

1992

Variation in Ornamental Traits of *Dalea purpurea* Vent. (Purple Prairie Clover)

Dale T. Lindgren

University of Nebraska - Lincoln, dlindgren1@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/westcentrext>



Part of the [Agriculture Commons](#)

Lindgren, Dale T., "Variation in Ornamental Traits of *Dalea purpurea* Vent. (Purple Prairie Clover)" (1992). *West Central Research and Extension Center, North Platte*. 36.

<http://digitalcommons.unl.edu/westcentrext/36>

This Article is brought to you for free and open access by the Agricultural Research Division of IANR at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in West Central Research and Extension Center, North Platte by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Variation in Ornamental Traits of *Dalea purpurea* Vent. (Purple Prairie Clover)

D.T. Lindgren¹

West Central Research and Extension Center/Horticulture, University of Nebraska-Lincoln, Route 4 Box 46A, North Platte, NE 69101

Additional index words. *Petalostemon purpureus*, height, foliage color, stem count

Dalea purpurea Vent., formerly designated as *Petalostemon purpureus* (Vent.) Rydb., is a native herbaceous plant found growing in the United States from North Dakota to Texas and from the Mississippi River to the eastern edge of the Rocky Mountains (Great Plains Flora Assn., 1986). *Dalea purpurea* would likely be more accepted as an ornamental plant if additional selections with improved flowering and foliage traits were available.

Two populations of *D. purpurea* were evaluated for variation in height, stem color, foliage color, flowering time, stem count, and lodging. Population 1 (467 plants) was the cultivar Kaneb (Stock Seed Farm, Murdock, Neb.) and population 2 (278 plants) came from the Nebraska Federated Garden Clubs wildflower distribution program (source unknown).

Seeds from the two sources of *D. purpurea* were cold-stratified at 2 2 2C for 6 weeks, moved to a greenhouse, germinated, and transplanted to field plots in 1987. Field soil was a Typic haplustoll (Cozad silt loam). Plants were irrigated at transplanting time in the field and then only as needed during the growing season. In 1988, the second year after planting, notes on growth characteristics were recorded 9 and 10 July for height (cm), stem color (1 = green to 5 = red), foliage color (rated as 1 = light green to 5 = dark green), flowering time (1 = early to 5 = late), stems per plant and lodging (1 = no lodging to 5 = complete lodging). These traits were selected because they affect the attractiveness of the plant for land-

scape use. No evaluations were made for flower quality. However, there were some slight variations in flower size between plants.

Seed was collected in 1988 from 5% of the plants in each of the two populations that displayed the most desirable traits, bulked, and planted in 1989 using the same procedures as populations 1 and 2. Measurements of ornamental traits of this population (population 3) were recorded in 1990. Ten plants from population 3 were selected for additional comparisons.

The mean height of population 2 was 11.2 cm less than population 1 while the mean height of population 3 was intermediate between the parent populations (Table 1). The means of population 3 for foliage color and lodging were higher than in populations 1 and 2 and the mean number of stems per plant in population 3 was two to five times that in the parent populations (Table 1).

None of the correlation coefficients exceeded 0.55. The low correlation between lodging and height would indicate that taller

Table 2. Four ornamental traits of *Dalea purpurea* for 10 individual plants in population 3.

Plant (no.)	Ht (cm)	Foliage ^z	Stem count	Lodging ^y
4	42	3	21	1
8	47	5	11	1
24	51	5	20	3
27	55	5	28	3
38	40	5	23	3
48	50	5	25	1
55	40	5	23	1
81	48	5	7	1
112	40	5	24	3
114	41	5	10	3

¹1 = Light green to 5 = dark green.

²11 = No lodging to 5 = severe lodging.

plants could be selected that do not lodge.

The characteristics of 10 plants from population 3 indicate that various combinations of traits can be found with relatively little selection pressure in *D. purpurea* (Table 2). For example, plant no. 55 was relatively short, had good foliage color, many stems, and no lodging.

Dalea purpurea does have potential for use as a landscape plant, since vegetative characteristics can be selected that will enhance its value even when not in flower. The lower correlation coefficients between traits indicate specific traits can be selected for without modifying other traits. Sources of germplasm for modifying ornamental traits are available from commercial sources as well as from native populations.

Literature Cited

Great Plains Flora Association. 1986. Flora of the Great Plains. Univ. Press of Kansas, Lawrence.

Table 1. Ornamental traits for three populations of *Dalea purpurea* grown in field plots at North Platte, Neb., in 1988 (populations 1 and 2) and 1990 (population 3).

Characteristic	Population					
	(no.)	Mean	SD	Median	Minimum	Maximum
Height (cm)	1	57.5	9.8	58.0	27.0	81.0
	2	46.3	11.9	43.0	26.0	79.0
	3	52.3	7.9	53.0	26.0	72.0
Stem color ^z	1	3.1	1.5	3.0	1.0	5.0
	2	1.9	1.2	1.0	1.0	5.0
	3	---	---	---	---	---
Foliage color ^y	1	3.1	1.5	3.0	1.0	5.0
	2	2.6	1.4	3.0	1.0	5.0
	3	4.2	1.2	5.0	1.0	5.0
Time of flowering ^x	1	3.1	1.4	3.0	1.0	5.0
	2	4.1	1.2	5.0	1.0	5.0
	3	---	---	---	---	---
Stems per plant	1	8.7	5.3	8.0	1.0	43.0
	2	4.2	3.0	4.0	1.0	25.0
	3	20.2	8.4	20.0	4.0	45.0
Lodging ^w	1	3.0	1.6	3.0	1.0	5.0
	2	2.9	1.5	3.0	1.0	5.0
	3	3.3	1.7	3.0	1.0	5.0

^z1 = green to 5 = red.

^y1 = light green to 5 = dark green.

^x1 = early to 5 = late.

^w1 = no lodging to 5 = severe lodging.

Received for publication 13 Dec. 1991. Accepted for publication 4 Mar. 1992. Published as paper no. 9771 Journal Series, Agricultural Research Division, Univ. of Nebraska, Lincoln, NE 68583. Research conducted at Univ. of Nebraska West Central Research and Extension Center, North Platte. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper therefore must be hereby marked *advertisement* solely to indicate this fact.

¹Associate Professor.