

Opportunity Germplasm

Nevada bluegrass

Poa secunda J. Presl

Opportunity Germplasm Nevada bluegrass is a selected class germplasm released from the USDA-NRCS Bridger Plant Materials Center in 2007.

Description

Nevada bluegrass is a native, long-lived perennial bunchgrass. It is a medium to tall stature, cool-season grass with numerous basal and cauline leaves reaching 6 to 12 inches in length. Nevada bluegrass leaves are smooth, deep blue-green, and folded with keel-shaped tips typical of other bluegrass species. The inflorescence is a narrow panicle up to 8 inches long. Opportunity Germplasm Nevada bluegrass has the same general botanical (floral, foliage, fruit, and seed) attributes as the bluegrasses lumped into the *Poa secunda* classification but has the phenological attributes of the late-maturing types (*P. nevadensis*, *P. ampla*, and *P. juncifolia*) rather than the early-maturing types (*P. sandbergii* and *P. canbyi*). Donor plants of this selection reached 24 to 48 inches to the top of inflorescence by early July.



Figure 1. Seed production field of Opportunity Germplasm Nevada bluegrass.

Source

The original Opportunity Germplasm Nevada bluegrass (accession number 9081633) seed collection was made in 1998 near Wisdom Junction, east of Anaconda, Montana. The collection site was severely contaminated with heavy metals deposited by smelter fallout, surface wind and water transport, and historic overflow from a waste canal. Surface pH of the soil was acidic at 4.3. This release was selected for superior seedling emergence and vigor, total plant biomass and cover, and overall survival.

Conservation Uses

Opportunity Germplasm Nevada bluegrass is best used as an inner-space species in native seed mixtures with other appropriate grasses, forbs, and shrubs. Nevada bluegrass can also be used for the reseeded of burned range and forestlands because of its ability to produce roots that suppress weed establishment and growth. Due to its early-season growth, Nevada bluegrass provides excellent spring grazing for wildlife and livestock, and cover and nesting habitat for upland game birds. Opportunity Germplasm can also be used in other conservation applications, such as native range restoration, wildlife habitat enhancement practices, critical area stabilization, and logging road revegetation. It establishes easily and rapidly on sites characterized by low soil pH and moderate to high levels of heavy metals (relative to phytotoxicity levels) when these sites are properly amended. Opportunity Germplasm exhibits superior seedling emergence, percent cover, stand persistence, vigor rating, mean plant height, biomass production, and seedling and stand survival on fertilized and lime-amended, acid/heavy-metal impacted sites under the ambient climatic conditions of the Upper Clark Fork Watershed (Deer Lodge County, Montana). It reached a mean plant height of 24.5 inches on a lime-amended test site in a 14-inch precipitation zone 4 years after planting.

Area of Adaptation and Use

Although Nevada bluegrass naturally occurs in states indicated on Figure 2, Opportunity Germplasm is best adapted to elevations of 2,000 to 6,000 feet, performing more favorably on lower-elevation (valley and mountain foothill) sites. As a seed source found growing naturally in the northern Rocky Mountains, it is assumed the selection will perform well in other mountainous regions of the Intermountain West with similar environments and climates.

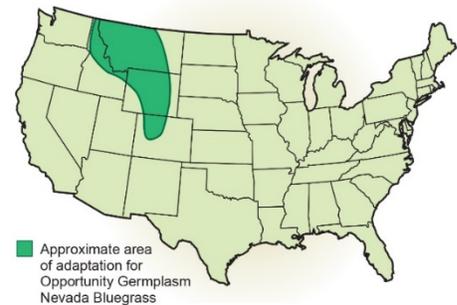


Figure 2. Adaptation areas for Opportunity Germplasm Nevada bluegrass.

Establishment and Management for Conservation Plantings

Nevada bluegrass establishes well when drilled seeded at a rate of 50 pure live seed (PLS) per square foot (approximately 25 seeds per linear foot of row in 6 to 7-inch row spacing) which is equivalent to 2 PLS pounds per acre. The ideal planting

depth ranges from $\frac{1}{8}$ to $\frac{3}{8}$ inches. Surface broadcast at a rate of 4 pounds PLS per acre for a solid stand. Light roller-packing using a cultipacker or roller-harrow with the tines up after planting improves seed-to-soil contact and subsequent germination with both methods of planting. Planting in late winter to early spring in areas characterized by light, frequent spring showers is ideal. Dormant fall seeding, after November 1 in Bridger, Montana, has been successful in lieu of spring planting. Adequate seedling development must occur prior to winter. Light mulching with certified weed-free straw or the use of agronomy cloth, when practical, improves germination and stand establishment on exposed sites. Severely acidic sites should be amended with lime and deep tilled prior to planting. Soils characterized by high surface concentrations of heavy metals should be plowed or deep tilled prior to planting.

Ecological Considerations

No serious insect or disease problems have been observed in Opportunity Germplasm. Nevada bluegrass is easily overgrazed so it should be managed closely until fully established, often after two growing seasons. Opportunity Germplasm Nevada bluegrass is a composite of naturally occurring germplasm and does not differ significantly in rate of spread, seed production, or vigor from naturally occurring Nevada bluegrass.

Seed and Plant Production

Opportunity Germplasm Nevada bluegrass seed production at the Bridger Plant Materials Center (MTPMC) consists of 36inch between-row spacing, clean cultivation, furrow irrigation, and fertilization using conventional seed production methods and equipment (Figure 1). Average seed production of Opportunity Germplasm at the MTPMC is approximately 240 pounds of clean bulk seed per acre. A seed crop is not produced until the second growing season, and the stand is productive for 3 to 5 years. Opportunity Germplasm averages 1,029,000 seeds per pound. With standard harvesting and cleaning practices, up to 25% of the seed may have naked but viable embryos. Maximum production per unit area of land can be realized by maintaining seed production fields in 20 to 24 inch between-row spacing (0.5 pounds PLS/acre rate), clean cultivation, and supplemental irrigation and fertilization. Average date of harvest of Opportunity Germplasm at the MTPMC ranges from June 25 to July 5. Seed production fields are swathed when the seed is in the firm-dough stage (approximately 22 percent seed moisture), allowed to cure in the windrow, and then combined.

Availability

For seed or plant increase: Foundation seed of Opportunity Germplasm Nevada bluegrass for commercial seed production is available by contacting the Foundation Seed Stocks Program, 119 Ag Biosciences Facility, Montana State University, Bozeman, Montana 59717-3150, Phone: 406-994-5687 or Wyoming Seed Certification Service, P.O. Box 983, Powell, Wyoming 82435-9135, Phone: 307-754-9815. Commercial production of two generations (G₂ and G₃) beyond G₁ are allowed.

For conservation use: Opportunity Germplasm Nevada bluegrass is available from the commercial seed market. A list of commercial seed producers can be obtained by contacting the Montana Seed Growers Association, Montana State University, P.O. Box 173146, Bozeman, Montana 59717-3146, Phone: 406-994-3516, the Wyoming Seed Certification Service, P.O. Box 983, Powell, Wyoming 82435-9135, Phone: 307-754-9815, and in USDA-NRCS Plant Materials Technical Note PM-33 *Plant and Seed Vendors for Idaho, Montana, Nevada, Eastern Oregon, Utah, Eastern Washington, and Wyoming*. Available at: <http://www.plant-materials.nrcs.usda.gov>.

Citation

Release Brochure for Opportunity Germplasm Nevada Bluegrass (*Poa secunda*). 2021. USDA-Natural Resources Conservation Service, Bridger Plant Materials Center. Bridger, MT.

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>>

For more information, contact:

Bridger Plant Materials Center, 98 S River Rd, Bridger, MT 59014

Phone: 406-662-3579

<https://www.plant-materials.nrcs.usda.gov/mtpmc/>

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