



at a glance

- Design a planting schedule based on your local climate and the rate of plant growth
- Use light-textured, sterile, commercial potting mix
- Use clean, sterilized containers
- Provide a supplemental light source
- Keep seedlings moist but not wet
- Fertilize only as needed
- Provide air circulation
- Acclimate plants to outdoor conditions before planting

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Start Seeds Indoors with Success

Introduction

Starting vegetable, herb, and annual flower plants at home from seed is economical and rewarding. A greater variety of plant material is available by seed, and the gardener skilled in seed starting enjoys more flexibility in planning and planting the garden.

Getting started

Carefully schedule indoor planting to ensure your transplants are at the proper growth stage when the outdoor garden is ready. Begin by creating a planting schedule that includes crop varieties adapted to your climate and conditions. Information sources for crop and/or species lists include personal experience, neighbors and friends, Idaho Master Gardeners, and the local UI Extension educator.

Use the information in table 1 to schedule transplant production based on the average last spring frost date in your locale. Cool-season crops, like broccoli,

Table 1. Timing and temperatures for commonly transplanted vegetables, herbs, and annual flowers

| PLANT | IDEAL SOIL TEMPERATURE FOR GERMINATION | DAYS TO GERMINATION | NUMBER OF WEEKS TO GROW INDOORS |
|------------------------------|--|---------------------|---------------------------------|
| Vegetables and fruits | | | |
| Broccoli, cauliflower | 65°–75°F | 5–10 | 5–7 |
| Cabbage, kale & collards | 65°–75°F | 5–10 | 5–7 |
| Celery | 65°–75°F | 10–18 | 8–10 |
| Lettuces | 65°–70°F | 7–10 | 3–5 |
| Melons | 80°–85°F | 5–10 | 3–4 |
| Onions, leeks & shallots | 65°–70°F | 10–14 | 4–8 |
| Peppers | 75°–85°F | 10–14 | 6–9 |
| Squash | 70°–85°F | 7–14 | 3–4 |
| Tomatoes | 75°–80°F | 7–14 | 5–9 |
| Herbs | | | |
| Basil | 70°–85°F | 4–10 | 8–10 |
| Parsley | 65°–70°F | 10–25 | 6–8 |
| Flowers | | | |
| Alyssum | 55°–70°F | 8–14 | 8–9 |
| Marigold | 70°–85°F | 5–8 | 3 |
| Nasturtium | 65°–70°F | 10–14 | 3 |
| Pansy | 60°–65°F | 14–21 | 8–9 |
| Snapdragon | 60°–85°F | 7–14 | 8–10 |
| Zinnia | 70°–85°F | 7–14 | 3–4 |

onions, and pansies, can be transplanted outside 2 to 5 weeks before the average date of last frost. Warm-season plants like tomatoes, peppers, and zinnias can be moved into the garden about 1 to 3 weeks after that date.

Next, prepare your containers and planting medium for seed starting. To avoid disease, use new or clean pots and trays. Sterilize used containers by soaking them in a dilute bleach solution of one part bleach to nine parts water, then rinse and air dry.

Compressed peat pellets are convenient, but do not always provide enough rooting space for vigorous seedlings. It is easier to keep plants healthy in larger pots.

Use a moistened, lightweight, sterile potting mix, not garden soil. Do not reuse potting mix for seed starting, and try to avoid mixes with large amounts of added fertilizer. You may add fine-textured compost or worm castings to your potting mix as a nominal source of nutrients.

Planting and germination

Fill containers with potting mix to within 1/2 inch of the top. Plant seeds at the depth recommended on the packet. Label containers using permanent marker or graphite pencil, and place containers inside a solid tray to catch water.

Although most crops grow well in consistent room-temperature conditions, those with ideal germination temperatures of 70°F or higher sprout much faster when supplied with bottom heat from a commercial seedling heat mat or other source. Remove the heat source once plants emerge.

Before plants emerge, irrigate with a fine misting nozzle that will not dislodge seeds or soil. Bottom-up watering also works well, accomplished by pouring room temperature water into a tray holding the planting containers. If using this method, apply only as much water as the pots will completely absorb within a few minutes. Don't let pots sit in standing water for long periods of time.

Caring for transplants

Insufficient light is a major cause of transplant failure at home. To ensure stocky, sturdy seedlings, provide a source of artificial light even in sunny rooms or windowsills. Fluorescent tubes of any spectrum work; there is no need to purchase expensive plant grow lights. Hanging shop-light fixtures are commonly used. Suspend lights about 2 to



Figure 1. Tomato seedlings growing under ideal conditions for home transplant production. Photo by Ariel Agenbroad.

4 inches above the plants. Keep lights on for 12–16 hours per day and turn them off at night. A simple timer can schedule this automatically.

Proper watering is critical for producing healthy transplants. The trick is to consistently provide moderate conditions — not too wet, but never so dry that plants wilt.

Add additional fertilizer only after the young plants have at least four leaves, and then use a very dilute organic or conventional liquid fertilizer. Fertilization may not be necessary unless plants stop growing or turn yellow.

Using a small fan to blow air across the plants during the day will help prevent fungal problems and increase seedling toughness. Recognize that additional air movement increases water usage. Alternatively, brush your hand across the tops of the plants several times a day to help keep seedlings stocky.

Making the transition outdoors

Seedlings produced indoors are “soft” and will need to be gradually acclimated to outdoor temperatures, dry conditions, and intense sunlight even if the danger of frost has passed. This can be accomplished by moving the pots outside for progressively longer periods each successive day. This process of “hardening off” usually takes at least a week. Once the plants have adapted, plant them outside, but take any necessary steps to protect the newly established plants from sun, wind, and weather extremes.

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