Native Plant Propagation by Seed
Rules of Thumb

Golden Rules

Always get permission from the land-owner.

Never harvest more than 10% of the seed, nor all from one plant.

Don't harvest from rare, parasitic, mycorrhizal dependent, or very site specific plants (e.g. orchids, wood betony, gorge cliff dwellers).

Be patient. Native plants can take more than one year to germinate.

Seed Treatment

Berry-like: Keep moist, remove the pulp and store in slightly moist potting soil, sand, or vermiculite. Or plant directly outside after removing pulp.

Eliasomes (looks like a root starting to poke out of the seed): Keep moist, store immediately in slightly moist potting soil, sand or vermiculite.

Spring bloomers, especially ephemerals: Will need to mimic natural conditions. Warm/moist, then cool/moist, then warm/moist and they will germinate. If you put them directly into the refrigerator after harvest, and bring them out the following spring, it may take 2 years to complete the cycle.

Sunny, late-summer to fall bloomers: Frequently need minimal treatment. Dry storage is usually OK. Cool/moist treatment never hurts, or can sow directly outside.

Very hard coated seeds: scarify (rub with sandpaper) and/or soak in several changes of water for 24-48 hours.

Teeny seeds: Do not cover with soil; they may need light to germinate. Covering lightly with sand is OK as it lets light through.

Always cover very lightly (sprinkle) as even some large seeds need light to germinate.

When to Harvest

When stem below seed head turns brown

When berries look ripe (or just before so you beat the critters)

If seeds drop off easily when brushed

Spring ephemerals are ready in June.

Key References

1. Cullina, William, Wildflowers: A Guide to Growing and Propagating Native Flowers of North America (The New England Wild Flower Society), Houghton Mifflin Harcourt, 2000
2. Cullina, William, Native Trees, Shrubs, and Vines: A Guide to Using, Growing, and Propagating North American Woody Plants, Houghton Mifflin Harcourt, 2002
3. Cullina, William, Native Ferns, Moss, and Grasses: From Emerald Carpet to Amber Wave, Serene and Sensuous Plants for the Garden, Houghton Mifflin Harcourt, 2008

A few more tips:

Adding water to the potting mix before sowing is important. If you are opening a freshly purchased bag, the soil may be moist enough. Otherwise, you need to moisten the mix some or bottom watering will not "wick" up and top watering will only flow along the edges and out the bottom. Your seeds will not have enough moisture as the middle of the pot will stay dry.

More watering: If you are so lucky as to have a watering can with a good "rose" that delivers lots of water that is dispersed enough to NOT disturb the surface of the soil, you can use it after sowing to wet the soil from above. Most indoor watering cans don't have a good rose, so watering from the bottom plus an occasional top misting is recommended. As with house plants, don't leave seed trays in standing water. Put in enough to soak up, no more.

Pots & flats & cells: The pots we used for sowing during the workshop were just what we had lying around. In general, you will have more seeds than can be sown in such a small pot. Use small flats, foam mushroom boxes, perforated trays, wooden clementine boxes lined with newspaper, etc. for more generous sowing. Just be sure there are holes to let water in & out. For shrubs and trees I recommend putting 3-4 seeds in a small (3-4") pot or using the plastic cell-flats you can buy at garden centers. Woody plants need a bit more room, and you should probably pot them up into slightly larger (& deeper) pots a few times before putting them directly into the ground.

Tamping down: Tamp down the potting mix so that it doesn't pack down itself with repeated watering, leaving your sprouting seeds with only an inch of soil. You leave a quarter-to-half inch of the pot above the tamped down soil so that you have room to water from the top once the plants are large enough to do so.

Plastic covers: If you fill a long, solid flat with smaller flats & pots, you can put one large clear trash bag over the whole flat. For individual pots you can lightly tie

the top of a bag into a single loop – this helps the bag stand up away from the soil while leaving an opening for air.

Stratifying or not: Not every species needs stratifying. Unless you have a greenhouse where you can continue to grow the plant no matter what the outside temperature may be, wait until April to grow or your plants will be very spindly by the time you can start hardening them off to go outside. It will always be OK to give your natives cold, moist stratification. So the default treatment should be to sow in early January or by mid- February and chill 30-90 days. Begin Growing in a warm place around April1st.

NOTES:

Plant Propagation: Seeds sown outdoors in natural habitat will usually germinate. By mimicking and controlling the seasonal cycle, seed germination can be more successful and accelerated.

Seed storage: Moist vs. Dry- Some seeds must never dry out.

Keep Moist post collecting: All berries, early spring blooming ephemerals, others as noted on list. Store in plastic bag with excess air squeezed out, in a moist, NOT wet medium.

Allow to dry post collecting: Any seeds not specified as needing moist storage. Place in paper bag and allow to air dry. Do not put into closed containers too soon or mold may destroy them.

Seed Treatment: Processing for better, faster germination by removing seed coats that inhibit germination.

Cleaning: Remove fleshy seed coat for berries and similar fruits. Soaking in water for 24 hrs can help if needed.

Scarification: Some very hard seed coats need light sanding or filing to open the coat to softer layers so moisture can enter. Only for recommended species.

Stratification: Manipulation of temperature and moisture to mimic the natural cycle. The process is best with the seed planted in some media, e.g. potting soil, sand, vermiculite, sphagnum. The most common stratification requirements are:

Cold/moist: Keep seeds in moist, not wet, medium at refrigerator temperature, ~40deg. F. for recommended number of days, usually 30, 60, 90, 120 days. After the cool period, bring the seeds into a warm location to germinate.

Warm/Moist, Cold/Moist, Warm/Moist: Some seeds require multiple cycles of temperature change to germinate. This includes early spring flowering plants whose seeds naturally stay warm on the ground throughout the summer prior to winter cold. Keep seeds moist, not wet, in medium at room temperature until outdoor temperatures begin to drop into the 40's. Then refrigerate at ~40deg. F. until spring. Bring the seeds into a bright and warm (~70 deg F) location to germinate. Native warm season grasses will not germinate until the temps reach 85 degrees.