

Starting Seeds Indoors Part Three

In [part one](#) of this series, we discussed the reasons for involving oneself in the project, how to select one's seeds, the type of planting medium to use, and other miscellaneous equipment that is useful. [Part two](#) dealt solely with the disease of "damping off". So, we continue...

Prepare Germinating Medium

Please refer to the section entitled [The Seed-Starting Mix](#) in part one of this article for more information about germinating media.

If ground limestone and bonemeal are not among the ingredients in your seed-starting mix, add one teaspoon of each per quart of mix, since some seeds respond favorably to a high calcium content in the germinating medium. (Since "damping-off" disease can be stimulated by the presence of nitrogen, always allow seedlings to develop three sets of true leaves before beginning a regular liquid fertilizer schedule.)

Moisten Medium

Because peat moss takes a while to absorb water, moisten some of your germinating mix up to a day before, but at least several hours before you sow seeds. Put a ratio of four parts mix to one part warm (or even hot) water into a plastic bag or dishpan and "knead" the contents with glove-covered hands, until the water is absorbed. To test for the proper moisture level, squeeze the water out of a handful of the mix, and try to mold it into a ball. If you are successful, the mix is too wet; add more dry matter to it. When the moisture level is right, the germinating mix should flow freely off the trowel or spoon which you use to fill your containers. Let the germinating mix rest at least a few hours before sowing any seed. (Patience, patience...)

Fill Containers

Spread a layer of newspaper on the bottom of each flat or container to keep the germinating mix from escaping through the holes. Coffee filters serve the same purpose if you are using individual containers. Fill each container with moistened germinating mix. Tap the container on your work surface to help settle the mix and get rid of any air pockets. Firm the mix with a light touch, using your gloved fingers, the bottom of a similar-shaped container, a piece of wood or a brick. The mix should be about one-half inch from the top of the container. Avoid compacting the medium, as seedlings are more likely to rot if deprived of air.

Sow Seeds

Line up three seeds, end to end, to see how deep and how far apart the seeds should be planted. The longer you expect to leave the seedlings in their first container, the farther apart they should be sown. Sow seeds which are

particularly susceptible to damping off very thinly, as good air circulation is a factor which can help prevent that dread disease of seedlings.

Tiny seeds are a challenge to sow. Some gardeners advocate mixing them with very fine sand before distributing them over the germinating mix; others advise you to "practice" sowing the seeds on a piece of paper before you actually sow them on the mix. Most very fine seeds do not need a covering of germinating mix, but if they do, try using a paint brush and dry germinating mix to lightly cover them. That may give you better control than a trowel, spoon, or your hands...

Cover larger seeds with a layer of dry, fine (sieved) germinating mix to a depth two or three times the diameter of the seed. Some gardeners then spray the "topping" with water; others assume it will absorb moisture from the moist medium underneath it. Some tough seed casings must be chipped or soaked before planting, to hasten germination. If soaking is advised, soak seeds in warm water or strong tea 12-48 hours before planting. A wide-mouth thermos bottle helps keep the liquid warm. The largest seeds, such as winter squash, should be planted directly into peat pots or cell packs.

Most methods of overhead watering are likely to disturb freshly sown seed, so use bottom watering or a fine spray if you consider it necessary to water the newly planted containers.

Keep Records

Once seeds are sown, label their container. Most gardeners label a wooden or plastic stake and insert this into the container; some write on the container itself. Be sure that water and/or light will not quickly erase what you have recorded. At a minimum, record the variety name. You will want to record the sowing date either on the label or in a record book or both. Variety, source, year purchased, quantity, date sown, type of medium, germination date, fertilizing schedule, transplanting or thinning date and other pertinent information should all go into a record book. Spending a little time with your records once a week can prove invaluable during subsequent growing seasons. In addition, you will probably consult your records as you plan and purchase seeds in years to come.

Cover Containers

To help maintain an even temperature over the surface of the germinating mix and to keep it from drying out, cover the containers you use. Use a cover that is easy to remove, as you should check the containers once or twice a day. If your seeds require light to germinate, slip the containers into transparent plastic bags, cover them with purchased "domes", clear plastic sweater or shoe boxes, sheets of glass, plexiglas or plastic wrap. If the seeds will germinate in darkness, the cover can be opaque: dampened sheets of newspaper or burlap, cardboard, brown paper, black polythene or aluminum foil. If you are not sure about the light/darkness requirements of your seeds, keep them in the dark until they germinate or a few weeks have passed; then provide light.

Condensation tends to collect on the underside of many of the suggested coverings. Try inserting bendable straws into the germinating mix to help keep covers like plastic wrap above the level of the planting medium, or reverse the cover daily to keep the germinating mix from becoming overly wet from the condensation. Remove covering at least once daily, to help prevent excessive amounts of condensation from saturating the medium. If you find mold anywhere on the surface of the medium, leave the cover off for an hour or so. Check for signs of dryness, and spray or water the container from the bottom as necessary. AS SOON AS GERMINATION IS APPARENT, remove the covering.

Placement Until Germination Occurs

Most garden seeds started indoors germinate best when the soil temperature is between 75 and 95 degrees Fahrenheit, so seek a warm place for your container(s) until germination occurs. Germinating mats, available from gardening catalogs, are a convenient means of keeping the seeds at the proper temperature.

Post-germination Care

Seedlings need twelve to sixteen hour of light per day, but they need a period of darkness as well, to go through the metabolic processes necessary for growth. Cool white or warm white (try one of each) fluorescent lights are as effective as grow-lights for growing healthy, stocky plants. At first, place the seedlings right under the lights. Increase the distance between plants and lights as the plants mature, to a maximum of four inches.

Most seedlings thrive at daytime temperatures ranging from 60 to 70 degrees Fahrenheit, and nighttime temperatures ten degrees cooler.

Examine containers once a day, more often if possible, to see if water is needed. If a container feels light and the color of the medium is light, lower it into a larger container of tepid water for a few seconds - just until the surface changes color - then immediately drain away the excess before returning the container to its normal place. You may wish to have a tray or something underneath the containers to collect drips. Don't allow a container to sit in water for longer than it takes to moisten the surface of the growing medium. Use room temperature water because cold chills the roots and slows growth. Watering in the morning is preferable to watering later in the day. Some gardeners use capillary matting as a convenient means of providing continuous bottom watering for seedlings.

Once seedlings have two or three sets of true leaves, fertilize them once a week with a soluble, complete fertilizer with trace elements (micro nutrients) at one-fourth to one-half the recommended strength. Try to avoid getting any of the solution on the delicate seedling leaves. The growing medium should already be moist when you apply the fertilizer. Fast-growing annual vegetables and flowers require more fertilizer than slower-growing perennials.

Thin or Transplant

Overcrowded seedlings have a greater risk of "damping off". Moreover, the caretaker of overcrowded seedlings has a great risk of being turned off by the overwhelming task of separating or thinning them, so monitor your seedlings carefully. If thinning, rather than transplanting, is warranted, use small scissors (like the type used for manicures) at the soil line so as not to disturb the roots of the seed

lings which will remain. If transplanting is your plan, after seedlings have their first set of true leaves and are large enough to handle easily, they can be "pricked out" (transferred to other containers to give them more room to develop). Standard wooden or plastic seed trays, which can hold 40–50 seedlings each, cell trays, or individual pots may be used. If you use seed trays, they'll take up less space for a while, but most seedlings will eventually need to be "potted on". Partially fill the containers with pre-moistened potting mix that is not icy cold. (Well, would you submerge an infant in icy bath water?) Select your strongest seedlings (and with a heavy heart, say good-bye to the rejects). Handle the seedlings by their seed leaves or cotyledons (the first leaves the plant developed), rather than by the stem, which you must avoid damaging. Either hold the seedling over the container and sprinkle dry mix around the roots or make an indentation in the potting mix and set the seedling into it. Place the seedling

just a bit deeper than it was in its first home, to give the stem some extra support. Firm the transplanted seedling gently, avoiding damage to the stem, then water it. Do not subject the new transplants to extreme conditions of light, heat or cold for the next twenty-four hours or so.

Harden Off

When it appears that conditions outdoors are appropriate for your seedlings, they should undergo a week-long initiation period to the garden. Start by setting them outside in a protected location in dappled shade for a few hours during the day. Be forewarned that placing the containers on the ground invites slugs to a free salad bar. Increase the time that the youngsters are out each day, monitoring them for signs of stress, and then gradually introduce them to a sunnier more exposed location. Be aware that wind can do great damage to a seedling; even after seedlings are planted in their permanent locations in the garden, wind protection helps them prosper.

We hope that you are already among, or will soon join, the group of gardeners who find no greater thrill than that of cooperating with nature in the process of growing plants from seeds. If you are already hooked on growing plants from seed, we hope that this article has provided a good review or a few hints that may help you improve your skills. Let us know!

Resources

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