Forbs Legumes

purple prairie clover

Dalea purpurea, Vent.

Alternate Common Names

violet prairie clover, thimbleweed, red tassel flower, purple prairie-clover

Scientific Synonym(s)

Petalostemum purpureum (Vent.) Rybd.

Functional Group

legumes

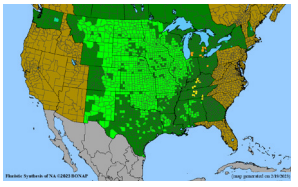
Family

legume and pea family (Fabaceae (Leguminosae))

Description

- **Life cycle/growth form:** Perennial, with woody, branched taproot.
- **Height:** 1-3 ft
- **Leaves and stem:** Leaves 1.5-3 in long, alternate, odd-pinnately compound with 3-7 very narrow leaflets, smooth but with black dots on lower leaf surface and a strong citrus odor when crushed; stems hairless to hairy and slightly ribbed when dry.
- **Flower:** Individual flowers densely packed into a cylindrical spike about 1/2-3 in long; flowers open in whorls from the bottom to the top; tiny, 5-part flowers have purple petals and prominent, golden stamens.
- **Fruit/seed head:** Seed head is an elongate, compact head at the stem tip, composed of numerous dry, hairless pods which stay attached to the calyx until dislodged; strong scent when crushed.
- **Pollination:** Insects, particularly bees, wasps, small butterflies, skippers, and beetles.

Habitat and Range



Dry to mesic, rocky or sandy soil; full sun; prairies, dunes, savannas. Very well-drained, loamy soils are preferred for seed production.

Conservation Status

Global- G5, secure; Michigan and Ohio- SX, presumed extirpated; Georgia and Tennessee- S1, critically imperiled; Kentucky- S2, imperiled; Indiana- S3, vulnerable (NatureServe)

General Comments

Purple prairie clover is an important component of mesic to dry upland prairies. It tends to increase following spring burning (Bidwell 1990), though burning production fields is usually not an option because of a lack of continuous grass fuels to carry fire. Purple prairie clover seed should be dehulled when cleaned for the commercial market. Seed tests are more accurate on a dehulled seed, and seed count per pound is higher.

Establishment for Seed Production (Appendix A)

Direct seeding:

Row spacing:	30-36 in	7 in rows or solid stands
PLS lbs/acre:	2	6

- **Seeding depth:** 1/4 in
- **Seeding method:** native seed drill
- **Seeding time:** Dormant fall seeding of unscarified seed. Scarify and inoculate seed (*Dalea, F inoculum*) for spring planting.
- **Weed control:** Prepare clean, firm, weed free seedbed prior to seeding.

Greenhouse:

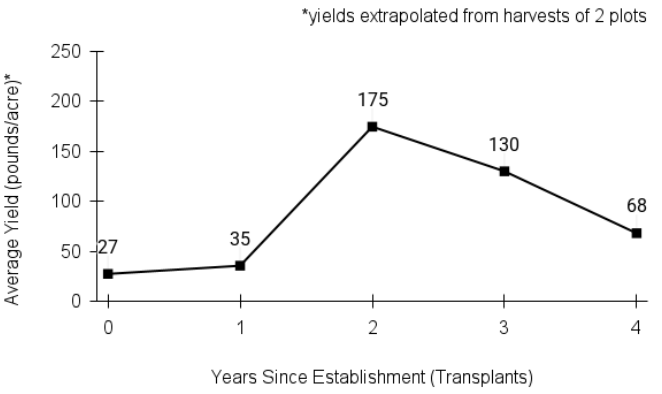
- **Seed pre-treatment:** Scarify seed (see General Information: Propagation of Native Species). Moist stratification is not required, but seed should be stored in cold, dry conditions until planting time. A short stratification of 10-14 days may result in faster, more uniform germination.
- **Sowing:** Sow seed 1/4 in deep in the greenhouse 2 months before the last frost free date. Damping off (fungal pathogen) can be a problem for seedlings if soil is kept too moist, or seedlings are planted too thickly. Avoid excess moisture on the soil surface by adding additional perlite to the sterile soil medium, applying a thin layer of chick grit (crushed quartzite or granite) over the top of the soil, improving air circulation with fans, thinning seedlings, and/or watering from the bottom of the containers only.
- **Transplanting:** When root growth is sufficient to produce sturdy plugs, transplant seedlings into bare soil in rows convenient for tillage equipment or into a weed barrier at 8-12 in intervals after all danger of frost is past.

Stand Management

- **Weeds:** Mow stands above prairie clover seedling height during establishment year. Poast (sethoxydim) or Prowl (pendimethalin) herbicide after establishment can be used to control weedy grasses. Plateau is labeled for pre- and post-emergence application. Note: These herbicides may not be labeled for this species in your state, always check the label and follow recommendations.
- **Pests:** Herbivory by rabbits or deer may be a problem. Voles can kill many plants within a plot by feeding on the roots. Weevils may infest seed heads, reducing seed yield.
- **Diseases:** None noted under field conditions. Damping off can be serious in a greenhouse environment (see above).

Seed Production (Appendix B)

- **First harvest:** Flowering and seed set occur at end of second growing season from greenhouse grown transplants and well-managed direct seeded stand.
- **Yield:** 27-175 bulk pounds/acre (extrapolated from harvests of 2 plots)
- **Stand life:** 5-10 years. Peak harvest third year.
- **Flowering date:** July - early August in northern Iowa
- **Seed maturity/Harvest date:** September in northern Iowa
- **Seed retention:** Shattering potential is low. Seed heads hold seed into October.
- **Harvest date range at TPC (2004-2023):** Sept 5 - Nov 5
- **Recommended harvest method:** Combine. If plants still retain green leaves, do not cut any lower than necessary to harvest seed heads.



Seed Cleaning Process (Appendix C)

Pre-clean air-dried material by scalping through 1/2 in and 1/4 in mesh to remove large particles. Use a brush machine with stiff bristles to remove hulls, then air-screen. Re-brush any seed still in the hull, if necessary, and air-screen.

Seed Characteristics (Appendix D)

- **Seeds per ounce:** 18,000 (IA NRCS)
- **Seeds per pound:** 288,000 (IA NRCS)
- **1000 seed weight:** 3.19 g (Seed Information Database)
- **Description:** Fruits are a 1-2 seeded legume. Seeds are small beans, about 2 mm (1/16 in) long, olive green to tan or brown.
- **Seed storage:** cool/dry (33-50° F, 30-50% RH)
- **Typical seed test:**

  PLS: 97% (n = 11)
  Purity: 100% (n = 11)
  Germination: 83% (n = 10)
  Hard: 14% (n = 10)
  (averages obtained from n tests of purchased seed lots)

Released Germplasm

- **Source Identified material:** Natural Selections/Iowa Ecotype Project Zones 1, 2, and 3
- **Selected Germplasm:** Bismarck Germplasm (SD), Cuero Germplasm (TX)
- **Cultivated variety (cultivar):** Kaneb (KS)

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Species Updated: 12/03/2025

Notes