

PLANT PROPAGATION IN A HOME NURSERY

PROPAGATION EQUIPMENT

Containers should be at least 2 inches deep. If you are re-using containers, such as seed flats, six-pacs, or 4-inch pots, be sure to sterilize them. A very mild household bleach solution works well, then scrub, rinse in fresh water, and let dry.

A **propagation or heat mat** is helpful for plants that usually germinate in warm weather, and can give you a head start on the season for native perennials, ornamentals, and food plants. The propagation mat will bring the soil temperature up to about seventy degrees, which will speed up germination and root growth. Do not, however, place the seedling flats or pots directly on the mat; raise them above it about one inch, using a baker's rack or 1" x 1" stakes; otherwise you will be "cooking" the root system!

Grow-lights. Not all seeds need light to germinate, but all seedlings need light from directly above to grow well. A grow-light set-up that allows you to adjust the distance above your containers is best. To germinate seeds, put the lights about two inches above the container. When the seeds have germinated, lift the lights to make sure that tender young leaves are not being burned. Put your lights on a timer; most seedlings need twelve to fourteen hours of light daily.

SOIL MIX COMPONENTS

If you plan to propagate on a regular basis, it will make sense to keep the basic components for a variety of soil mixes on hand. Components are either organic—peat, coir, sphagnum, compost, humus (such as leaf mold) and vermicompost, or mineral—perlite, vermiculite, pumice, lava rock and sand.

Good Quality Organic Soil with a high humus content

Vermicompost. Great in the seedling mixes; very high in organic phosphorous, which is essential for vigorous root growth

Peat Moss. Adds moisture retention qualities, and also acidifies the mix

Coir Fiber. Adds moisture retention qualities

Sphagnum Moss. Believed to have a natural sterility that slows certain diseases, such as "damping off"

Perlite. Has no nutrient value, but makes the mix lighter and helps to ensure good drainage

Vermiculite. Has some available minerals, retains some water, and also lightens up the mix and aids with drainage

Small Lava Rock. Sometimes available in either a 5/16" size with "lava sand" or a 3/8" size for use in larger containers; either one is an aid in drainage

Pumice. Aids in drainage

Coarse River Sand. Sand promotes fast drainage. Never use playbox or beach sand, which contain salts.

SAMPLE SOIL RECIPES

Knowing the soil preferences for the species you want to grow will help you customize the soil mixes.

For a seed starting mix: equal parts of peat moss, fine perlite, vermiculite, and vermicompost.

For 2" pots: two parts of soil or compost, and one part each of perlite and/or vermiculite, and sometimes peat moss

For 4" pots: three parts soil, one part each of perlite, and/or vermiculite, sometimes peat moss, sometimes one part lava rock

For 1 gallon pots: three parts soil, one part each of perlite and/or vermiculite, sometimes peat moss or lava rock

For species that need a drier, really well-draining mix: add one part pumice and/or coarse river sand

SOWING and WATERING

A rule of thumb is to plant a seed no deeper than twice its diameter. The size of the seed equates to its food reserve; which equates to the distance it can grow before being able to produce its own food.

Furrows can be created for large seed; medium seeds can be sown on top of the soil mix, and then covered with vermiculite to the top of the container. For tiny seeds fill your container with a properly tamped in soil mix, cover this mix with a thin layer of vermiculite or perlite; then sprinkle the seeds on top. The seeds will settle into the tiny spaces between particles of the soil covering. Then press it all down thoroughly to ensure good seed-to-soil contact, and water in your seeds.

If you have the seed flat set up indoors with bottom heat and a grow-light, be sure to water your seed flat every day; the soil medium needs to be kept moist, but not soggy. Plastic lids designed to fit tightly over the seed tray can be used to help maintain moisture levels. Plastic food wrap also seals in moisture and warmth, but prop it up on little sticks to make sure that it doesn't rest on the soil. Undyed burlap can be laid right on the soil surface to keep it moist and dark. As soon as you notice the first green shoots, remove the covering. Always water seedlings with water that is at room temperature! It is important to keep the growing medium moist once germination has occurred. The new seedlings must not be allowed to dry out—they are extremely vulnerable at this stage.

RECORD KEEPING

Noting the following helps to create a body of knowledge:

- Botanical name, and when and how the seed was acquired

 - note if the seed is old and if you did a viability test

- Date when the seed was sown

- Conditions the seed has been sown in:

 - soil mix (if it's different than your standard)

 - inside or outside ?

 - lid or covering over the seed flat ?

 - bottom heat ?

 - grow-light ? and if so how many hours of light ?

- Note the date of the first germination

 - note whether it is scant, just one or two seedlings

 - note if germination occurs over a period of time

- Note the date when the first true leaves appear

- Note the date if and when you thin the seedlings

- Note the dates of progressive transplants

 - note the numbers of seedlings you transplant