


Seedling Identification Guide for Site Assessment – Mesic to Dry Species

Mark B. Fiely, Melinda Rudd, Barb Leckie, Harold Hager, Janet Weygandt, Ella Styer, and Gail Davis

Ernst Conservation Seeds

Disclaimer

The presence of a species in this document does not guarantee its availability from Ernst Conservation Seeds nor any other vendor in the native seed trade.

Educational Objectives

1. Learn to recognize seedlings of four warm season grasses.
2. Learn to recognize seedlings of other grasses.
3. Learn to recognize seedlings of key mesic to dry wildflowers.

Do not expect to be able to recognize every species.

Focus on learning species that serve as indicators that the mix is growing!

When Will Native Species Germinate?

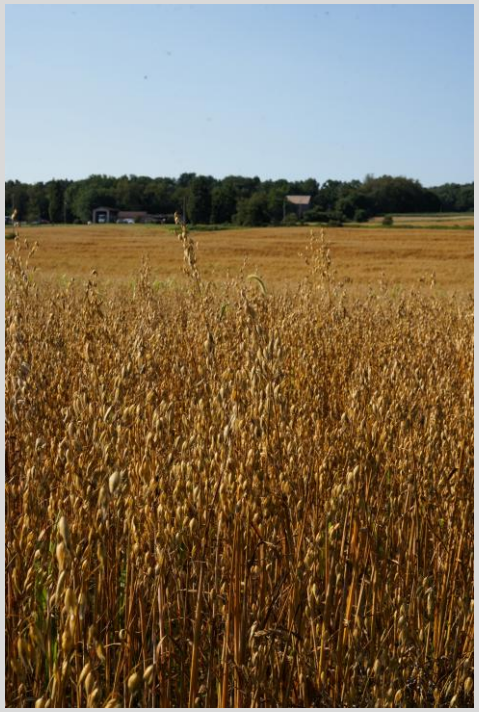
- Typically, no earlier than two weeks after planting assuming adequate moisture availability and soil temperatures.

- Warm season grasses – When soil temperatures are 55 F at 3” depth.

- We have observed germination of some wildflowers at 40 F. Others will germinate at warmer temperatures.

“Quality Controls”

Species That Are Indicators Of A Successful Upland Meadow Establishment



Oat
Avena sativa
Large Seed
Grass

Rye
Secale cereale
Large Seed
Grass

Virginia Wildrye
Elymus virginicus
Large Seed
Grass

Black-Eyed Susan
Rudbeckia hirta
Small Seed
Wildflower

Wild Bergamot
Monarda fistulosa
Small Seed
Wildflower

Species That Are Indicators of Of Successful Meadow Establishment

Oat
Avena sativa
Large Seed
Grass

Rye
Secale cereale
Large Seed
Grass

Virginia Wildrye
Elymus virginicus
Large Seed
Grass

Black-Eyed Susan
Rudbeckia hirta
Small Seed
Wildflower

Wild Bergamot
Monarda fistulosa
Small Seed
Wildflower

Germination Sequence For Key Upland Meadow Species

1. Cover crop (Oats (*Avena sativa*) or Grain Rye (*Secale cereale*)).

2. Virginia Wildrye (*Elymus virginicus*) and Black-Eyed Susan (*Rudbeckia hirta*).

3. All other species.

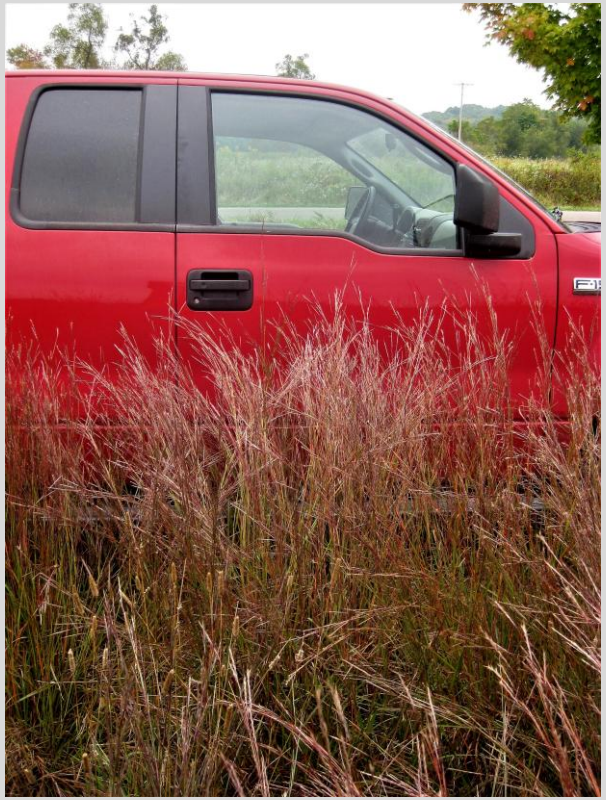
Species That Are Indicators Of Successful Upland Meadow Establishment

If the cover crop and Virginia Wildrye germinate, then your grasses and large seeded species are likely to germinate.

If Black-Eyed Susan and Wild Bergamot germinate, then your wildflowers and small seeded species are likely to germinate. Your small seeded species are not planted too deep.

The Seedlings

- **Four Warm Season Grass**
- Other Grasses
- Wildflowers

Identifying Seedlings Of Four Warm Season Grasses: *Andropogon gerardii*, *Panicum virgatum*, *Schizachyrium scoparium* and *Sorghastrum nutans*

Seedlings of these species may be difficult to recognize until they are three to six inches tall. For fall planted meadows this may be mid-July to early September of the following year.

When Will Warm Season Grasses Germinate?

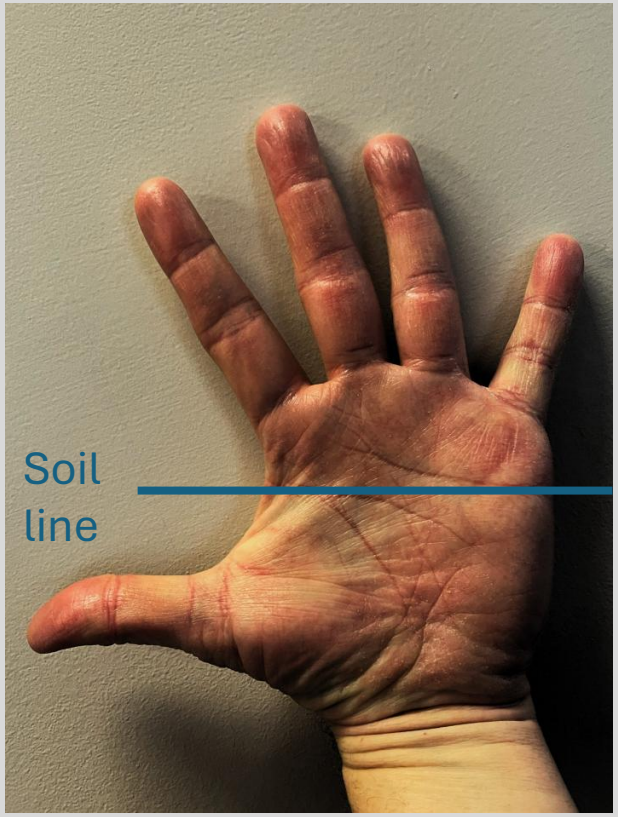
- Seeds have been in the soil for at least two weeks.
- Soil temperatures are at least 55 F at 3” depth.
- Adequate soil moisture to support germination.

Using Your Hand As A Model For Identifying Seedlings Of Four Native Grasses

Tillers (stems) will be fanned out like the fingers on your hand when viewed from one angle.
All tillers of the same age will be in the same plane when viewed from a perpendicular angle.

Andropogon gerardii (Big Bluestem) And *Schizachyrium scoparium* (Little Bluestem)

Andropogon gerardii tillers are pubescent (hairy).



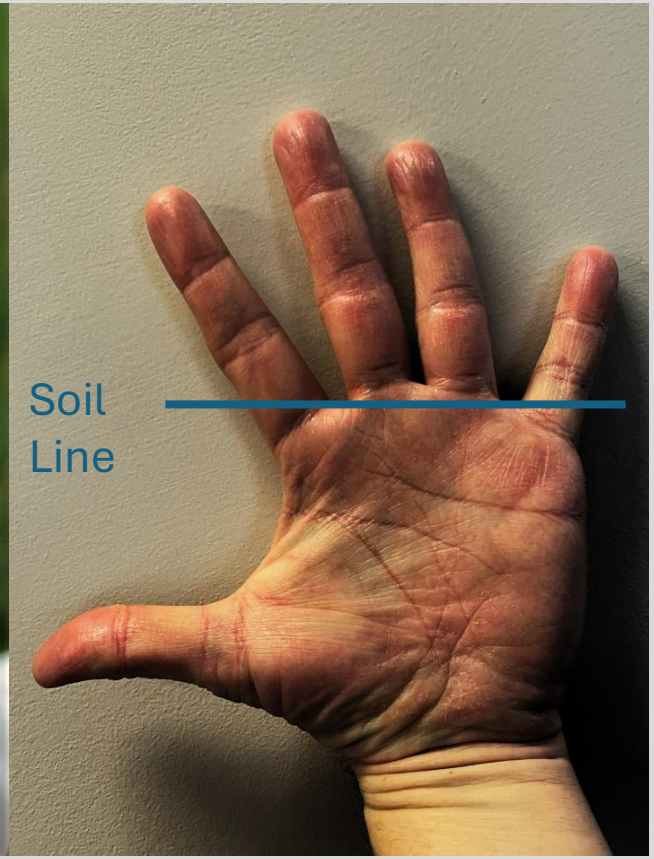
Tillers are flat like a business card and arise from a point at or on top of the soil surface.

Schizachyrium scoparium tillers have no pubescence (hairs).

Panicum virgatum (Switchgrass)

Tillers (stems) are round and the common point from which they arise is below the soil surface. Viewed in profile, tillers are fanned out. If a leaf is pulled, the tiller moves with it.

Sorghastrum nutans (Indiangrass)



Tillers (stems) are round and the common point from which they arise is below the soil surface. If a leaf is pulled an extension of the leaf pulls back from the stem. Viewed in profile, tillers are fanned out.

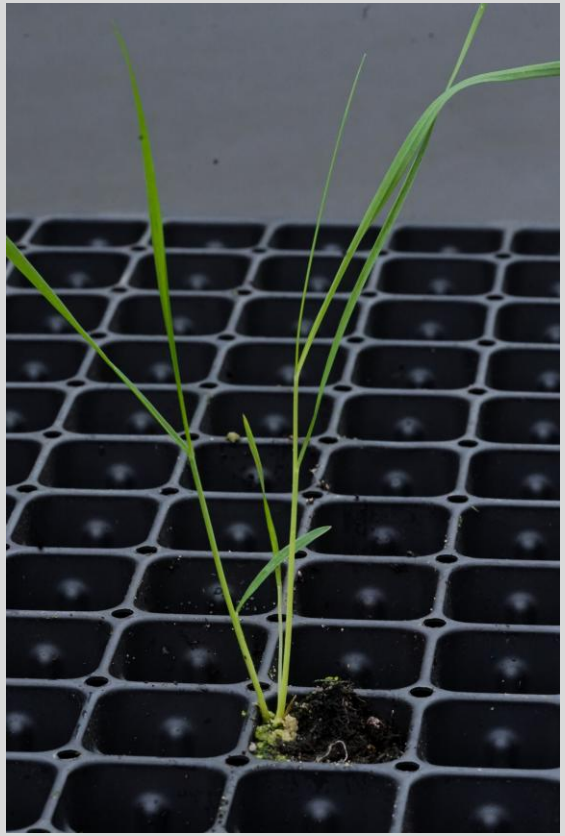
The Seedlings

- Four Warm Season Grass
- **Other Grasses**
- Wildflowers

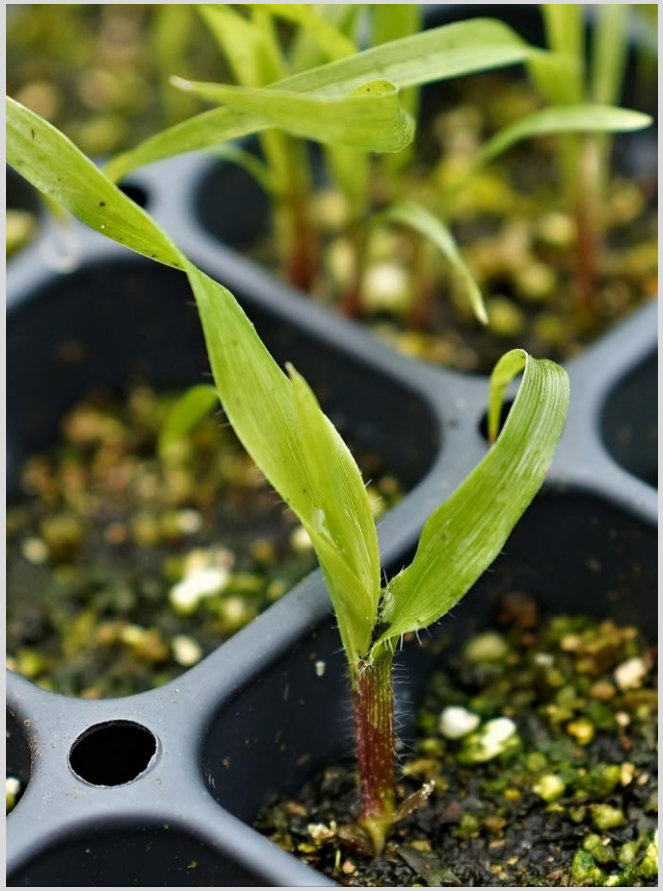
Elymus virginicus (Virginia Wildrye)

Newly emerged seedlings will look like threads. They are hard to detect when standing. Leaves of older seedlings will have a lime green color and stems will be reddish.

Panicum amarum (Coastal Panicgrass)



Panicum anceps (Beaked Panicgrass)



Note how stems are pubescent (hairy) and that the first leaves are fanned out in the same plane.

The Seedlings

- Four Warm Season Grass
- Other Grasses
- **Wildflowers**

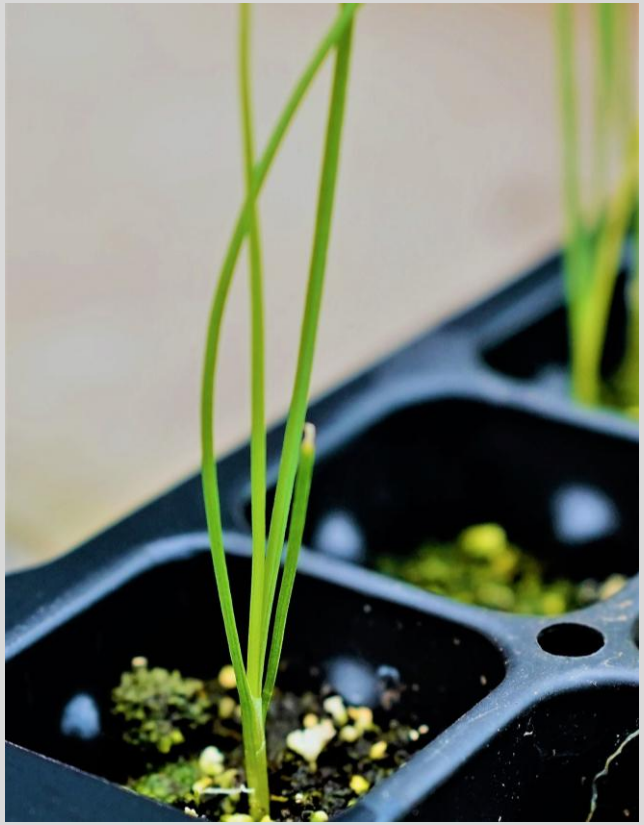
Agastache foeniculum (Anise (Lavender) Hyssop)

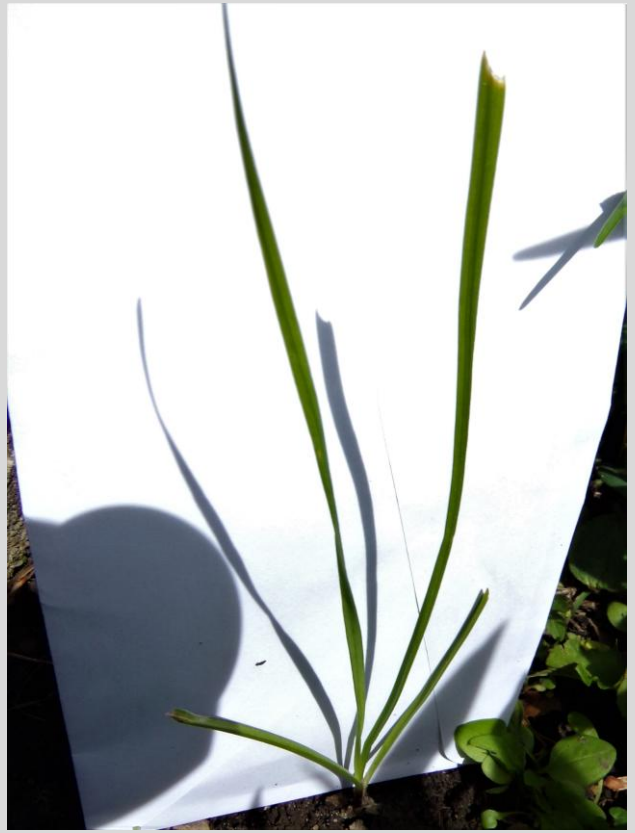
Note leaves are opposite and toothed.

Agastache nepetoides (Yellow Giant Hyssop)

Note leaves are opposite and toothed.

Allium cernuum (Nodding Onion)





Note leaves are flat and have a pungent smell when crushed.

Amorpha herbacea (Clusterspike False Indigo)

Note pinnately compound leaves.

Anemone canadensis (Canadian Anemone)

Note dentate (toothed) leaves.

Anemone virginiana (Thimbleweed)

Note dentate (toothed) leaves.

Apocynum cannabinum (Indianhemp)

Note opposite leaves and milky sap that exudes from cut leaves and stems.

Aquilegia canadensis (Eastern Columbine)

Note lobed leaves.

Asclepias syriaca (Common Milkweed)

Note leaves are opposite, stems are pubescent (hairy), and plant produces a sticky, milky sap.

Asclepias tuberosa (Butterfly Milkweed)

Note stems are pubescent (hairy) and this milkweed does not produce a milky sap.

Aster divaricatus (White Wood Aster)

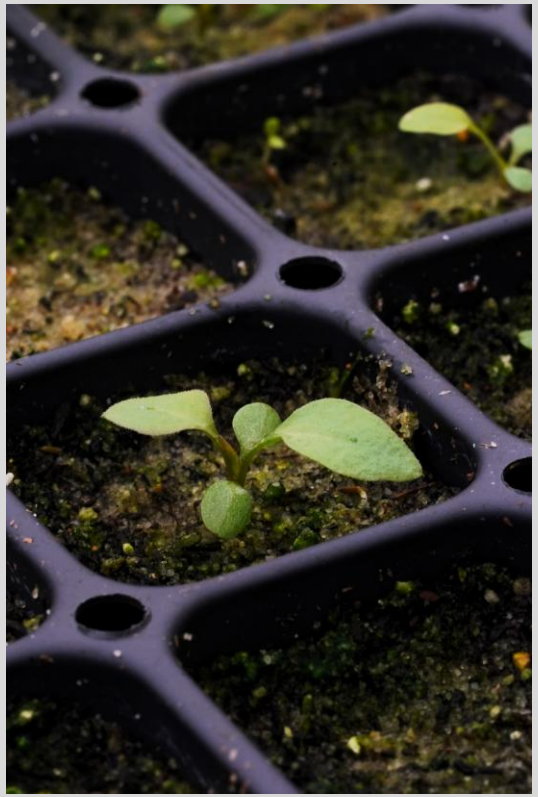
Note narrow petiole and wide, dentate (toothed) leaves.

Aster ericoides (White Heath Aster)

Aster laevis (Smooth Aster)

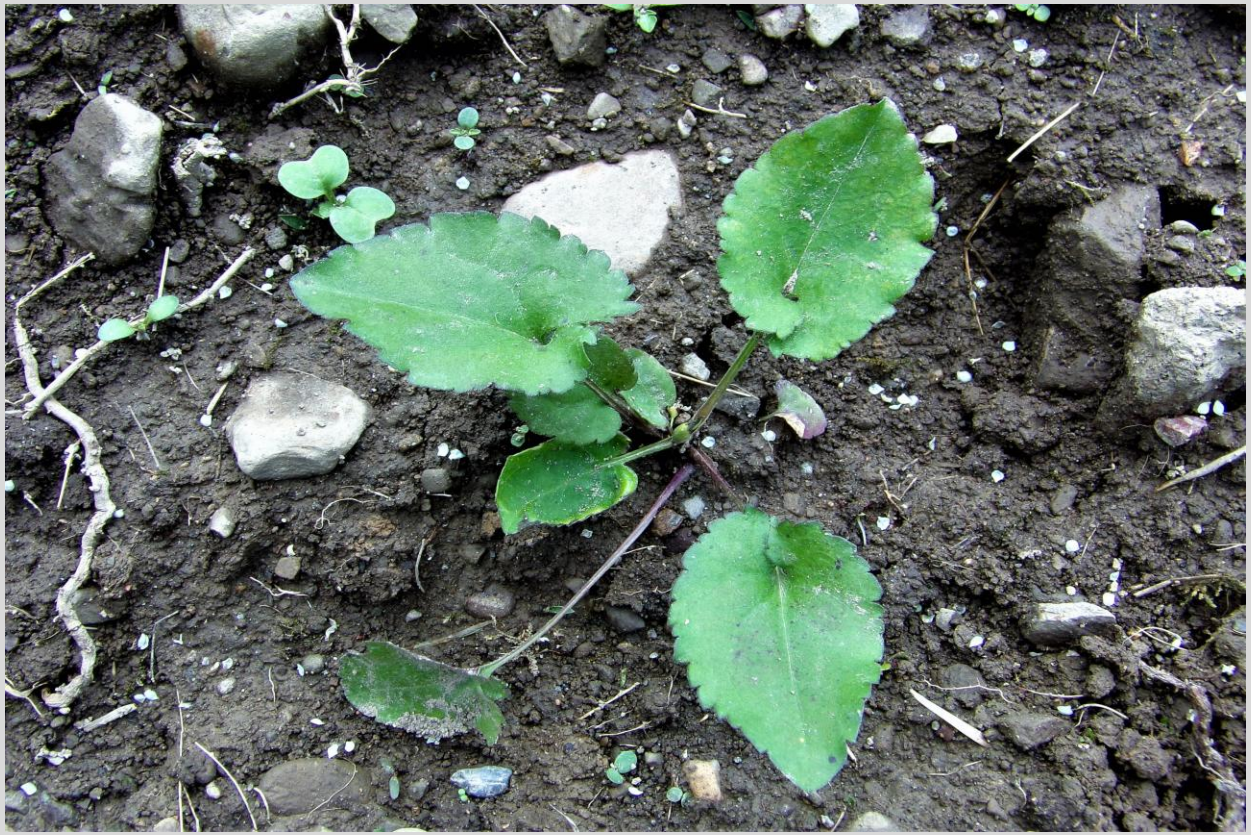
Note narrow petiole and blue-green color of plants in the field.

Aster lateriflorus (Calico Aster)



Note dentate (toothed) leaves.

Aster lowrieanus (Lowrie's Aster)

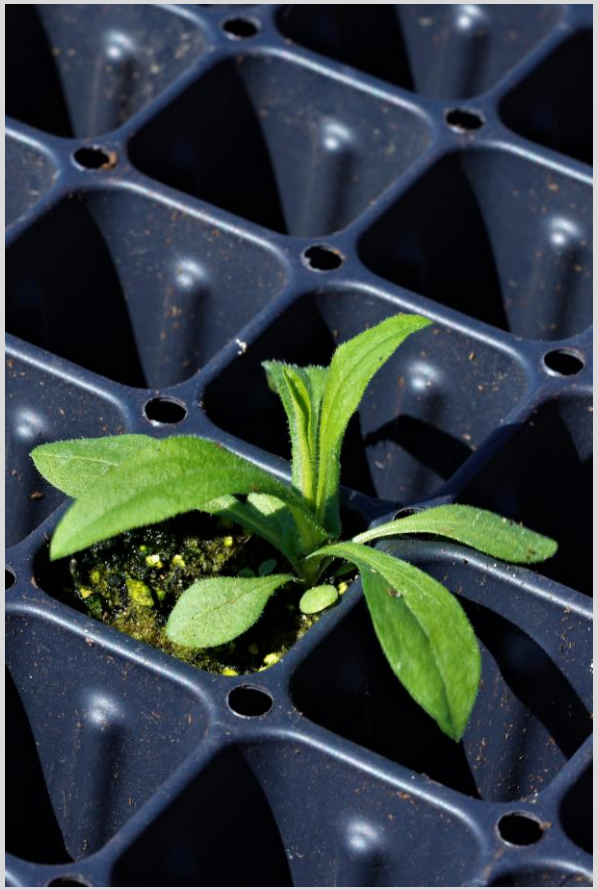


Note narrow petiole and dentate (toothed) leaves.

Aster macrophyllus

Note long petiole and dentate (toothed leaves.

Aster novae-angliae (New England Aster)



Leaves clasp pubescent (hairy) stems. There is no change of stem direction at each node (leaf attachment point).

Aster oblongifolius (Aromatic Aster)

No other plant closely resembles this species. When crushed, leaves give off a lemony scent.

Aster prenanthoides (Zig Zag Aster)

Note dentate (toothed) leaves, flared petiole (stem of the leaf), and stem that changes direction at each node (leaf attachment point).

Aster spectabilis (Showy Aster)

Baptisia albescens (Spiked Wild Indigo)

Note trifoliate leaves.

Baptisia australis (Blue False Indigo)

Note trifoliate leaves.

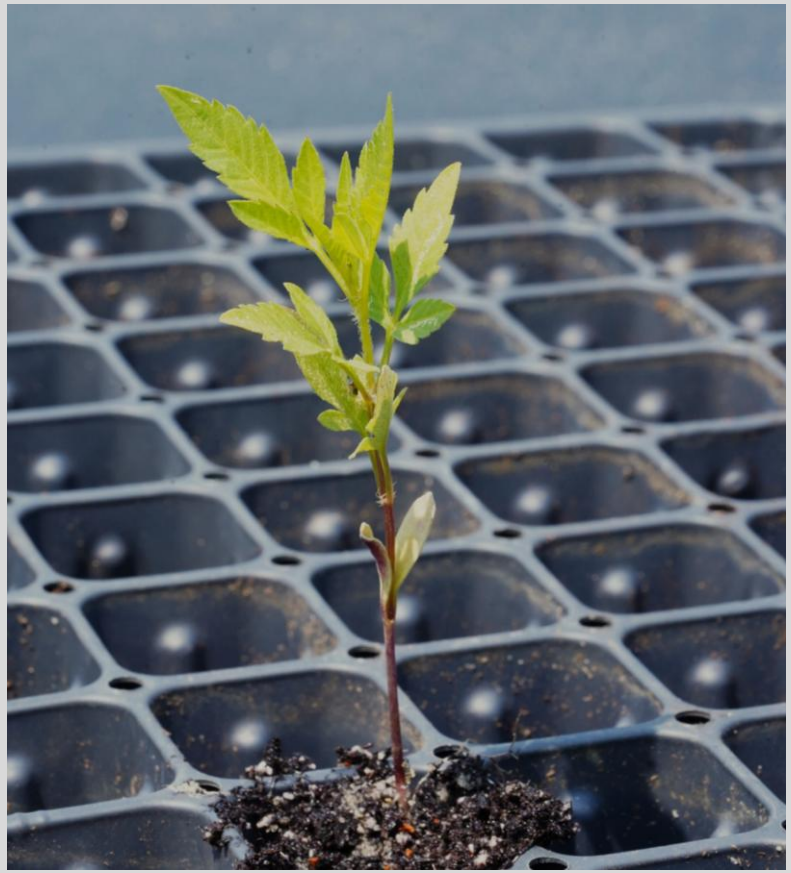
Baptisia tinctoria (Yellow False Indigo)

Note trifoliate leaves that are smaller than those of Baptisia australis.

Bidens aristosa (Showy Tickseed Sunflower)

Note deep lobing of leaves that are in opposite arrangement on the stem.

Bidens frondosa (Beggartick)



Note deeply lobed leaves that in an opposite arrangement on the stem.

Blephilia ciliata (Downy Pagoda Plant)

Note pubescent (hairy) leaves and stems.

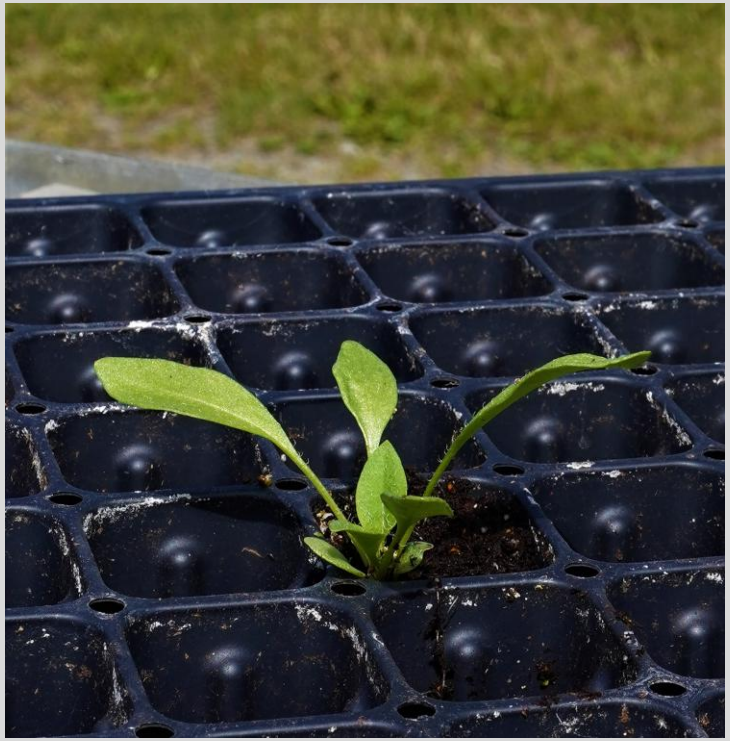
Chamaecrista fasciculata (Patridge Pea)

Leaves are pinnately compound.

Clematis virginiana (Virgin's Bower)

Note toothed leaves that are in opposite arrangement on the stem.

Coreopsis basalis (Goldenmane Tickseed)

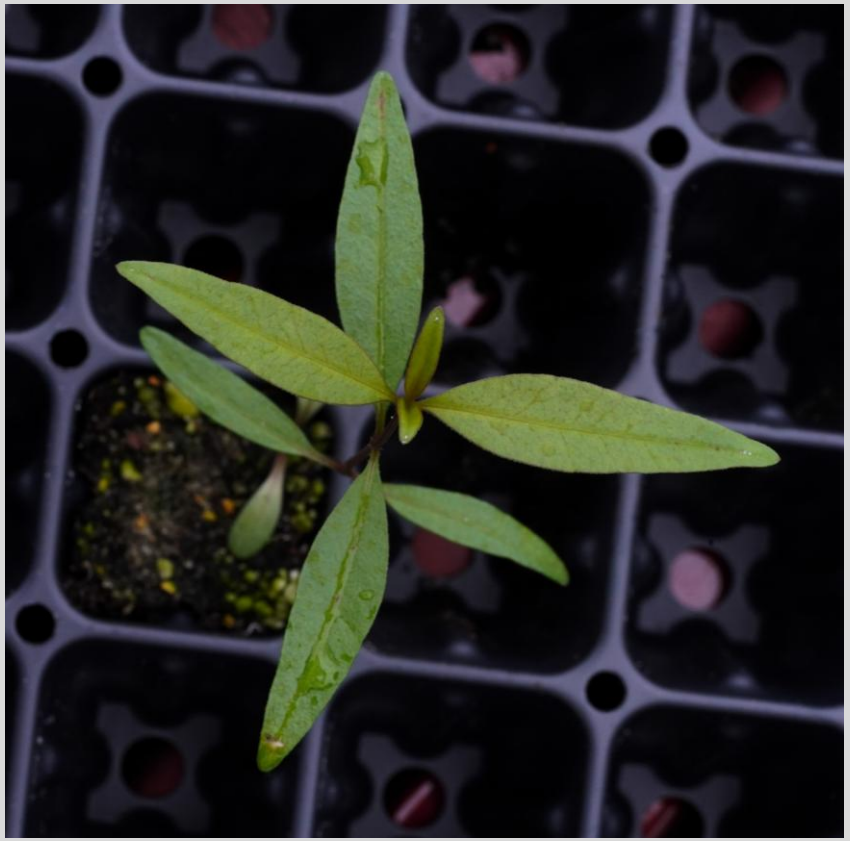


Coreopsis grandiflora (Largeflower Tickseed)

Coreopsis lanceolata (Lanceleaf Coreopsis)

Note deeply lobed leaves.

Coreopsis tripteris (Tall Coreopsis)

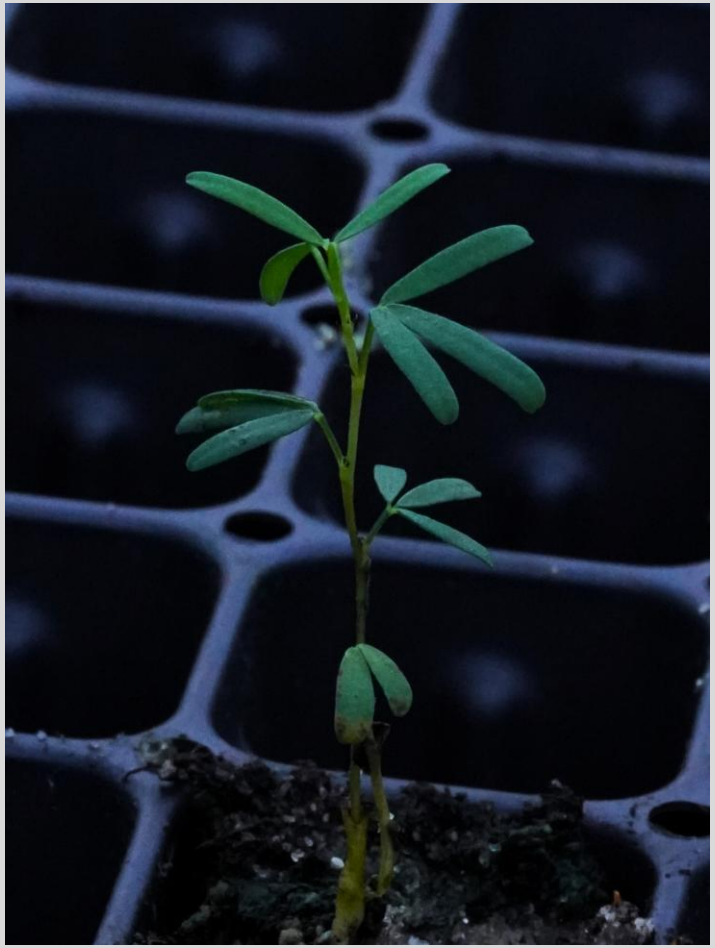


Note opposite leaves. When plants are a little older leaves are trifoliate.

Coreopsis verticillata (Threadleaf Coreopsis)

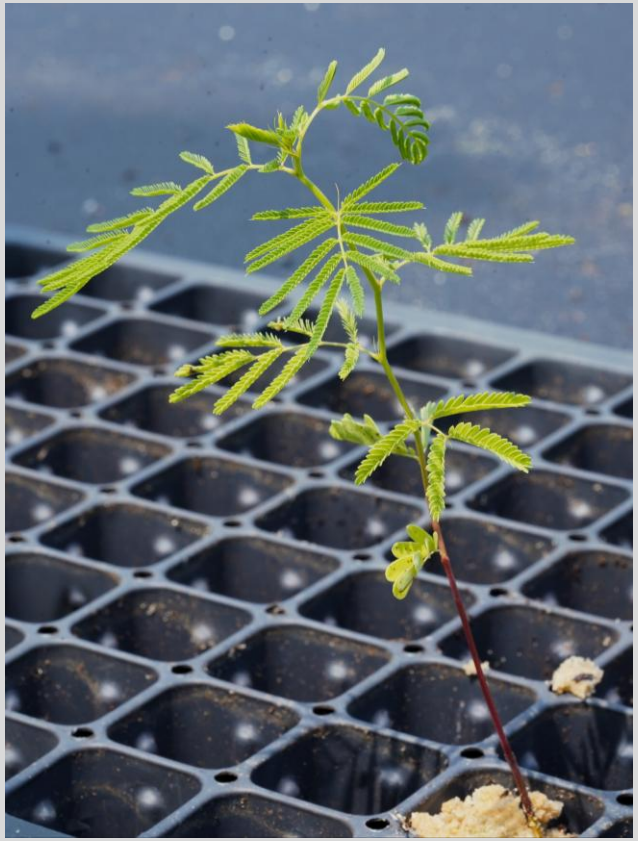
Note narrow leaves in opposite position on the stem. Older plants will have trifoliate leaves.

Dalea purpurea (Purple Prairie Clover)



Note trifoliate leaves in alternate positions on the stem.

Desmanthus illinoensis (Illinois Bundleflower)



Note pinnately compound leaves in alternate positions on the stem.

Desmodium canadense (Showy Tick Trefoil)

Note trifoliate leaves and leaf shape.

Desmodium nudiflorum (Nakedflower Ticktrefoil)

Note pubescent (hairy) stems and leaves.

Desmodium paniculatum (Panicledleaf Ticktrefoil)

Echinacea pallida (Pale Purple Coneflower)

Note pubescent narrow leaves and stems. Leaves are narrow compared to *Echinacea purpurea*.