

## SPECIES RECOMMENDED FOR MONARCH BUTTERFLY PLANTING AREAS IN ALABAMA

The following list of monarch butterfly plants are eligible for planting as part of the NRCS Monarch Butterfly Habitat establishment practice. The practice requires a mixture of seeds to be planted at a density of 50 pure live seeds per square foot. Milkweed must make up a minimum of 1.5% of the total mixture. Seeds per pound are required to calculate the mixtures and determine if milkweed seeds are present in numbers to meet national requirements (1.5%). There is an excel spreadsheet that can be used by NRCS employees to assist with mixture development. Please consult this list (soil moisture, sun and color may be important to landowner needs) when developing your species to include in the excel spreadsheet. **Species highlighted in yellow have less value to monarch butterflies but are beneficial to other pollinator species. Only one yellow highlighted species may be included in the mix for monarch butterfly habitat establishment.** Tropical milkweed (*Asclepias curassavica*) should not be planted under any circumstances as part of a monarch butterfly habitat establishment effort.

### Southeastern regional ecotype seed should be used if available, ask seed vendors

Flowering Period	Soil Moisture	Sun	Botanical Name	Common Name	Color	Height	Seeds Per PLS Pound*
Early	dry to medium	sun to partial shade	<i>Coreopsis lanceolata</i>	Lanceleaf tickseed	yellow	1' – 2'	220,000
Early	medium to wet	full sun	<i>Coreopsis tinctoria</i>	Plains Coreopsis	yellow, red	1' – 3'	3,200,000
Early	dry to medium	full sun	<i>Asclepias syriaca</i>	Common milkweed	pink	3' – 6'	48,000
Early	dry to medium	full sun	<i>Asclepias tuberosa</i>	Butterfly milkweed	orange	2' – 3'	56,000
Early	dry to wet	full sun	<i>Penstemon digitalis</i>	Smooth beardtongue	white	2' – 4'	1,800,000
Early	dry to medium	sun to partial shade	<i>Rudbeckia hirta</i>	Black-eyed Susan	yellow,	2' – 3'	1,600,000
Early	medium to wet	full sun	<i>Zizia aurea</i>	Golden alexander	yellow	2' – 3'	192,000
Early	Dry to medium	sun to partial shade	<i>Echinacea pallida</i>	Pale purple coneflower	pink	2' – 3'	80,000
Early	Dry to medium	full sun	<i>Coreopsis grandiflora</i>	Large-flowered tickseed	Yellow	1' – 2'	227,000
Early	Dry to medium	full sun to partial shade	<i>Phlox divaricata</i>	Eastern blue phlox	Blue	up to 1'	170,000
Early	Medium to wet	full sun	<i>Coreopsis tripteris</i>	Tall tickseed	Yellow	2' – 8'	170,000
Early	dry to medium	full sun	<i>Monarda punctata</i>	Spotted beebalm	white, purple, yellow	1' - 3'	1,500,000
Early	Medium to wet	full sun to partial shade	<i>Amsonia tabernaemontana</i>	Eastern bluestar	blue	2' – 3'	22,400
Mid	moist to mesic	full sun	<i>Liatris spicata</i>	Dense or Spiked blazing star	rosy-pink-purple	2' – 4'	190,000
Mid	dry to medium	full sun to partial shade	<i>Dracopis amplexicaulis</i>	Clasping coneflower	yellow	1' – 2'	1,600,000
Mid	moist	sun to partial shade	<i>Desmanthus illinoensis</i>	Illinois bundleflower	white	2' – 3'	200,000
Mid	moist to dry	sun to partial shade	<i>Echinacea purpurea</i>	Purple coneflower	lavender	2' – 4'	115,000
Mid	dry to medium	full sun	<i>Ratibida pinnata</i>	Greyheaded coneflower	yellow	3' – 5'	450,000
Mid	medium to wet	sun to partial shade	<i>Eupatorium perfoliatum</i>	Boneset	white	4' – 6'	2,000,000
Mid	dry to wet	full sun	<i>Eupatorium rotundifolium</i>	Roundleaf thoroughwort	white	1' – 3'	2,000,000
Mid	dry to wet	sun to partial shade	<i>Monarda fistulosa</i>	Bergamot	lavender	2' – 4'	1,250,000
Mid	dry to wet	full sun	<i>Heliopsis helianthoides</i>	False sunflower or smooth oxeye	yellow	3' – 6'	105,000
Mid	Dry to medium	full sun	<i>Pycnanthemum tenuifolium</i>	Slender mountainmint	White	2' - 3'	6,000,000
Mid	Dry to wet	full sun to partial shade	<i>Pycnanthemum incanum</i>	Hoary mountainmint	white	2' – 3'	6,000,000
Mid	Dry to medium	full sun to partial shade	<i>Pycnanthemum muticum</i>	Clustered mountainmint	white	2' – 4'	2,240,000
Mid	Medium to wet	partial shade	<i>Penstemon laevigatus</i>	Eastern smooth beardtongue	Light purple-white	2' – 3'	350,000
Mid	Dry to medium	full sun	<i>Eryngium yuccifolium</i>	Rattlesnake master	white	4' – 5'	128,000

Mid	Dry to medium	full to partial shade	Asclepias verticillata	Whorled milkweed	white	1' – 3'	182,000
Mid	Dry to wet	full sun	Eupatorium hyssopifolium	Lanceleaf thoroughwort	white	2' – 4'	2,000,000
Mid	Medium to wet	full sun to partial shade	Phlox pilosa	Prairie phlox	Pink	1' – 2'	304,000
Mid	Dry to medium	full sun	Salvia coccinea	Scarlet sage	Scarlet	1' - 3'	276,800
Mid	Dry to medium	full sun	Silphium asteriscus	Starry rosinweed	yellow	2' – 5'	20,800
Mid	Dry to medium	full sun to partial shade	Silphium laciniatum	Compass plant	yellow	3' – 8'	10,560
Mid	Dry to medium	full sun to partial shade	Silphium trifoliatum	Southern rosinweed	yellow	up to 5'	20,800
Mid	Dry to medium	full sun to partial shade	Monarda Citriodora	Lemon mint	lavender	1' – 2'	800,000
Mid	Medium to wet	full sun	Verbena hastata	Blue vervain	blue	3' – 6'	1,600,000
Late	medium to wet	partial shade	Eutrochium purpureum	Sweet Joe-pye weed	pink	5' – 7'	672,000
Late	dry to medium	full sun	Gaillardia pulchella	Indian blanket	yellow, red	1' – 2'	238,000
Late	medium to wet	partial shade	Helianthus angustifolius	Narrow Leaved sunflower	yellow	3' – 6'	504,000
Late	Moist	full sun	Helenium autumnale	sneezeweed	Yellow	3' – 4'	2,000,000
Late	medium to wet	partial shade	Verbesina alternifolia	Yellow wingstem	yellow	4' – 8'	145,000
Late	medium to wet	partial shade	Verbesina virginica	White wingstem	white	3' – 6'	260,000
Late	moist	full sun to partial shade	Vernonia gigantea	Ironweed	purple	5' – 8'	320,000
Late	dry to medium	full sun	Helianthus maximiliani	Maximilian sunflower	yellow	3' – 10'	210,000
Late	moist	full sun	Bidens aristosa	Showy tickseed	yellow	2' – 3'	130,000
Late	Dry to medium	full sun to partial shade	Symphotrichum novae-angliae	New England aster	purple	4' – 5'	1,056,000
Late	Dry to medium	full sun	Symphotrichum laevis	Smooth aster	Blue	2' – 3'	750,000
Late	Medium to wet	full sun to partial shade	Lobelia siphilitica	Blue lobelia	blue	2' – 3'	8,000,000
Late	Dry to medium	full sun to partial shade	Liatris aspera	Button blazing star	purple	2' – 3'	256,000
<b>Late</b>	<b>Dry to moist</b>	<b>partial shade</b>	<b>Desmodium paniculatum</b>	<b>Panicked tick trefoil</b>	<b>Purple</b>	<b>2' – 5'</b>	<b>106,000</b>
Late	Dry to moist	full sun	Symphotrichum pilosum	White oldfield aster	White	3' – 5'	700,000
Late	Medium to moist	full sun	Eutrochium fistulosum	Tall Joe Pye Weed	pink, purple	5' – 8'	2,000,000
Late	Medium to wet	full sun to partial shade	Asclepias incarnata	Swamp milkweed	pink	4' – 5'	70,000
Late	Dry to medium	full sun to partial shade	Liatris tenuifolia	Shortleaf blazing star	purple	3' – 5'	190,000
Late	Dry to medium	full sun	Salvia azurea	Pitcher sage	blue and white	3' – 5'	149,000
Late	Medium/moist	partial shade	Symphotrichum lateriflorum	Calico aster	white, purple	1' – 2'	4,000,000
Late	Dry to medium	partial shade	Symphotrichum cordifolium	Blue wood aster	blue	up to 3'	2,240,000
Late	Dry to medium	full sun to partial shade	Liatris squarrosa	Scaly blazing star	purple	1' - 2'	112,000

Forb (flowering) mixtures should contain at least 3 species from each of the 3 bloom periods (Early, Mid, Late). The 3 species need not be in bloom for the entirety of a bloom period. Mixtures of forbs and/or legumes should be planted at the rate of 50 pure live seed (PLS) per square foot.

### Native Grasses

Native grasses (NWSG) are key components of natural herbaceous plant communities and may be a necessary component for the establishment of monarch butterfly habitat on some sites. NWSG aren't host or nectar species for monarch butterflies but many other butterfly species utilize them as host plants. NWSG may be added to the mixture if the landowner or NRCS agent believe it is necessary for ecological stability of the site or as structure for the benefit of the pollinator species. **NWSG should not be planted at a rate greater than 1 pound per acre.** NWSG are not a substitute for the approved monarch pollinator species – they are in addition to the pollinator species. NWSG provide fuel for prescribed burning and maintenance of pollinator and monarch butterfly habitat.

<u>Soil moisture</u>	<u>Sun</u>	<u>Botanical name</u>	<u>Common name</u>	<u>Height</u>	<u>Notes</u>
Dry to medium	sun to partial shade	<i>Schizachyrium scoparium</i>	little bluestem	3-6'	likes a dry site
Dry to medium	sun to partial shade	<i>Sorghastrum nutans</i>	Indiangrass	3-8'	no more than 0.5 lbs./acre
Medium to wet	sun to partial shade	<i>Elymus virginicus</i>	Virginia wild rye	2' – 3'	cool season grass
Likes wet soils	sun to partial shade	<i>Tripsacum dactyloides</i>	Eastern gamagrass	up to 8'	
moist to dry	sun to partial shade	<i>Andropogon gerardii</i>	big bluestem	4-8'	no more than 0.5 lbs/acre
Dry to medium	sun to partial shade	<i>Bouteloua curtipendula</i>	sideoats grama	1-3'	

**After establishment** – Grass selective herbicides such as those with clethodim will not harm the forbs, legumes or any broadleaf plants in a monarch habitat establishment area but will remove any grasses that are present, including native warm season grasses. Spot spraying may be necessary if grasses need control. Read and apply as per label instructions.

\*PLS = Pure Live Seed (% purity x % germination = % pure live seed)

**Example:** Where Purity is 90% (meaning 90% of the weight being purchased is actual seed) and where Germination is 70%, (meaning 70% of the actual seed are guaranteed to be viable). In this Example **PLS = .90 X .70 = 63 percent**

So, in this example, every 100 pounds of bulk seed you get actually contains 63 pounds in pure, viable seed.

*As you can see, PLS is NOT the same as bulk seed. Buyer should ensure pricing is based on pls pounds!*

Useful links to determine suitability of plants for inclusion in the seed mixture include:

[Biota of North America Plant Atlas](#)

[Alabama Plant Atlas](#)

[Alabama Butterfly Atlas](#)

[Xerces Society](#)

[Native milkweed fact sheet](#)

[Tropical milkweed fact sheet](#)