United States Department of Agriculture

A Conservation Plant Released by the Natural Resources Conservation Service
Bismarck Plant Materials Center, Bismarck, North Dakota

Bismarck Germplasm Purple Prairie clover

Dalea purpurea Vent.

Purple prairie clover in bloom

Bismarck Germplasm purple prairie clover (*Dalea purpurea* Vent.) is a Selected Class of natural germplasm released in 2000 by the Bismarck Plant Materials Center (PMC) in cooperation with the North Dakota, South Dakota and Minnesota Agricultural Experiment Stations.

Description

Bismarck Germplasm purple prairie clover is a warm-season, native, perennial legume that will reach heights of 1-2 feet. It can be distinguished by its alternate, pinnately compound leaves and multiple, upright stems that arise annually from a woody crown. Flowers are purple and born on terminal spikes that are cone-shaped and supported by an extensive taproot system. Reproduction is by seed. It initiates plant growth in May, flowers between July and August, and seed mature in September. There are approximately 300,000 seed/lb.

Source/Collection Site Information

Bismarck Germplasm purple prairie clover originated from one pound of seed collected by Tom Pozarnsky in 1975 from Lyman County, located in south central South Dakota, approximately 5 miles east of Presho. It was compared to ten purple prairie clover collections from North Dakota and South Dakota for vigor, foliage abundance, and seed production at the Bismarck PMC from 1977-1982. Bismarck Germplasm purple prairie clover was selected for its superior vigor and foliage abundance and above average seed yield.

Conservation Uses

Bismarck Germplasm purple prairie clover is recommended for range and pasture seeding mixtures, wildlife habitat development or enhancement, native rangeland restoration, prairie landscaping, and other vegetative practices promoting native species diversity. It is nutritious and a palatable forage for many wildlife species and classes of livestock.

Area of Adaptation and Use

The area of adaptation of Bismarck Germplasm purple prairie clover has not been formally tested. However, it is expected to perform well on soils/sites where it naturally occurs in North Dakota, South Dakota, Minnesota, Northern Nebraska and eastern portions of Montana and Wyoming. Bismarck Germplasm purple prairie clover is adapted to areas receiving 12 inches or more of annual precipitation and prefers well drained soils on shallow to thin upland sites associated with ridges and steep slopes.

Establishment and Management for Conservation Plantings

Bismarck Germplasm purple prairie clover establishment has been most successful when seeded in the spring in the Northern Great Plains. This species is easy to establish from seed; however, seed dormancy can delay or lower germination. Mechanical scarification improves seed germination. The species can also be dormant seeded when soil temperature is below 40° F. If dormant seeded, mechanical scarification is not recommended. Prior to planting, inoculate the seed with Rhizobium spp. (for *Dalea purpurea*). Plant seed into a firm, weed free seedbed at a ¼ to ½ inch depth. The full seeding rate recommended for North Dakota is 3.8 pure live seed (PLS) lbs/acre (25 seeds/ft^2). However, purple prairie clover is usually planted as a component in a mix. The average seeding rate as part of a mix is ¼ to 1 PLS lb/acre. The ¼ PLS lb/acre rate, which averages approximately 1.7 seeds/ft^2, is generally recommended. The higher rate is used for critical area plantings. Weed control during the establishment year is important for the success of the planting. Mowing is an effective method for controlling weeds. This is achieved by adjusting mowing height above the purple prairie clover seedlings. Protect from grazing during the establishment year.

Ecological Considerations

Bismarck Germplasm purple prairie clover is a selection of naturally occurring germplasm that has been unaltered from its original collection. Like purple prairie clover in general, this selection does not spread aggressively by seed or vegetatively.

It is not considered invasive based on an environmental assessment of the species conducted by the Bismarck PMC. Although Bismarck Germplasm was not tested for forage quality and bloat potential, common purple prairie clover is known to exhibit high crude protein in the early growth stages, which may cause bloating in livestock if the forage is consumed in large quantity.

Seed and Plant Production

Fertilizer is not recommended the year of establishment. Fertilize in subsequent years based on soil test results. The following are recommended seeding rates for commercial seed production based on row spacing:

Row Spacing (inches)	PLS lb/acre
12 or less	4.4
24	2.2
30	1.8
36	1.5
42	1.3

Seed can be harvested with a conventional combine. When conditioning seed, removal of seed appendages is achieved using a hammermill or debearder. After removing appendages, seed has been cleaned at the PMC using a 3-screen fanning mill set to a shaker speed of 400 rpm and the following screen sizes: 12/64 inches round (screen 1), 10/64 inches round (screen 2), and 1/22 inches round (screen 3).

Availability

For conservation use: Commercial seed of Bismarck Germplasm purple prairie clover is available in limited quantities from local seed vendors and growers. Certified seed classes are Generation 2, 3, or 4.

For Seed and plant increase: Generation 1 seed is maintained by the Bismarck Plant Materials Center and is available in limited quantities for commercial seed increase. Seed is distributed through the North Dakota State University Foundation Seedstocks Program as a selected class (green tag) of natural germplasm. Certification is limited to four generations.

Citation

Release Brochure for Bismarck Germplasm purple prairie clover (*Dalea purpurea* Vent.). 2021. USDA-Natural Resources Conservation Service, Bismarck Plant Materials Center, Bismarck, ND 58504.

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