United States Department of Agriculture

**A Conservation Plant Released by The Natural Resources Conservation Service**
**Bridger Plant Materials Center, Bridger, Montana**

# STILLWATER GERMPLASM
# prairie coneflower

## *Ratibida columnifera* (Nutt.) Wooton. & Standl.

*Figure 1: Stillwater Germplasm blooming at the Bridger Plant Material Center.*

Stillwater Germplasm prairie coneflower is a 2004 selected class release from the USDA-NRCS Bridger Plant Material Center, Bridger, Montana.

**Description**

Prairie coneflower is a native, late-season, herbaceous perennial in the Aster family. It has a taproot and grows upright from a woody base to a height of 12 to 24 inches. 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. 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. Fruit is a one seeded, gray and black achene.

**Source**

Stillwater Germplasm 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 and 5,380 feet. In Stillwater County, three collections were made at site elevations of 3,600, 4,600, and 5,280 feet. Twenty five accessions were evaluated in three initial evaluation plantings over a period of more than 10 years at the USDA-NRCS Plant Materials Center in Bridger, Montana. Five accessions were selected for their consistently taller stature, uniformity in seed maturity dates, and superior seed production.

**Conservation Uses**

Potential uses of Stillwater Germplasm are forage and habitat improvements. Prairie coneflower is palatable and nutritious to all classes of domestic livestock when utilized in the early stages of plant growth and development. It is considered desirable spring browse for big game animals, and seed of prairie coneflower is preferred by several species of upland birds and small mammals. Prairie coneflower provides structural cover 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, mine lands, roadsides, park and recreation areas, prairie restoration projects, and conservation plantings in accordance with government farm bill program requirements. Prairie coneflower is also commonly recommended as an ornamental in low maintenance or natural landscapes.

**Area of Adaption and Use**

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 railroads. Prairie coneflower does well on a variety of soil types, including loams and rocky to gravelly sandy textures in areas receiving 10 to 30 inches of annual precipitation. It tolerates a pH range from slightly acidic to moderately alkaline soils and weak saline soils. 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 feet in Colorado, Montana, Utah, and Wyoming.

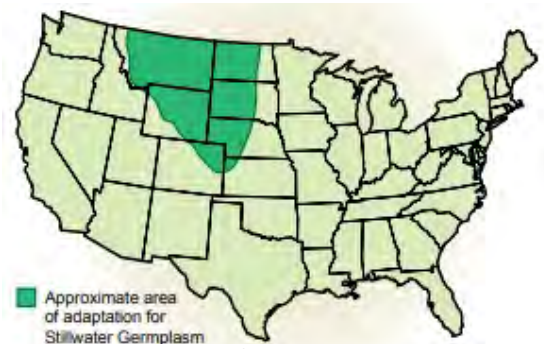


*Figure 2: Adaption area for Stillwater Germplasm prairie coneflower.*

**Establishment and Management for Conservation Plantings**
Seed should be planted into a firm, weed-free seedbed, preferably with a drill seeder to ensure uniform seed placement depth of ¼ to ½ inch. Stillwater Germplasm prairie coneflower has approximately 600,000 seeds/lb. The full stand drill seeding rate is 2 lb/acre 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 ¼ to ½ PLS lb/acre. When used in a mix, adjust the seeding rate to match the desired percentage of the plant community. Spring seeding is preferred over a dormant, fall planting date. Periodic mowing during the establishment year is an option for weed suppression.


*Figure 3: Stillwater Germplasm before flowering at Bridger Plant Material Center, Montana.*

**Ecological Considerations**
Stillwater Germplasm prairie coneflower is susceptible to powdery mildew during seed production.

**Seed and Plant Production**
Seed production fields should be established in rows at 25 PLS per linear foot of row. Between row spacing is dependent on the type of planting and cultivation equipment, and ranges from 24 to 36 inches. Adequate between row space should be provided to perform mechanical cultivation, as needed. At 24 inch row spacing, the recommended seeding rate is 1 PLS lb/acre, and at 30 and 36 inch row spacing the seeding rate is 0.7 and 0.6 PLS lb/acre, respectively. There are presently no herbicides specifically labeled to control broadleaf weeds in seed production fields. Seed harvest of Stillwater Germplasm prairie coneflower is effective by several methods such as swathing and combining or direct combining. Direct combining should take place when the seed begins to shatter from the top of the ripened conehead. Processing of 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 can be expected under irrigated conditions. Seed production stands will remain productive for only 3 years (2 seed crops). Seed viability is high, and longevity can be expected for 5 to 8 years when stored at moderate temperatures and low humidity.

**Availability**
*For seed or plant increase:* 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 is available by contacting the MSU Foundation Seed Program, Montana State University, Bozeman, Montana 59717, (406) 994-5687 or Wyoming Seed Certification Service, University of Wyoming, Powell, Wyoming 82435, (307) 754-9815. One generation (G2 equivalent to certified) beyond G1 is recognized.

*For conservation use*: Stillwater Germplasm prairie coneflower is available from the commercial seed market. A list of regional seed producers can be obtained by contacting the Montana Seed Growers Association, Montana State University or the Wyoming Seed Certification Service, University of Wyoming and is available 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: https://www.nrcs.usda.gov/plant-materials/publications

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

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