

How to Grow Fruits, Vegetables, Herbs in Container Gardens



From backyards to apartment balconies, small-scale gardeners have plenty of room to grow fresh herbs, vegetables, and fruit at home. Basil to peppers and even apples can successfully grow in containers giving gardeners of all sizes access to fresh produce. The gardening industry has noticed the down-sizing trend and has responded by releasing new dwarf cultivars of fruits and vegetables that can thrive with limited root space and greenery that won't overtake a patio.

Container garden tips

When growing plants in containers, especially if you are used to growing in-ground, remember that maintenance schedules will vary.

Location: Position your plants according to how much light they need. Most vegetables and annual flowers need full sun, at least six hours, to grow properly. Other plants can be burned by too much direct light. Follow the seed packet or plant label guidelines on light requirements.

Watering: Plants in containers need to be watered more often as the media in containers will dry out much faster than soil in the ground. How much you water depends on which media you planted in and environmental conditions. A touch test is the best way to decide. Stick your finger in the soil. If the top 1 inch of your growing media feels dry, it needs to be watered. Irrigate plants thoroughly until water starts to trickle out of the drainage holes. In warm, dry weather, you may need to water your containers more than once a day.

Overwintering: Plants grown above ground don't get the same geothermal heat during the winter as in-ground plants do. This may be an issue for plants with shallow, spread-out roots. Having roots in contact with a container also creates potential for cold injury. When placing your containers for winter, be sure to think about how to avoid the predominant direction of the wind as well as where snow, which is an insulator, tends to accumulate. To prevent cracking, dry clay and terra cotta pots and protect them or bring them indoors for winter.

Container selection, sizes, and soil

Container selection

When it comes to deciding where to grow, gardeners are only limited by their imagination, willingness to experiment, and availability of drainage holes in a container. Pots, raised beds, grow bags, and milk crates are suitable options. Make sure there are enough drainage holes to remove excess water.

Be cautious when selecting recycled or reused containers you will be growing food in. If you are re-purposing an item, clean it with soapy water and disinfect it with a 10% bleach solution. If you're planting flowers or other decorative plants, be creative. Bicycle baskets, buckets, and rain gutters can all make great displays.

Containers made of porous materials like terra cotta and fabric will dry out much faster than non-porous materials like plastic or glazed ceramic. Dark-colored containers and those made of metal will absorb more heat which will heat the soil and can damage plants. Plastic, resin, and fiberglass containers are lighter than many other types of pots, which can make them prone to tipping over with large, top-heavy plants.



Photo by Ken Johnson. One benefit of growing in containers such as these cloth grow bags is the media can easily be amended to suit the plant's growing requirements such as pH levels or nutrient needs.

Container size

Every plant has unique size needs. For example, tomatoes need a container that is at least 20 inches in diameter at the top, while leafy greens only need a 10-inch diameter container. The diameter of the top of the container is the “minimal container size.” Container heights are usually categorized as “standard” or “azalea.” Azalea pots are shorter and ideal for plants with minimal roots such as herbs. When in doubt, standard pots are recommended for growing vegetables and are readily available at garden centers.

Plant	Minimal Container Size
Tomatoes, fruits	At least 20 inches
Peppers	At least 16 inches
Carrots	At least 12 inches
Radish, onion, beets, leafy greens, herbs, flowers	At least 10 inches

Soil selection and fertilization

When choosing a growing media for your container, select something that is well aerated, drains well, but can hold enough water for the plant to grow. The most common and best growing media for containers are soil-less media. They do not actually contain any soil and are made up of materials such as peat, vermiculite, bark, coconut fiber, and perlite. These can be purchased commercially as all-purpose potting mixes or you can make your own.

Do not use garden soil by itself for container gardening because it won't provide the proper drainage and aeration and may contain weed seeds or pathogens. If you do want to use garden soil, mix one part garden soil, one part peat moss, and one part perlite or coarse builder's sand.

Another benefit of using a container is that it is easier to modify it to suit the plant's growing requirements. For example, most berries prefer a pH of 5.5 to 7.5. Blueberries are the exception to this rule, and they are productive in a more acidic soil with a pH of 4.8 to 5.2.

Soil-less media are usually low in nutrients. Because of this, plants growing in them may need to be fertilized at some point. You can use either slow-release or liquid fertilizers. Follow the directions on the product label when applying fertilizers to avoid damage to your plants.

Container Size	Soil Volume Needed
10 inches	3 gallons
12 inches	5 gallons
14 inches	7 gallons
16 inches	10 gallons
18 inches	15 gallons
24 inches	25 gallons
30 inches	30 gallons



Vegetables in buckets: Photo by Kelly Allsup. All herbs are well suited to be grown in containers. Herbs need containers with a diameter that is at least 10 inches so they work well in these buckets which have had holes drilled into the bottoms

Container friendly vegetables

Containers do well with spinach, Swiss chard, beets, kohlrabi, kale, eggplant, peppers, carrots, potatoes, tomatoes, radishes, and herbs such as cilantro and basil.

Some vegetables, such as tomatoes and squash for example, are not typically well suited for containers but the gardening industry has created varieties that can grow in smaller soil volumes. Many of these container suitable vegetables will need to be ordered as seeds from garden catalogs, but some may be available as transplants in local garden centers. Look for plant tags that note container friendly or a dwarf or bush variety.

- Micro Tom tomato
- Dwarf Yellow Crookneck squash
- Carrots: Romeo and Short Stuff
- Baby Ball beets

- Mexican Miniature watermelon
- Striped Guadeloupe Fairy Tale baby eggplant
- Tom Thumb peas
- Mini White cucumbers
- Kitchen Minis bell peppers and tomatoes
- Huckleberry potatoes

Container friendly fruits

Apples

In Europe, columnar fruit trees, also known as Ballerina fruit trees, have been grown since the 1950s. They are bred with a natural mutation inherited from the 'McIntosh Wicik' apple. A popular apple series in the United States, Urban Apples, was developed in the Czech Republic. Hardy to Zone 4, Urban Apples have an upright, narrow growth habit. Another available upright, columnar series of apple is the Spire® Series.

Mature columnar trees range from 7 to 10 feet tall with a width of 2 to 3 feet depending on the cultivar. Available varieties depend on the series. Select the cultivar based on disease and insect resistance, taste, use, and storage. Columnar apple trees have one central leader loaded with small branches and fruiting spurs. This tight growth habit makes them perfect choices to be planted in containers for gardeners with limited space. But this same characteristic means they may not be ideal for a commercial operation. As with in-ground apple trees, container-grown trees require cross-pollination between two varieties for total fruit set.

Berries and brambles

Bushel and Berry and Brazel Berries are two series of berries bred for containers to give “patio perfect” fruit. Containers have been an ally to anyone who wants to grow berries with a reduced risk of them spreading around the yard. They grow shorter but may have cold hardiness issues.

Blueberries are a popular fruit crop for home gardeners and container gardening allows them to do it economically since only a smaller volume of planting medium will need to be acidified. Planting mixes can be acidified using peat moss, pine needles, or elemental sulfur. One popular blueberry is Jelly Bean, with a super-dwarf height of 1 to 2 feet and ball-like growth habit. Peach Sorbet is known for its colorful foliage. Varieties will ripen at different times offering the ability to extend harvest with both.

Brambles can be one of the most costly berries to purchase due to their highly perishable nature. Container brambles make the fruit more cost effective, plus they are a beautiful accent on a patio. Raspberry Shortcake is a compact raspberry that is thornless, hardy to Zone 5, and great for containers due to its 24- to 36-inch habit. Baby Cakes is a fall-bearing, primocane blackberry that fall ripens and is hardy to zone 4.

Planting

Before planting, wet your growing media and then add it to the container. Leave about 1 inch of space between the container rim and the soil to help prevent water from overflowing. If growing from seed, follow seed package instructions for depth. It is usually a good idea to overseed and then thin the seedlings since not all seeds may germinate. If growing from transplants, select plants that look healthy. Thoroughly water the container after planting.

Authors

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Additional Resources

- When to plant in Illinois, go.illinois.edu/WhenToPlant
- Growing herbs, go.illinois.edu/herbs
- Get in touch with horticulture educators in your area by connecting with your local Extension office at go.illinois.edu/ExtensionOffice

References

Small-space containers big with new gardeners, go.illinois.edu/SmallSpaceContainers, Illinois Extension Horticulture Educator Kelly Allsup

Save money and space with container-grown fruits, go.illinois.edu/ContainerFruits, Illinois Extension Horticulture Educator Bruce Black

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