

## Container Vegetable Gardens

Are you a frustrated gardener living in an apartment or house without a speck of yard in which to garden? Don't despair! You can grow almost any fruit or vegetable, from apples to zucchini, in soil-filled containers on a balcony, doorstep or patio, or hung from an eave or a tree limb. Growing food in pots, boxes, or other containers is easy and offers some advantages over growing in the ground. Many gardeners with plenty of garden space still grow certain things in containers. Containers expand "tillable" land onto paved areas and allow a longer season for cold-sensitive crops, such as tomatoes and peppers, which can be started indoors in the spring. Some people even grow orange trees in large containers that can be moved inside during the winter! Gardening in containers allows the positioning of heat-loving crops, such as tomatoes and peppers, in full sun or where they will get reflected heat.

### Containers

Any container used for growing plants must have holes near the bottom to allow excess water to drain out. Holes should be made on the sides of containers right near the bottom, but not on the bottom itself. They should be at least 1/4 inch in diameter. If the basic need for drainage is met, any container that will hold soil is suitable for growing plants.

Some commonly available cheap or free containers include: plastic or metal buckets that restaurants get vegetable oils or other foodstuffs in, plastic milk containers with the tops cut off, old leaky pails, bushel baskets or fruit boxes lined with plastic to hold soil (remember to poke drain holes in the plastic), plastic garbage cans, or nursery pots or flats. Terra cotta clay pots are another widely available container. If you use clay pots, you will be required to water much more frequently, because they dry out much more quickly than plastic containers. Heavy plastic bags of varied capacity can be used, too. In Britain, tomatoes are commonly grown in soil-filled plastic bags.

Generally, large plants require wider and deeper growing spaces than small plants. Large containers make more efficient use of space and serve as a heat reservoir to protect plants from freezing in winter or baking on warm summer days. But, smaller containers are easier to move and may be better for warm-season crops that you want to start inside or move to protected areas occasionally. Shallow containers, 8 to 10 inches deep, are fine for most vegetables, but they dry out faster than deeper ones. Some crops, such as tomatoes, peppers, carrots and other long-root crops require deeper containers.

### Soil

Commercially available potting mixes have many advantages over garden soils for growing in containers. They are light, drain well, hold moisture and plant foods well, are free of disease, and are widely available even in urban areas where good soil is scarce. A homemade potting mix can be made from equal parts of compost, leaf mold, or well-rotted manure; vermiculite; and coarse sand or perlite. A good garden soil (not clay) can be used to extend a mix, but it should make up no more than 1/3 of the total volume of the mix. All ingredients should be thoroughly mixed and moistened, then stored in a covered container where the mix will not dry out until ready to use.

Potting soils are very loose and light but will compact when watered. To make sure you have enough soil in a container, gently push the soil down, especially around the edges, as you fill it. If using plastic containers, you may pick them up and gently drop them on the ground to firm the soil. When settled, the soil should come to about an inch below the container's rim, to allow room for watering.

## **Fertilizer**

Soilless mixes are very low in nutrients, so fertilizers must be added. Initially, to each 16 gallons or 2.5 cubic feet of mix, add:

- 1 cup dolomite lime and
- 1 cup 5-10-10 fertilizer

In place of the 5-10-10, a "complete" organic fertilizer can be made from:

- 1 cup cottonseed meal or 2/3 cup bloodmeal and
- 2 cups bone meal and
- 1 cup kelp meal

Organic fertilizers are released slowly and will not be available to your crop as quickly as synthetic ones. Slow-release fertilizers, however, have the advantage of being less likely to burn plants from over-applications. Synthetic fertilizers are also available in slow-release forms.

Additional fertilization while crops are growing can be made most easily with liquid fertilizers, such as fish emulsion or a soluble chemical fertilizer, or by scratching solid fertilizers into the soil surface. If you overapply fertilizers (scorched leaf edges are a common symptom), wash out the excess by watering using three times as much water as the volume of soil to be cleansed. Again, organic sources such as fish emulsion are less likely to burn plants.

Once a year, empty the container and add new soil, lime, and fertilizer (see above for amounts).

## **Crops**

The basic rule for deciding which crops to plant is to grow what you like to eat and what your growing conditions allow. You have control of the soil, so light is the most limiting factor. Most vegetables require a minimum of six hours of direct sunlight a day. Leafy vegetables (lettuce, spinach, chard and various other greens) can tolerate more shade than root crops (beets, carrots, potatoes). Fruiting crops (tomatoes, peppers) will not thrive at all in a shady spot. It is important to grow varieties adapted to our cool, cloudy climate, especially of such heat-loving crops as tomatoes and peppers.

One factor to consider when growing in a limited space is what crops will produce the most food. Training crops to grow up trellises or strings dangling from eaves, etc., is a very productive way to use a small space. Crops that can be trained up poles, strings or trellises include tomatoes, peas and beans (pole varieties), and cucumbers. If you cannot provide supports, be sure to grow bush varieties of peas and beans. Cherry tomatoes can also be grown from hanging pots and allowed to dangle over the edges.

Crops can be grown successively. Keeping your containers full all year will give you more food in the same space. For example, beans or squash can follow an early crop of spinach or lettuce. Seed packets provide information on when to plant a crop and how long it will take until harvest.

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Another trick to get the most food out of a small space and the least labor is to grow crops that can be harvested continually over a long season. Hardy, leafy plants, such as chard, spinach, mustard, collards and kale can be harvested this way. You can also prolong the harvest by sowing crops like spinach very thickly and thinning them for salad greens as they grow crowded. Thinning allows the remaining plants room to grow, and they can be thinned again each time they get crowded. Grow green onions, leeks, mustards, turnips, beets and even lettuce this way. Carrots may also be grown like this, thinning "baby" carrots and later harvesting the main crop.

Most vegetables can be seeded directly into the container. Follow the seed packet instructions for planting depth. Yields of all crops will be increased by closer spacing (up to a point). A good rule to follow is to grow plants at the distance recommended for space "in rows" on seed packets, and ignore the recommendation for space "between rows." For example, a beet seed packet says to space plants 3 to 4 inches apart in rows 12 inches apart. You can grow them spaced 3 to 4 inches apart in both directions. Offset the seeds. Generally, spacing plants closer will result in a higher total harvest of slightly smaller individual plants. This concept may be economically applied to crops like cabbage, which may be grown very close together (12 inches) to yield more reasonably sized heads than the normal behemoths.

In a 6-inch or 1-gallon pot you can grow:

- 1 lettuce or chard plant, or
- 6-8 radishes or green onions, or
- 3 spinach plants, or chives, parsley or dill.

In a 5-gallon bucket you can grow:

- 1 tomato, pepper or zucchini, or
- 3-4 lettuce, or
- 1 cabbage or broccoli (with 15 radishes or 8 spinach), or
- 15 carrots or beets, or
- 6 bulbing onions, garlic or leeks, or
- 8 mustards or turnips for greens.

In a half whiskey barrel you can grow:

- 10-12 lettuce, or
- 60 radishes or green onions, or
- 50 carrots or beets, or
- 3 broccoli or cabbage (with several spinach), or
- a whole salad: 4 lettuce, 1 cherry tomato, 8 carrots,
- 12 radishes and 12 green onions.

Starting plants inside early and moving them outside as weather permits is a good way to get early crops of many plants. Remember, plants must be conditioned (hardened) to withstand the cold and wind they will encounter outside, or they will suffer permanent damage from the change. Hardening is done by putting the plants out in a protected area and bringing them back inside at night for several days. Withholding fertilizer and water before putting them outside can also help harden them.

## **Watering**

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Watering container-grown plants is a little tricky. Overwatering and underwatering are the most common problems. Remember the water in a container is the only water the plants can get. They cannot send their roots deeper to find water. Large plants drink a lot on warm days, and they must be watered often. Check plants every day. On the other hand, you don't want to drown plants either. Water does not drain in a container as easily as it may in a garden. A good light potting mix is essential for soil drainage.

The best guide to whether or not a container planting needs watering is to stick a finger 2 or 3 inches into the soil and see if it is moist. If it is dry, water! (Of course, if there are seeds growing, the soil should be moist all the way up to the surface.) Check every day until you get a good sense of how often your plants need water. They may need it every day. Water pots until the water starts to come out the bottom of the container. Then try the finger test again. Potting mixes can be difficult to rewet once they dry out. Often water will not penetrate these mixes and will just drain along the side of the container and out the bottom. If the soil is still dry an inch or two down even though it is draining out the bottom, try breaking up the top layer with your fingers or a trowel, poke some holes a few inches down, and then water again.

### **Insects, Diseases, and Weeds**

Container-grown plants are susceptible to the same insect and disease problems as any other crops. Weeds can take over potted plants, robbing your crops of needed nutrients and sunlight. Fortunately, weeds are easier to control in containers than in open garden spaces. Pulling young weeds or shallow cultivation are the best controls. Herbicides are not appropriate.

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