

Container vegetable gardening

Many vegetables can be grown successfully in containers. People who live in apartments or condominiums can grow vegetables in containers on a balcony, windowsill, or doorstep. Those with a poor site for a garden—one that is too shady or drains poorly—would probably be more successful by switching to container gardening.

A container vegetable garden can provide enjoyment as well as fresh vegetables. In order for the garden to be productive, a well-drained growing medium, adequate water and fertilizer, and plenty of sunlight are essential.

Containers

Select a container large enough to hold the plants and accommodate their root systems. Plastic or clay pots, old pails, bushel baskets, plastic buckets, wash tubs, wooden planters, or hanging baskets will hold vegetable plants. Almost any type of container can be used if it provides good drainage through holes on the sides or bottom. If holes need to be made, drill four or more 1/4-inch holes evenly spaced around the bottom of the container. To further help drainage, put about 1/2-inch of coarse gravel, small stones, or pieces of a broken clay pot in the bottom of each container. These items are not a substitute for drainage holes, however.

The size and number of containers needed depends on the space available and the vegetables you intend to grow. Six to 10-inch diameter pots are satisfactory for chives, parsley, herbs, or a miniature tomato plant such as 'Pixie Hybrid.' For most vegetable crops, such as tomatoes, peppers, and eggplant, a 3- to 5-gallon container is preferred. (See table 1.)

Wood containers will last longer if they are constructed of the heartwood of naturally durable tree species, such as western red cedar and redwood. Treated lumber is another option. Lumber that is treated with chromated copper arsenate (CCA) is recommended for structures that come in

Table 1. Approximate size containers needed for vegetables

Crop	Minimum size container	No. of plants per container
Beets	2 gallon	Thinned to 2-3 inches apart
Cabbage	1 gallon	1 plant
Carrots	2 gallon	Thinned to 2-3 inches apart
Cucumber	1 gallon	2 plants
Eggplant	2 gallon	1 plant
Green beans	1 gallon	2-3 plants
Leaf lettuce	1 gallon	4-6 plants
Parsley	½ gallon	1 plant
Pepper	2 gallon	2 plants
Radishes	2 gallon	Thinned to 1-2 inches apart
Spinach	1 gallon	Thinned to 3 inches apart
Swiss chard	1 gallon	1 plant
Tomatoes		
Cherry	1 gallon	1 plant
Standard	3 gallon	1 plant

contact with soil. CCA wood preservative is forced into the wood under a pressure treatment process where it fixes to the wood and remains permanently. CCA will not leach out of well-dried treated wood and is rarely toxic to plants. The life of CCA-treated wood in soil contact is 40 years. CCA-treated lumber is widely available under such trade names as Wolmanized. It has a slight green hue and is sold for use as landscape timbers, fencing, and decks.



Almost any type of container can be used to grow vegetables if it is clean and provides good drainage.

Table 2. Clay pot size and capacity

Diameter inside top (inches)	Approximate soil content
3	1 cup
4	2½ cups
5	1 quart
6	2½ quarts
7	3 quarts
8	1 gallon
9	1½ gallons
10	2¼ gallons
12	3½ gallons
14	6 gallons

Wood preservatives that you can buy and apply are copper or zinc naphthenate. They are nontoxic to plants and are available under trade names such as Cuprinol at lumber and hardware stores. Treat the inside and outside of wooden containers before painting. Do not use creosote or pentachlorophenol as these can damage or kill plants.

A garden box that will hold a few vegetable plants can be easily made. A manageable size is 18 in. x 24 in. x 8 in. Drainage holes must be drilled in the bottom or around the sides near the bottom of the box. A mesh screen can be cut to fit the bottom of the container to allow water, but not soil, to drain.

The depth of the container is important, and the requirement varies with the crop. Soil 6 to 8 inches deep is the minimum for most vegetables. Root crops, such as carrots, and the larger plants will do better in deeper soil. See table 2 for the amount of soil needed to fill various sized containers.

Growing Media

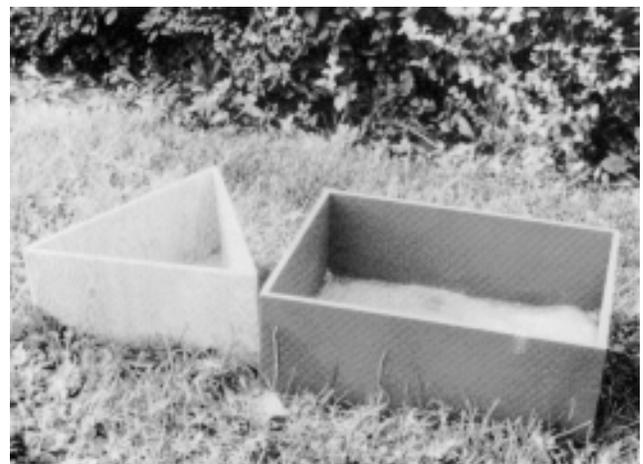
Container gardens require a growing medium that drains well, yet does not dry out too fast. Select a light-weight growing mix. Pots, hanging baskets, and planter boxes can be heavy to move or suspend and are much easier to handle if soil weight is kept to a minimum.

Soilless potting mixes are best for container vegetable gardening. They have several advantages over soil. Soilless mixes are free of plant disease organisms and weed seeds, are less likely to compact, hold moisture and plant nutrients well, and are lightweight—making the container more portable.

Soilless potting mixes can be purchased from garden centers and retail outlets or they can be prepared using horticultural grade vermiculite, peat moss, limestone, and 5-10-5 fertilizer (see table 3). Peat moss and vermiculite are extremely light materials. Water molecules do not readily stick to them when dry. Add water when mixing the materials. Store the moistened soilless mix in plastic garbage bags.

Table 3. Soilless potting mix recipe

Materials	To make 2 bushels
Shredded peat moss	1 bushel
Vermiculite	1 bushel
Ground limestone	1¼ cups
Superphosphate (0-20-0)	½ cup
or Superphosphate (0-45-0)	¼ cup
5-10-5 fertilizer	1 cup



Garden boxes that hold a few vegetable plants can be made easily.



Bush cucumbers, such as 'Salad Bush,' grow well in containers. (Photo courtesy of All-American selections.)

Crop Selection

Most vegetables that grow in a typical backyard garden will do well as container-grown plants. Vegetables best suited for containers include tomatoes, peppers, eggplant, green onions, beans, lettuce, summer squash, radishes, parsley, and herbs.

Select varieties that were developed for growing in small areas—those with compact, bush, or dwarf growth habits. See table 4 for suggested varieties for container gardens.

If the container garden is to be ornamental as well as food-producing, there are several vegetables that are both attractive and tasty. Lettuce, for example, makes an attractive border in a planter box. Annual flowers also can be planted among the vegetables. Dwarf marigolds are a colorful addition. Herbs also are attractive as well as useful. Many herbs can be brought indoors in the fall to provide a continuous supply of fresh herbs throughout the winter.

Table 4. Suggested vegetable varieties for container gardens

Beets	Ruby Queen
Carrots	Little Finger, Denver's Half Long, Nantes Half Long
Cucumber	Salad Bush, Bush Champion, Spacemaster
Eggplant	Dusky
Green Beans	Topcrop, Tendercrop, Derby
Lettuce	Green Ice, Salad Bowl, Red Sails, Black Seeded Simpson, Buttercrunch, Oakleaf
Parsley	Dark Moss Curled, Paramount
Pepper	Lady Bell, Gypsy, Crispy, New Ace, Bell Boy, Red Chili (hot)
Radishes	Champion, Comet, Sparkler, White Icicle, Early Scarlet Globe
Spinach	American Viking, Long Standing Bloomsdale, Melody
Summer squash	Pic-N-Pic (yellow crookneck)
Swiss chard	Fordhook Giant (white ribbed), Lucullus (green ribbed)
Tomatoes	
Standard	Jetstar, Celebrity, Super Bush
Patio	Patio
Cherry	Pixie

Summer Care of Container Gardens

When growing standard-sized tomato varieties, use a stake or cage to keep the vines upright. If staked, plants should be pruned to produce manageable one- to two-stem plants. To prune a tomato, remove the small shoots that form in the axils of the leaves and stems. If these shoots are not pinched out, they will grow and make the plants difficult to train. Tie the stems loosely to the stake.

Tomato cages should be made of fencing material of at least 4-inch mesh so the fruit can be harvested easily. Cages should be at least 24 inches in diameter.

Sunlight is important for producing quality vegetables. Nearly all vegetables grow and produce best when grown in full sunlight. Leafy vegetables (lettuce, cabbage, greens, spinach, and parsley) tolerate more shade than root crops (radishes, beets, and onions). Plants that bear fruit, such as cucumbers, tomatoes, peppers, and eggplant, require the most sun. It is best to place a garden in a location that receives at least 6 hours of sunlight per day.

One advantage of container gardening is mobility. A garden can be positioned where it will benefit from the best possible growing conditions. The garden may need to be rotated so that all plants receive ample sunlight.

Since the roots of container-grown plants do not have much soil from which to obtain nutrients, they require fertilization more frequently than field-grown vegetables. A soluble fertilizer (15-30-15 or 20-20-20) applied once every week or two is recommended. This can be applied while watering.

Plants grown in containers require frequent watering because they dry out quickly from sun and wind. Some plants may require daily watering. Apply enough water to reach the bottom of the container and allow the excess to drain through the drainage holes. Never allow the soil to dry out completely between watering. This may cause the plants to drop their fruits and flowers. On the other hand, do not overwater a container garden. Overwatering will slowly kill plants because the roots will not receive enough oxygen.

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While watering, avoid wetting the leaves. If a sprinkler can be used, do not water late in the day as the plant foliage will stay wet all night. Wet leaves encourage the development of plant diseases.

For more information

Ask your county extension office for these publications.

Pm-731 *Harvesting and Storing Vegetables* (50¢)

Pm-230 *Insect and Disease Management in the Vegetable Garden* (\$1)

Pm-534 *Planting and Harvesting Times for Garden Vegetables*

Pm-870A *Small Plot Vegetable Gardening*

Pm-814 *Where to Put Your Garden*

This publication and many others are available at [http:// www.extension.iastate.edu/Pages/pubs/](http://www.extension.iastate.edu/Pages/pubs/).

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