days). Fifty percent of germination should occur within 15 to 30 days after planting. Do not apply fertilizer during the first year of establishment.

Soil moisture should be carefully maintained during early green-up and after harvest. No irrigation should be applied during flowering to encourage seed set. Fertilize established fields at 100 lbs nitrogen and 40 lbs phosphorus per acre in mid-September. Control broadleaf weeds with herbicides prior to boot stage. Between-row cultivation can be used to control other weeds for the life of the stand.

Seed is ready to harvest around mid-July of the second growing season. Harvest by windrowing followed by combining. Because of the large amount of inert material produced from awns and glumes, this is a very time-consuming species to clean. Thresh seed through a hammer mill to remove awns. Follow with a clipper or other separator. Purity should exceed 90% with greater than 85% viability.

Seed yields under irrigated conditions average approximately 200 lbs/acre with 190,000 seeds/lb. Harvested seed should be dried to 12% or less moisture before storing. Storing seed in a cool, dry environment will retain its viability for several years.

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

For more information, contact:
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This is a cooperative release between the USDA-Natural Resources Conservation Service's Los Lunas Plant Materials Center and New Mexico State University's Los Lunas Agricultural Science Center.