



Container vegetable gardening

Adequate sunshine, water, and fertilizer plus a well-drained growing medium are essential for successful container gardens.

Containers

Almost any type of container can be used if it provides good drainage through holes in the bottom or around the sides near the bottom. If adding holes, drill four or more $\frac{1}{4}$ -inch holes evenly spaced around the container bottom. To further help drainage, put about $\frac{1}{2}$ inch of coarse gravel, small stones, or pieces of a broken clay pot in the bottom. These items are not a substitute for drainage holes.

Most vegetables require containers that hold at least 6 to 8 inches of potting mix. Root crops, such as carrots, and tomatoes and other larger plants require deeper containers. See Table 1 for the amount of potting mix needed to fill various sized containers. See Table 2 for the approximate size containers recommended for various vegetables.



For longer life, wood containers should be constructed of the heartwood of naturally durable tree species, such as western red cedar and redwood, or from lumber that has been pressure-treated with arsenic-free wood preservatives. Examples include alkaline copper quat (ACQ) and copper azole (CBA-A and CA-B). For maximum durability and service life, the pressure-treated wood should be labeled "End Use-Ground Contact." A manageable size is 18 inches x 24 inches x 8 inches. Drainage holes must be drilled in the bottom or around the sides near the bottom. A mesh screen can be cut to fit the bottom of the container to allow water, but not soil, to drain.

Growing media

Container gardens require a growing medium that drains well, yet does not dry out too fast. Soilless potting mixes have several advantages over soil. They 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 the proportions in Table 3.

Crop selection

Most vegetables that grow in a backyard garden will do well as container-grown plants. Those with compact growth habits will do best. See Table 4 for suggested cultivars.

Summer care of container gardens

Location—Nearly all vegetables grow and produce best when grown in full sunlight. Plants that bear fruit, such as cucumbers, tomatoes, peppers, and eggplant, require the most sun. Leafy vegetables (lettuce, cabbage, greens, spinach, and parsley) tolerate more shade than root crops (radishes, beets, and onions). Containers should be placed where they will receive at least 6 hours of sunlight per day.

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 waterings; this may cause the plants to drop their fruits and flowers. However, over-watering also will slowly kill plants because the roots will not receive enough oxygen. When watering, avoid wetting the leaves, especially if watering late in the day. Wet leaves encourage the development of plant diseases.

Fertilization—Container-grown plants require fertilization more frequently than field-grown vegetables because they have less soil from which to obtain nutrients. A soluble fertilizer (15-30-15 or 20-20-20) applied once every week or two is recommended. This can be applied while watering.

Tomato tips—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- or 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.

For more information

Additional information about vegetable gardening and other horticultural topics is available from local extension offices and from these Web sites:

ISU Extension Distribution Center (online store)—

www.extension.iastate.edu/store

ISU Extension Horticulture—

www.yardandgarden.extension.iastate.edu

ISU Extension Publications—

www.extension.iastate.edu/pubs

Table 1. 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

Table 2. Container size for vegetables

Crop	Minimum size	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

Table 3. Soilless potting mix recipe

Materials	To make 2 bushels
Shredded sphagnum peat moss	1 bushel
Vermiculite	1 bushel
Ground limestone	1¼ cups
Superphosphate (0-20-0)	½ cup
or Superphosphate (0-45-0)	¼ cup
Granular 5-10-5 fertilizer	1 cup
Moisten with water; store in plastic garbage bags.	

Table 4. Suggested vegetable cultivars 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

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