United States Department of Agriculture

A Conservation Plant Released by the Natural Resources Conservation Service
Plant Materials Center, Pullman, Washington

'Secar'
Snake River wheatgrass
Elymus wawawaiensis (J. Carlson & Barkworth)

'Secar' Snake River wheatgrass (*Elymus wawawaiensis*) is a cultivar released in 1980 in cooperation with the Idaho-Oregon-Montana-Wyoming Agricultural Experiment Stations, Washington Agriculture Research Center, and the Pullman Plant Materials Center.

Description

Snake River wheatgrass is a long-lived, perennial, cool-season native bunchgrass with an extensive root system and strong tillers. It is one of the most drought-tolerant native perennial grasses available and can survive in locations with 8 inches of rainfall. It establishes well under droughty conditions with fair to good seedling vigor. Stems are fine and smooth. Leaves grow from the base of the plant and range from 12-16 inches in length. Mature plants reach a height of approximately 36 inches. Snake River wheatgrass is similar in appearance to bluebunch wheatgrass yet can be distinguished by floral and vegetative characters. Seeds are between ½ and ¾ inches in length with bent ¾ inch awns. Recruitment from shattered seed is fair to poor, and plants live 30+ years. The name was selected to reflect drought tolerance; seca, in Spanish, means dry. Secar is the first release of Snake River wheatgrass. Originally released as a bluebunch wheatgrass, but cytological examination later determined it to be Snake River wheatgrass.

Figure 1. Secar Snake River wheatgrass seed production field at the Pullman Plant Materials Center.

Source

The parent material for Secar was originally collected in 1938 along the Snake River Gorge near Lewiston, Idaho. It was identified in observational tests as an outstanding accession (P-6409) among 500 bluebunch and beardless wheatgrass collections representing six ecotypes from the Pacific Northwest. Secar was developed using mass selection from spaced plantings.

Conservation Uses

Secar's primary use is for rangeland re-establishment of native-plant communities and cropland retirement. It is compatible with slower developing native bunchgrass species but does not compete well with aggressive introduced grasses. Its drought tolerance, extensive root system and fair to good seedling vigor, make it well suited for reclamation in areas receiving 10 to 20 inches annual precipitation. This grass can be used in urban areas where irrigation water is limited to stabilize ditch banks, dikes, and roadsides as a component of a native mix. Secar is palatable to all classes of livestock and wildlife. It is a preferred feed in spring when protein levels can be as high as 20 percent. Protein levels decrease to about 4 percent as the grass matures in early to mid-summer. It is also used in erosion control and mine reclamation in soils too rocky or areas too dry for other grass species.

Area of Adaptation and Use

Secar is adapted to low rainfall areas of 8-14 inches. It performs best on deep, well-drained soils and should not be seeded to saline lowlands, wet meadows, or densely forested areas. Secar is very drought tolerant and is adapted to stabilization of disturbed soils. Secar has performed better than 'Whitmar' beardless wheatgrass and 'Goldar' bluebunch wheatgrass in nearly every test planting on sites that receive less than 14 inches of annual rainfall. It performs similarly to Anatone

Germplasm bluebunch wheatgrass and P7 Selected Germplasm bluebunch wheatgrass in plantings that receive 7-10 inches of annual rainfall. Conservation Reserve Program burn studies conducted in central Washington indicate that late summer fires have little adverse impact on Secar. Forage production of Secar is typically between 400 and 2,000 pounds per acre. Sites that receive 10 inches of annual rainfall will yield 900-1,200 pounds per acre.

Establishment and Management for Conservation Plantings

Secar can be seeded alone or with understory grasses such as big bluegrass, Sandburg bluegrass, Idaho fescue, and prairie Junegrass. It also can be sown with forbs and legumes. There are approximately 139,000 seeds per pound. Seed should be sown by drilling at ¼ inch depth on finely textured soils to ¾ inch on coarse soils at a single species rate of 8 pure live seed (PLS) pounds per acre. If seed is broadcast, the seeding rate should be doubled. Cheatgrass competes rigorously with Secar seedlings so cheatgrass must be controlled prior to seeding Secar. Once established, Secar will grow amongst cheatgrass. Annual broadleaf weeds such as prickly lettuce and Russian thistle are less of a problem during the establishment of Secar. Perennial broadleaf weeds such as Canadian thistle and leafy spurge must be controlled. If not controlled, they will severely impact Secar biomass (forage). Stands of Snake River wheatgrass should not be grazed for two to three growing seasons after planting.

Secar should not be grown in areas that are subject to heavy, spring-summer grazing usage. The growing point of Snake River wheatgrass is high, and stands can be easily overgrazed. Heavy early-spring grazing is especially damaging, and grazing should be delayed until new seedheads are emerging about halfway from the boot or protecting leaf. Spring grazing should occur no more than one out of three years and no more than 40 percent utilization should occur during rapid growth. No more than 60 percent utilization should occur after seed ripens. Snake River wheatgrass is not suited to hay production and is best suited to rangeland, critical area stabilization, and cropland retirement type uses.

Ecological Considerations

Secar is susceptible to strip rust and powdery mildew.

Availability

For conservation use: Foundation seed is available through the Washington State Crop Improvement Association. A registered class is not recognized for Secar. Certified seed is available from commercial seed companies.

For seed or plant increase: Breeder seed is maintained by the Pullman Plant Materials center.

Citation

Release Brochure for Secar snake river wheatgrass (*Elymus wawawaiensis)*. 2022. USDA-Natural Resources Conservation Service, Pullman Plant Materials Center. Pullman, WA.

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