



Germination Information for Seed Swap

E (easy) - M (moderate ease) - D (difficult)

M *Asclepias incarnata* (Swamp Milkweed) - Apocynaceae
REQUIRES LIGHT TO GERMINATE

1. store seeds dry at 40° for 5-6 months then sow, VERY light cover, germinate at 75-85° OR
2. cold stratify 30 days, sow at 75-85°, very light cover OR
3. sow outside in fall

M *Asclepias speciosa* (Showy or Common Milkweed) - Apocynaceae
Sow outside in fall, cover lightly OR cold stratify 60 days; germinates best above 80° day/ 60° night

E *Berlandiera lyrata* (Chocolate Flower) - Asteraceae
Sow in cells or in situ, cover very lightly. Needs light to germinate. Germinates at 60-70° in 3-4 weeks.

D *Calochortus nutallii* (Sego Lily) - Liliaceae
Sow outside in late fall or early winter. Germinate in very cool temperature. Hypogeal. First above ground shoot will occur after temps warm.

M-D *Chamerion angustifolium* (Fireweed) - Onograceae
Sow outdoors in fall or early spring sowing. Press into soil and put just a bit of cover material, seeds need light. One source says no cold stratification is required but most recommend 60 days of cold before sowing at 70+°
Divide mature plants.

E *Dieteria bigelovii* (Bigelow's Tansyaster) - Asteraceae
Sow seeds at 70°, VERY light cover. Light requirement.

M-D *Eriogonum umbellatum* (Sulfur Flower) -
Store dry at 40° (storing at 70° very detrimental!) Sow outside in late fall. To cold stratify in the fridge, you must sow in cells because the radicles emerge irregularly between 2-3 months. Leaves will not emerge until they are darn ready in the spring.

D *Frasera speciosa* (Monument Plant) - Gentianaceae

Collect seeds August to Sept. Store dry at 70° until January 1. Sow in situ outdoors or cold stratify 4 months and then sow in cells or in situ. This plant is monocarpic. It dies after blooming and fruiting but it can take 18-28 years to bloom.

E *Gaillardia aristata* (Blanketflower) - Asteraceae

“**Gaillardia** blooms the second spring when started from ...seeds. If sowing ... indoors, start 6 - 8 weeks before the last frost. Use sterile starting soil and starter trays. Press the ...seeds into the soil and barely cover. Keep seeds moist until germination.” 70°, www.outsidepride.com

M-D *Geranium viscosissimum var. incisum* (Sticky Purple Geranium) - Geraniaceae

Scarification increases germination. If seeds have been air-dried, they are more permeable to water and will require less scarification. www.wildflower.org

Scarify with sandpaper, then soak in hot water for 12 hours. After treatment, plant outside 1/4” deep in fall or in spring after last frost.

For sowing in cells: In spring, about 4 weeks before the last frost, scarify, soak, cold stratify 30 days, sow in cells, cover to depth and put outside in sun.

Transplant into a deep pot and use very well draining soil.

E *Helianthus maximiliana* (Maximilian Sunflower) - Asteraceae

Store dry at 40 or 70°. Cold stratify 6 weeks before sowing at 70-85°. L=D so use light cover over seeds.

E *Heliomeris multiflora* (Showy Goldeneye) - Asteraceae

Keep seeds dry at 70° for a year to after ripen. Sow at 70-80. Cover lightly with soil.
OR

Cold stratify fairly fresh seeds for 4-6 weeks. Then sow at 70-80°. Cover lightly.

E *Heterotheca villosa* (Hairy False Goldenaster) - Asteraceae

Store seeds dry at 40°. Sow after last frost in situ or in cells. Cover lightly. 70°+.

E *Linum lewisii* (Blue Flax) - Linaceae

Indoors: Cold, moist stratification. Start at least 5 weeks before outdoor night temperatures are reliably in the 10 C (50 F) range. Mix the seed with a slightly moistened, sterile, soil-less growing mix. Put this in a labelled, sealed plastic bag and store in a refrigerator for one day. The next day place this in the freezer for one day. Repeat this for one week, alternating between the fridge and the freezer. After stratifying, plant seed 0.32 cm (1/8 inch) deep in pots. Keep moist but not soggy and very warm (21 C - 70 F). When seedlings are 5 cm (2 inches) tall or more, transplant into the garden spaced 30 cm (1 foot) apart.

Outdoors: Plant seed 3 mm (1/8 inch) deep in a prepared seed bed in late fall so that the seed overwinters and germinates naturally in spring.

Outdoors Alternative: In late fall through to mid-winter fill plastic pots with a slightly moistened, sterile, soil-less growing mix. Plant seed 3 mm (1/8 inch) deep in pots and label the pots. Place them outdoors in an area where they will experience the snow and cold of winter. The seed will germinate in the pots in spring as the weather warms up. Be sure to water the pots regularly in spring and once the plants are 5 cm (2 inches) tall, transplant them into your garden.

<https://www.wildflowerfarm.com/index>

M *Mirabilis multiflora* var. *glandulosa* (Colorado Four O'Clock) - Nyctaginaceae
Desert four o'clock seeds are dormant, require 8-12 weeks of moist chilling to become germinable, and will germinate in chilling. Light retards germination so the large seeds should be planted about a 1/2-1 inch deep. If sown in the ground do a fall seeding for spring emergence.

When starting in pots it may help to soak the rather large seeds in warm to hot water before chilling to help accelerate the water uptake. If germination does not occur after 3-4 weeks of planting an additional cooling period of 2-4 weeks is recommended. The germinated seeds should be planted in elongate containers to accommodate the long storage tubers that soon begin to form. Container-grown plants tend to look weak but usually grow rapidly once planted out.

<https://nargs.org/forum/mirabilis-multiflora>

E *Monarda fistulosa* var. *menthifolia* (Wild Bergamot) - Lamiaceae

Can be planted in spring, on bare soil, and will germinate without overwintering. Seeds do not need stratification. Prairie Moon Nursery.

Cover very lightly. Light requirement. It germinates in 10-14 days.

E *Oenothera albicaulis*? (Whitist Evening Primrose) - Onograceae

ANNUAL

Seeds can be sown directly in the garden in late summer, early fall, or planted early in the spring. Cover the small seeds well ...germinate at 65 to 70 °F (18 to 21 °C). Seeds require darkness to break dormancy. www.worldoffloweringplants.com

E *Oxytropis lambertii* (Purple Locoweed) - Fabaceae

Scarify seeds which have been dry stored at 40°. Inoculate with rhizobium inoculant (opt.) and sow promptly. Cover to depth. Germinate in 3 days to 2 months.

M *Penstemon grandiflorus* (Large Beardtongue) - Plantaginaceae

Surface sow 8 wks @ 40°F (4°C), needs light for germ. Jim Swayne, American Penstemon Society, <https://tomclothier.hort.net>

Penstemon virgatus* var. *asa-gray (Oneside Penstemon) - Plantaginaceae

syn. *P. unilateralis*

Sow under thin cover 8 wks @ 40°F (4°C) - Jim Swayne, APS, <https://tomclothier.hort.net/page09>

Penstemon virens (Blue Mist Penstemon, Front Range Beardtongue) - Plantaginaceae
Surface sow 8 wks @ 40°F, move to 70°F (21°C) for germ. in light, Jim Swayne, APS
<https://tomclothier.hort.net/page09>

E *Ratibida columnifera* (Prairie Coneflower) - Asteraceae - red form
Sow outside in fall. OR Cold stratify for 90 days. Sow, cover lightly. Germinate in 8-21 days at 70° (slower if lower temp).

E *Rudbeckia laciniata* var. *ampla* (Cutleaf Coneflower) - Asteraceae
Cold stratify 30 days. Sow and keep moist, cover lightly, 70-75°.

M *Stanlea pinnata* (Prince's Plume) - Brassicaceae
"sow anytime", Plants of the Southwest
Gently rake seeds into warm, loose soil. This will give the new taproot and lateral roots room to grow. [Cover seeds] The warm soil works to speed germination which should occur in about 2 weeks. <https://santafebotanicalgarden.org/january-2018/>

Shrubs

D *Amorpha nana* (Dwarf or Fragrant Wild Indigo) - Fabaceae
Scarify with sandpaper. Cold stratify 30 days. Inoculate (opt.). Sow on well draining mix. Cover VERY lightly with mix or fine vermiculite. 70°. May germinate in 2 months or longer.

M *Chamaebatiara millefolium* (Fern Bush) - Rosaceae
Regional native
Sow outside in fall or early winter. Cover seeds to depth.
Fresh seeds are nondormant, whereas stored seeds require 1 to 3 months of chilling to relieve dormancy. The optimum temperature range for germination of southwestern populations is 18 to 26 °C (65-80°F). https://www.fs.fed.us/rm/pubs_other/wo_AgricHandbook727
With fresh seeds stratification ok but reduces germination rate. Norman C. Deno, First Supplement, p30.

M *Rosa blanda* (Smooth or Woods' Rose) - Rosaceae
Remove fleshy material. Cold stratify 3 months. www.wildflower.org

Seed banking: Woods' rose forms a seed bank and seeds remain viable for 16 or more years in the field

Germination: Woods' rose seeds require scarification and/or stratification for germination to occur www.fs.fed.us/database/

Seedlings grow slowly.

Grasses

M Andropogon gerardii (Big Bluestem) - Poaceae

Dry store seeds at 40°. Then sow seeds at 75-80° (a germination blanket would be helpful to achieve the desired warm temps but temps should drop dramatically every night). Spring planting of plants would be desirable but fall planting is fine if the plant has a substantial root system. This warm season grass will not grow over the fall and winter but will begin active growth when temps warm in spring. I find temperature fluctuations from day to night help warm season grasses germinate.

Big Bluestem has a low percentage of fertile seeds. I collected at least 5 ecotypes of seeds and established them stock plots. Thereafter I collected many more fertile seeds.

Bouteloua curtipendula (Sideoats Grama) - Poaceae

No pretreatment. Plant outside spring to mid summer. Plant to 1/8" deep. Western Native Seeds)

Dry store seeds at 40°. Sow, cover to depth, 70-90° with nights 40-45°. Germinate in 2-3 weeks.

Free downloads of [Seed Germination Theory and Practice 2nd ed. and 2 supplements.](https://www.gardenfundamentals.com/seed-germination-dr-deno/)<https://www.gardenfundamentals.com/seed-germination-dr-deno/>