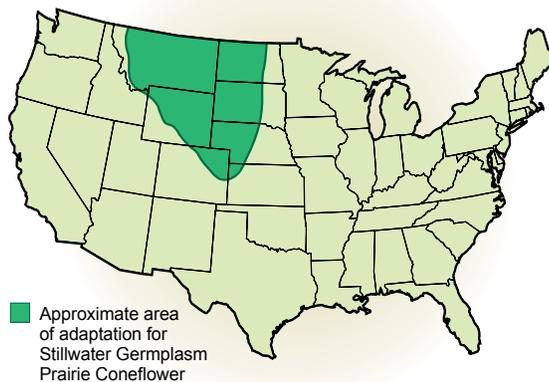


Stillwater Germplasm Selected Class Prairie Coneflower

Stillwater germplasm is a selected class release of prairie coneflower (*Ratibida columnifera* [Nutt.] Woot. & Standl.). It is a composite of five accessions collected in 1989 from native stands in Montana. In Carbon County, two collections were made at site elevations of 3,667 ft. (1,118 m) and 5,380 ft. (1,640 m). In Stillwater County, three collections were made at site elevations of 3,600 ft. (1,097 m), 4,600 ft. (1,402 m), and 5,280 ft. (1,609 m). Twenty-five accessions were evaluated in three initial evaluation plantings over a period of more than 10 years at the NRCS Plant Materials Center in Bridger, Montana. The five accessions were selected because of their consistent taller stature, uniformity in seed maturity dates, and superior seed production.



as shallow, silty, shallow to gravel, and silty steep. Associated species include western wheatgrass, blue-bunch wheatgrass, prairie Junegrass, Sandberg bluegrass, common gailardia, white and purple prairie clover, big sagebrush, and western yarrow. Stillwater germplasm is adapted for use in the foothills and prairies in the eastern and central parts of Montana and Wyoming and western North and South Dakota.

Description

Prairie coneflower is a native, late-season, herbaceous perennial in the Aster family. It usually has a taproot and grows upright from a woody base to a height of 12 to 24 inches (30 to 60 cm). The numerous, pinnate leaves are deeply cut into linear or lance-shaped segments along alternately branched stems. Showy yellow ray flowers droop and surround the columnar-shaped, brown, central disk. Occasionally, the ray flowers are reddish-brown in color. The flowers tend to bloom from late June until August, with seed ripening completed in early August to September. The mature seed head has a pleasant odor when crushed that is similar to anise or licorice. The fruit is a 1-seeded, gray-black achene.

Adaptation

Prairie coneflower is a native, drought-tolerant wildflower of the Great Plains that is commonly found from south central Canada to northern Mexico, and west from Manitoba and Minnesota to southeastern Idaho. It prefers to grow in the dry, open spaces of prairie grasslands and mountain foothills and is found along roadsides, in waste and disturbed areas, and along railroad rights-of-way. Prairie coneflower does well on a variety of soil types, including loams and rocky to gravelly-sandy textures. It tolerates a pH range from slightly acidic to moderately alkaline soils and weak saline soils, in areas receiving 10 to 30 inches (254 to 762 mm) of annual precipitation. Prairie coneflower attains optimum growth in full sun and low to moderate levels of competition within a native plant community. It occurs at elevations ranging from 3,200 to 8,400 ft. (975 to 2,565 m) in Colorado, Montana, Utah, and Wyoming. This plant is a common component of such ecological sites

Uses

Prairie coneflower is palatable and nutritious to all classes of domestic livestock when utilized in stages of early plant growth and development. It is considered a desirable spring browse plant for big game animals, and the seed of prairie coneflower is preferred by several species of upland birds and small mammals. Prairie coneflower is a medium- to tall-statured forb that may fill a structural cover niche for multiple species of upland game birds in a variety of plant community types. Stillwater germplasm prairie coneflower was selected primarily for adding species diversity to native seed mixes in the rehabilitation of disturbed sites such as rangelands, minelands, roadsides, park and recreation areas, prairie restoration projects, and conservation plantings in accordance with government farm bill program requirements. Prairie coneflower is commonly recommended as an ornamental wildflower in low maintenance or natural landscapes.

Establishment

Seed should be planted into a firm, weed-free seedbed, preferably with a drill that will ensure a uniform seed placement depth of 1/4 to 1/2 inch (6 to 12 mm). The processed seed of Stillwater germplasm prairie coneflower has approximately 600,000 seeds/lb (1,320,000 seeds/kg). The full seeding rate is 2 lb/acre (2.2 kg/ha) pure live seed (PLS), but it would seldom be seeded in a pure stand. It is recommended that Stillwater germplasm prairie coneflower be included as a component of a native seed mixture at a rate of 1/4 to 1/2 lb/acre (0.3 to 0.6 kg/ha). When used in a mix, adjust the seeding rate to match the desired potential of the plant community. Spring seeding is preferred over a dormant, fall planting date. Periodic mowing during the establishment year is one option for weed suppression.



Seed Production

Seed production fields should be established in rows at 25 PLS per linear foot of row (82 per linear meter of row). Between-row spacing is dependent on the type of planting and cultivation equipment, and ranges from 24 to 36 inches (60 to 90 cm). Adequate between-row space should be provided to perform mechanical cultivation. At 24-inch row spacing, the recommended seeding rate is 1 PLS lb/acre (1.1 kg/ha), and at 30- and 36-inch row spacing, the seeding rate is 0.7 and 0.6 PLS lb/acre (0.8 and 0.7 kg/ha), respectively. There are presently no herbicides specifically labeled to control broad-leaf weeds in seed production fields. Seed harvest of prairie coneflower is effective by several methods such as swathing and combining or direct-combining. Direct-combining should take place when the seed has just begun to shatter from the very top of the ripened conehead. Processing of the seed works well over a 2- to 3-screen fanning mill with final cleaning over an indent cylinder or gravity table. Seed production of 300 to 500 lb/acre (336 to 560 kg/ha) can be expected under irrigated conditions. Seed production stands will remain productive for only 3 years (2 seed crops). Seed viability is very high and longevity can be expected for 5 to 8 years when stored at moderate temperatures and low humidity.

Availability

The USDA-NRCS Plant Materials Center, Bridger, Montana, released Stillwater germplasm as a selected class release. G₁ seed (equivalent to foundation seed) is produced at the Bridger PMC and made available to commercial growers through the Montana Foundation Seed Program at Montana State University-Bozeman and the University of Wyoming Foundation Seed Service at Powell, Wyoming. One generation (G₂ equivalent to certified) beyond G₁ is recognized.

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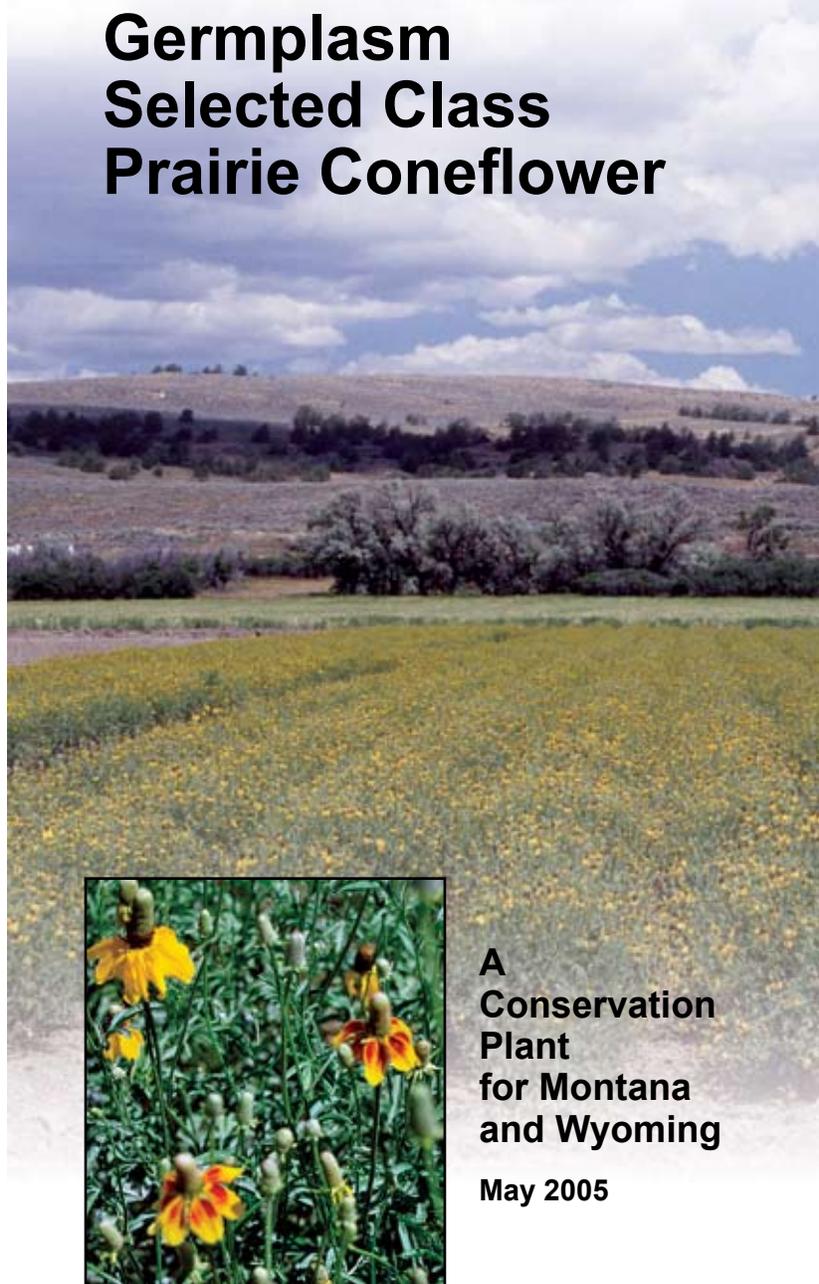


United States Department of Agriculture

Natural Resources Conservation Service

Bridger Plant Materials Center

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**A
Conservation
Plant
for Montana
and Wyoming**

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