

## Growing Early-Season Vegetables

### What

Early-season vegetables are also called “cool-season” crops. In general, their seeds will germinate in lower soil temperature and plants will grow in cooler air temperature. Examples include: root vegetables (beet, carrot, kohlrabi, potato, leek, onion, and radish), Cole crops (broccoli, cabbage, cauliflower, and Brussel sprout) and leafy vegetables (lettuce, parsley, spinach, pea, chive, and kale).

Some cool-season vegetables have a tendency to develop flowering stalks when the air warms up. Look for varieties that resist “bolting” or reach maturity in fewer days.

### Planting Season

Early-season vegetables are usually planted in March or April, depending on the weather and your soil condition. All seeds germinate best when soil temperature is about 70 degrees, but cool-season crops will germinate at lower temperatures.

Vegetables that will germinate at 40°F of soil temperature include: fava bean, beet, broccoli, Brussel sprout, Chinese cabbage, cabbage, carrot, cauliflower, kale, collard, kohlrabi, leek, parsley, pea, radish, rutabaga, Swiss chard, celery, and turnip. Lettuce, onion, parsnip, and spinach will germinate at 35°F.

### Soil Temperature

Soil temperature is important to seed germination, root growth, and activities of soil microbes that convert nutrients into the form usable to plants. The astute gardener checks his/her garden with a soil thermometer before sowing and planting. Check the soil temperature at 9 a.m., by inserting the thermometer probe into the ground at a depth of 2 inches, for 7 consecutive days. The average gives you a good indication of when to sow and plant.

### Soil Condition

Take care not to work the soil when it is too wet. Squeeze a handful of soil in your hands – if water drips out, or the soil forms and stays a tight ball, wait. Working the soil when it is too wet will ruin its structure. If you rototill a bed, make one or two passes over workable soil. Stop when soil still contains small chunks; don't pulverize it.

### Warming the Soil

Early-season crops may need a little extra help to protect them from the weather. Consider taking these steps to warm up your soil:

- Place your garden in a sunny location;
- Cover the ground with clear polyethylene plastic;
- Mix in 2 to 4 inches of compost to loosen clay and compacted soil;

- Make a raised bed;
- Cover the bed with a cloche, cold frame, or plastic tunnel. See *How to Build Your Own Raised Bed Cloche* (EC 1627-E), an Oregon State University Extension publication, for detailed instructions;
- Cover floating row cover over an area that has been newly seeded or planted. It warms the soil and protects plants/seeds while allowing water and light to penetrate.

### **Seeds or Plants**

Carrot, pea, lettuce, kohlrabi, greens, beet, and radish grow easily from seeds; sow seeds directly into the soil. Pre-sprout seeds, especially those with thick coating, speed up germination. Place seeds between two layers of damp paper towels then into a plastic bag. Keep them in a warm place until the seeds germinate. An alternate method is to soak seeds for 4 hours before planting.

Cabbage, broccoli, cauliflower and kale are commonly available as plants from nurseries; buying small plants give a head start and speed up the harvest. This is particularly important if the vegetable is a type that tends to divert its energy toward flowering rather than growing leafy greens when warmer weather arrives.

Yet other vegetables come neither as seed nor as small plant. Examples are potato tubers, onion bulbs (sets), rhubarb crown and roots, and asparagus roots.

### **Soil Fertility**

Most vegetables are annual crops and need sufficient nutrients to produce well. Plants use only the nutrients that are dissolved in soil water, but most nutrients in soil are not in a soluble form. For immediate result, use water-soluble forms of fertilizer.

If you use organic fertilizers that are not in liquid form, apply a couple of months before planting. Examples of organic fertilizers are fish emulsion (3-5% N); composted chicken manure (3% N); blood meal (12-15% N); bone meal (12-24% P); and kelp meal (2-5% K).

In general, apply a balanced fertilizer containing nitrogen (N), phosphorus (P) and potassium (K) but give leafy greens more N, fruits and flowers more P, and roots more K. Fertilize according to the needs of the plant and fertility of your soil. Heavy feeders such as beet, collard, kale, lettuce, parsley, spinach, and tomato may need more fertilizer. Light feeders such as carrot, garlic, onion, chard, mustard, and pepper may need a moderate amount. Bean, pea, soybean, and clover fix nitrogen from the air and often do well with no fertilizer.

### **OSU Extension Service Resources**

Visit your OSU Extension Service office at 200 Warner-Milne Road, Oregon City, for these publications, or get them online at <http://catalog.extension.oregonstate.edu>

*Short Season Vegetable Gardening* PNW 497

*How to Build Your Own Raised Bed Cloche* EC 1627-E

*Fall and Winter Vegetable Gardening in the Pacific Northwest* PNW 548

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