



CONSERVATION

INTRODUCTION TO CONSERVATION

CUSTOM MIXES

For nearly 100 years, we have been designing custom mixes here at Star Seed Inc. We understand that a “cookie cutter” mix may not fit with what you have in mind for a desired outcome. Answer some of the simple questions below, then give us a call! We can’t wait to discuss your goals for your property.

- › Where will this be planted?
- › What is the soil type of the area?
- › How is the water drainage?
- › What is currently established?
- › What benefits do you wish to see from the planting?
- › What is your budget?
- › Do you have USDA program specifications that you need to follow?

CRP

The Conservation Reserve Program (CRP) is a land conservation program administered by the Farm Service Agency (FSA). Farmers who enroll in the program agree to remove land from agricultural production and plant species that will improve environmental health and quality, in exchange for yearly rental payments. CRP contracts are generally 10-15 years in length. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat.

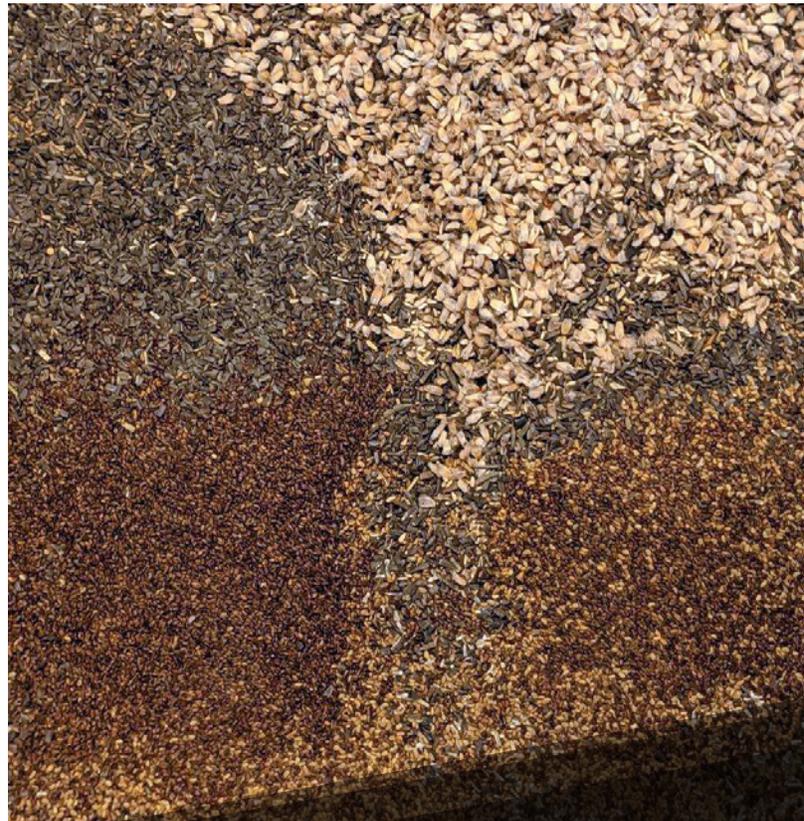
To inquire about the enrollment process, stop by your local USDA Service Center. Once you are enrolled into the CRP program, the NRCS will provide a seeding sheet for your specific site. Give us a call to quote your custom seed mixture once you receive your seeding sheet!

PURE LIVE SEED

Why buy seed on a Pure Live Seed (PLS) basis?

Purchasing seed by the PLS weight ensures that you are only buying seed that is pure, and not paying for seeds that are not viable, weed seeds, stems, and leaves. We test each individual lot of seed on a regular basis. This tells us germination, purity, inert matter, and other crop seeds that we use to calculate the PLS %. The PLS % tells you that out of every bulk pound of seed, only a certain percentage of each pound would be good viable seed. When buying on a **bulk** basis, you have no way of knowing how much of that seed will actually germinate, or how much of that seed is inert matter and weed seed.

$$\frac{(\% \text{ Germ} + \% \text{ Firm Seed}) \times \text{Purity}}{100} = \text{Percent PLS}$$





POLLINATORS

What are pollinators?

- › Pollinators include: bees, birds, butterflies, and other animals and insects
- › Pollinators fertilize plants by moving pollen from one flower to another

Why are pollinators important?

- › Pollinator populations are diminishing worldwide
- › About 3/4 of our major food crops require pollinators (flowers, fruit, coffee, chocolate, and many more)
- › Higher quality crops and increased yields
- › Pollinators are key to maintaining habitats and ecosystems that many animals rely on for food and shelter

Tips on establishing a healthy pollinator habitat

- › Consider sunlight, soil type, and drainage when selecting which species to grow
- › Choose a diverse range of flower colors and bloom periods to attract many different pollinators
- › Select high quality seed that is native to your area

WILDLIFE

Tips on establishing a wildlife habitat

- › Clear set of objectives and habitat requirements
- › Prepare the area
- › Go native
- › Establish a diverse plant community
- › Light disking
- › Burn or mow

Cover

- › Native grass clumps create ideal nesting habitat, brood, fawning, bedding, escape cover for wildlife
- › Many native grasses remain standing throughout winter, unlike non-native grasses, creating crucial thermal protection from brutal winds and snow for all types of wildlife

Food

- › Forbs and legumes attract beneficial insects that serve as the primary food source for most upland birds from spring to fall
- › Seeds from forbs and legumes are eaten throughout fall and winter months by deer and other wildlife
- › Most non-native plants cannot provide the food source that native grasses, forbs, and legumes are able to

HOW TO PLAN, PREPARE, AND PLANT

Understanding

Native warm season grasses are slow to establish. It is not uncommon to think that your first year was a failure. It takes longer to establish native warm season grasses than it does to establish cool season grasses. Weed competition the first year after planting is likely, but can be prevented or controlled with proper management.

Site Preparation

Weeds and unwanted grasses need to be killed the year prior to planting. It is very beneficial to remove as much vegetation from the site as possible the fall or spring before the desired planting. Some ways to do this include burning, grazing, haying, or mowing. If there is regrowth before planting, final application of glyphosphate may be required to help eliminate competition.

Seeding Methods

Seeding your site properly could either make or break your planting. Planting too deep results in seeds that are unable to sprout. Ideal planting depth is 1/4 to 1/2 inch. It is important to make sure your drill is properly calibrated before seeding your entire area. A native grass drill is the preferred method of seeding, but a conventional till drill will also work. When using a conventional till drill, it may be a good idea to use a “filler” like rolled milo or rice hulls to help the fluffy seed properly flow into the drill. Another method of seeding is broadcast seeding. This can be done by hand over a large or small area. Before

broadcasting your seed, be sure you have a firm, weed free seed bed to ensure good seed to soil contact.

When to Plant

As a general rule of thumb, planting 2 weeks prior to average last frost and at least 6 weeks prior to hot, dry summer weather is recommended. During planting, soil temperature between 55-75 degrees is preferred. Planting too early may not give competing plants enough time to emerge and cannot be effectively killed. Planting too late may result in competition for soil moisture among other plants. Dormant seedings are planted from late fall to late winter. A hard freeze on the seed can help to break any dormancy in seeds.

Seed Quality

Buying seed by the PLS (pure live seed) weight ensures that you are only buying seed that is pure, and not paying for seeds that are not viable, weed seeds, stems, and leaves. Understanding the origin of the seed helps to find species that are well suited for your location. After purchasing your seed, be sure to store your seed in a cool, dry place that is out of sunlight.

Seeding Rates

Seeding rates vary by soil, precipitation, and intended use of the seeding. For help on seeding rates and mixtures, contact us for more information.



STAR SEED MIXES

HONEY BEE MIX

Our **Honey Bee Mix** is packed with 18 different clovers and wildflowers that are loved by honey bees and many other pollinators. The Honey Bee Mix produces brilliant flowers across all bloom periods providing pollen and nectar throughout the growing season. The best time to plant this mix is in early spring at a rate of 6 PLS lbs per acre. The Honey Bee mix contains low maintenance perennials and reseeding annuals:

- › Maximilian Sunflower
- › Red Clover
- › Sainfoin
- › White Blossom Sweet Clover
- › Hoary Vervain
- › Purple Prairie Clover
- › Yellow Blossom Sweet Clover
- › Wild Bergamot
- › Western Yarrow
- › Partridge Pea
- › Crimson Clover
- › Claspig Coneflower
- › Lemon Mint
- › Indian Blanket
- › Alsike Clover
- › Blackeyed Susan
- › Ladino White Clover
- › Lanceleaf Coreopsis



BIG 12 WILDFLOWER MIX



The **Big 12 Wildflower Mix** is comprised of 12 native wildflower species that are both easy to grow and highly showy. Containing long lived perennials and reseeding annuals, this mix will provide many years of beautiful flowers with very little maintenance. This mix contains:

- › Maximilian Sunflower
- › Blackeyed Susan
- › Lanceleaf Coreopsis
- › Illinois Bundleflower
- › Partridge Pea
- › Plains Coreopsis
- › Butterfly Milkweed
- › Purple Prairie Clover
- › Blanketflower
- › Purple Coneflower
- › Claspig Coneflower
- › Upright Prairie Coneflower

KANSAS FOOD PLOT MIX

Our **Kansas Food Plot Mix** is packed with millets and forage and grain sorghums. This high-yielding blend provides quail and pheasants with crucial winter cover and food. One 25# bag plants 4-5 acres. This blend contains:

- › 2 millets
- › 7 forage sorghums
- › 5 grain sorghums



NATIVE SHORTGRASS MIX

Our **Native Shortgrass Mix** contains a mixture of warm season grasses that will reach heights between 6 inches and 3 feet. This mix is perfect for shortgrass pasture reclamation, soil stabilization, or native landscape in residential areas. Our Native Shortgrass Mix contains:

- › Little Bluestem
- › Sideoats Grama
- › Blue Grama
- › Buffalograss

STAR SEED MIXES

NATIVE TALLGRASS MIX

Our **Native Tallgrass Mix** contains a mixture of warm season grasses that will reach heights between 2 and 6 feet. This mix is perfect for tallgrass pasture reclamation, creating wildlife habitat, or a living snow fence. Our Native Tallgrass Mix contains:

- › Big Bluestem
- › Indiangrass
- › Sideoats Grama
- › Switchgrass



PRETTY PRAIRIE SHORTGRASS MIX

The **Pretty Prairie Shortgrass Mix** is a combination of our Native Shortgrass Mix and the Big 12 Wildflower Mix. This mix provides the highly showy wildflowers and short grasses that are common in a native shortgrass prairie.

Pretty Prairie Shortgrass Mix contains:

- › Little Bluestem
- › Sideoats Grama
- › Blue Grama
- › Buffalograss
- › Maximilian Sunflower
- › Blackeyed Susan
- › Lanceleaf Coreopsis
- › Illinois Bundleflower
- › Partridge Pea
- › Plains Coreopsis
- › Butterfly Milkweed
- › Purple Prairie Clover
- › Blanketflower
- › Purple Coneflower
- › Clasping Coneflower
- › Upright Prairie Coneflower

PRETTY PRAIRIE TALLGRASS MIX

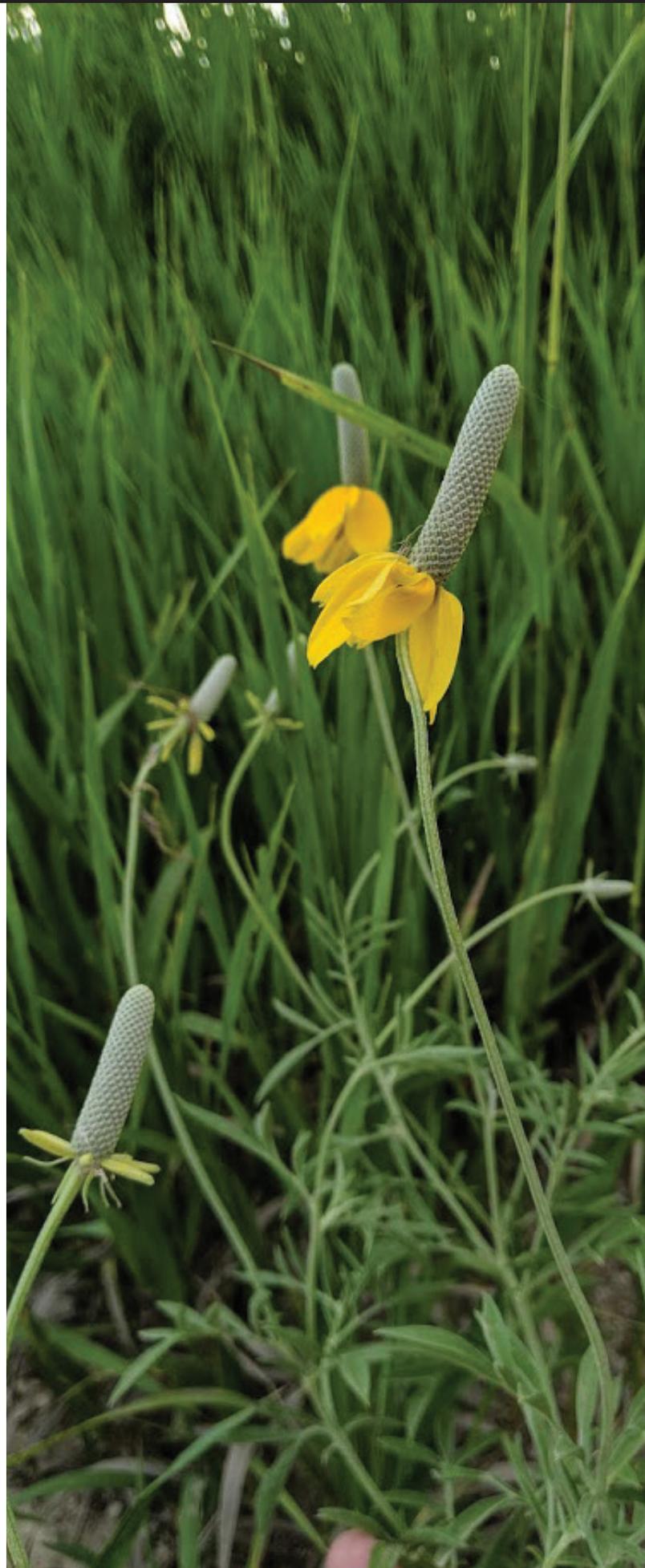
The **Pretty Prairie Tallgrass Mix** is a combination of our Native Tallgrass Mix and the Big 12 Wildflower Mix. This mix provides the highly showy wildflowers and tall grasses that you would typically find in a mixed or tallgrass prairie. Pretty Prairie Tallgrass Mix contains:

- › Big Bluestem
- › Indiangrass
- › Sideoats Grama
- › Switchgrass
- › Maximilian Sunflower
- › Blackeyed Susan
- › Lanceleaf Coreopsis
- › Illinois Bundleflower
- › Partridge Pea
- › Plains Coreopsis
- › Butterfly Milkweed
- › Purple Prairie Clover
- › Blanketflower
- › Purple Coneflower
- › Clasping Coneflower
- › Upright Prairie Coneflower

COOL SEASON PASTURE MIX

The **Cool Season Pasture Mix** provides high quality forage for all classes of livestock. This mix does most of its growing in the cooler temperatures of spring and fall. Our budget friendly cool season pasture mix performs exceptionally well under a variety of conditions. This mix contains:

- › Smooth Bromegrass
- › Timothy
- › Orchardgrass
- › Annual Ryegrass



STAR SEED MIXES



ASYLUM INSANE DEER BEDDING

Asylum is a blend of carefully selected native grass varieties designed to provide superior bedding and escape cover for whitetail deer. Asylum is a perennial mix, so you plant only one time to provide your deer herd with what it needs to reach its full potential year after year! This mix contains:

- › Big Bluestem
- › Indiangrass
- › Switchgrass

BARRICADE CONCEALMENT MIX

Barricade is an annual sorghum mix designed to provide concealment of your property, undetected stand entrance, and hidden travel corridors for wildlife. Barricade has the potential to reach 14 feet in height to help you hide what you do not want seen. This unique mixture is designed to withstand winter's harsh abuse and continue to provide concealment through hunting season. Barricade will produce grain that deer and other wildlife will find attractive. If you do not want to attract deer to the planting, such as along a road, you can delay your planting so the plants freeze out before producing grain. Not allowing the plants to produce seed will also aid in managing volunteer plants the following year.

FALL DEER FOOD PLOT MIX

Our **Fall Deer Food Plot Mix** provides the perfect blend of oats, Austrian peas, 4010 peas, turnips, and radishes to keep your deer returning day after day throughout fall and winter months.

SPORTSMAN'S SUNFLOWERS

Sunflowers are crowd favorite among sportsman and wildlife lovers alike. Dove and game birds will favor our high energy, high oil, sunflower blend. One 25# bag plants 4-5 acres.



STAR SEED MIXES

GRASSES

SCIENTIFIC NAME	COMMON NAME	ANNUAL/PERENNIAL	WARM/COOL SEASON	FULL SEEDING RATE	HEIGHT
<i>Andropogon gerardii</i>	Big Bluestem	P	W	6	6-8 ft
<i>Bouteloua gracilis</i>	Blue Grama	P	W	2	10-20 in
<i>Bromus biebersteinii</i>	Bromegrass, Meadow	P	C	10	2-4 ft
<i>Bromus inermis</i>	Bromegrass, Smooth	P	C	15	2-4 ft
<i>Bouteloua dactyloides</i>	Buffalograss	P	W	5	6-8 in
<i>Calamagrostis canadensis</i>	Bluejoint	P	C	1	2-6 ft
<i>Sporobolus heterolepis</i>	Dropseed, Prairie	P	W	6	1-3 ft
<i>Sporobolus compositus</i>	Dropseed, Rough	P	W	3	2-4 ft
<i>Sporobolus cryptandrus</i>	Dropseed, Sand	P	W	1	1-3.5 ft
<i>Tripsacum dactyloides</i>	Eastern Gamma	P	W	8	8 ft
<i>Glyceria striata</i>	Fowl Mannagrass	P	C	10	7-11 in
<i>Carex vulpinoidea</i>	Fox Sedge	P	C	1	1-3 ft
<i>Alopecurus arundinaceus</i>	Garrison Creeping Foxtail	P	C	2	3-6 ft
<i>Sorghastrum nutans</i>	Indiangrass	P	W	6	3-7 ft
<i>Schizachyrium scoparium</i>	Little Bluestem	P	W	4	1.5-3 ft
<i>Dactylis glomerata</i>	Orchardgrass	P	C	4	15-18 in
<i>Spartina pectinata</i>	Prairie Cordgrass	P	W	6	6-8 ft
<i>Koeleria macrantha</i>	Prairie Junegrass	P	C	2	1/2-2 ft
<i>Calamovilfa longifolia</i>	Prairie Sandreed	P	W	4	3-5 ft
<i>Phalaris arundinacea</i>	Reed Canarygrass	P	C	7	6-8 ft
<i>Lolium multiflorum</i>	Rye Grass, Annual	A	C	25	2-3 ft
<i>Lolium perenne</i>	Rye Grass, Perennial	P	C	25	1-2 ft
<i>Andropogon hallii</i>	Sand Bluestem	P	W	6	2-6 ft
<i>Eragrostis trichodes</i>	Sand Lovegrass	P	W	2	2-5 ft
<i>Bouteloua curtipendula</i>	Sideoats Grama	P	W	6	1-3 ft
<i>Panicum virgatum</i>	Switchgrass	P	W	3	3-5 ft
<i>Phleum pratense</i>	Timothy	P	C	10	1.5-3.5 ft
<i>Eragrostis curvula</i>	Weeping Lovegrass	P	W	5	2.5-3.5 ft
<i>Agropyron cristatum</i>	Wheatgrass, Crested	P	C	7	1-3 ft
<i>Agropyron intermedium</i>	Wheatgrass, Intermediate	P	C	12	3-4 ft
<i>Agropyron trichophorum</i>	Wheatgrass, Pubescent	P	C	10	3-4 ft
<i>Elymus trachycaulus</i>	Wheatgrass, Slender	P	C	6	2-2.5 ft
<i>Thinopyrum ponticum</i>	Wheatgrass, Tall	P	C	12	3-10 ft
<i>Elymus lanceolatus</i>	Wheatgrass, Thickspike	P	C	6	1-3 ft
<i>Pascopyrum smithii</i>	Wheatgrass, Western	P	C	10	1-3 ft
<i>Leymus cinereus</i>	Wildrye, Basin	P	C	8	3-6 ft
<i>Elymus canadensis</i>	Wildrye, Canada	P	C	8	2.5-5 ft
<i>Elymus virginicus</i>	Wildrye, Virginia	P	C	6	2-3 ft
<i>Elymus riparius</i>	Wilerye, Riverbank	P	C	10	3-6 ft

WILDFLOWERS

SCIENTIFIC NAME	COMMON NAME	BLOOM PERIOD	PERENNIAL/ ANNUAL/BIENNIAL	FLOWER COLOR	HEIGHT
<i>Heuchera richardsonii</i>	Alumroot	E	P	● ● ●	1-3 ft
<i>Teucrium canadense</i>	American Germander	E-M	P	● ●	3 ft
<i>Rosa arkansana</i>	Arkansas Rose	M	P	● ●	.5-3 ft
<i>Symphotrichum oblongifolium</i>	Aster, Aromatic	L	P	●	1-3 ft
<i>Boltonia asteroides</i>	Aster, False	M-L	P	●	3-5 ft
<i>Doellingeria umbellata</i>	Aster, Flat Top	M-L	P	●	3-5 ft
<i>Heterotheca villosa</i>	Aster, Hairy	E-M-L	P	●	3 ft
<i>Aster ericoides</i>	Aster, Heath	L	P	●	1-3 ft
<i>Aster novae-angliae</i>	Aster, New England	L	P	●	3-6 ft
<i>Aster tanacetifolia</i>	Aster, Prairie	E-M-L	P	●	3 ft
<i>Aster sericeus</i>	Aster, Silky	L	P	●	1 ft
<i>Aster azureus</i>	Aster, Sky Blue	L	P	● ●	2-3 ft
<i>Aster laevis</i>	Aster, Smooth Blue	L	P	● ●	2-3 ft
<i>Aster puniceus</i>	Aster, Swamp	L	P	● ●	3-6 ft
<i>Aster ptarmicoides</i>	Aster, Upland White	M-L	P	●	1-2 ft
<i>Bidens aristosa</i>	Beggars Tick, Bearded	M-L	A	●	1-5 ft
<i>Bidens frondosa</i>	Beggars Tick, Common	L	A	●	1-3 ft
<i>Lotus corniculatus</i>	Birdsfoot Trefoil	M	P	●	2-3 ft
<i>Rudbeckia hirta</i>	Blackeyed Susan	M-L	A/B	●	1-2 ft
<i>Rudbeckia subtomentosa</i>	Blackeyed Susan, Sweet	M-L	P	●	3-5 ft
<i>Gaillardia aristata</i>	Blanketflower	M	P	● ●	1-2 ft
<i>Liatris punctata</i>	Blazingstar, Dotted	L	P	●	1-2.5 ft
<i>Liatris spicata</i>	Blazingstar, Marsh	L	P	●	3-4 ft
<i>Liatris pycnostachya</i>	Blazingstar, Prairie	M	P	●	2-5 ft
<i>Liatris aspera</i>	Blazingstar, Rough	L	P	● ●	2-5 ft
<i>Liatris squarrosa</i>	Blazingstar, Scaly	M-L	P	●	1-3 ft
<i>Iris virginica</i>	Blue Flag Iris	E	P	● ●	1-3 ft
<i>Agastache foeniculum</i>	Blue Giant Hyssop	M	P	● ●	2-4 ft
<i>Eupatorium perfoliatum</i>	Boneset	M-L	P	●	3-6 ft
<i>Brickellia eupatorioides</i>	Boneset, False	L	P	●	1-3 ft
<i>Eupatorium altissimum</i>	Boneset, Tall	M-L	P	●	3-6 ft
<i>Rudbeckia triloba</i>	Brown-eyed Susan	M-L	P	●	2-5 ft
<i>Lobelia cardinalis</i>	Cardinal Flower	M-L	P	●	3-6 ft
<i>Silene armeria</i>	Catchfly	M	P	●	1-1.5 ft
<i>Silene antirrhina</i>	Catchfly, Sleepy	E-M	A	●	.5-1.5 ft
<i>Nepeta cataria</i>	Catnip	M-L	P	●	1-4 ft

WILDFLOWERS

SCIENTIFIC NAME	COMMON NAME	BLOOM PERIOD	PERENNIAL/ ANNUAL/BIENNIAL	FLOWER COLOR	HEIGHT
<i>Silphium laciniatum</i>	Compass Plant	M	P	●	3-10 ft
<i>Echinacea angustifolia</i>	Coneflower, Black Sampson	M	P	●	1.5-2 ft
<i>Rudbeckia amplexicaulis</i>	Coneflower, Claspig	E-M	A	● ●	2-3 ft
<i>Rudbeckia laciniata</i>	Coneflower, Cutleaf	M-L	P	●	3-6 ft
<i>Ratibida pinnata</i>	Coneflower, Greyhead	E-M-L	P	●	3-6 ft
<i>Echinacea pallida</i>	Coneflower, Pale Purple	M	P	● ●	2-4 ft
<i>Echinacea purpurea</i>	Coneflower, Purple	E-M-L	P	● ●	1-3 ft
<i>Ratibida columnifera</i>	Coneflower, Upright	E-M-L	P	● ● ●	1-3 ft
<i>Coreopsis lanceolata</i>	Coreopsis, Lanceleaf	E-M	P	●	.5-2 ft
<i>Coreopsis tinctoria</i>	Coreopsis, Plains	E-M	A	● ●	1-3 ft
<i>Coreopsis palmata</i>	Coreopsis, Prairie	M	P	●	1-3 ft
<i>Coreopsis tinctoria</i>	Coreopsis, Red Dwarf	E-M	A	● ●	1-3 ft
<i>Coreopsis tripteris</i>	Coreopsis, Tall	M	P	●	3-6 ft
<i>Papaver rhoeas</i>	Corn Poppy, Red	M	A	●	1-2 ft
<i>Centaurea cyanus</i>	Cornflower	M	A	●	1-3 ft
<i>Gentiana flavida</i>	Cream Gentian	M-L	P	●	1-3 ft
<i>Veronicastrum virginicum</i>	Culver's Root	M-L	P	● ● ●	3-6 ft
<i>Silphium perfoliatum</i>	Cup Plant	M-L	P	●	3-6 ft
<i>Grindelia squarrosa</i>	Curly Cup Gumweed	M-L	A/B	●	1-3 ft
<i>Englemannia peristenia</i>	Daisy, Engleman	E-M	P	●	.5-2 ft
<i>Leucanthemum xsuperbum</i>	Daisy, Shasta	M	P	●	3-4 ft
<i>Monarda punctata</i>	Dotted Mint	E-M	A	● ● ● ●	1-3 ft
<i>Froelichia floridana</i>	Field Snake Cotton	M	A	● ●	3-6 ft
<i>Linum lewisii</i>	Flax, Blue	E-M	P	● ●	1-2 ft
<i>Linum grandiflorum</i>	Flax, Scarlet	M	A	●	1-3 ft
<i>Penstemon digitalis</i>	Foxglove Beardtongue	M	P	●	1-3 ft
<i>Zizia aurea</i>	Golden Alexander's	E-M	P	●	1-3 ft
<i>Solidago canadensis</i>	Goldenrod, Canada	L	P	●	3-6 ft
<i>Solidago ulmifolia</i>	Goldenrod, Elm-Leaf	L	P	●	3-6 ft
<i>Solidago gigantea</i>	Goldenrod, Giant	L	P	●	3-6 ft
<i>Solidago graminifolia</i>	Goldenrod, Grass-Leaved	L	P	●	2-4 ft
<i>Solidago nemoralis</i>	Goldenrod, Gray	M-L	P	●	1-2 ft
<i>Solidago missouriensis</i>	Goldenrod, Missouri	M	P	●	1-3 ft
<i>Solidago riddellii</i>	Goldenrod, Riddell's	L	P	●	2-3 ft
<i>Solidago speciosa</i>	Goldenrod, Showy	M	P	●	3-6 ft
<i>Solidago rigidum</i>	Goldenrod, Stiff	L	P	●	3-5 ft
<i>Angelica atropurpurea</i>	Great Angelica	M	P	●	6-12 ft
<i>Lobelia siphilitica</i>	Great Blue Lobelia	M-L	P	●	1-3 ft
<i>Hypericum pyramidatum</i>	Great St. John's Wort	M	P	●	2-5 ft
<i>Desmanthus illinoensis</i>	Illinois Bundleflower	E-M-L	P	●	1-3 ft
<i>Gaillardia pulchella</i>	Indian Blanket	M	A	● ●	1-2 ft
<i>Baptisia australis</i>	Indigo, Blue False	E-M	P	● ●	3-5 ft

WILDFLOWERS

SCIENTIFIC NAME	COMMON NAME	BLOOM PERIOD	PERENNIAL/ ANNUAL/BIENNIAL	FLOWER COLOR	HEIGHT
<i>Baptisia bracteata</i>	Indigo, Cream False	E-M	P	●	1-3 ft
<i>Baptisia alba</i>	Indigo, White Wild	E-M	P	●	2-4 ft
<i>Vernonia fasciculata</i>	Ironweed	M	P	●	2-4 ft
<i>Vernonia baldwinii</i>	Ironweed, Baldwin's	M-L	P	● ●	3-6 ft
<i>Helianthus tuberosus</i>	Jerusalem Artichoke	M-L	P	● ● ●	3-6 ft
<i>Eupatorium fistulosum</i>	Joe-Pye Weed	M-L	P	● ●	2-7 ft
<i>Eupatorium maculatum</i>	Joe-Pye Weed, Spotted	M-L	P	● ●	3-6 ft
<i>Eupatorium purpureum</i>	Joe-Pye Weed, Sweet	M	P	● ●	3-6 ft
<i>Delphinium virescens</i>	Larkspur, Prairie	E-M	P	● ●	3-6 ft
<i>Consolida ajacis</i>	Larkspur, Rocket	M	A	● ● ●	2-4 ft
<i>Amorpha canescens</i>	Lead Plant	M	P	● ●	3-6 ft
<i>Monarda citriodora</i>	Lemon Mint	M	A	● ● ●	1-3 ft
<i>Lespedeza capitata</i>	Lespedeza, Roundhead	M	P	●	3-6 ft
<i>Lespedeza virginica</i>	Lespedeza, Slender	M	P	●	3-6 ft
<i>Lupinus perennis</i>	Lupine, Perennial	E-M	P	● ●	1-3 ft
<i>Bidens cernua</i>	Marigold, Nodding Bur	L	A	●	1-3 ft
<i>Bidens coronata</i>	Marigold, Tall Swamp	L	A	●	1-2 ft
<i>Senna marilandica</i>	Maryland Senna	M	P	●	3-6 ft
<i>Ratibida peduncularis</i>	Mexican Hat	E-M-L	P	● ● ●	2-3 ft
<i>Astragalus canadensis</i>	Milkvetch, Canada	M	P	●	1-3 ft
<i>Astragalus cicer</i>	Milkvetch, Cicer	M	P	●	1-3 ft
<i>Asclepias tuberosa</i>	Milkweed, Butterfly	E-M-L	P	● ●	1-3 ft
<i>Asclepias syriaca</i>	Milkweed, Common	M	P	● ●	3-6 ft
<i>Asclepias arenaria</i>	Milkweed, Sand	M-L	P	●	2-4 ft
<i>Asclepias speciosa</i>	Milkweed, Showy	E-M-L	P	● ● ●	1-3 ft
<i>Asclepias sullivantii</i>	Milkweed, Smooth	M	P	●	1-3 ft
<i>Asclepias incarnata</i>	Milkweed, Swamp	M-L	P	● ●	3-6 ft
<i>Asclepias verticillata</i>	Milkweed, Whorled	M	P	● ● ●	1-3 ft
<i>Mimulus ringens</i>	Monkeyflower	M	P	● ● ● ●	1-3 ft
<i>Pycnanthemum tenuifolium</i>	Mountain Mint, Slender	M	P	●	1-3 ft
<i>Pycnanthemum virginianum</i>	Mountain Mint, Virginia	M	P	●	1-3 ft
<i>Ceanothus americanus</i>	New Jersey Tea	E	P	●	1-3 ft
<i>Allium cernuum</i>	Nodding Pink Onion	M	P	● ●	1-3 ft
<i>Physostegia virginiana</i>	Obedient Plant	L	P	● ● ●	3-6 ft
<i>Chamaecrista fasciculata</i>	Partridge Pea	M-L	A	●	.5-1 ft
<i>Phlox drummondii</i>	Phlox	E-M	A	● ● ● ●	.5-1 ft
<i>Callirhoe alcaeoides</i>	Pink Poppy Mallow	E	P	● ●	1-3 ft
<i>Salvia azurea</i>	Pitcher Sage	L	P	● ●	3-6 ft
<i>Monarda pectinata</i>	Plains Bee Balm	M	A	●	1-3 ft
<i>Potentilla arguta</i>	Prairie Cinquefoil	M	P	●	1-3 ft
<i>Dalea purpurea</i>	Prairie Clover, Purple	M	P	●	1-3 ft
<i>Dalea villosa</i>	Prairie Clover, Silky	M	P	● ● ●	..5-2 ft

WILDFLOWERS

SCIENTIFIC NAME	COMMON NAME	BLOOM PERIOD	PERENNIAL/ ANNUAL/BIENNIAL	FLOWER COLOR	HEIGHT
<i>Dalea candida</i>	Prairie Clover, White	M	P	•	1-2 ft
<i>Silphium terebinthinaceum</i>	Prairie Dock	M-L	P	•	1-3 ft
<i>Eustoma grandiflorum</i>	Prairie Gentian	M-L	P	•	.5-1 ft
<i>Phlox pilosa</i>	Prairie Phlox	E	P	• • •	1-3 ft
<i>Packera plattensis</i>	Prairie Ragwort	E-M	B	•	1-3 ft
<i>Oenothera biennis</i>	Primrose, Common Evening	M	B	•	3-6 ft
<i>Oenothera rhombipetala</i>	Primrose, Four-Point	E-M	A	•	1-3 ft
<i>Oenothera missouriensis</i>	Primrose, Missouri	M	P	•	.5-1 ft
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	E-M	P	• • • •	3-6 ft
<i>Callirhoe involucrata</i>	Purple Poppymallow	E-M	P	• • •	0-1 ft
<i>Eryngium yuccifolium</i>	Rattlesnake Master	M	P	•	4-6 ft
<i>Thelesperma megapotamicum</i>	Rayless Greenthread	E-M-L	P	•	1-3 ft
<i>Cleome serrulata</i>	Rocky Mountain Bee Plant	M	A	• •	3-6 ft
<i>Silphium integrifolium</i>	Rosinweed	M	P	•	3-6 ft
<i>Agalinis aspera</i>	Rough Purple Gerardia	L	A	• •	.5-2 ft
<i>Salvia coccinea</i>	Sage, Scarlet	E-M-L	P	• • •	1-3 ft
<i>Artemisia ludoviciana</i>	Sagewort, Cudweed	M-L	P	•	1-3 ft
<i>Artemisia frigida</i>	Sagewort, Fringed	M	P	•	1-3 ft
<i>Sphaeralcea coccinea</i>	Scarlet Globemallow	E-M-L	B	• •	3-6 ft
<i>Ludwigia alternifolia</i>	Seedbox	M-L	P	•	2-3 ft
<i>Mimosa quadrivalvis</i>	Sensitive Briar	E-M-L	P	•	0-3 ft
<i>Penstemon grandiflorus</i>	Shell-Leaf Penstemon	M	P	• •	1-3 ft
<i>Penstemon gracilis</i>	Slender Beardtongue	M	P	•	1-3 ft
<i>Sanguisorba minor</i>	Small Burnett	M	P	•	.75-2 ft
<i>Polygonum pennsylvanicum</i>	Smartweed, Pennsylvania	E	A	• •	1-4 ft
<i>Helenium autumnale</i>	Sneezeweed	M-L	P	•	2-5 ft
<i>Tradescantia ohiensis</i>	Spiderwort, Ohio	E-M	P	• •	1-3 ft
<i>Tradescantia occidentalis</i>	Spiderwort, Prairie	M	P	• •	0-1 ft
<i>Cosmos sulphureus</i>	Sulphur Cosmos	M	A	•	2-6 ft
<i>Helianthus annuus</i>	Sunflower, Annual	M-L	A	•	3-6 ft
<i>Helianthus mollis</i>	Sunflower, Ashy	M-L	P	•	2-6 ft
<i>Heliopsis helianthoides</i>	Sunflower, False (OX-EYE)	M-L	P	•	3-6 ft
<i>Helianthus maximiliani</i>	Sunflower, Maximilian	M-L	P	•	3-6 ft
<i>Helianthus angustifolius</i>	Sunflower, Narrow-Leaf	L	P	•	1-3 ft
<i>Helianthus petiolaris</i>	Sunflower, Plains	M-L	A	•	1-3 ft
<i>Helianthus grosseserratus</i>	Sunflower, Sawtooth	M-L	P	•	3-5 ft
<i>Helianthus laetiflorus</i>	Sunflower, Showy	M-L	P	•	3-6 ft
<i>Helianthus pauciflorus</i>	Sunflower, Stiff	M	P	•	2-4 ft
<i>Helianthus occidentalis</i>	Sunflower, Western	M-L	P	•	2-4 ft
<i>Helianthus salicifolius</i>	Sunflower, Willowleaf	L	P	•	8-10 ft
<i>Anemone cylindrica</i>	Thimble Weed (Candle Anemone)	M	P	•	.75-1.5 ft
<i>Desmodium illinoense</i>	Tick Trefoil, Illinois	M-L	P	•	3-6 ft

WILDFLOWERS

SCIENTIFIC NAME	COMMON NAME	BLOOM PERIOD	PERENNIAL/ ANNUAL/BIENNIAL	FLOWER COLOR	HEIGHT
<i>Desmodium canadense</i>	Tick Trefoil, Showy	M-L	P	● ●	3-6 ft
<i>Verbena hastata</i>	Vervain, Blue	M-L	B	● ●	3-6 ft
<i>Verbena stricta</i>	Vervain, Hoary	E-M-L	P	● ●	2-4 ft
<i>Vicia americana</i>	Vetch, American	E-M	P	●	.5-1.5 ft
<i>Monarda fistulosa</i>	Wild Bergamot	E-M-L	P	● ● ●	2-5 ft
<i>Parthenium integrifolium</i>	Wild Quinine	E-M	P	●	2-4 ft
<i>Rosa woodsii</i>	Wild Rose, Western (Woods Rose)	M	P	●	3-6 ft
<i>Senna hebecarpa</i>	Wild Senna	M	P	●	4-6 ft
<i>Krascheninnikovia lanata</i>	Winterfat	E-M	P	●	1-3 ft
<i>Achillea millefolium occ.</i>	Yarrow, Western	E	P	●	1-3 ft
<i>Achillea millefolium</i>	Yarrow, White	E-M-L	P	● ●	1-3 ft

STAR SEED CLOVERS

ALSIKE CLOVER

Trifolium hybridum L.

Alsike clover is used for hay, pasture, and soil health, and works best in wet and acidic soils. It does not yield as well as other clover species. Alsike clover is not normally grown as a pure stand but rather in grass or cover crop mixes and serves best as a one cut forage.

Alsike clover is a short-lived perennial similar to red clover. It can be distinguished from red clover by the absence of crescent-shaped marks on each leaflet and more conspicuously toothed leaves. Alsike clover grows from the crown and the plant can reach a height of 2-4 feet with a tendency to lodge.

Alsike clover is adapted to a wide range of soil types and grows well in northern latitudes and at high elevations. It survives severe winters and performs best where summers are cool. It grows well in soils that are too acidic for red clover (pH < 6.0) and can tolerate more alkalinity than most clovers. It will tolerate wetter soils better than other clovers. It prefers silty clay loams where moisture is sufficient throughout the growing season or can be supplied by irrigation. Alsike clover does not tolerate

droughty sites but will tolerate soils that are completely waterlogged and can withstand some flooding, however, is not shade tolerant.

ARROWLEAF CLOVER

Trifolium vesiculosum Savi

Arrowleaf clover is utilized for haying, grazing, and soil improvement and a great wildlife attractant for deer and turkey. Arrowleaf clover is an upright, cool-season, annual legume that grows to a height of 40 to 50 inches under good conditions. Seeds germinate in the fall and grow slowly during the winter. Blossoms are a cluster up to 2 inches long. Initially, the blossoms begin white to pinkish in color and later turn brown when mature. The plant is suited to a wide range of soil conditions from slightly acidic to slightly alkaline.

Seed should be planted at 1/4 to 1/2 inch deep or may also be planted in an established summer perennial grass sod by light disking or with a no-till drill. Interseeding into a grass sod should be done around the first frost date at a rate of 10 lbs of seed per/acre.

STAR SEED CLOVERS

BERSEEM CLOVER / EGYPTIAN CLOVER

Trifolium alexandrinum

Berseem Clover, also known as Egyptian clover, is a winter annual legume. It resembles alfalfa but produces small seed heads with white flowers.

It is a heavy nitrogen producer but is the least winter-hardy of all annual clovers. Berseem clover will provide the highest yields when planted in fertile, well-drained soil. It will grow on a wide range of soils, from loam to clay, but does not do well in very wet soils. Lighter loamy and silty soils produce excellent crops, and the plant is tolerant of relatively high salt concentrations.

CRIMSON CLOVER

Trifolium incarnatum L.

Crimson clover, as a winter annual, planted in the late summer to early fall. It is often used in pasture, hay, pollinator enhancement, and cover cropping for soil health.

Crimson clover is a winter annual legume that resembles red clover. The plant will grow on soils of poorer quality than most other clovers, thriving on both well drained sandy and clay soils and prefers a pH range of 6.0 to 7.0. After seedling establishment, growth at lower temperatures is superior to other clovers and has been used for a cover cropping well into the northern states.

Crimson clover seed should be inoculated before planting. On sites that have been in pasture or hay, inoculating may not be necessary. Nitrogen should not be necessary unless planting sites are of poor quality. Plant in the spring, late summer, or frost seed in late winter. The best planting method is to drill the seed into a firm, weed free seedbed. No-tilling can be used successfully if effective weed control is employed. Seed should be planted at about 1/4 inch depth with seeding rates from 10 to 15 pounds per acre when seeded alone and 5 to 10 pounds per acre when seeded in a mixture.

WHITE CLOVER

Trifolium repens L. (Ladino vs Dutch)

White clover is an important pasture legume. It is highly palatable and nutritious for all classes of livestock. White clover is commonly companion planted with a variety of pasture grasses. Grass benefits from the nitrogen produced by white clover when included in a pasture mix. The plant seldom grows tall enough to be a high tonnage hay or silage producer.

White clover is seeded at 2 pounds per acre with grass and establishes best on moist soils. White Clover has other common advantages such as being a choice food for deer and other wildlife. Solid stands of white clover form a good erosion controlling cover on moist fertile soils, but may not establish well in dry areas. White clover seldom roots deeper than 2 feet, which makes it adapted to shallow soils when adequate moisture is available. It should produce pink flower heads consisting of 40 to 100 florets on a plant.

The standard seeding rate is two pounds per acre of seed and should be inoculated before seeding. The proper time of seeding is determined by seasonal and moisture conditions. This may vary from April to May. Late summer and fall seedings should be done well before freezing and planted into soils with adequate moisture.

RED CLOVER

Trifolium pratense L.

Red clover is primarily used for hay, pasture, silage, and soil improvement. It is a quick growing crop, easily established, and produces high quality forage. Red clover is very shade tolerant making it a good companion cover crop under crops such as corn.

Red clover is a biennial or short-lived perennial that grows from crowns. There are generally two types of red clover, Medium and Mammoth. Stem lengths of Medium types average 18 inches and have about 4 branches per stem. Medium will mature earlier than Mammoth, making it possible for multiple harvesting operations. Mammoth

stems grow to 24 to 30 inches long, have 6 branches, and a longer maturity, making it a one harvest crop. The taproot of red clover is extensively branched, and the flowers are pink in color.

Red clover seed should be inoculated prior to seeding. It can be planted with a drill at a depth of 1/4 to 1/2 inch or broadcast. Red clover may be seeded in pure stands, but it is often mixed with grain or grass. Seeding rate is 8 to 12 lbs per acre in a pure stand or 4 to 8 lbs in a mix. Establishment may occur in spring or late summer or over seeded in the spring on fall seeded grasses.

Graze or cut for hay when the red clover is 1/4 to 1/2 in bloom. A second cutting may occur when red clover is 1/4 in bloom. Leave at least 2 inches of growth after each harvest.

YELLOW BLOSSOM CLOVER

Melilotus officinalis L.

WHITE BLOSSOM SWEETCLOVER

Melilotus alba Medik

Sweetclover is an introduced species to North America from Europe in the 1700's and is now widespread throughout North America in multiple wildlife habitats and uses. Yellow and white sweetclover are separated by scientists because of flower color and by flower size, white clover having a somewhat smaller flower. Yellow sweetclover is shorter growing, finer stemmed, more drought tolerant and easier to establish than white sweetclover.

Both sweetclovers are used for hay, silage, and pasture however, cattle graze it sparingly as it can have a bitter taste. It is preferred by livestock in spring and early summer before stems become course and woody. Hay should be cut at 10% bloom stage, waiting until full flowering results in stemmy, lower-quality hay.

Sweetclover provides exceptional habitat to a variety of wildlife species. Deer, turkeys, and upland birds utilize sweetclover as a vital part of their diet. The abundant

flowers are attractive to bees and butterflies making sweetclover a popular plant in pollinator mixes nationwide.

Rapid growth and ease of establishment make sweetclover a popular choice for reclamation seedings. Roadside seedings, mining, and fire restoration are just a few of the areas which sweetclovers have become an important part. The plants increase nitrogen in poor soils and a large taproot decreases soil compaction and aides in aeration and water absorption by opening the soil.

Prior to planting, seed should be inoculated with the proper inoculant for nitrogen fixation. If starting a monoculture stand, sweetclover should be planted at a rate of 4 lb/ac. When sweetclover is used in a mix, it should not exceed 10% of the total mix due to its competitive growing pattern. Rangeland seedings can be done in late fall but no later than 6 weeks prior to a first frost. This will allow for natural stratification of the seed, helping with germination. Seed should be planted in a firm, seedbed at a depth of 1/8 to 1/2 inch.

