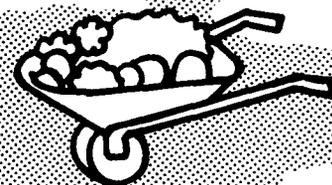
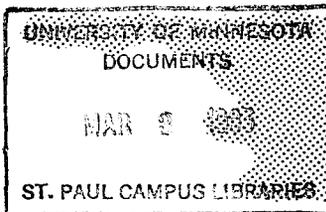


YARD'N'GARDEN

Starting Garden Seed Indoors

FACT SHEET 107
C. GUSTAV HARD



Many gardeners prefer to start their own vegetable and flower seedlings indoors. Their reasons for doing so include:

- to insure a supply of the specific varieties that the gardener desires to grow;
- to have the transplants available when the season and soil are right for planting;
- to utilize the home conditions for growing the seedlings; and
- to economize on certain plants that they use in large quantities.

The conditions found in many homes may not be favorable for good plant growth. To successfully start seeds and grow transplants indoors, you must be careful to provide the proper levels of light, temperature, and humidity.

The two problems most commonly encountered are lack of light and damping-off. Windows usually do not provide adequate light. It is best to use fluorescent lights. Damping-off is a fungus disease that attacks seedlings, causing them to collapse and die. Treating seeds and sterilizing the planting medium and containers will control damping-off.

Preparing the Planting Medium

For starting seedlings, the planting medium should be loose and well aerated, well-drained, finely textured, low in nutrients, and sterile.

Starting Seeds

Before planting, treat seeds with a fungicide, such as captan or thiram. Open a corner of the seed packet and insert a small amount of the fungicide (about as much as you can pick up on the tip of a pocket knife). When using fungicides, always read and follow label instructions carefully.

Beans, sweet corn, and the vine crops are hard to transplant, so they should be started in plastic or peat pots and not transplanted until they are set in the garden. Other seeds can be started in either flats or pots. You can sow seeds directly from the packet. Open one end and tap the packet so the seeds slowly shake out (see figure 1). You can also use a V-shaped trough, folded from a piece of heavy paper, to sow seed (see figure 1). You can sow very large seeds individually by hand. Use care to prevent overcrowding when sowing seed. Always label your containers with the plant name and the planting date.

Fill the planting container with growing medium, press it down firmly, and level it to about 1/4 inch from the top. Determine the planting depth by the seed size. A good rule is to plant seeds at a depth that is three times their diameter (see figure 2). Broadcast very

small seed (such as tomato and the cole crops) on the surface of the growing medium and cover with a light sifting of the growing medium or peat. Sifting can be done with window screening, a sieve, or a flour sifter (see figure 3). Plant larger seeds in shallow furrows if you are using flats, or scatter them on the surface if you are using pots. Cover seeds to the proper depth by sifting some of the growing medium over them. A furrow maker will provide uniform depth and spacing (see figure 4). Furrows should be spaced 1 1/2 - 2 inches apart.

After sowing, water the seeds by placing the flats or pots in a shallow tray of water. Remove them when the surface of the soil becomes moist. The water in the tray should not be so deep that it spills over the top of the flats or pots. You can also water with a fine spray, but be careful not to disturb the seeds. After watering, cover the flats or pots with a sheet of glass or polyethylene plastic and put them in a location with a constant temperature of 60° - 75°F. The seeds should not require any further watering until they have germinated. Seeds, with the exception of lettuce, do not require light to germinate. To avoid injury from heat buildup, never place glass- or plastic-covered containers in the sunlight.

It is important to start seeds at the proper time. See table 1. Refer to seed packets for starting dates for annual and perennial flowers. When seeds are started too early plants become tall and spindly and do not grow well after they are moved to the garden.

Figure 1. Methods of sowing seed

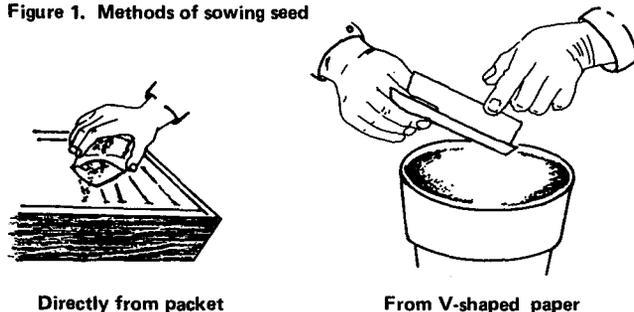


Figure 2. Planting depth

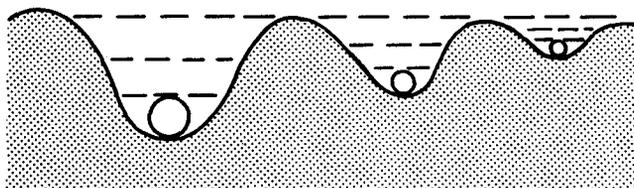
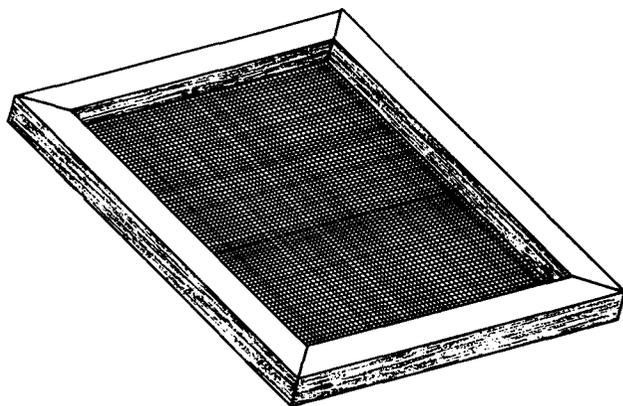
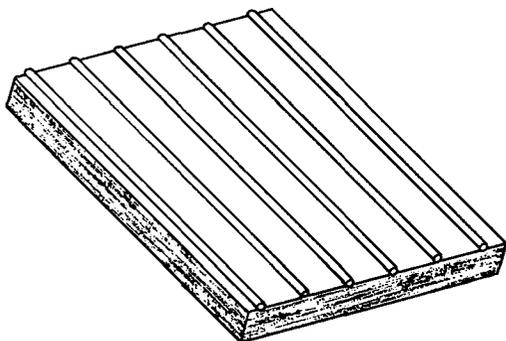


Figure 3. Sifting screen



Make a sifting screen by attaching window screening to a wood frame.

Figure 4. Furrow maker



Make a furrow maker by nailing 1/4" dowels to a piece of wood. Space dowels 1 1/2"-2" apart. Make it any size that works with your flats.

Caring for Seedlings

As soon as the seeds germinate, remove the glass or plastic covers and place the seedlings in the light. Most seedlings grow best if they receive 18 hours of light per day. Fluorescent tubes, placed 6 inches above the seedlings, provide the best light source. An easy way to ensure the proper duration of light is to connect the light to a timer. (Those sold to turn lamps on and off work well.) The optimum temperature for seedling growth is 65°F.

After the covers are removed from the containers, the seedlings will require frequent watering. They will also need to be fertilized. Do both of these jobs at the same time by watering with a solution of 1 tablespoon of a soluble fertilizer per gallon of water. Water by placing the flats or pots in a shallow tray of the solution. Remove them when moisture shows on the surface. You can also water with a rubber-bulb syringe that sprays a fine mist, or by pouring the solution into a small flower pot placed in the center of the flat.

Transplanting Prior to Garden Setting

Thin or transplant seedlings when they develop two true leaves, or when the plant is 1 - 1 1/2 inches tall. Thin seedlings started in plastic or peat pots to one seedling per pot. Seedlings in flats can be transplanted to other flats or to individual pots. When transplanting, use the same planting medium that you used for starting the seeds. Space most plants 1 1/2 to 2 inches apart. Tomatoes and eggplants should be spaced 3 inches apart.

To transplant, use a knife or wood label to deeply dig under and lift out the seedlings. Separate the seedlings, being careful not to pinch them. Plant seedlings in large holes with the roots carefully spaced; do not stuff them in holes that are too small. When transplanting is complete, water the seedlings thoroughly and replace them under fluorescent lamps. Continue to water with the fertilizer solution until you set the seedlings in the garden.

The transplanted seedlings need considerably more space than when they were growing in the germinating container. At this time you must add more light units, place in a window with full southern exposure, or use a hot bed or cold frame outdoors, where the temperature can be controlled early in the season.

Table 1. Starting and Transplanting Dates

Plants normally started indoors	Starting date	Transplant to garden
Broccoli	April 1	May 10
Brussels sprouts	April 15	June 1
Cabbage	April 1	May 10
Cauliflower	April 1	May 10
Celery	February 1	May 10
Eggplant	April 1	June 1
Lettuce (head)	April 1	May 10
Onion (seed)	March 1	May 1
Pepper	April 1	June 1
Tomato	April 15	June 1

Plants sometimes started indoors

Bean, snap (string)	April 30	May 10
Beet	April 20-25	May 10
Corn, sweet	April 20-25	May 10
Cucumber	April 30	June 1
Endive	April 20-25	May 10
Kale	April 1-10	May 10
Kohlrabi	April 20-25	May 10
Melons	May 1	June 1
Parsley	March 1	May 10
Pumpkin	April 30	June 1
Squash	May 1	June 1

*Note: Dates are for the Minneapolis-St. Paul area. Plant one week earlier for each 100 miles south and one week later for each 100 miles north.

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