



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Recovery'

Western wheatgrass

Pascopyrum smithii (Rydb.) A. Love

A Conservation Plant Release by USDA NRCS Aberdeen Plant Materials Center, Aberdeen, Idaho



'Recovery' western wheatgrass is a cultivar released in 2009 by the Agricultural Research Service Forage and Range Laboratory, United States Army, Utah Agricultural Experiment Station and the Natural Resources Conservation Service.

Description

Western wheatgrass is native, long-lived, cool season, perennial grass with an extensive, very strong, rhizomatous root system combined with a few deep roots. Stems arise singly or in small clusters and grow from 1 to 3 feet tall. The leaves are flat, very rough on the upper surface and margins and are blue-green in color with very prominent veins. Because of this bluish color, western wheatgrass is sometimes called bluestem or bluejoint wheatgrass. The seed spike is stiff, erect and is 2 to 6 inches long.

Source

The development of Recovery was initiated to breed a western wheatgrass cultivar with rapid establishment for use in areas that are frequently disturbed such as military training lands. Recovery traces its parentage to three maternal sources and was selected for superior vegetative vigor, seed yield and seedling vigor. The parentage consists of 'Rosana', D2945 (a different seed lot of the same population which gave rise to 'Rodan'), and a collection from the Fort Carson Army base in central Colorado.

In 1996, a spaced-plant nursery was established at Fort Carson, CO. In 1998, five entries from that trial were identified with the desired phenotype and 17 plants with the highest seed yield were harvested. Crossing blocks were planted near Logan, Utah in 1999 to maximize crossing of the four maternal sources. In 2000, seed from the crossing block were deep-planted and seed was harvested and pooled together by maternal source and transplanted into another isolation block near Richmond, Utah in 2001. Seed harvested from this isolated block was harvested and designated as Breeder seed.

Conservation Uses

Recovery western wheatgrass is palatable to all classes of livestock and wildlife. It is preferred forage for cattle, horses, deer, and elk in spring and is considered a desirable feed for sheep and antelope in spring. It is considered desirable forage for cattle, horses and elk in summer, fall and winter. In spring, the protein levels can be fairly high and decrease as the plant matures and cures. This species is generally a relatively low yielding forage producer, but can be harvested and utilized as native hay, especially from overflow sites that collect additional moisture. Western wheatgrass is well adapted to stabilization of disturbed soils because of its strong, spreading rhizomes. It is very compatible with slower developing native grasses such as bluebunch wheatgrass, thickspike wheatgrass, streambank wheatgrass and needlegrass species.

Area of Adaptation and Use

On native sites western wheatgrass is most abundant in the 12 to 20 inch annual precipitation zone. The natural geographic range is from southern Ontario and northern Minnesota, west to British Columbia and south to west central California and western Texas from 1,000 to 9,000 feet elevation. Western wheatgrass is a component of many native plant communities.

Recovery prefers clay loam to silt loam soil and tolerates saline and saline-sodic soil conditions, and poor drainage. It will tolerate spring flooding, high water tables and considerable silt deposition. It is very cold tolerant, and moderately shade tolerant. It will not tolerate long periods of inundation or standing water.

Establishment and Management for Conservation Plantings

Recovery western wheatgrass seed should be planted with a drill to a depth of ½ to ¾ inch. The recommended seeding rate for western wheatgrass is 8 pounds Pure Live Seed (PLS) per acre. If used as a component of a mix, adjust the seeding rate to percent of mix desired. For

critical area erosion control, the seeding rate should be increased to 12 pounds PLS/ac. Mulching and light irrigation is beneficial for stand establishment.

The best seeding results are obtained from seeding in very early spring on heavy to medium textured soils or in late fall on medium to light textured soils. Late summer (August - mid September) seedings are not recommended unless irrigation is available. Recovery was selected for improved seedling establishment.

Recovery western wheatgrass is compatible with other adapted native species and can be used in seeding mixtures. It should not be seeded with strongly competitive introduced species.

Stands may require weed control measures during establishment, but application of broadleaf herbicides should not be made until plants have reached the four to six leaf stage. Mowing above western wheatgrass seedlings when weeds are beginning to bloom will reduce weed seed development. Grasshoppers and other insects may also damage new stands and use of pesticides may be required. Be sure to read and follow label directions. Irrigation, weed control and fertilization will improve western wheatgrass stands and aid in establishment and overall production.

Western wheatgrass "greens up" in March to early April and matures in mid-July to August. It makes good spring growth, fair summer growth and good fall growth if moisture is available.

Rotational grazing systems on western wheatgrass are recommended, and 40 to 50 percent of the annual growth (3 to 4 inch stubble) should remain following grazing. Stands of western wheatgrass should not be grazed until they have firmly established. Six inches of new growth should be attained in spring before grazing is allowed in established stands.

Stands can become sod-bound and may need fertilization and moderate spring/fall deferment. Sod-bound stands may benefit from ripping which can increase forage production. Care should be taken to avoid excessive tillage, because stands may be damaged.

Ecological Considerations

This cultivar release is from a species native to the Midwest and western United States and has no known negative impacts on wild or domestic animals. Recovery is not considered a weedy or invasive plant but can spread to adjoining vegetative communities under ideal environmental conditions.

Seed and Plant Production

Seed production of western wheatgrass has been very successful under cultivated conditions. Row spacing of 24-36 inches is recommended and although rhizomatous, it should be cultivated and maintained in rows. Recovery should be seeded at a rate of 4.5 pounds PLS/ac in 36 inch rows.

Seed fields are generally most productive for two years. Average production of 75 to 150 pounds per acre can be expected under dryland conditions in 14 inch plus rainfall areas. Average production of 150 to 300 pounds per acre can be expected under irrigated conditions. Harvesting is best completed by direct combining or swathing in the hard dough stage, followed by combining of the cured windrows. Stands are prone to lodging and careful application of fertilizer and irrigation is recommended. Seed is generally harvested in late July to mid August

Availability

For conservation use: Certified seed is available from commercial seed vendors.

For seed or plant increase: Breeder seed is maintained by the ARS Forage and Range Laboratory and Foundation Seed is produced by the Aberdeen PMC. Foundation seed is available through the University of Idaho Foundation Seed Program and the Utah Crop Improvement Association. Registered and Certified seed may be produced from Foundation seed.

For more information, contact:
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Citation

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