



Vegetable Gardening in Containers

Large Type Version

*Diane Relf**

If you don't have space for a vegetable garden, consider raising fresh, nutritious, homegrown vegetables in containers. A windowsill, patio, balcony, or doorstep can provide sufficient space for a productive container garden. Problems with soil-borne diseases, nematodes, or poor soil can also be overcome by switching to container gardening.

Grow vegetables that take up little space, such as carrots, radishes, and lettuce, or crops that bear fruits over a period of time, such as tomatoes and peppers, for best use of space and containers. Dwarf or miniature varieties often mature and bear fruit earlier, but most do not produce as well overall as standard varieties. With increasing interest in container gardening, plant breeders and seed companies are working on vegetables specifically bred for container culture. These varieties are not necessarily miniature or dwarf and may produce as well as standard types if cared for properly.

The amount of sunlight your container garden receives determines what crops can be grown. Generally, root crops and leaf crops can tolerate partial shade, but vegetables grown for their fruits generally need at least five hours of full, direct sunlight each day and perform best with 8 to 10 hours. Available light can be increased somewhat by providing reflective materials around the plants (aluminum foil, white-painted surfaces, marble chips, etc.).

Container gardening lends itself to attractive landscaping. A dull patio area can be brightened by the addition of baskets of cascading tomatoes or a colorful herb mix. Planter boxes with trellises can be used to create

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a cool, shady place on an apartment balcony. Container gardening presents opportunities for many innovative ideas.

Containers

The many possible containers may be made of clay, wood, plastic, metal, or other materials. Containers for vegetable plants must (1) be big enough to support plants when they are fully grown, (2) hold soil without spilling, (3) have adequate drainage, and (4) never have held products that would be toxic to plants or people. Consider using barrels, flower pots, cut-off milk and bleach jugs, recycled styrofoam coolers, window boxes, plastic clothes baskets (lined with plastic with drainage holes punched in it), even pieces of drainage pipes or cinder blocks.

Some gardeners have built vertical planters out of wood lattice work lined with black plastic and filled with a lightweight soil mix; or out of welded wire shaped into cylinders lined with sphagnum moss. Depending on the size of your vertical planter, 2-inch diameter perforated plastic pipes may be needed inside to provide good water penetration.

Whatever type of container you use, be sure that there are holes in the bottom for drainage so plant roots do not stand in water. Most plants need containers at least 6 to 8 inches deep for adequate root development.

As long as the container meets the basic requirements described above, it can be used. The imaginative use of discarded items or construction of attractive patio planters is a very enjoyable aspect of container gardening. For ease of care, dollies or platforms with wheels or casters can be used to move the containers from place to place.

This is especially useful for apartment or balcony gardening so plants can be moved to get maximum use of the available sunlight and to avoid damage from particularly nasty weather.

Potting Soil (Media)

A lightweight potting mix is needed for container gardening. Soil straight from the garden cannot be used because it may contain too much clay. Clay soil consists of extremely small (microscopic) particles. In a container, the bad qualities of clay are exaggerated. It holds too much

moisture when wet, resulting in too little air for the roots, and it pulls away from the sides of the pot when dry. Container medium must be porous to drain well, but high enough in organic matter to hold water because roots require both air and water. Packaged potting soil available at local garden centers may make a good container medium, but be sure that it is not too high in organic material. It should be 30% or more perlite or coarse matter or average. Soilless mixes, such as peatlite mix, are generally too light weight for container vegetable gardening, not offering enough support to plant roots. If the container is also lightweight, a strong wind can blow plants over, resulting in major damage. Also, the soilless mixes are sterile and contain few nutrients, so when fertilizers are added, trace elements must be included. If you wish to use a sterile prepackaged mix, you may add garden soil for weight and better water holding capacity, but remember it will introduce insects, weeds and diseases. For a large container garden, the expense of prepackaged or soilless mixes may be quite high. Try mixing your own with one part peat moss, one part garden loam, and one part clean coarse builder's sand, adding a slow-release fertilizer (14-14-14) according to container size. Lime may also be needed to bring the pH to around 6.5. A soil test is helpful in determining nutrient and pH needs, just as in a larger garden.

Planting

Plant container crops at the same time as a regular garden. Fill a clean container to within 1/2 inch of the top with the slightly damp soil mixture. Peat moss in the mix will absorb water and mix in much more readily if moistened with warm water before putting the mix in the container. Sow the seeds according to the instructions on the seed package or set transplants. Put a label with the name, variety, and date of planting in each container. After planting, gently soak the soil with water, being careful not to wash out or displace seeds. Thin the seedlings to obtain proper spacing when the plants have two or three leaves. If cages, stakes, or other supports are needed, provide them when the plants are very small to avoid root damage later.

Watering

Pay particular attention to watering container plants. Because the volumes of soil are relatively small, containers can dry out very quickly,

especially on a concrete patio in full sun. Daily or even twice daily watering may be necessary. Apply water until it runs out the drainage holes. On an upstairs balcony make provisions for drainage of water, in order to avoid neighbor problems. Large trays filled with coarse marble chips work nicely. The soil should never be soggy or have water standing on top of it. When the weather is cool, container plants may be subject to root rots if maintained too wet. Clay pots and other porous containers allow additional evaporation from the sides of the pots, and watering must be done more often. Small pots also tend to dry out more quickly than larger ones. If the soil appears to be drying excessively fast (plants wilting every day is one sign), group the containers together so the foliage creates a canopy to help shade the soil and keep it cooler. On a hot patio, you might consider placing containers on pallets or other structures that will allow air movement beneath the pots and prevent direct contact with the cement. Check your containers at least once a day and twice on hot, dry, or windy days. Feel the soil to determine whether or not it is damp. Mulching and windbreaks can help reduce water requirements for containers. If you are away a lot, consider an automatic drip emitter irrigation system.

Fertilizing

If you use a soil mix with fertilizer added, your plants will have enough nutrients for 8 to 10 weeks. If plants are grown longer than this, add a water-soluble fertilizer at the recommended rate. Repeat every two to three weeks. An occasional dose of fish emulsion or compost will add trace elements to the soil. Do not add more than the recommended rate of any fertilizer since this may cause fertilizer burn and kill the plants. Container plants do not have the buffer of large volumes of soil and humus to protect them from overfertilizing or overliming.

General Care

The same insects and diseases that are common to any vegetable garden can attack vegetables grown in containers. Plants should be periodically inspected for the presence of foliage-feeding and fruit-feeding insects as well as the occurrence of diseases. Protect plants from very high heat caused by light reflection from pavement. Move them to a cool spot or shade them during the hottest part of the day. Plants

should be moved to a sheltered location during severe rain, hail, or windstorms and for protection from early fall frosts.

Indoor Container Gardening

If you want fresh, homegrown vegetables over the winter, or if you don't have an outdoor space in which you can place containers, it is worth trying some indoor container gardening. Of course you cannot have a full garden in the house, but a bright, sunny south-facing window can be the site for growing fresh food all year. Some small-fruited tomatoes and peppers, several types of lettuce, radishes, and many herbs are among the plants you can include in an indoor garden.

Follow the directions given above for preparing pots and for watering, fertilizing, etc. However, note that plants will dry out less quickly indoors and will also grow more slowly, needing less fertilizer. To make watering easier, it is wise to set the pots in large trays with an inch or two of decorative stones. Not only will this prevent having to move the plants in order to water them, it will also provide humidity, which is a major requirement, especially during winter when the house is warm and dry.

A sunny, south-facing window, is a must for indoor vegetable growing. Fruiting vegetables, such as tomatoes and peppers, will also need supplemental light, such as a combination warm-white/cool-white fluorescent fixture, during winter months. Insufficient light will result in tall, spindly plants and failure to flower and set fruit.

Herbs are a first choice for many indoor gardeners. Many are less demanding than vegetable plants, and cooks find it pleasant to be able to snip off a few sprigs of fresh parsley or chop some chives from the window sill herb garden. Chives grow like small onions, with leaves about 6 inches tall. These plants prefer cool conditions with good light, but will grow quite well on a windowsill in the kitchen. One or two pots of chives will provide leaves for seasoning salads and soups. Plant seeds or small bulbs in a 6-inch pot. The plants should be about 1 inch apart over the entire surface. It will require about 12 weeks from the time seeds are planted until the first leaves can be cut. Plants can be potted from the garden and brought in. For variety, try garlic or Chinese chives, which grow in a similar fashion, but have a mild garlic flavor.

Parsley seeds can be planted directly into 6-inch pots, or young healthy plants can be transplanted from the garden. One vigorous plant per pot is enough. Standard parsley develops attractive, green, curly leaves about 6 or 8 inches tall. Italian, or flat-leafed, parsley has a slightly stronger flavor and is a favorite for pasta dishes. Leaves can be clipped about 10 to 12 weeks after planting the seeds.

Cilantro, or the leaves of the young coriander plant, can be grown in your window sill garden. Cilantro is used in Oriental and Mexican dishes and must be used fresh. Grow cilantro as you would parsley. Thyme and other herbs will also grow well indoors if given the right conditions.

The small-fruited varieties of tomatoes, such as Tiny Tim, Small Fry, and the Roma (a paste tomato), may be raised quite satisfactorily in the home. They will challenge your gardening ability and supply fruits that can be eaten whole, cooked, or served with salad. Tiny Tim grows to a height of about 12 to 15 inches. Small Fry, which is about 3 feet tall, and Roma will need more space and should be located on an enclosed porch or in a sunroom. It may be worth experimenting with varieties developed for hanging baskets.

Some of the small-fruited peppers may be grown as indoor plants. Like tomatoes, they require warm bright conditions to grow well indoors. Fruit will be ready to harvest from peppers and tomatoes about ten weeks after planting.

Whiteflies and aphids may present a problem on indoor tomato and pepper plants. Keep a close watch for these pests so that they do not get a good start in your planting. Yellow sticky traps, either purchased or homemade, are effective in trapping whiteflies. Insecticidal soap or other pesticide approved for vegetable plants can be used to control aphids. Fortunately, problems with such outdoor pests as tomato hornworms, corn ear worm, and late blight will essentially be eliminated.

For a quick-growing crop, try radishes. These must be grown very rapidly if they are to be crisp and succulent. Scatter radish seeds on moist soil in a 6- or 8-inch pot. Cover with 1/4 inch of soil, and place a piece of glass or plastic wrap over the pot to conserve moisture until the seeds germinate. Carrots are slower, but can be grown in the same way; use the small-rooted varieties, such as Little Finger, for best results indoors.

Experiment with various types of lettuce. Leaf lettuce and the miniature Tom Thumb butterhead are some to try. Space them according to package directions. Keep lettuce moist and in a very sunny spot.

If light is limited, an old standby for fresh taste and high food value is sprouted seeds. Almost any seeds can be sprouted: corn, barley, alfalfa, lentil, soybean, rye, pea, radish, mung bean, sunflower, etc. Use only special seeds for sprouting available from health food or grocery stores to avoid the possibility of getting seeds treated with poison, such as antifungal agents. Use any wide-mouthed container, such as a Mason or mayo jar. Soak seeds overnight, drain, and place in the container. Cover with a double cheesecloth layer held with rubber bands or a sprouting lid. Set the container in a consistently warm spot, and rinse and drain seeds two or three times daily. In three to five days, sprouts will be 1 to 3 inches long and ready for harvesting.

Information for Growing Vegetables in Containers

Vegetable*	Minimum Container Size	Distance (" Between Plants in Containers	Days from Seed to Harvest	Comments
Beans, bush FS	2 gal.	2-3	45-60	Several plantings, two-week intervals
Beets FS/PS	1/2 gal.	2-3	50-60	Thin plants when 6 to 8 inches tall
Carrots FS/PS	1 qt.	2-3	65-80	Several plantings, two-week intervals
Cabbage FS/PS	5 gal.	12-18	65-120	Requires fertile soil
Chard, Swiss FS/PS	1/2 gal.	4-6	30-40	Harvest leaves for long yield
Cucumbers FS	5 gal.	14-18	70-80	Support vining types
Eggplant FS	5 gal.	1 plant per container	75-100	Requires fertile soil

Vegetable* Light Requirement**	Minimum Container Size	Between Plants in Containers	Distance (") Days from Seed to Harvest	Comments
Kale FS/PS	5 gal.	10-15	55-65	Harvest leaves
Lettuce, leaf PS	1/2 gal	4-6	30-35	Harvest leaves
Mustard greens PS	1/2 gal.	4-5	35-40	Several plantings, two-week intervals
Onions FS/PS	1/2 gal.	2-3	70-100	Requires lots of moisture
Peppers, FS	2 gal.	1 plant per container	110-120	Require hot weather
Radishes FS/PS	1 pint	1	25-35	Several plantings, weekly intervals
Squash, FS	5 gal.	1 plant per container	50-60	Plant only bush type
Tomatoes FS	5 gal.	1 plant per container	55-100	Stake and prune or cage
Tomatoes, cherry FS	1 gal.	1 plant per container	55-100	Helps to stake and prune
Turnips FS/PS	3 gal.	2-3	30-60	Harvest leaves and roots

* Consult seed catalogs for varieties adapted to container culture.

** FS=Full sun; FS/PS= Full sun, tolerates part shade; PS=Partial shade