



Summary Information on Growing Alaska Native Plants from Seeds

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Seed Dormancy and First Winter Survival—Many species of native plants are easy to grow from seed. But it is fair to say that wild plants are often more difficult to grow from seed than domesticated plants. In the wild, native plants produce thousands of seeds to compensate for predation and low germination and survival. Understanding of some basic ecological facts and care for seeds and young plants greatly improves the success in propagating native plants from seeds. Start by storing clean and dry seeds in a cool place (e.g., fridge), in plastic or glass to prevent gain or loss of humidity.

Seeds of most Alaska native plants have one or more kinds of dormancy. Some seeds have a hard coat that prevents water uptake. Seeds that wintered in their natural environment are exposed in spring to cold and moist conditions (a.k.a. stratification) that break dormancy. Seeds sowed outside in fall-winter will follow their natural life cycle and will be ready to germinate the following spring. The metabolic process that breaks dormancy happens at chilling temperatures, but it does not happen at freezing temperatures.

Sowing Alaska native plants in spring often require an additional step to mimic the natural stratification process that breaks dormancy. Stratification usually involves keeping seeds in the fridge in a cold, moist, and clean environment for several weeks before sowing. Details about this process for different kinds of plants can be found in the literature listed below. But some native plants can be sowed in spring (in the first half of April) without fridge stratification.

Surviving the first winter is a main challenge for young plants in Alaska because their small size makes them vulnerable to winter desiccation. The bigger and the more established new plants are by the end of summer, the higher will be their first winter survival. An early start in spring and attentive care is important to ensure big and vigorous plants by the end of summer. Continuous snow cover is also important to protect plants from the dry winter air.

Fall-Winter Sowing—Outdoor sowing after early October suspends germination of native seeds until at least the following spring. Direct sowing native seeds on prepared beds can work for some plants and conditions. But starting seeds in flats or pots facilitates more attentive care. Thinly sow seeds on moistened potting soil or a seed starting mix. A few seeds per pot or cell is often sufficient to ensure germination and will prevent crowding of seedlings. Small seeds (e.g., poppies) do not need to be covered with soil. Large seeds (e.g., lupine) should be covered with a soil layer just as thick as the seed diameter. Water gently for good contact between soil and seeds. Sow small batches so you can attend to the young plants. Write species names on plastic plant labels using pencil for long-term identification. Plan for adequate drainage of pots and trays during spring snowmelt. Place pots outdoors protected from excessive wind. Voles and birds actively search for seeds during the winter. Covering seeded pots with a fine metal or plastic mesh can help protect seeds from predation. Cover pots with snow and recover as needed. Do not let seeds dry as this induces further dormancy.

Care for Young Plants—In spring watch for signs of germination and do not let seeds dry. As germination starts, if possible, move pots to a warmer place or greenhouse to speed up

development. Water seedlings in the morning so they can dry during the day. Water thoroughly and fewer times, preferably from the bottom up. Crowded seedlings are susceptible to diseases and competition for nutrients. Thin out seedlings to let only up to a few plants per pot or one plant per cell. Throughout the winter, cover plants with snow and recover as needed.

Hints for Some Species Easy to Grow from Seed

- Alaska and Portage poppies (*Papaver alaskanum* and *P. alboroseum*): Sow outdoors in fall-winter (starting early October) or spring (first half of April).
- Shooting star (*Dodecatheon pulchellum*): Sow outdoors in fall-winter (starting early October). Requires darkness (cover seeds with soil).
- Siberian aster (*Aster sibiricus*): Sow outdoors in fall-winter (starting early October) or spring (first half of April). Do not cover seeds with soil as they need light to germinate.
- Lupine: Seeds of lupine and other legumes are highly sought after by voles and birds. Sowing these seeds in spring helps curb predation, but requires a simple additional step. For spring sowing, soak seeds in warm water for 4–24 hours. Seeds without a hard coat take in water and double in size. Discard water and any seeds that remain afloat. Plant enlarged seeds immediately. Seeds may also be scarified (nick or rub between sheets of sandpaper) before soaking to increase the proportion of enlarged seeds.
- Western columbine (*Aquilegia formosa*): Sow outdoors in fall-winter (starting early October).
- Arnica (*Arnica* sp.): Sow outdoors in fall-winter (starting early October) or spring (first half of April).

Some Main References

Alaska Plants Materials Center (2004) Guidelines for Planting Seeds of Alaska Native Plants from the Native Plant Nursery. <http://plants.alaska.gov/pdf/GuidelinesShortProtocolsfor2004Seed.pdf>

Alaska Plants Materials Center (2022) Plant flyers. <https://plants.alaska.gov/PMCPubsIndex.html>

Baldwin RL (1997) Growing Alaska Natives: The Propagation of Alaska's Native Plants. (out of print)

Holloway P, Gauss V (2021) Wildflowers for Northern Gardens. A.F. Farmer LLC

Native Plant Network (2022) Propagation; Propagation Protocol Database. Reforestation, nurseries, and genetic resources. USDA and US Forest Service Southern Regional Extension Forestry. <https://nnp.rngr.net/propagation>

Ontario Rock Garden and Hardy Plant Society (2022) Germination guide instructions. <https://onrockgarden.com/index.php/germination-guide/germination-guide>