

MOUNTAIN HOME GERMPLASM SANDBERG BLUEGRASS

SPECIES: *Poa secunda* J. Presl. ssp. *secunda*

SYNONYM: *Poa sandbergii* Vasey

COMMON NAME: Sandberg bluegrass

SYMBOL: POSE

ACCESSION NUMBERS: RMRS B53, W6 39684,
PI 660255



Mountain Home Germplasm
Sandberg Bluegrass

ORIGIN: Mountain Home Germplasm was first collected in 1997 by the USDA Forest Service, Rocky Mountain Research Station, Provo, Utah on the Saylor Creek Air Force Range in Owyhee County, Idaho at an elevation of 900 km (Lambert et al. 2011). Common plant species at the collection site are rubber rabbitbrush (*Ericameria nauseosa* [Pallas ex Pursh] Nesom & Baird), squirreltail (*Elymus elymoides* [Raf.] Swezey), hoary tansyaster (*Machaeranthera canescens* [Pursh] Gray), cheatgrass (*Bromus tectorum* L.),

and tall tumbled mustard (*Sisymbrium altissimum* L.). Prior to burning and other disturbances, additional common species were Wyoming big sagebrush (*Artemisia tridentata* Nutt. ssp. *wyomingensis* Beetle & Young), bluebunch wheatgrass (*Pseudoroegneria spicata* [Pursh] A. Love), Thurber needlegrass (*Achnatherum thurberianum*), needle and thread (*Hesperostipa comata*), and long-leaf phlox (*Phlox longifolia*) (USDA NRCS 2011). The soil type is a silt loam and average precipitation is 199 mm (USDA NRCS SSS 2011). Ecological site is Loamy 8-12 ARTRW/PSSPS-ACTH7 (USDA NRCS WSS 2011).

METHOD OF SELECTION: Mountain Home Germplasm was selected based on a series of comparative field trials conducted near Boise, ID and Nephi, UT that included collections from five western states: Idaho, eastern Oregon, northern Nevada, Utah and Washington (Lambert et al. 2011). Three of the collections from Owyhee County, ID were similar in percent survival, vigor, leaf height, stalk height and crown diameter, and were typical of *Poa secunda* ssp. *secunda* from the Snake River Plain and Northern Basin and Range ecosystems. The native stand of Mountain Home Germplasm occurs in the same geographic area as the three Owyhee County accessions and was chosen for stock seed harvest as it includes an extensive population of the species that is protected from livestock grazing (Lambert et al. 2011). Joining USFS Rocky Mountain Research Station, Boise, Idaho in the release were the USDI Bureau of Land Management, Idaho State Office, Boise, Idaho; Utah State University Agricultural Experiment Station, Logan, Utah; University of Idaho Agricultural Experiment Station, Moscow, Idaho; and the US Air Force, Mountain Home Air Force Base, Idaho.

DESCRIPTION: Mountain Home Germplasm is an early season, small-statured, perennial bunchgrass that produces small tufts of basal leaves and an extensive system of coarse, fibrous roots. The mature seed head is typically up to 40 cm tall and leaf blades are generally 5 to 15 cm in length. Chromosome number is $2n=22$ (Stewart Sanderson, USFS Rocky Mountain Research Station, Provo, Utah, personal communication

2011) and plants of this species exhibit facultative apomixis (Kellogg 1987). Plants begin growth in early spring, and set seed and enter dormancy in late spring or early summer. Fall regrowth may occur, depending on precipitation.

INSECT AND DISEASE PROBLEMS: No highly detrimental disease or insect problems have been observed in Mountain Home seed production fields. Plants of this species can be damaged by grasshoppers (Pfadt 1994 a,b) and they may be susceptible to infection by leaf and stem rusts (Tilley et al. 2011).

ENVIRONMENTAL CONSIDERATIONS: Mountain Home Germplasm is a population of a native species that is widely distributed throughout the western United States and has no known negative impacts on wild or domestic animals. Mountain Home is not considered a weedy or invasive species.

AREA OF ADAPTATION: Mountain Home Germplasm is widely adapted to Wyoming and basin big sagebrush communities in low elevation, semi-arid areas with a long hot growing season in the Snake River drainage of southern Idaho and similar areas in the northern Great Basin. It is recommended for locations that receive at least 300 mm of annual precipitation.

USE: Mountain Home's drought tolerance and the competitive nature of mature plants make it a useful germplasm for post-fire restoration of cheatgrass dominated landscapes. It can be seeded with other native species to provide an early spring perennial grass to compete against annual weeds. Mountain Home produces early-season forage for wildlife and livestock. It offers soil protection, particularly on shallow soils where few other bunchgrasses may occur. The species is fairly resistant to wildfires because of the small size of the plants, their early summer senescence, and minimal litter production (Monsen et al. 2004).

PLANTING AND HARVESTING: Sandberg bluegrass should be planted on loamy, well drained soils at a depth of about 6-13 mm (Fulbright et al. 1982). Seed may be drilled or broadcast and packed to provide good soil

contact. Seeding in wide-spaced rows (24-36 inches) is recommended to provide for weed control and encourage plant growth and seed production (Majerus et al. 2009). Good precipitation at the time of germination is important when planting in dryland situations. Harvestable yields can be expected in the second and third years. Seed may be harvested by swathing and combining the windrows or by direct combining (Rose et al. 1998; Smith and Smith 1997). Seed yield ranges from 110-450 kg/ha for dryland production and 450-670 kg/ha for irrigated production (Majerus et al. 2009; Tilley et al. 2011). Seed yields can be reduced by late spring frosts due to the early phenology of the species. The release is not recommended for seed production in areas with a high probability of a killing frost after May 15th. There are about 2 million seed/kg (Hafenrichter et al. 1968). Ninety-five percent germination and 85 percent purity are recommended as purchasing standards (Jorgensen and Stevens 2004).

For wildland seedings, the full seeding rate is 1.7 kg/ha PLS, but when included in a native seed mix the seeding rate is reduced to 0.3 to 0.6 kg/ha PLS (Majerus et al. 2009). Mountain Home can be seeded with other small-seeded species. Seedlings should be protected from grazing and established stands should be rested periodically to permit seed production as the plants are short-lived (Monsen et al. 2004). Productivity varies widely from year to year depending upon weather conditions.

STOCK SEED MAINTENANCE: The Utah Crop Improvement Association will maintain and distribute stock seed for increase fields. Growers may produce certified generations of seed through G4.



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