

SDSU Extension Missouri Valley Master Gardeners

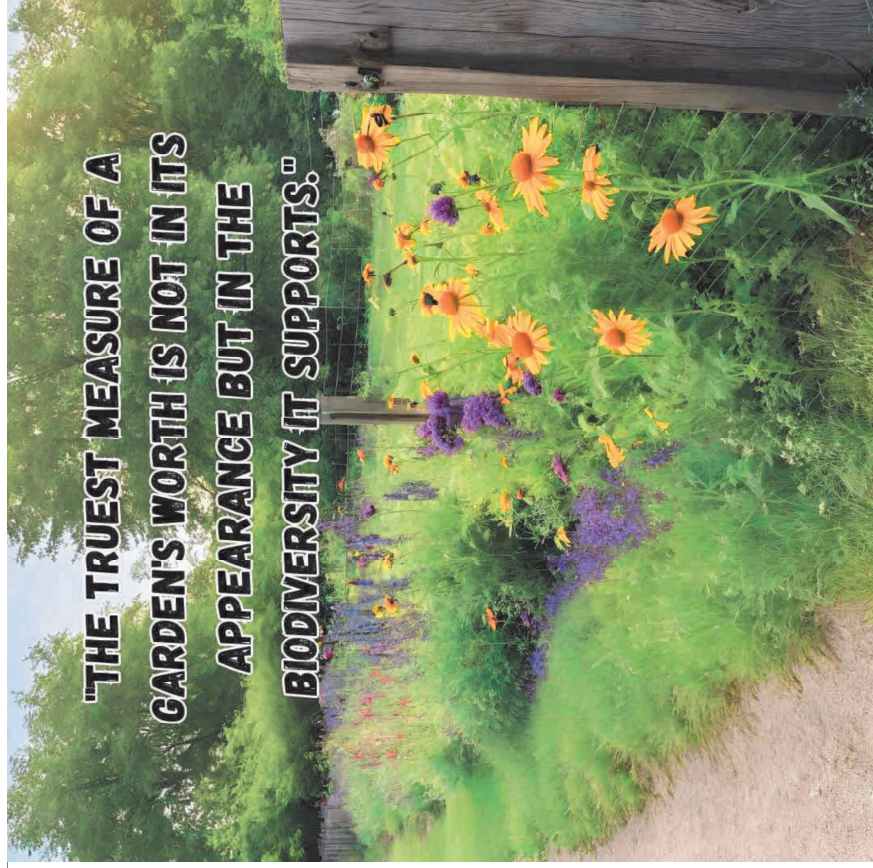
Propagating Native Plants

This information is prepared and/or presented by an SDSU Extension volunteer.



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“Native plant” defined – *A native plant species is one that occurs naturally in a particular region, ecosystem and/or habitat, and was present prior to European settlement.*

Methods

Direct sowing

Indoors or greenhouse

Outdoor nursery

Winter sowing



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What is winter sowing

USDA Definition:

A propagation method used throughout the winter where temperate climate seeds are sown into protective vented containers and placed outdoors to foster a naturally timed, high percentage germination of climate tolerant seedlings.



LEARN MORE: https://www.youtube.com/watch?app=desktop&fbclid=IwAR3id_fJysebg9pbcc8ZIEZ19PBf227hddl9c8L-GaVgn749gsyE9ZnKxuk&v=mhqT1kUVSk0&feature=youtu.b

<https://marylandgrows.umd.edu/2019/01/23/winter-sowing-how-i-get-a-jump-start-on-my-summer-flower-garden/?amp=1>



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Why to Winter Sow

Simple and efficient

Hardy plants, not leggy

Protects seeds

Something to do in winter

So many seed choices

No pesticides

No need for artificial stratification



Stratification

- **CMS- Cold moist stratification; requires cold moist conditions for a number of days; 30, 60, 90 most common**
 - **Scarification: requires physical removal of seed coat, rub between two sanding bricks, nail file.**
 - **Remove hulls: pinch with a tweezer or roll over with rolling pin**
 - **Hot water treatment: cover with boiling water and let stand for 24 hours**
- Note: the latter three do not have to be done if winter sowing is done early enough in the season.**

LEARN MORE: <https://www.prairiemoon.com/how-to-germinate-native-seeds.html>
<https://tomclothier.hort.net/page02.html>



When to Winter Sow

**Begin after the WINTER SOLSTICE
once day and nighttime temps are
consistently below 50 degrees.**



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Supplies needed

- 1. Containers; Clear or translucent jugs with caps off, or pots/cups in clear totes, or pots with clear plastic covers that will hold 3-4 inches of soil and headroom for seedling growth.**
- 2. High quality well draining potting soil mix (no moisture control, no seed starter)**
- 3. Tool for making holes; drill, soldering iron, hot glue gun without the glue, sharp knife, awl**
- 4. Tool for cutting open containers; scissors, tin snips, utility blade**
- 5. Something to water gently with (bottle with small holes in lid, or hand sprayer, or bottom watering by placing in container with water and let set for 10 min)**
- 6. Tape; painters tape works great (duct tape is hard to get off and no to packaging tape)**
- 7. Oil based paint pens or china markers (no to regular sharpies, it fades)**



Steps

1. Pre-moisten soil; wet enough to form a ball but not so wet that water wrings out
2. Make drainage holes in containers; # depends on size of container, 9-10 for a milk jugs seems adequate
3. Cut open container if needed leaving a hinge just below handle
4. Place 3-4 inches of soil in container; press it down and add more if needed, it will settle
5. Sprinkle in seeds and press into soil



Steps

6. Cover seeds with dry soil (note: some don't need to be covered)
7. Tape or twist tie container back together, or cover with a clear top with holes
8. Label using numbering system with list or date and name of plant
9. Water gently through top hole if dry soil was added
10. Set outside in sunny location where they won't blow away and moisture can get into containers
11. Let Mother Nature do the rest but if it doesn't rain/snow you may need to water

What to do once seeds germinate

It all depends on the weather;

If it is dry, water

If it is hot (daytime temps over 55 or 60),
move to part shade

If it is really hot, move to part shade and
open containers (but close them again
at night if it will get below freezing

If it is rainy, make sure containers are
draining



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How do you know if containers need water?

If there is no condensation in the containers lift it up, if the soil is dry it will be lighter than a wet container. Lighter soil color is also a good indicator.

What to do if algae/mold grows on the soil?

If green algae/mold grows in the container then the soil may be too wet so drainage holes can be added, or open the container to dry it out a bit, or open and sprinkle cinnamon on the soil surface.



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When and how to plant

1. Once plants have two sets of true leaves, plant out or pot up for fall planting
2. If seeds were sown densely then use Hunk o seedling method to separate plants (cut like brownies or use kitchen tongs) otherwise seeds sown sparsely should be easy to tease apart
3. Wintersown seedlings are tough, no hardening off required



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NATIVE PLANTING IN PROGRESS

YEAR 1

Sleep

It may seem that the plants are "sleeping" but in fact they are investing in root growth.

Weeds may thrive — when weeds are knee-high, mow the planting to 6 in. several times over the growing season. This way more sunlight can reach seedlings.



YEAR 2

Creep

The native plants are taller, although some may still be in the seedling stage. A few natives may bloom.

Still some **weeds**. Mow as high as possible in June or July.



YEAR 3

Leap

Most all native plants should be well established, with a number of species blooming.

Scout and spot treat **invasives**. Burn a portion annually, if possible.



6"



Grow Native! is the native plant marketing and education program of the Missouri Prairie Foundation.

Native plants provide many benefits. Find hundreds of free native landscaping resources at grownative.org

Sourcing

MVMG seed library

Collect your own seed

- From a friends yard or prairie
- From a volunteer opportunity
- ALWAYS get permission

Save the date: Oct 8

LEARN MORE: <https://xerces.org/publications/guidelines/collecting-and-using-your-own-wildflower-seed>




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Collecting and Using Your Own Wildflower Seed


To Expand Pollinator Habitat on Farms

James Ebbery, Jennifer Hopwood, and Eric Lee-Mader

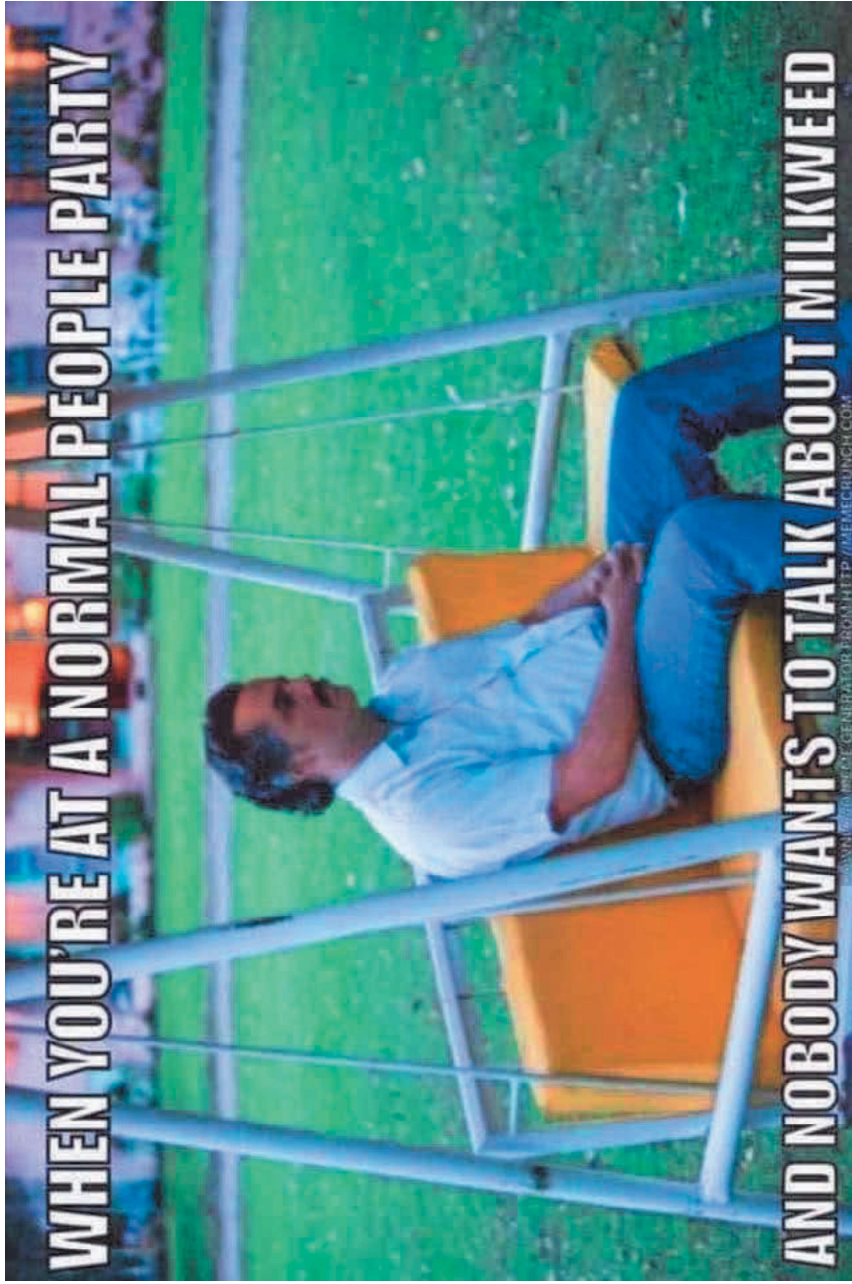


Native wildflowers are the backbone of pollinator habitat on the farm. Field borders, filter strips, pastures, hedgerows, and other places where wildflowers (and grasses) grow also provide us with natural pest control by sustaining beneficial insects. For example, the presence of native wildflowers and grasses provide the food of need can be daunting. Fortunately, if you have native plant areas already established, they can provide you with a readily available source for additional seed.

While harvesting seed from existing wildflowers around the farm may not yield huge volumes, it can provide you with the raw material to greatly create more habitat on the farm. By collecting seed from plants already established on the farm, you can avoid the expense of purchasing seed and the need for specialized equipment. While our focus is primarily on wildflowers, many of these same techniques can be useful for collecting native grasses as well as seeds from trees and shrubs.



XERCES SOCIETY
for Invertebrate Conservation



ANISE HYSSOP

Agastache foeniculum

Color: purple

Bloom time: June through September

Height: 3'

Spacing: 12 – 16"

Sun requirement: Full or partial sun

Water: Medium to Medium dry



WHITE SNAKEROOT

Ageratina altissima

Color: White

Bloom time: July, August, September, October

Height: 2'

Spacing: 3 – 4'

Sun requirement: Partial shade, Shade

Water: Medium-wet, Medium, Medium-dry



NODDING ONION

Allium cernuum



Color: pink to light purple
Bloom time: July to August
Height: 18"
Spacing: 4 – 8"
Sun requirement: Full or partial sun
Water: Medium wet, Medium, to Medium dry

PRAIRIE ONION

Allium stellatum



Color: Purple
Bloom time: July, August
Height: 14"
Spacing: 4 – 8"
Sun requirement: Full, Partial sun
Water: Medium, Medium-dry, Dry

LEAD PLANT

Amorpha canescens



Color: purple/ orange
Bloom time: June to August
Height: 3'
Spacing: 1 - 2'
Sun requirement: Full sun
Water: Medium to dry



TALL THIMBLEWEED

Anemone virginiana

Color: White
Bloom time: June,
July, August
Height: 3'
Spacing: 18 - 24"
Sun requirement: Full,
Partial, Shade
Water: Medium-dry,
Dry

COLUMBINE

Aquilegia canadensis

Color: red

Bloom time: April to
June

Height: 2'

Spacing: 10 – 17"

Sun requirement: Full
sun to shade

Water: Medium to
dry



Butterfly Milkweed

Asclepias tuberosa



Color: orange

Bloom time: June to August

Height: 2'

Spacing: 1 – 3'

Sun requirement: Full to partial sun

Water: Medium to dry

WHORLED MILKWEED

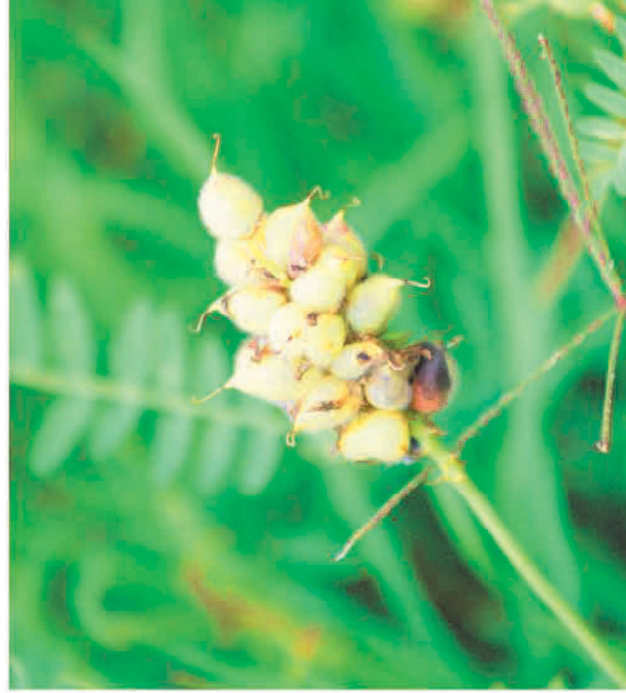
Asclepias verticillata



Color: white
Bloom time: June
to August
Height: 2'
Spacing: 1 - 2'
Sun requirement:
Full to partial sun
Water: Medium to
dry

CANADA MILK VETCH

Astragalus canadensis



Color: cream
Bloom time: May to June
Height: 2'
Spacing: 1 - 2'
Sun requirement: Full sun
Water: Medium dry to dry

PURPLE POPPY MALLOW

Callirhoe involucrata



Color: Pink
Bloom time: June,
July, August
Height: 6"
Spacing: 18 – 24"
Sun requirement:
Full sun
Water: Medium-dry,
Dry

PLAINS OVAL SEDGE

Carex brevior



Bloom time: June, July
Height: 2'
Spacing: 6 – 10"
Sun requirement: Full sun, Partial sun, Shade
Water: Medium-wet, Medium, Medium-dry, Dry

PRAIRIE COREOPSIS

Coreopsis palmata



Color: yellow
Bloom time: June
to August
Height: 2'
Spacing: 12 – 18"
Sun requirement:
Full to
partial sun
Water: Medium
to dry

Credit: Sally and Andy Wasowski

WHITE PRAIRIE CLOVER

Dalea candida



Color: white
Bloom time: May
to August
Height: 2'
Spacing: 12 – 18"
Sun requirement:
Full to partial sun
Water: Medium
to dry



PURPLE PRAIRIE CLOVER

Dalea purpurea

Color: Purple
Bloom time: July, August,
September
Height: 2'
Spacing: 18 - 24"
Sun requirement: Full sun,
Partial sun
Water: Medium, Medium-
dry, Dry

NARROW LEAVED CONEFLOWER

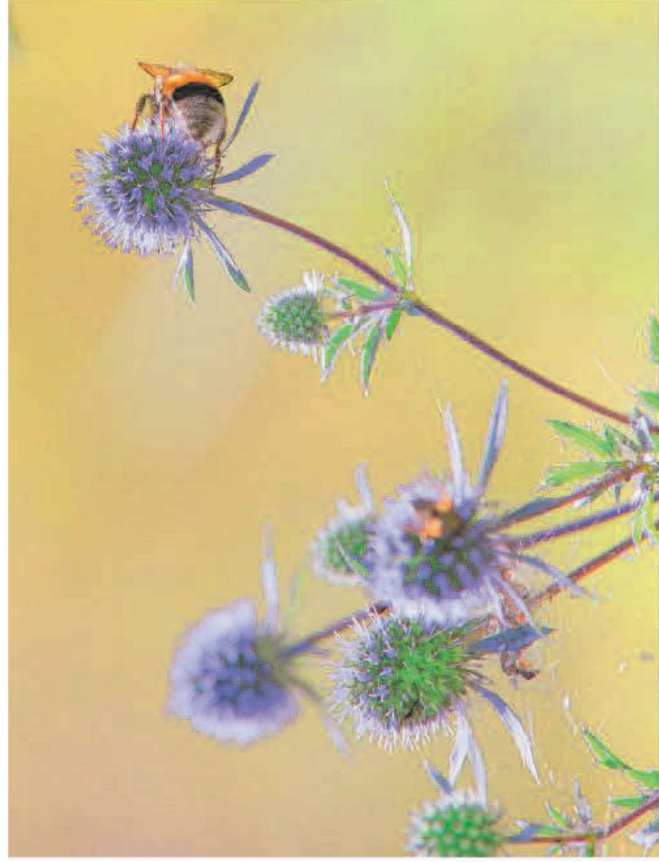
Echinacea angustifolia



Color: pink
Bloom time: June
to July
Height: 2'
Spacing: 18 - 24"
Sun requirement:
Full sun
Water: Medium
dry to dry

RATTLESNAKE MASTER

Eryngium yuccifolium



Color: silver
Bloom time: June to July
Height: 4'
Spacing: 18 - 24"
Sun requirement: Full sun
Water: Medium wet to medium dry

BONESET

Eupatorium perfoliatum



Color: white
Bloom time: July to September
Height: 4'
Spacing: 1 - 2'
Sun requirement: Full to partial sun
Water: Wet to medium wet



Color: Pink

Bloom time: July, August, September

Height: 7'

Spacing: 3 - 4'

Sun requirement: Partial sun, Shade

Water: Medium-wet, Medium, Medium-dry

SWEET JOE PYE WEED

Eutrochium purpureum

BLANKET FLOWER

Gaillardia pulchella



Color: red/yellow

Bloom time: Jun- Oct

Height: 1-1.5 ft

Spacing: 1 ft

Sun requirements:

Full

Water: Medium, dry

WESTERN INDIAN PHYSIC

Gillenia stipulate



Color: White
Bloom time: May, June
Height: 2'
Spacing: 1 – 2'
Sun requirement: Full sun,
Partial sun
Water: Medium-wet,
Medium, Medium-dry

ROUND-HEADED BUSH CLOVER

Lespedeza capitata



Color: Green, Cream
Bloom time: August, September
Height: 4'
Spacing: 1 – 2'
Sun requirement: Full, Partial sun
Water: Medium, Medium-dry, Dry



ROUGH BLAZING STAR

Liatris aspera

Color: Purple
Bloom time: July, August, September, October
Height: 3'
Spacing: 10 - 18"
Sun requirement: Full, Partial sun
Water: Medium, Medium-dry, Dry



MEADOW BLAZING STAR

Liatris ligulistylis

Color: purple
Bloom time: August to September
Height: 5'
Spacing: 1 - 2'
Sun requirement: Full to partial sun
Water: Medium wet to medium dry

DOTTED BLAZING STAR

Liatris punctata

Color: purple
Bloom time: July to
September
Height: 2'
Spacing: 10 - 12"
Sun requirement:
Full to partial sun
Water: Medium dry
to dry



PRAIRIE BLAZING STAR

Liatris pycnostachya

Color: purple
Bloom time: July to
September
Height: 4'
Spacing: 12 - 18"
Sun requirement: Full
to partial sun
Water: Wet to Medium



CARDINAL FLOWER *Lobelia cardinalis*



Color: Red
Bloom time: July,
August, September
Height: 4'
Spacing: 6 – 16”
Sun requirement: Full,
Partial sun
Water: Wet, Medium-
wet

GREAT BLUE LOBELIA *Lobelia siphilitica*



Color: blue
Bloom time: July
to October
Height: 2'
Spacing: 18 - 24”
Sun requirement:
Full to partial sun
Water: Wet to
Medium

PALE SPIKED LOBELIA

Lobelia spicata



Color: Purple

Bloom time: May, June, July, August

Height: 2'

Spacing: 12 - 18"

Sun requirement: Full, Partial sun

Water: Medium- wet, Medium, Medium-dry

WILD BERGAMOT

Monarda fistulosa



Color: Purple

Bloom time: July,

August, September

Height: 4'

Spacing: 2 - 3'

Sun requirement:

Full, Partial sun

Water: Medium- wet,

Medium, Medium-

dry, Dry

SPOTTED BEE BALM

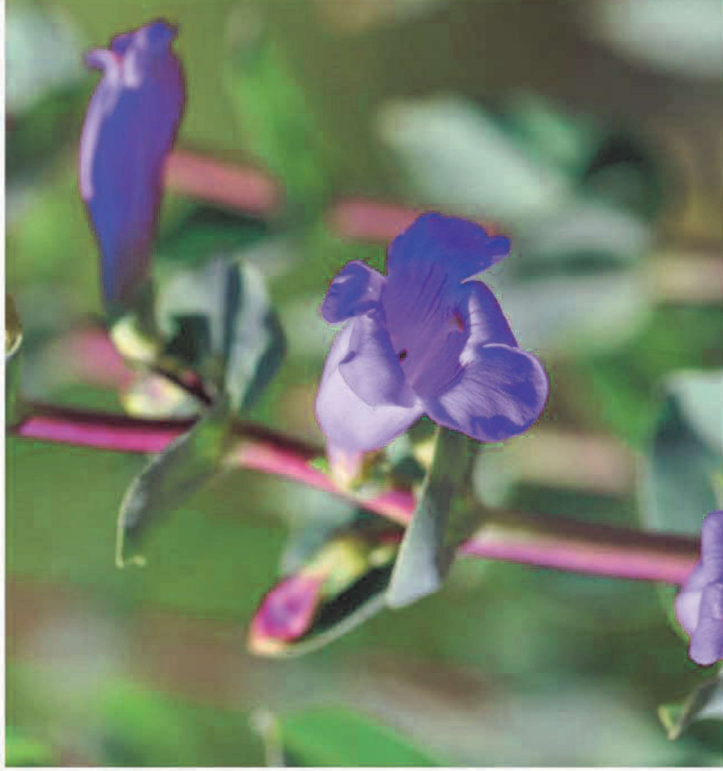
Monarda punctata



Color: Purple
Bloom time: July,
August, September
Height: 2'
Spacing: 8 - 12"
Sun requirement:
Full, Partial sun
Water: Medium-dry,
Dry

LARGE-FLOWERED BEARDTONGUE

Penstemon grandiflorus

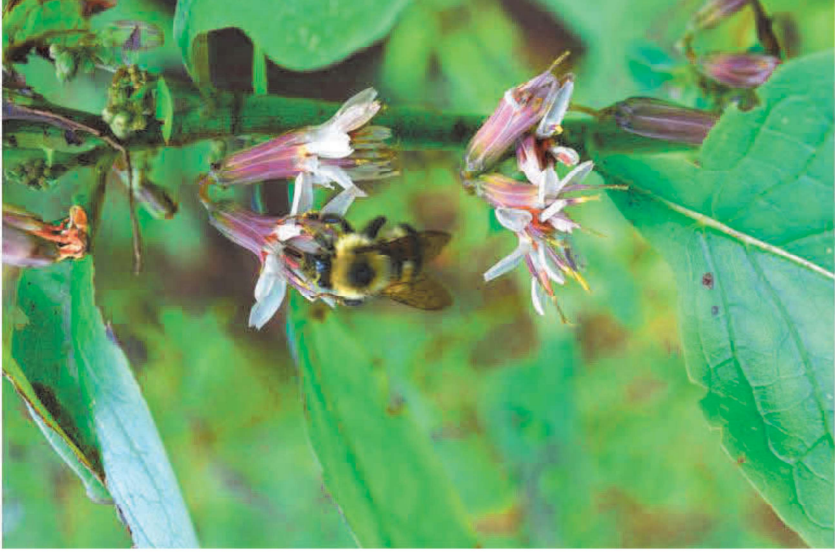


Color: purple
Bloom time: May
to July
Height: 2'
Spacing: 8 - 12"
Sun requirement:
Full to partial
Water: Medium
dry to dry

LION'S FOOT

Prenanthes alba

Color: Purple, White
Bloom time: August, September, October
Height: 4'
Spacing: 1 - 2'
Sun requirement: Partial Shade, Shade
Water: Medium-wet, Medium, Medium-dry



MOUNTAIN MINT

Pycnanthemum virginianum

Color: white
Bloom time: June to September
Height: 3'
Spacing: 12 - 18"
Sun requirement: Full to partial sun
Water: Wet to medium dry





YELLOW CONEFLOWER

Ratibida pinnata

Color: yellow
Bloom time: July to
September
Height: 5'
Spacing: 18 – 24"
Sun requirement: Full to
partial sun
Water: Medium to medium
dry

LONG HEADED CONEFLOWER

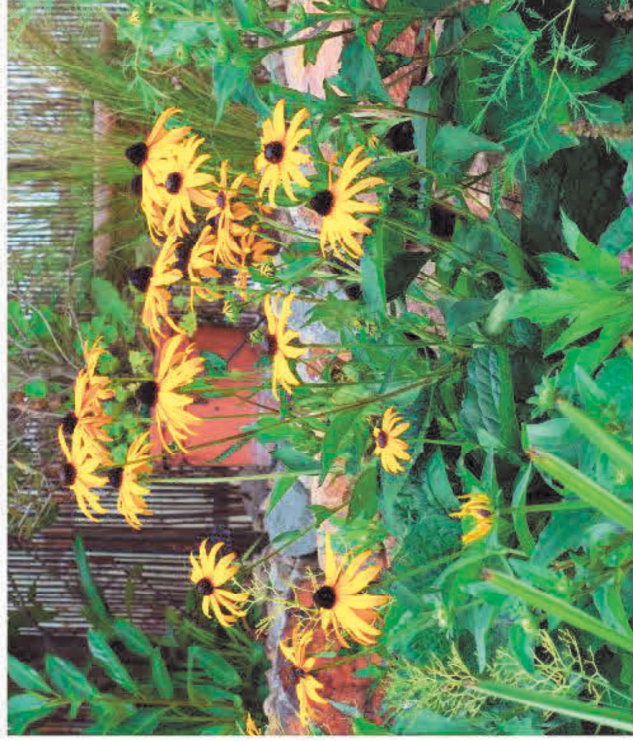
Ratibida columnifera

Color: yellow
Bloom time: June to
August
Height: 3'
Sun requirement:
Full to partial sun
Water: Medium to
dry



BLACK EYED SUSAN

Rudbeckia hirta



Color: yellow
Bloom time: June to
October
Height: 2'
Spacing: 10 - 12"
Sun requirement: Full
to partial sun
Water: Medium wet to
medium dry



WILD PETUNIA

Ruellia humilis

Color: purple
Bloom time: June
to August
Height: 12"
Spacing: 1'
Sun requirement:
Full sun
Water: Medium to
dry



BLUE SAGE

Salvia azurea

Color: blue
Bloom time: August to
October
Height: 5'
Spacing: 18 - 24"
Sun requirement: Full to
partial sun
Water: Medium to dry

LITTLE BLUESTEM

Schizachyrium scoparium



Color: Green, Blue

Bloom time: July, August, September, October

Height: 3'

Spacing: 2 - 3'

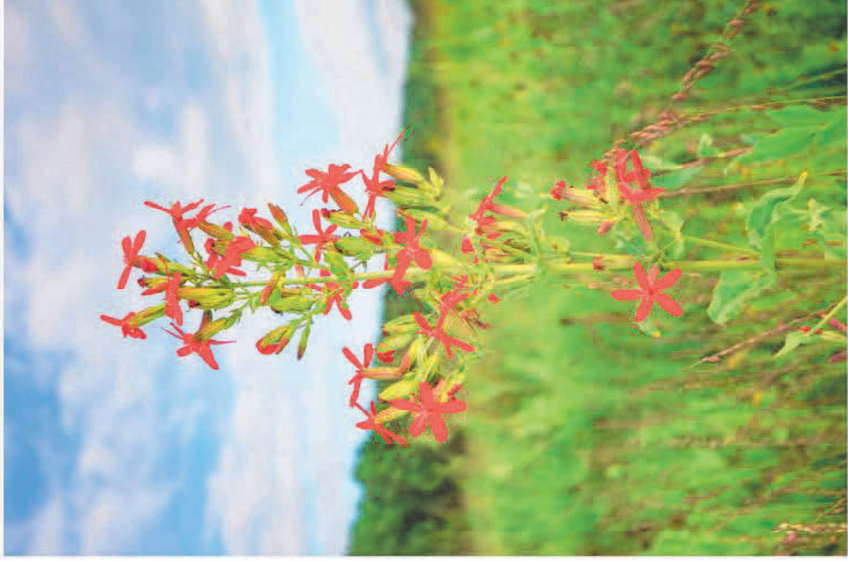
Sun requirement: Full, Partial Sun

Water: Medium, Medium-dry, Dry

ROYAL CATCHFLY

Silene regia

Color: red
Bloom time: June to August
Height: 4'
Spacing: 1 - 2'
Sun requirement: Full to partial sun
Water: Medium to medium dry



ROSIN WEED

Silphium integrifolium

Color: Yellow
Bloom time: July, August, September
Height: 5'
Spacing: 2 - 4'
Sun requirement: Full Sun
Water: Medium-wet, Medium, Medium-dry, Dry



ZIG ZAG GOLDENROD

Solidago flexicaulis



Color: yellow
Bloom time: August to
October
Height: 3'
Spacing: 1 - 2'
Sun requirement: Partial
sun to shade
Water: Medium wet to
medium dry

FIELD GOLDENROD

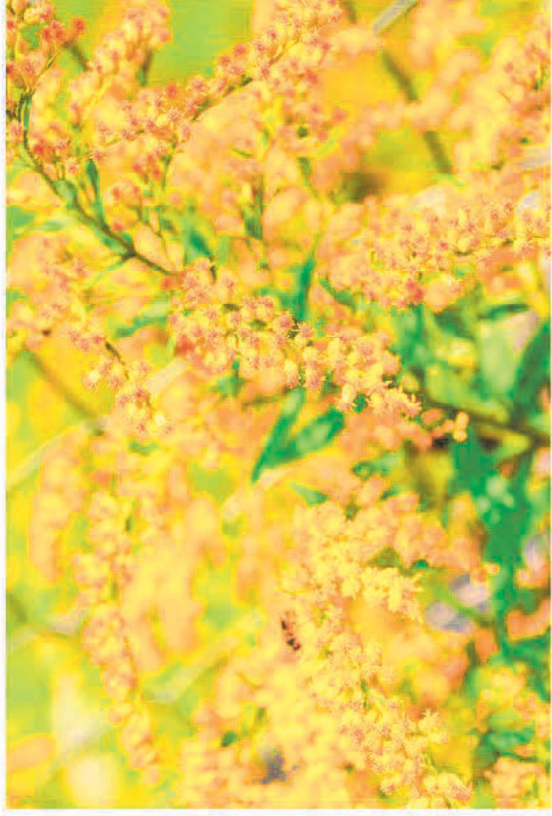
Solidago nemoralis



Color: yellow
Bloom time: August to September
Height: 2'
Spacing: 1 - 2'
Sun requirement: Full to partial sun
Water: Medium dry to dry

SHOWY GOLDENROD

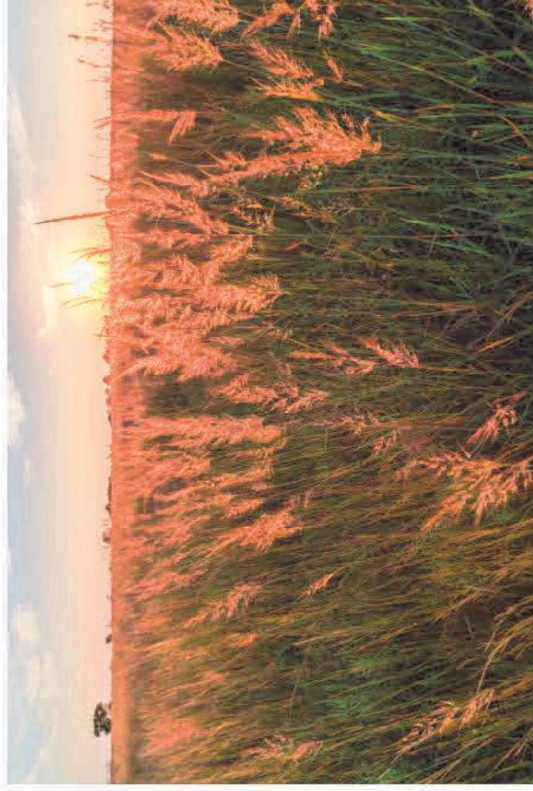
Solidago speciosa



Color: yellow
Bloom time: September to October
Height: 5'
Spacing: 2 – 3'
Sun requirement: Full to partial sun
Water: Medium to dry

INDIAN GRASS

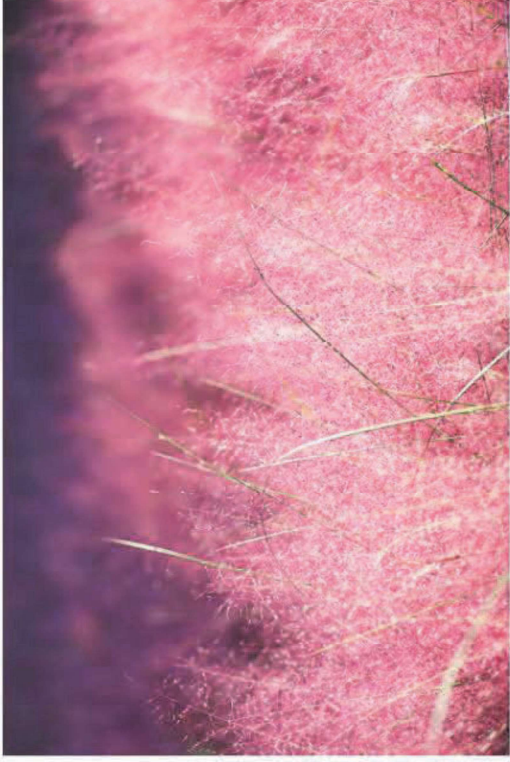
Sorghastrum nutans



Bloom time: August, September
Height: 6'
Spacing: 2 – 3'
Sun requirement: Full, Partial sun
Water: Medium, Medium-dry

ROUGH DROPSEED

Sporobolus compositus



Bloom time: August, September, October
Height: 3'

Sun requirement: Full, Partial sun

Water: Medium, Medium-dry, Dry



PRAIRIE DROPSEED

Sporobolus heterolepis

Bloom time: August,
September, October

Height: 2'

Spacing: 2 - 3'

Sun requirement: Full, Partial
sun

Water: Medium-wet, Medium,
Medium-dry, Dry

SMOOTH BLUE ASTER

Symphotrichum laeve



Color: blue
Bloom time: August to September
Height: 4'
Spacing: 18 – 24"
Sun requirement: Full to partial sun
Water: Medium wet to medium dry

AROMATIC ASTER

Symphotrichum oblongifolium



Color: purple
Bloom time: August to October
Height: 2'
Spacing: 12 – 18"
Sun requirement: Sun
Water: Medium dry to dry



SKY BLUE ASTER

Symphotrichum coelentangiense

Color: Blue
Bloom time: August, September, October
Height: 3'
Spacing: 1 - 2'
Sun requirement: Full, Partial sun
Water: Medium, Medium-dry, Dry



SILKY ASTER

Symphotrichum sericeum

Color: purple
Bloom time: September to October
Height: 1 - 2'
Spacing: 1 - 2'
Sun requirement: Sun and partial sun
Water: Medium dry to dry



HOARY VERVAIN

Verbena stricta

Color: Blue
Bloom time: June, July,
August, September
Height: 2'
Spacing: 10 - 12"
Sun requirement: Full,
Partial sun
Water: Medium-dry, Dry



CULVER'S ROOT

Veronica virginicum

Color: White
Bloom time: June, July,
August
Height: 5'
Spacing: 2 - 3'
Sun requirement: Full,
Partial sun
Water: Medium-wet,
Medium, Medium-dry

COMMON IRONWEED

Vernonia fasciculata

Color: Purple

Bloom time: July, August,
September

Height: 6'

Spacing: 2 – 3'

Sun requirement: Full, Partial sun

Water: Medium-wet, Medium



GOLDEN ALEXANDERS

Tizia aurea



Color: Yellow

Bloom time: April,
May, June

Height: 3'

Spacing: 1 - 2'

Sun requirement:

Full, Partial sun

Water: Medium-

wet, Medium,

Medium-dry