

GREEN TIPS

Department of Horticulture - Michigan State University

Buying and Growing Annual Seed

Most garden seed catalogs become available in November and December so that ordering can be done in January and February. Seeds become available locally in garden centers and other stores in late winter. If you plan to start seedlings indoors, some species should be planted in March or even earlier, so be sure to have them on hand for sowing at the appropriate time (see the sowing date chart, page 2).

Information in seed catalogs or on packets often tells how many seeds are included. A single packet is usually sufficient for most gardens unless you are planning on having an especially large display. Old seeds saved from previous years may not germinate well, so buying fresh seeds each year is recommended. Collecting and saving seeds from plants is usually not recommended because so many of the new cultivars are hybrids and will not come true from seed. If you want to save seeds, place them in glass jars, seal and refrigerate.

Starting Seed Outdoors

Your garden can bloom a month to six weeks earlier if you start annuals indoors instead of sowing seeds outdoors in late spring. The chart on page 2 indicates the appropriate time for starting various annuals indoors in the northern half of the area in Zone 5. For more southern areas, start one to three weeks earlier; for more northern areas, one to three weeks later.

Empty half-gallon milk cartons make excellent recycled container for starting seeds. Each carton should be thoroughly rinsed and then sterilized using 1 part liquid chlorine bleach to 9 parts water. Cut lengthwise to give two shallow boxes of equal size. Punch a few small holes in the bottom of each carton for drainage.

Soil Mixture or Growing Medium - Use one of the commercially prepared mixes containing perlite, vermiculite and peat moss for best results. To prepare your own growing

medium, use one part good garden soil and one part peat moss. Before using the homemade growing medium, pasteurize it to eliminate destructive diseases, weeds and insects. To do this, place the well mixed medium in a shallow baking pan, sprinkle it with 1 to 2 cups of water, cover it with aluminum foil, and bake it in an oven set at 300 to 350°F. The soil must be held at 180° for at least 30 minutes. Put a medium-sized

potato into the soil-when the potato is done, the soil is pasturized. You may also use a thermometer to gauge soil temperature. When soil reaches 180°F, turn down the oven heat. Heating the soil too high to too long destroys the soil structure. When the soil has cooled, place it in the prepared milk cartons. Water the soil before sowing the seeds. The soil mixture can be prepared in the fall and stored in a dry place until needed. Be sure to keep it covered to avoid contamination.

Sowing Seed - Two methods of sowing are used, depending on the size of the seeds. For large seeds, such as marigolds and zinnias, make holes in the growing medium about 1 inch apart with the point of a pencil. Place two seeds in each hole at a depth two or three times the greatest dimension of the seed. After all the seeds are in place, firm the growing medium light.

Fine seeds, such as flowering tobacco, may be broadcast over the surface, spaced about 1/4 inch apart. Then sift a very thin layer of growing medium over the seeds. Some fine seeds are pelleted; that is; covered with a material to make them bigger and easier to handle. Polluting also reduces the number of seeds used.

The seed containers should be properly labeled with names of the plants so they will be easily identifiable. Be sure to include the cultivar name and date of sowing. Water the containers carefully to avoid washing the seeds out. One way to do this is to stand the container in a shallow pan of water so that the growing medium is not disturbed. Leave the container in the water just until the water reaches the .

SOWING DATES:

Homegrown annuals in the northern half of zone 5.

Indoors

March 1 - Bush violet, Chinese forget-me-not, petunia, scarlet sage, verbenas

March 15 - Ageratum, black-eyed Susan vine, blue-eyed African daisy, bugloss, China aster, chrysanthemum, creeping zinnia, cupflower, dusty miller, flowering flax, flowering tobacco, forget-me-not, garden balsam, globe amaranth, heliotype, larkspur, mealy-cup sage, Mexican sunflower, moss rose, painted tongue, pincushion, sweet alyssum

March 21 - Annual phlox, blanket flower, spider flower

April 1 - Cockscomb

April 15 - Cornflower, cosmos, marigold, pot marigold, zinnia

Outdoors

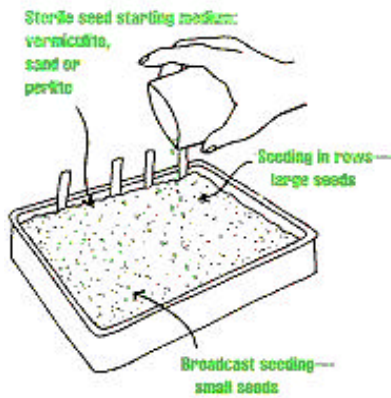
April 1 - (as soon as ground thaws) - Bugloss, bush violet, California poppy, cornflower, flowering tobacco, larkspur, moss rose, petunia, pot marigold, sweet alyssum

May 15 - Large-seeded, fast growing types such as cosmos, marigold and zinnia

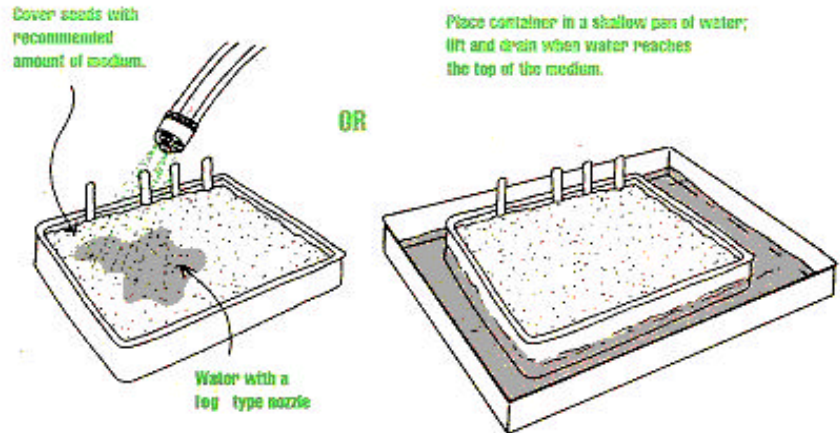
Best Purchased

Types requiring a long growing season - Coleus, edging lobelia, geraniums, impatiens, snapdragons, wax begonia and wishbone flower.

Sowing Seeds



Watering Seeds



top of the growing medium. Then remove the water and let it drain

Cover the seed containers with plastic film to retain moisture while the seeds are germinating. Fold the plastic under the container. An airtight seal is unnecessary, but the plastic cover should completely enclose the container.

Germination - Most flower seeds germinate best at a temperature of about 75 degrees F. Light is not essential for germination of most varieties, but a good light source after germination is required. Fluorescent lights are widely used.

Usually seedlings will appear within 3 to 14 days. Check the seed containers daily for signs of germination. As soon as most seeds have germinated, remove the plastic cover and expose the seedlings to full sunlight and cooler temperatures - 65 to 70 degrees F. If the cover is left on too long, spindly growth will result and the seedlings will be more susceptible to damping-off disease. The most common cause of tall, leggy seedlings is low light intensity.

Disease - Under poor light and stagnant air conditions, damping off may occur even in pasteurized soil. This disease becomes evident when seedlings start falling over because of stems weakened at the soil line by the invasion of a fungus. The disease may spread throughout a container in two or three days if left uncontrolled. Fungicides are available to control the disease, but prevention is by far the most important and effective method of control. Sterilize containers and tools by washing them in a household bleach solution (1 part bleach to 9 parts water).

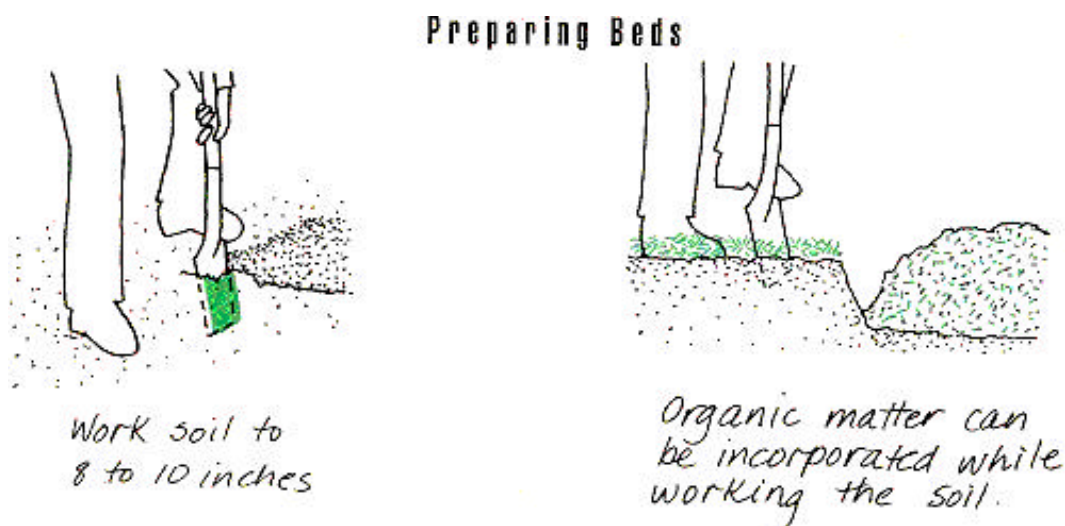
Fertilizing - Fertilizer applied after germination will help produce sturdy plants. Use any soluble complete fertilizer at half the strength recommended on the container. Two weeks later, and every two weeks thereafter, apply the same fertilizer at the rate of recommended on the container.

Watering - Careful attention to watering is essential when starting annuals indoors. They should never be allowed to dry to the point of wilting. This severely slows the growth of the plants for several days following apparent recovery. When the growing medium feels dry to the touch, apply water. Do not water again until needed. Over watering, which drives the air out of the growing medium, can be as fatal as applying no water at all.

Thinning and Transplanting - After true leaves appear above the seedlings leaves, the plants are ready for wider spacing. Large seeded annuals that were sown two seeds to a hole should be thinned out to one plant per hole. The extra plants should be cut off at the soil line with a pair of scissors to leave a space of 1 inch between remaining plants. This method of thinning prevents injury to the roots of the remaining seedlings.

Fine-seeded plants that were sown broadcast should be carefully pried out by placing a knife or stiff stake under the root and then lifting the seedling out while gently pulling on the leaves. Do not handle seedlings by the stems to avoid damaging the growing point at the top of the plant. Move as much growing medium as possible with the root system. The seedlings should be spaced 1 inch apart in containers filled with the same growing medium. Prepare holes in the growing medium that will hold the root system of the seedling that you are moving; then insert the roots and fill in with soil mix. Gently firm the growing medium around the roots, and water.

Preparing the Garden Bed



Most annuals grow best in a well drained, loamy soil in a sunny location. Only a few grow well or even tolerate full shade. Soils can be improved by adding organic matter such as leaves, grass clippings, peat moss, well rotted manure, compost or other material. The addition of coarse sand (1 to 2 inches deep) to heavy clay soils may help improve drainage, but generally addition of organic matter is best. Adding fine sand to clay soil is not recommended.

As the flower bed is being prepared, also incorporate 2 pounds of 5-10-5 or 12-12-12 fertilizer per 100 square feet. Work the soil to a depth of 8 to 10 inches unless hardy bulbs such as tulips and daffodils are present.

Soil for planters, window boxes and hanging baskets needs to drain well, and most garden soils are not suitable for this purpose. It is best to buy an artificial soil or growing medium at a garden center. Many suitable commercial mixes available. Disease organisms may build up in the soil in containers, so replace the medium every year for best results.

Starting Annual Seed Outdoors

Sowing and watering - Seeds of hardy species can be sown outdoors as soon as the soil can be worked in the spring. After preparing the soil, level the surface with a garden rake with the tines facing up and break up any clumps of soil. Then mark the area where the seeds are to be sown.

If seeds are sown by broadcasting over the soil where the plants are to remain, sow the seeds rather thinly and thin the seedlings later to obtain the correct spacing. If seeds are to be sown in rows (drills or furrows), you may want to take extra precautions to ensure good germination, especially if the soil either contains a lot of clay and crusts easily, or is very sandy and dries out quickly. To be sure of good germination, you can sow the seeds in vermiculite-filled furrows. Use a hoe to make furrows about ½ inch deep, fill with vermiculite (obtainable at garden centers) and moisten with water. Then make another shallow furrow in the vermiculite and sow the seed in this furrow. Sow the seeds according to the directions on the packet.

Most seeds should be sown at a depth of one to three times their greatest diameter. Small seeds are sown on the surface and covered only very lightly. Cover the seeds with vermiculite and use a mist nozzle to water the seeded area thoroughly. Be sure to avoid washing the vermiculite or soil covering away and exposing the seeds.

Keep the seed bed moist until most of the seeds have germinated; then let the surface dry out between waterings to reduce the risk of disease and to produce shorter, sturdier seedlings. Newspapers may also be used while the seeds are germinating to help prevent the seedbed from drying out. Support the newspapers on blocks or sticks 1 to 2 inches above the surface. Remove the papers when the seedlings start emerging from the soil or vermiculite.

Thinning - When the seedlings are about 2 inches tall or have developed their first two true leaves, they should be thinned to the recommended spacing. Thinned seedlings can be used to fill in sparse areas or transplanted to other areas.

Buying Annual Transplants

If you buy plants, select healthy, bushy plants. Look for short, dark green stems. Some plants, such as dwarf marigolds, sweet alyssum, petunias and geraniums, can be purchased already in flower. Other plants, such as snapdragons, scarlet sage, pincushions and zinnias, should not be in bloom when purchased.

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