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SOUTHEASTERN PENNSYLVANIA

Fall and Winter Seed Sowing

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WHY GROW YOUR OWN?

Some varieties are available only from seed

When you grow your own, you can control the timing and growing conditions

You can grow dozens of plants for a small investment in money and time

Small plants often acclimate quicker when transplanted

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WHY PLANT SEEDS IN FALL AND WINTER?

Fall and winter are the best times to sow native seeds.
Let nature do the work!

Many native seeds need to have a winter period of cold and fluctuating temperatures to break dormancy and germinate. Some seeds require a full year of alternating cold and warmth to germinate, but many natives will germinate readily if started in late fall or winter.

Not all native seeds require this cold period for germination, but all native perennials can be sown outdoors in the fall or winter.

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Most seedlings will be ready to plant out in a few months, and a few may even bloom the same year.

Conoclinium coelestina winter-sown in January, blooming in July

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To-Do List

- Make a list of the seeds you want to grow
- Research each variety to find out its requirements
  - Many seeds need “cold stratification,” a period of chilling that breaks dormancy
  - Some seeds do better if sown outside in late fall, AFTER the first hard freeze, e.g. columbine
  - Others that need just 1 to 2 months of cold stratification can be sown outside in January

Sources of Information

- On-line seed sources – some have more germination information than others; check multiple sources to confirm details
  - Everwilde.com
  - Prairiemoon.com
  - Prairienursery.com
  - Toadshade.com
  - Wildflowerfarm.com
  - Wildseedproject.net

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Artificial Cold Stratification

It's also possible to cold-stratify seeds indoors, in the refrigerator. The instructions and photo below are from Prairie Moon Nursery and can be found at https://www.prairiemoon.com/blog/how-to-germinate-native-seeds

Place seed and medium in a labeled, sealed plastic bag and store in a refrigerator (33-40°F). Stratification medium could be a damp paper towel, coffee filter, sand, vermiculite, or other horticultural-use medium.

We recommend mixing equal parts sand and seed, or slightly more sand than seed. Whatever stratifying medium you choose, be sure to moisten the mixture slowly to a damp but not wet consistency. You should not be able to squeeze any excess water out of the medium.
Stratify for the number of days indicated in parentheses. If two months stratification is required, C(60), one month may work for many species if time is a constraint. Some seeds may sprout in the storage bag. If this occurs with more than a few seeds, plant immediately.

Sources of Information

- Botanical garden and university websites:
  - Univ. Wisconsin Extension Service https://hort.extension.wisc.edu/
  - Missouri Botanical Garden https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx

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Order your seeds

- Not all sources sell exclusively native seeds
- Sources, in alphabetical order:
  - Everwilde Farms — everwilde.com
  - Prairie Moon Nursery — prairiemoon.com
  - Prairie Nursery — prairienursery.com
  - Toadshade Wildflower Farm — toadshade.com
  - Wild Seed Project — wildseedproject.net

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Order your seeds

Bulk order sources of native seeds for larger areas:

- American Meadows (VT) americanmeadows.com
- Ernst Seed (PA) ernstseeds.com
- Prairie Nursery (WI) prairienursery.com
- Vermont Wildflower Farm (VT) Vermontwildflowerfarm.com

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Supply list

- Seeds — your own saved seeds, or commercial
- Pots — at least 4” square or round; must have drainage holes; don’t use degradable because they will disintegrate too quickly
- Labels — plastic or wood; dark pencil for marking
- Soil — lightweight seed starting mix, no added fertilizer or moisture crystals; coarse sand or gravel screenings to mix in as needed
- Water — watering can or hose with sprinkler head
- Cover — hardware cloth, window screen, or lightweight remay

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Supplies

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Start with the best soil possible

- Your seed starting mix must be light and drain well
- You can use commercial seed starting mix or mix your own using coir and whichever add-ins you prefer
- If you use commercial mix, make sure it does not contain fertilizer, moisture crystals, or fungicides
- If you add compost, be aware that your seedlings may include whatever was in the compost!
- For plants that need excellent drainage, you can stir in some coarse sand or gravel screenings

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Add water

- Pour soil into a large bucket or tub
- Add water slowly, stirring to mix until soil is damp but not wet enough to clump when picked up
- If you added too much water, pour in some more soil and mix until the right texture is achieved
- Better to have the soil a bit dry than too wet

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Prepare the pots

- Have at least one pot for each variety; more if you want a lot of seedlings
- Write the variety name and DATE on each label – you will be glad of this information later!
- Fill each pot with soil
- Smack the pot on the ground firmly several times to settle the soil; refill if needed to within ¼” of the rim

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Sow the seeds

- Sprinkle seeds on top of the soil
- You can spread the seeds pretty thickly

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Cover the seeds

- Press the seeds lightly into the soil using the back of a spoon
- Cover the seeds with soil or sand NO DEEPER than the thickness of the seed
- CHECK to see which seeds NEED LIGHT to germinate; cover these seeds very lightly

Water the pots

- Water each pot LIGHTLY, using a hose or watering can with a sprinkler head so the seeds are not disturbed

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Choose your location

- Set your pots outside on a level surface
- If you put them in flats, make sure the flats drain
- Choose a location where they WILL get rained/snowed on
- A location out of direct sun and sheltered from wind is best, to avoid drying out
- Avoid a location on gravel or asphalt, or near a building's foundation

Protect the seeds

- Cover the seeds with hardware cloth, window screening, or remay (NOT glass or plastic) to protect from varmints
- A soil screed (shown here) makes a great cover

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Protect the seeds

Hardware cloth is a simple and effective cover

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Winter care – Don't let your pots dry out!

- Seeds in pots are vulnerable to drying out; unless the pots are covered with snow, check them every few days and water lightly if the soil surface is dry.

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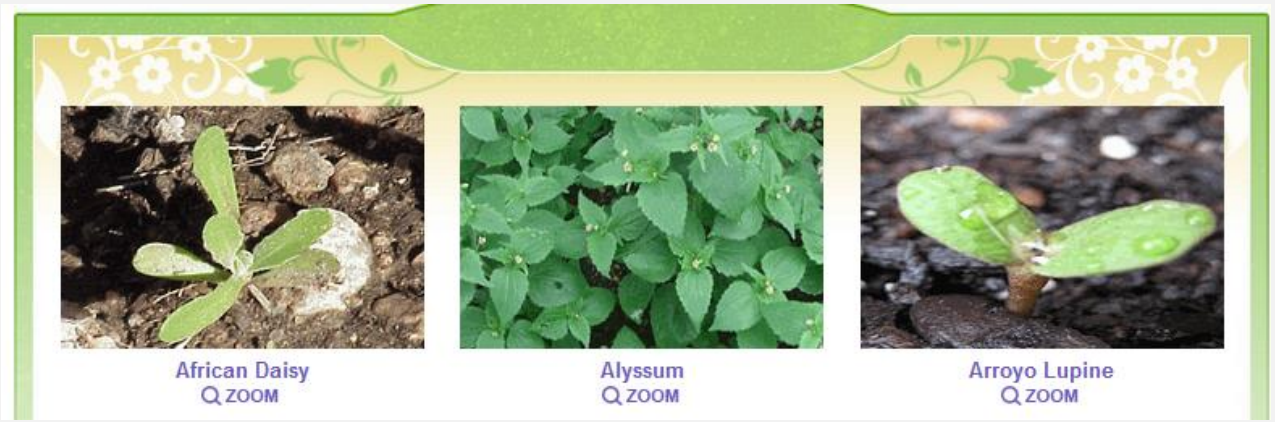
Early spring

- Start checking your pots in mid-March for signs of germination
- Make SURE the soil does not dry out once plants start to germinate, but don't flood them with water either
- If you're not sure whether you have weed sprouts or natives, check on line for photos of seedlings
- Post photos on the Wild Ones facebook page for help identifying seedlings

Seedling Identification

On-line identification guides can help you determine whether your sprouts are natives or weeds – or both!



https://www.vermontwildflowerfarm.com/wildflower-seedlings.html

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Germination

- Germination can be uneven; some seeds have lower viability or are just more finicky
- If seedlings in the pot are growing at different rates, wait to transplant until a good number of them have two true leaves

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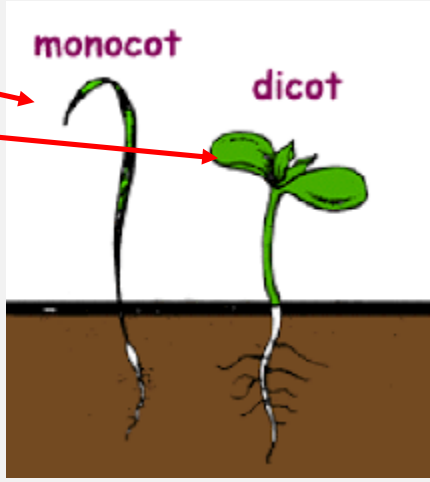
Seed leaves

- The first leaves to appear are the seed leaves, or cotyledons; they provide the true leaves with nutrients stored in the seed

- Grasses and bulbs have one cotyledon; most other plants have two
- The true leaves appear <u>after</u> the seed leaves



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Transplanting seedlings

- You can start transplanting seedlings into separate pots when they have two true leaves, or when the pots start to look crowded – this can happen any time from April into summer, depending on the variety

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Transplanting seedlings

- Don’t wait too long; seedlings grow better when their roots are not crowded
- The longer the seedlings stay in one pot, the more tangled their roots will be when you try to transplant them

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Transplanting

- Fill 4” pots or cells no more than halfway with damp soil
- Make a well in each pot or cell with your finger, almost to the bottom
- Turn the seedling pot upside down into your palm, then place the ball of soil and seedlings on a plant saucer
- Loosen each seedling gently and place one in each well
- Handle seedlings by their leaves, NOT the stems

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Transplanting

- Settle the roots into the soil well
- Use a spoon to fill the well gently with damp soil
- Tap the pot or cell on the ground several times to settle the soil. Add more soil as needed; seedlings should have all their leaves showing above the soil
- Water lightly
- Place pots or cells in a protected location under hardware cloth or screen; keep out of direct sun

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Growing on

- Check pots EVERY DAY; don’t let soil dry out completely
- Each variety should be watered according to its growing preference:
  - Plants that prefer moist soil should not be allowed to dry out
  - Plants that prefer dry soil should not be overwatered

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Potted seedlings arranged in trays according to watering needs

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Growing on

Senna winter-sown in January 2020, potted up or planted in the ground in June 2020

Potting up

- When plants outgrow their pot or cell, they can be planted out or potted up into a larger size if you need to hold them

Echinacea pallida growing out in deep landscape plug cells, winter-sown in January and ready to be planted out

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Planting out

- Seedlings can be planted out as soon as they're big enough or have outgrown their pot; this depends on the variety and the size of the pot
- Don't be fooled by leaf growth; many perennials concentrate on root growth their first year
- Check the bottom of the pot or cell; if you can see roots, it's time to plant out or transplant to a larger pot

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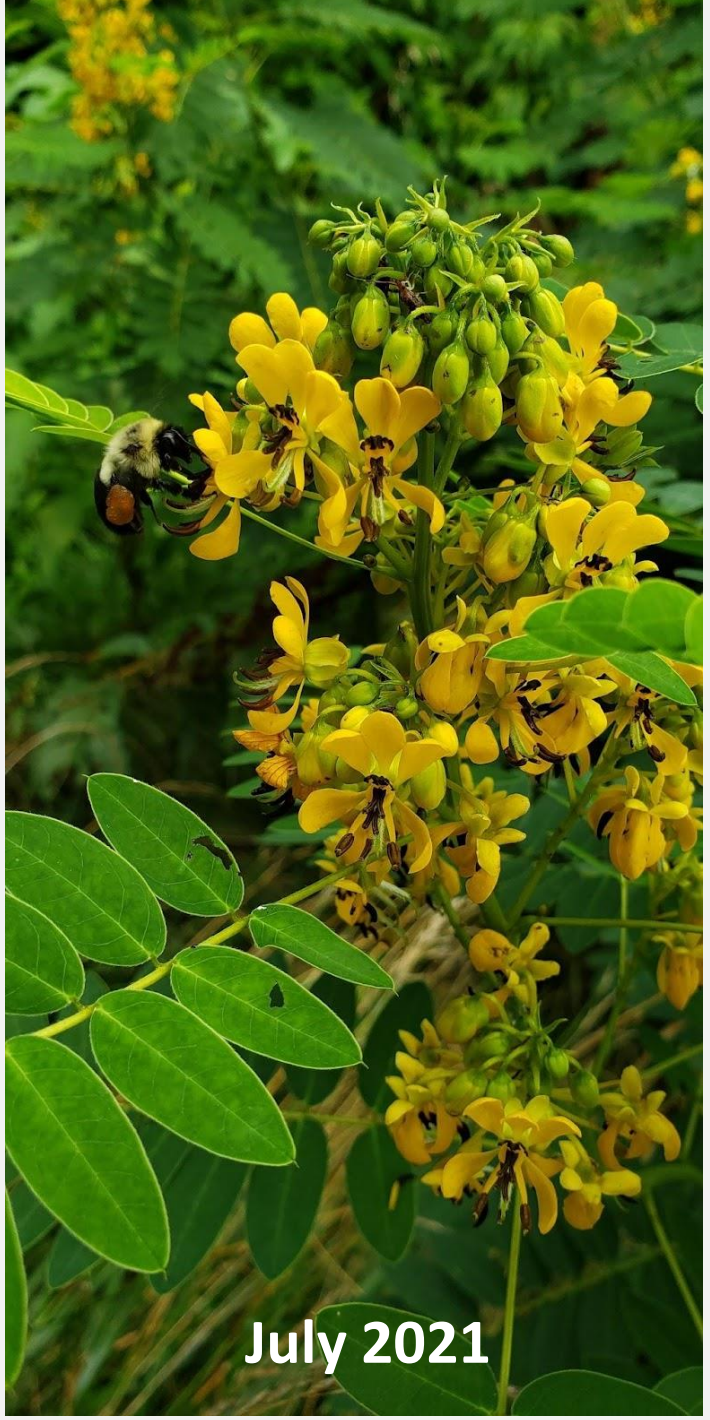
Planting out

Senna winter-sown in January 2020 and planted out in June 2020



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Many seedlings will stay small their first year. Be patient; they are growing lots of roots and will take off in their second year.

Ratibida pinnata full size and blooming in September of year 2.

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- Tutorials on fall and winter seed sowing can be found here:
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  - Ecolandscaping.org
  - https://www.prairiemoon.com/blog/how-to-germinate-native-seeds

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Some seeds germinate well when fall- and winter-sown

Anemone virginiana
Aquilegia canadensis (of course; they come up like weeds!)
Blephilia ciliata (downy wood mint)
Conoclinium coelestinum (blue mistflower)
Heliopsis helianthoides
Penstemon grandiflorus and P. hirsutus
Pycnanthemum vert. pilosum
Senna hebecarpa
Solidago caesia (blue-stem goldenrod)

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Some seeds are more challenging to germinate

Baptisia alba

Dalea purpurea

Delphinium exaltatum

Echinacea pallida

Veronicastrum virginicum

Symphyotrichum oolentangiense (sky-blue)

Geum triflorum

Liastris aspera

Verbena stricta

Verbena hastata

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Some seeds don't need cold stratification and can be started indoors before the last frost or outside after frost

Agastache pallidiflora Rose Mint
Asclepias tuberosa
Coreopsis lanceolate
Helenium autumnale
Monarda punctate
Salvia azurea
Symphyotrichum lateriflorum
Gaillardia aristata
Aster laevis (smooth blue)
Dalea purpurea
Coreopsis tinctoria (annual)
Hypericum prolificum
Monarda fistulosa
Symphyotrichum drummondii
Sporobolis heterolepsis