



Growing warm-season crops in cool-season areas

Oregon's climate affords gardeners the joy of growing many types of plants. However, in many areas there are limitations to growing warm-season vegetables (e.g., melons, tomatoes, eggplants, and corn). Even if the growing season is long, air and soil temperatures may be too low for maximum plant growth. Luckily, there are ways to enhance your chances of harvesting large, luscious melons; vine-ripened, juicy tomatoes; and beautiful, purple eggplants.

Site selection

Choose a garden location that receives full sun and is protected from wind. A site with a slight south- or southeast-facing slope will warm early in the spring and allow colder air to drain to a lower location.

It takes only a small increase in temperature to speed up plant growth and development. Covering plants with cold frames, cloches (clear plastic and hoops), plastic-wrapped tomato cages, or floating row covers (spun polyester) will significantly modify the growing environment (temperature, wind, and humidity). These covers increase air and soil temperatures and conserve heat that otherwise would be lost during the night.

Some of these methods can be used with several plants, while others cover only an individual plant. Some are most suitable for modifying the environment at the beginning or end of the season, while others are suitable for use during the entire growing season.

Soil preparation and fertility

A light, well-drained soil (either sandy in texture or amended with organic matter) will warm faster in the

spring and stay warmer in the fall. Also, soil in raised beds warms faster and allows for earlier planting. To further speed soil warming, cover the soil with clear polyethylene plastic film. This can increase the soil temperature by 10–15°F over a period of a few days, thus allowing you to plant earlier in the spring.

Proper fertilization is critical when growing long-season vegetables under less-than-optimum temperatures. Plants need to get off to a quick start and have adequate nutrition in order to mature quickly. Phosphorus is especially important for early growth in cool soil.

Soluble chemical fertilizers are a good choice for plants growing in cold soil since the nutrients are immediately available to plants. Apply organic fertilizers later in the growing season when soil temperatures have risen; the microbes that break down these fertilizers and make them available to plants are most active in warm soils.

Choice of crop varieties

Select the vegetable varieties best suited to your growing environment. If you don't, all of your other work will be for naught. For tips on what varieties to plant, talk to long-time local gardeners and nursery or garden center personnel, or read seed catalogs.

Planting at the right time

Warm-season vegetables require warm temperatures to germinate (50°F) and warmer day and night temperatures to reach maturity. For germination and early growth, soil temperature is as important as air temperature. Don't rush. Vegetables planted too early may fail to establish well and may take longer to begin producing and have smaller total yields than those planted after soil and air temperatures have warmed.

You'll have better luck with tomatoes, peppers, and cucumbers if you select varieties suited to Oregon's environment.

Covering soil with plastic or fabric can increase the soil temperature.



For more information

Constructing Coldframes and Hotbeds (FS 246)

Fertilizing Your Garden (EC 1503)

Producing Transplants at Home (FS 225)

Raised Bed Gardening (FS 270)

Short-season Vegetable Gardening (PNW 497)

Available in the OSU Extension catalog: <http://extension.oregonstate.edu/catalog>