

PURE LIVE SEED CALCULATIONS

SEED DISTRIBUTION

Most seeding rates are listed in pounds of pure live seed per acre. The surest method of determining the amount of seed being distributed by the seeding equipment is to count the number of seeds per foot of drill row or per square foot while the machine is in operation. The formulas and examples for calculating PLS seeding rates, PLS seeds per sq. ft, and seeds per sq. ft for given species are as follows:

$$\frac{\text{PLS Seeds per sq. ft}}{\text{PLS seeds per sq. ft at 1 pound per acre}} = \text{Seeding rate in PLS lbs per acre}$$

Example: Smooth bromegrass from Table 2 $\frac{30 \text{ pls/ft}^2}{3.1 \text{ PLS seeds per sq. ft at 1 lb/acre}} = 9.7 \text{ PLS lbs/acre}$

$$\frac{\text{Seeds per lb}}{43,560 \text{ sq. ft/acre}} = \text{Seeds per sq. ft/PLS lb of seed}$$

Example: Smooth bromegrass $\frac{136,000 \text{ seeds/lb}}{43,560 \text{ sq. ft/acre}} = 3.1 \text{ PLS seeds per sq. ft at 1 PLS lb/acre}$

Table 1 Pure Live Seeds (PLS) Per Foot of Row at Various Seeding Rates and drill row spacings

Drill Row Spacing:	6"	8"	10"	12"
20 PLS per square foot	10 seeds/ft	13 seeds/ft	17 seeds/ft	20 seeds/ft
30 PLS per square foot	15 seeds/ft	20 seeds/ft	25 seeds/ft	30 seeds/ft
60 PLS per square foot	30 seeds/ft	40 seeds/ft	50 seeds/ft	60 seeds/ft

TABLE 2 INSTRUCTIONS

Background

Table 2 data was developed with published information shown in the reference section. This data will be used to provide seeding specifications for all seeding practices. When a variety of plant materials is known to greatly differ from seeds per pound listed, the seeding rate can be recalculated. For example, debarbed seed will have more seeds per pound than listed in Table 2. Many of the native forbs listed are not commercially available. A current year seedlist spreadsheet is available on <http://www.ne.nrcs.usda.gov> (click on technical resources) that can be utilized for automate PLS calculations.

Customizing Seeding Mixtures

Seeding rates for mixtures of native species (20 pls/ft²), native forbs (2 pls/ft²), or mixtures of introduced species (30 pls/ft²) can be developed by multiplying the percentage desired (in decimals) times the seeding rate in lb/ac for each species in a mixture. Seeding rates for mixtures of native forbs should be calculated to the hundreds of lbs/ac, and grass and introduced forbs to tenths of lbs/ac.

Formula: Percentage (in decimals) X Seeding Rate (lb/ac from Table 2) = PLS lbs/ac of each species in the mixture

Example Seed Mixture Calculations:

Range Seeding (20 pls/ft ²)	Pasture Seeding (30 pls/ft ²)	Native Forbs (2 pls/ft ²)
Big bluestem .20 X 5.3 = 1.1 lb/ac	Smooth bromegrass .40 X 9.6 = 3.8 lbs/ac	American Vetch .25 X 3.56 = 0.89 lbs/ac
Indiangrass .15 X 5.0 = 0.8 lb/ac	Orchardgrass .40 X 2.0 = 0.8 lbs/ac	Illinois bundleflower .25 X 1.45 = 0.36 lbs/ac
Little bluestem .25 X 3.4 = 0.9 lb/ac	Alfalfa .20 X 6.5 = 1.3 lbs/ac	Purple coneflower .25 X .75 = 0.18 lbs/ac
Sideoats grama .20 X 4.6 = 0.9 lb/ac	TOTAL 100%	Roundhead lespedeza .25 X .58 = 0.15 lbs/ac
Switchgrass .20 X 2.2 = 0.4 lb/ac		TOTAL 100%
TOTAL 100%		

Table 2 Pure Live Seeding Rates and MLRA Adaptation

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Native Grasses - Warm Season										
Alkali sacaton		1,758,000	40.4	0.05	0.5	0.7	1.0	1.5		Refer to Nebraska Cooperative Extension Circular "Certified Perennial Grass Varieties Recommended for Nebraska" for appropriate varieties
Big bluestem		165,000	3.8	0.53	5.3	7.9	10.6	15.8		
Blue grama		825,000	18.9	0.11	1.1	1.6	2.1	3.2		
Buffalograss (burs)		56,000	1.3	1.56	15.6	23.3	31.1	46.7		
Eastern gamagrass		7,200	0.2	12.10	121.0	181.5	242.0	363.0		Pasture and Hayland Planting (512) requires only 8.0 PLS lb/ac
Indiangrass		175,000	4.0	0.50	5.0	7.5	10.0	14.9		
Little bluestem		260,000	6.0	0.34	3.4	5.0	6.7	10.1		
Prairie cordgrass		105,600	2.4	0.83	8.3	12.4	16.5	24.8		
Prairie dropseed		481,000	11.0	0.18	1.8	2.7	3.6	5.4	63B,66,71, 75,102B, 106, 107	Dry, nonsandy sites
Prairie sandreed		273,700	6.3	0.32	3.2	4.8	6.4	9.5		
Sand bluestem		113,000	2.6	0.77	7.7	11.6	15.4	23.1		
Sand bluestem (Champ variety)		165,000	3.8	0.53	5.3	7.9	10.6	15.8		
Sand lovegrass		1,300,000	29.8	0.07	0.7	1.0	1.3	2.0		Short-lived
Sideoats grama		191,000	4.4	0.46	4.6	6.8	9.1	13.7		
Switchgrass		389,000	8.9	0.22	2.2	3.4	4.5	6.7		
Sand dropseed		5,200,000	119.4	0.02	0.2	0.3	0.3	0.5		
Native Grasses - Cool Season										
Refer to Nebraska Cooperative Extension Circular "Certified Perennial Grass Varieties Recommended for Nebraska" for appropriate varieties										
Canada wildrye	26	115,000	2.6	0.76	7.6	11.4	15.2	22.7		Adapted to Eastern Nebraska and wet meadows, short-lived but re-seeds itself
Green needlegrass		181,000	4.2	0.48	4.8	7.2	9.6	14.4		Best suited in Northwest Nebraska on hard sites
Needleandthread		115,000	2.6	0.76	7.6	11.4	15.2	22.7		Best on gravel and sandy soils
Porcupinegrass										Statewide droughty sites
Prairie junegrass		2,315,000	53.1	0.04	0.4	0.6	0.8	1.1		Statewide except for wet areas
Reed canarygrass	48	540,000	12.4	0.16	1.6	2.4	3.2	4.8		Invasive in wet areas, not always considered native
Slender wheatgrass	19	159,000	3.7	0.55	5.5	8.2	11.0	16.4	All but 106 and 107	Adapted to wet meadows
Thickspike wheatgrass		154,000	3.5	0.57	5.7	8.5	11.3	17	60A, 64, 67, 72, 73W, 65W	Critana is improved variety for use in Nebraska
Virginia wildrye		73,000	1.7	1.19	11.9	17.9	23.9	35.8		Wet areas and high rainfall areas
Western wheatgrass	19	110,000	2.5	0.79	7.9	11.9	15.8	23.8		Well adapted to many sites

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Statewide

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Warm Season Cover Crops										
Sudan grass	28	55,000	1.3	1.58	15.8	23.8	31.7	47.5		Use varieties appropriate to the site/area of the state (annual cover only)
Hybrid forage sudan		55,000	1.3	1.58	15.8	23.8	31.7	47.5		
Foxtail millet		213,000	4.9	0.41	4.1	6.1	8.2	12.3		
Pearl millet		88,000	2.0	0.99	9.9	14.9	19.8	29.7		
Proso millet		81,648	1.9	1.07	10.7	16.0	21.3	32.0		
Sorghum	56	28,000	0.6	3.11	31.1	46.7	62.2	93.3		
Introduced Grasses - Cool Season										
Refer to Nebraska Cooperative Extension Circular "Certified Perennial Grass Varieties Recommended for Nebraska" for appropriate varieties										
Creeping foxtail	14	750,000	17.2	0.12	1.2	1.7	2.3	3.5		
Crested wheatgrass		175,000	4.0	0.50	5.0	7.5	10.0	14.9		
Fairway wheatgrass		302,000	6.9	0.29	2.9	4.3	5.8	8.7		
Intermediate wheatgrass		88,000	2.0	0.99	9.9	14.9	19.8	29.7		
Kentucky bluegrass	14	2,177,000	50.0	0.04	0.4	0.6	0.8	1.2		
Meadow bromegrass		71,000	1.6	1.23	12.3	18.4	24.5	36.8		
Orchardgrass	14	654,000	15.0	0.13	1.3	2.0	2.7	4.0		
Perennial ryegrass		227,000	5.2	0.38	3.8	5.8	7.7	11.5		
Pubescent wheatgrass		100,000	2.3	0.87	8.7	13.1	17.4	26.1		
Redtop		4,990,000	114.6	0.02	0.2	0.3	0.3	0.5		
Russian wildrye		175,000	4.0	0.50	5.0	7.5	10.0	14.9		
Smooth bromegrass	14	136,000	3.1	0.64	6.4	9.6	12.8	19.2		
Tall fescue	21	227,000	5.2	0.38	3.8	5.8	7.7	11.5		
Tall wheatgrass		79,000	1.8	1.10	11.0	16.5	22.1	33.1		
Timothy	45	1,230,000	28.2	0.07	0.7	1.1	1.4	2.1		
Introduced Forbs (Legumes)										
Use varieties appropriate to the site/area of the state										
Alfalfa	60	200,000	4.6	0.44	4.4	6.5	8.7	13.1	Statewide	
Alsike clover	60	700,000	16.1	0.12	1.2	1.9	2.5	3.7		
Birdsfoot trefoil	60	375,000	8.6	0.23	2.3	3.5	4.6	7.0		
Cicer milkvetch	60	136,000	3.1	0.64	6.4	9.6	12.8	19.2		
Crimson clover	60	149,700	3.4	0.58	5.8	8.7	11.6	17.5		
Crownvetch	55	109,000	2.5	0.80	8.0	12.0	16.0	24.0		
Hairy vetch	60	20,000	0.5	4.36	43.6	65.3	87.1	130.7	Can spread and become aggressive in Western Nebraska	
Korean lespedeza	40	225,000	5.2	0.39	3.9	5.8	7.7	11.6		
Ladino (white) clover	60	871,650	20.0	0.10	1.0	1.5	2.0	3.0	Large vigorous form of white clover widely used in pasture mixes on irrigated land	
Purple vetch	60	10,000	0.2	8.71	87.1	130.7	174.2	261.4		
Red clover	60	275,000	6.3	0.32	3.2	4.8	6.3	9.5	Eastern half of the state does better in high rainfall areas	
Sainfoin	28	30,000	0.7	2.90	29.0	43.6	58.1	87.1		
Strawberry clover	60	300,000	6.9	0.29	2.9	4.4	5.8	8.7		

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Statewide

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Sweetclover (yellow & white)	60	260,000	6.0	0.34	3.4	5.0	6.7	10.1		Statewide
Varia crownvetch	55	119,000	2.7	0.73	7.3	11.0	14.6	22.0		
White clover	60	856,000	19.7	0.10	1.0	1.5	2.0	3.1		
Native Forbs										
American germander (Teucrium canadense)		259,428	6.0	0.34	3.4	5.0	6.7	10.1	Statewide	moist sites
Annual sunflower (Helianthus annuus)		59,000	1.4	1.48	14.8	22.1	29.5	44.3	Statewide	A, M, plains sunflower is better on sandy sites
American vetch (Vicia americana)		24,500	0.6	3.56	35.6	53.3	71.1	106.7	All but 65	L
Arkansas rose (Rosa arkansana)		40,000	0.9	2.18	21.8	32.7	43.6	65.3	Statewide	H, M
Blackeyed Susan (Rudbeckia hirta)		1,450,000	33.3	0.06	0.6	0.9	1.2	1.8	Statewide	
Black samson/Purple coneflower (Echinacea angustifolia)		115,500	2.7	0.75	7.5	11.3	15.1	22.6	60A, 63B, 64, 65, 66, 67, 71, 72, 73, 75,	Adapted to loess mixed grass prairies, different species than other purple coneflower listed in this table.
Blackseed plantain (Plantago rugelii)		?							?	
Blanketflower (Gaillardia aristata)		156,500	3.6	0.56	5.6	8.4	11.1	16.7	Statewide	
Prairie spiderwort (Tradescantia occidentalis)		7,900	0.2	11.0	110.2	165.4	220.4	330.8	Statewide	Dry sites
Breadroot scurfpea (Psoralea esculenta)		16,000	0.3	6.67	66.7	100.0	133.3	200.0	Statewide except course soils	Dry sites
Butterfly milkweed (Asclepias tuberosa)		67,000	1.5	1.30	13.0	19.5	26.0	39.0	MLRA's in Veg. Zone IV	moist sites
Bush morning-glory (Ipomoea leptophylla)		5900	0.1	14.77	147.7	221.5	295.3	443.0	All but 75, 102B, 106, 107	M, sandy/gravelly sites
Canada goldenrod (Solidago canadensis)		2,000,000	45.9	0.04	0.4	0.7	0.9	1.3	Statewide	M, Aggressive
Canada milkvetch (Astragalus canadensis)		256,000	5.9	0.34	3.4	5.1	6.8	10.2	Statewide	L
Clammy groundcherry (Physalis heterophylla)		?							Statewide	
Common milkweed (Asclepias syriaca)		?							Statewide	Excellent for monarch butterflies
Compass Plant (Silphium laciniatum)		24,600	0.6	3.54	35.4	53.1	70.8	106.2	75, 102B, 106, 107	Tallgrass prairie sites
Cudweed sagewort (Artemisia ludoviciana)		4,500,000	103.3	0.02	0.2	0.3	0.4	0.6	Statewide	

PASTURELAND AND HAYLAND INTERPRETATIONS - 38

Statewide

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Dotted gayfeather (Liatris punctata)		139,000	3.2	0.63	6.3	9.4	12.5	18.8	60A, 63B, 64, 65, 66, 67, 71, 72, 73, 75	
False-boneset (Kuhnia eupatoriodes)		?							Statewide	sandy sites
False sunflower (Heliopsis helianthoides)		60,000	1.4	1.45	14.5	21.8	29.0	43.6	63B, 65, 66, 71, 72, 102B, 106, 107, 73, 75,	
Field mint (Mentha arvensis)		?							?	
Fourwing saltbush (Atriplex canescens)		50,000	1.1	1.74	17.4	26.1	34.8	52.3	60A, 64, 67	H, M
Fringed sagewort (Artemisia frigida)		4,000,000	91.8	0.02	0.2	0.3	0.4	0.7	60A, 63B, 64,65, 66, 67, 71, 72, 73	
Grayhead coneflower (Ratibida pinnata)		625,000	14.3	0.14	1.4	2.1	2.8	4.2	71, 75, 102B, 106	
Groundplum milkvetch (Astragalus crassicarpus)		71,300	1.6	1.22	12.2	18.3	24.4	36.7	Statewide	Not on heavy clays
Hairy golden aster/Silky golden aster (Chrysopsis villosa)		403,000	9.3	0.22	2.2	3.2	4.3	6.5	60A, 63B, 64, 65	sandy/gravelly sites
Illinois bundleflower (Desmanthud illinoensis)		60,000	1.4	1.45	14.5	21.8	29.0	43.6	63, 66, 71, 73, 75, 102B, 106, 107	L, moist sites
Jerusalem artichoke (Helianthus tuberosus)		75,666	1.7	1.15	11.5	17.3	23.0	34.5	71, 73, 75, 102B, 106, 107	
Lanceleaf groundcherry (Physalis virginiana)		?							Statewide	
Leadplant (Amorpha canescens)		123,000	2.8	0.71	7.1	10.6	14.2	21.2	Statewide	H, L, M
Maximilian sunflower (Helianthus maximiliani)		150,000	3.4	0.58	5.8	8.7	11.6	17.4	Statewide	M, aggressive
Missouri goldenrod (Solidago missouriensis)		1,300,000	29.8	0.07	0.7	1.0	1.3	2.0	Statewide	
Narrow penstemon (Penstemon angustifolius)		33,600	0.8	2.59	25.9	38.9	51.8	77.8	65,72	sandy sites only
New England aster (Aster novae angliae)		1,300,000	29.8	0.07	0.7	1.0	1.3	2.0	75, 102B, 106	moist sites
New Jersey tea (Ceanothus herbaceus)		?							Statewide, except 60A, 64, 67, 72	
Pale purple coneflower (Echinacea pallida)		115,500	2.7	0.75	7.5	11.3	15.1	22.6	MLRA's within veg. Zone IV	Tallgrass prairie sites
Pitcher sage (Salvia aquarea)		150,000	3.4	0.58	5.8	8.7	11.6	17.4	75, 102B, 106	

PASTURELAND AND HAYLAND INTERPRETATIONS - 39
Statewide

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Plains coreopsis (Coreopsis tinctoria)		1,650,000	37.9	0.05	0.5	0.8	1.1	1.6	63B, 65, 66, 71, 73, 75, 102B, 106, 107	A, M, moist sites
White Prairie Aster (Aster commutatus)		496,000	11.4	.18	1.8	2.6	3.5		Statewide	Dry mesic sites, especially in western Nebraska
Smooth Violet Prairie Aster)		?							106, 107S	Open woods
Prairie sunflower (Helianthus petiolaris)		216,190	5.0	0.40	4.0	6.0	8.1	12.1	Statewide	A, M, Sandy soils only
Prairie violet (Viola pedatifida)		46,500	1.1	1.89	18.9	28.4	37.8	56.7	75, 102B, 106, 107	Tallgrass prairie sites
Purple coneflower (Echinacea purpurea)		115,500	2.7	0.75	7.5	11.3	15.1	22.6	75, 102B, 106, 107	Tallgrass prairie sites (different species than Black samson)
Purple poppy mallow (Callirhoe involucrata)		145,280	3.3	0.60	6.0	9.0	12.0	18.0	71, 75, ?	Prefers moist sites
Purple prairieclover (Dalea purpurea)		275,000	6.3	0.32	3.2	4.8	6.3	9.5	Statewide	L, KanNeb variety preferred
Rocky Mountain Bee Plant (Cleomeserrulata)		63,000	1.4	1.38	13.8	20.7	27.7	41.5	64, 67, 72, 65	A, M, sandy/gravelly sites
Rough Blazingstar (Liatris aspera)		252,000	5.8	0.35	3.5	5.2	7.0	10.4	63B, 66, 71, 75, 102B, 106	
Roundhead lespedeza (Lespedeza capitata)		151,000	3.5	0.58	5.8	8.7	11.5	17.3	63B, 65, 66, 71, 73, 75, 102B, 106, 107	L
Sawtooth sunflower (Helianthus grosseserratus)		?							75, 102B, 106, 107	
Scarlet globemallow (Sphaeralcea coccinea)		800,000	18.4	0.11	1.1	1.6	2.2	3.3	60A, 63B, 64, 65, 66, 67, 71, 72, 73, 75, 102B	
Sensitive briar (Schrankia nuttallii)		27,800	0.6	3.12	31.2	46.9	62.4	93.8	63B, 66, 71, 73, 75	L, dry sites
Serrateleaf evening primrose (Oenothera serrulata)		?							Statewide	rocky/sandy/gravelly sites
Shell-leaf /beardtongue penstemon (Penstemon grandiflorus)		272,200	6.2	0.32	3.2	4.8	6.4	9.6	63B, 65, 66, 71, 75, 102B, 106	
Showy partridgepea (Cassia chamaecrista)		50,000	1.1	1.74	17.4	26.1	34.8	52.3	63B, 65, 66, 71, 72, 73, 75, 102B, 106, 107	A, L, M, Platte variety preferred
Silky prairieclover (Dalea villosus)		7,000	0.2						Statewide except 106, 107S	sandy sites
Slender dalea (Dalea enneandra)		?							Statewide	Calcareous/rocky/ sandy sites

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Statewide

Species	Wt/ Bu	Seeds/ PLS lb	PLS Seeds/ Sq. Ft at 1 lb/Ac	Seeding Rate lb/Ac @ 2 PLS/ft ²	Seeding Rate lb/Ac @ 20 PLS/ft ²	Seeding Rate lb/Ac @ 30 PLS/ft ²	Seeding Rate lb/Ac @ 40 PLS/ft ²	Seeding Rate lb/Ac @ 60 PLS/ft ²	MLRA	COMMENTS
Slender greenthread (Thelesperma megapotamicum)		6,300?							60A, 64, 65, 67, 72, 73	
Slimleaf scurfpea (Psoralea tenuiflora)		26,300	0.6	3.31	33.1	49.7	66.3	99.4	60A, 64, 65, 66	A, L, M
Smoothseed wildbean (Strophostyles leiosperma)		?							Statewide	L
Stiff goldenrod (Solidago rigida)		1,300,000	29.8	0.07	0.7	1.0	1.3	2.0	Statewide	
Stiff sunflower (Helianthus rigidus)		740,000	17.0	0.12	1.2	1.8	2.4	3.5	Statewide	
Swamp milkweed (Asclepias incarnata)		72,000	1.7	1.21	12.1	18.2	24.2	36.3	Statewide	wet sites
Texas croton (Croton texensis)		?							60A, 63B, 64, 65, 66, 67, 71, 72, 73, 75	A, M, sandy sites
Thickspike gayfeather (Liatris pycnostachya)		110,000	2.5	0.79	7.9	11.9	15.8	23.8	75, 102B, 106	
Upright coneflower (Ratibida columnifera)		737,000	16.9	0.12	1.2	1.8	2.4	3.5	60A, 63B, 64, 65, 66, 67, 71, 72, 73, 75	
Virginia groundcherry (Physalis virginiana)		?							?	
Western false gromwell (Onosmodium occidentale)		?							?	
Western yarrow (Achillea millefolium/lanulosa)		2,300,000	52.8	0.04	0.4	0.6	0.8	1.1	Statewide	Upland sites
White aster (Aster ericoides)		2,200,000	50.5	0.04	0.4	0.6	0.8	1.2	Statewide	
White penstemon (Penstemon albidus)		?							Statewide except 106, 107S	sandy/gravelly sites
White prairieclover (Dalea candida Variety "candida")		384,000	8.8	0.23	2.3	3.4	4.5	6.8	63B, 65, 66, 71, 73, 75, 102C, 106, 107	L Use eastern Great Plains origin if variety unknown.
White prairieclover (Dalea candida Variety "oligophylla")		384,000	8.8	0.23	2.3	3.4	4.5	6.8	60A, 64, 65W, 67, 72, 73	L Use western Great Plains origin if variety unknown.
Wild bergamot (Monarda fistulosa)		1,200,000	27.5	0.07	0.7	1.1	1.5	2.2	63B, 65, 66, 71, 72, 73, 75, 102B, 106, 107	
Winterfat (Ceratooides lanata)		125,000	2.9	0.70	7.0	10.5	13.9	20.9	60A, 64, 67, 72	H, M, fall seed only
Cereal Grain (Cool Season)										Use varieties appropriate to the site/area of the state (annual cover only, not recommended for cover crops for grass seeding)
Barley	48	14,000	0.3	6.22	62.2	93.3	124.5	186.7		
Oats	32	13,000	0.3	6.70	67.0	100.5	134.0	201.0		
Rye	56	18,000	0.4	4.84	48.4	72.6	96.8	145.2		
Wheat	60	15,000	0.3	5.81	58.1	87.1	116.2	174.2		

Comment Legend

A - Plant is an annual

H - Plant is a shrub or half shrub that can be established from seed

L - Plant is a legume

M - Must plant/seed at no more than 1 PLS/ft² not to exceed half the forbs seeded in a native grass and forb mixture, and with at least one other non-annual forb

? - Species are generally not available commercially

References:

USDA NRCS, USDI National Park Service, 1996, Seeding Rate Statistics for Native and Introduced Species.

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Stock Seed Farms, 1997, Prairie Grasses and Wildflowers catalogue.

Western Native Seed, 1998, Native Plant Seed for the Rocky Mountains and Western Great Plains (1998 Seed List).