

Pollinator Habitat Seed Mixture - Solar Farms - Halifax County, Virginia (Height of 3 Feet or Less)

Common Name	Scientific Name	Seeds per pound	Seeds per SF at 1 pound of Pure Live Seed (PLS) per Acre	Pounds of Pure Live Seed (PLS) per Acre to Deliver 3 Seeds per SF	Pounds of Pure Live Seed (PLS) per Acre to Deliver 4.5 Seeds per SF	Seed Cost per Pound of Bulk Seed (Ernst, 2/26/19)	Cost per Acre of 3 Pure Live Seeds per SF Drilled	Cost per Acre of 4.5 Pure Live Seeds per SF Broadcast	Bloom Period	Value to Pollinating Insects	Max. Ht. (ft) USDA PLANTS	Max. Ht. (ft) Ernst Seeds	Max. Ht. VA DCR	Shade Tolerance
LOW COST SPECIES WITH MODERATE TO HIGH POLLINATOR VALUE														
Woodoats, Slender	<i>Chasmanthium laxum</i>	85,000	1.95	1.54	2.31	92.00	\$141.68	\$212.52	Summer	Unknown	3.0	3.0	3.0	Intermediate
Lovegrass, Purple	<i>Eragrostis spectabilis</i>	1,059,100	24.31	0.12	0.19	180.00	\$22.21	\$33.31	Spring	Unknown	2.0	2.0	1.5	Intolerant
Pea, Partridge	<i>Chamaecrista fasciculata</i>	65,000	1.49	2.01	2.01	10.00	\$20.10	\$20.10	Mid	High	2.4	3.0	3.0	Tolerant
Bee Balm, Spotted	<i>Monarda punctata</i>	1,472,000	33.79	0.09	0.13	180.00	\$15.98	\$23.97	Mid	High	3.0	3.0	3.0	Intolerant
Coreopsis, Lanceleaf	<i>Coreopsis lanceolata</i>	221,000	5.07	0.59	0.89	24.00	\$14.19	\$21.29	Late	Moderate to High	2.0	2.0	2.0	Intolerant
Indian Blanket	<i>Gaillardia pulchella</i>	238,144	5.47	0.55	0.82	30.00	\$16.46	\$24.69	Early	High	2.0	2.0	2.0	Intolerant
Mistflower, Blue	<i>Conoclinium coelestinum</i>	1,500,000	34.44	0.09	0.13	128.00	\$11.15	\$16.73	Mid	Moderate to High	3.0	3.0	3.0	Tolerant
Gentian, Meadow Bottle	<i>Gentiana clausa</i>	2,982,354	68.47	0.04	0.06	400.00	\$17.53	\$24.00	Late	High	1.0	2.5	2.5	Intermediate
Mountainmint, Virginia	<i>Pycnanthemum virginianum</i>	3,520,000	80.81	0.04	0.06	400.00	\$14.85	\$22.28	Late	High	3.0	3.0	3.0	Intolerant
Primrose, Showy Evening	<i>Oenothera speciosa</i>	3,039,069	69.77	0.04	0.06	50.00	\$2.15	\$3.23	Early	Moderate	1.0	2.0	2.7	Intolerant
Spiderwort, Ohio	<i>Tradescantia ohiensis</i>	1,750,000	40.17	0.07	0.11	210.00	\$15.68	\$23.52	Early	Moderate to High	1.0	3.0	3.0	Intermediate
				5.19	6.77	Total	\$291.99	\$425.63						
LOW COST ALTERNATIVE SPECIES														
Susan, Black-eyed	<i>Rudbeckia hirta</i>	1,575,760	36.17	0.08	0.12	20.00	\$1.66	\$2.49	Early	Low	2.0	3.3	3.0	Intolerant
Yarrow, Common	<i>Achillea millefolium</i>	2,852,012	65.47	0.05	0.07	40.00	\$1.83	\$2.75	Early	Low	3.0	3.0	4.0	Intermediate
OTHER ALTERNATIVE SPECIES														
LEGUMES	See Seed Mix Guidelines at the Bottom of the Spreadsheet													
Goats Rue	<i>Tephrosia virginiana</i>	40,000	0.92	3.27	4.90	400.00	1306.80	1960.20	Mid	Low to Moderate	1.5	NA	2.5	Intermediate
Indigo, Wild Yellow	<i>Baptisia tinctoria</i>	300,000	6.89	0.44	0.65	600.00	261.36	392.04	Mid	Moderate to High	2.5	3.3	3.0	Intolerant
Milkvetch, Canada	<i>Astragalus canadensis</i>	270,500	6.21	0.48	0.72	80.00	38.65	57.97	Mid	Moderate	0.5	3.5	4.5	Intolerant
WILDFLOWERS	See Seed Mix Guidelines at the Bottom of the Spreadsheet													
Alexander, Golden	<i>Zizia aurea</i>	121,800	2.80	1.07	1.61	240.00	257.50	386.25	Early	Low to Moderate	2.0	3.3	3.0	Intermediate
Blazing Star, Scaly	<i>Liatris squarrosa</i>	118,400	2.72	1.10	1.65	220.00	242.00	363.00	Late	High	3.0	3.0	3.0	Intermediate
Blue-eyed Grass, Narrowleaf	<i>Sisyrinchium angustifolium</i>	757,000	17.38	0.17	0.26	160.00	27.62	41.43	Early	Low to Moderate	2.0	1.0	2.0	Intermediate
Columbine, Wild	<i>Aquilegia canadensis</i>	515,616	11.84	0.25	0.38	300.00	76.03	114.05	Early	Low	2.0	2.6	3.0	Intermediate
Coneflower, Yellow Prairie	<i>Ratibida columnifera</i>	737,000	16.92	0.18	0.27	36.00	6.38	9.57	Mid	Moderate	3.0	3.0	NA	Intolerant
Goldenrod, Gray	<i>Solidago nemoralis</i>	1,008,000	23.14	0.13	0.19	360.00	46.67	70.01	Mid	High	2.0	3.0	4.0	Intolerant
Indian Paintbrush	<i>Castilleja coccinea</i>	325,000	7.46	0.40	0.60	490.00	197.03	295.54	Early	Moderate	1.0	1.5	2.0	Tolerant
Meadowbeauty, Virginia	<i>Rhexia virginica</i>	1,840,000	42.24	0.07	0.11	400.00	28.41	42.61	Mid	Moderate	3.0	3.0	3.0	Intermediate
Onion, Nodding Pink	<i>Allium cernuum</i>	123,200	2.82	1.06	1.59	210.00	222.60	333.90	Mid	Moderate	1.5	2.0	3.0	Intermediate

Pea, Sensitive	<i>Chamaecrista nictitans</i>	78,088	1.79	1.67	2.51	60.00	\$100.20	\$150.30	Mid	High	2.0	1.6	2.0	Intolerant
Poppymallow, Purple	<i>Callirhoe involucrata</i>	600,000	13.77	0.22	0.33	180.00	39.20	58.81	Early	Low to Moderate	1.0	1.0	1.0	Intolerant
Quinine, Wild	<i>Parthenium integrifolium</i>	112,000	2.57	1.17	1.75	160.00	186.69	280.03	Late	Low	3.0	4.0	3.0	Intolerant
Skullcap, Hoary	<i>Scutellaria incana</i>	320,000	7.35	0.41	0.61	640.00	261.36	392.04	Late	Moderate	3.0	4.0	3.6	Intermediate
Sneezeweed, Purple	<i>Helenium flexuosum</i>	2,000,000	45.91	0.07	0.10	196.00	12.81	19.21	Mid	High	3.0	3.0	3.0	Intolerant
Spiderwort, Virginia	<i>Tradescantia virginiana</i>	1,750,000	40.17	0.07	0.11	400.00	\$29.87	\$44.80	Early	Moderate to High	1.0	2.5	2.0	Intermediate
St. John's Wort, Spotted	<i>Hypericum punctatum</i>	3,000,000	68.87	0.04	0.07	210.00	9.15	13.72	Early	Moderate	3.0	4.0	3.6	Tolerant

MONARCH BUTTERFLY HABITAT SPECIES (SOW ONE SPECIES ONLY IN A BLOCK TO ALLOW FOR INTENSIVE MANAGEMENT WITH MOWING AND GRASS HERBICIDES)

Common Name	Scientific Name	Seeds per pound	Seeds per SF at 1 pound of pure live seed (PLS) per acre	Pounds of Pure Live Seed (PLS) per Acre to Deliver 30 Seeds per SF	Pounds of Pure Live Seed (PLS) per Acre to Deliver 45 Seeds per SF	Seed Cost per Pound of Bulk Seed (Ernst, 2/26/19)	Cost per Acre of 30 Seeds per SF Drilled	Cost per Acre of 45 Seeds per SF Broadcast	Bloom Period	Value to Pollinating Insects	Max. Ht. (ft) USDA PLANTS	Max. Ht. (ft) Ernst Seeds	Max. Ht. VA DCR	Shade Tolerance
Butterflyweed	<i>Asclepias tuberosa</i>	70,000	1.61	18.7	28.1	\$136.00	\$2,543.20	\$3,814.80	Mid	High	2.0	2.9	3.0	Intolerant
Milkweed, Common	<i>Asclepias syriaca</i>	72,000	1.65	18.2	27.3	\$196.00	\$3,567.20	\$5,350.80	Mid	High	4.0	6.0	6.0	Intolerant

Nominal Bloom Period versus PLANTS Database

Early-Season Blooming = Spring and Early Summer

Mid-Season Blooming = Summer

Late-Season Blooming = Late Summer and Fall

Seed Density for Wildlife and Pollinator Seed Mixes at Best Dates: 30 seeds per SF drilled, 45 seeds per SF broadcast

Seed Density for Wildlife and Pollinator Seed Mixes before Best Dates: 45 seeds per SF drilled, 70 seeds per SF broadcast

Wildlife Mix: no more than 50% native grass by seeds per SF

Pollinator Mix: 2 native grasses and 9 native legumes and forbs

Pollinator Mix: no more than 20% native grass by seeds per SF