

CONTAINER GARDENING

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As the number of people living in apartments and condominiums increases and as available space for traditional “in-ground” gardening decreases or disappears, container gardening becomes an attractive gardening alternative for many people.

ADVANTAGES OF CONTAINER GARDENING

Container gardening—growing plants in above-ground pots, baskets, boxes or barrels—allows you to grow plants in places where in-ground gardening isn’t practical or possible, such as patios, terraces, balconies, decks, porches, and rooftops. And because container gardens are mobile, you can move them from one place to another to take advantage of changing weather. This is especially handy when frost is forecast as you can simply move the containers to a frost-free location.

Container gardens also let you control the soil composition. By combining the right ingredients, you can produce a soil mix that has adequate fertility, holds water well, and still has sufficient drainage.

Lastly, container gardens can be attractive additions to the outdoor environment, whether you grow annual vegetables, flowers, or both. Landscape trees and shrubs, fruit trees, and herbaceous perennial flowers also can be grown in containers but require special care over winter.

This publication discusses growing annual vegetables and flowers in containers, although some of the information applies to other plants as well.



CONTAINER GARDENING PROBLEMS

While container gardening is versatile—allowing you to grow plants almost anywhere outdoors, move the containers at will, and control the soil mix—it also has some distinct disadvantages.

First, plants grown in containers almost always require more water than plants grown in the ground. In fact, you may have to water container-grown plants up to three times a day during hot, dry, windy weather. Such frequent watering leaches nutrients out of the soil, so you have to closely monitor fertility levels.

Container gardening also is usually more expensive than in-ground gardening. You typically have to buy the containers and soil mix components, although this isn’t always necessary. Also, frequent watering and fertilizing can add to the expense.

Some containers, especially the larger ones containing at least 5 gallons of soil, can be quite heavy, particularly when wet. This makes the containers difficult to move and may cause problems if you have several containers on a balcony, roof, or deck.

Another problem with container gardening is that you cannot grow certain crops in containers because of their growth requirements. These include sweet corn and most large-fruited vining crops such as winter squash, zucchini, and pumpkin. Finally, you must find a “baby sitter” for your container garden if you go on vacation. Someone *must* water the plants daily.

CARING FOR CONTAINER GARDENS

Container gardens need special care, including carefully selecting containers, preparing the soil mix (growing medium), watering, fertilizing, spacing plants and, in some cases, selecting plants and cultivars.

Selecting Containers

There are many kinds of containers for growing plants such as plastic and terra cotta clay pots, plastic pails and tubs, wooden barrels and boxes, bushel baskets, and trash containers. In addition, you can build various sizes and shapes of wooden containers. Plastic bags filled with growing medium also can be used, or you can buy these bags at some garden centers.

The best containers have drainage holes in the bottom and are large enough to support the plant or plants growing in them. Containers should be clean, and if they don't already have drainage holes in the bottom, cut, punch, or drill holes. Without drainage holes, proper watering is difficult.

Unglazed terra cotta clay pots dry out quickly during hot, dry weather. Thus, double-pot when using this type of container—place a slightly smaller plastic pot within the terra cotta pot. You can fill the space between the pots with sand, small stones or sphagnum moss to further help retain moisture. Polyethylene (plastic) or organic mulch placed on top of the soil also reduces moisture loss.

Like terra cotta containers, bushel baskets dry out quickly and should be lined with perforated polyethylene before filling with soil.

Container size will vary with the size of the plant or plants being grown. Generally, containers that hold at least 2 gallons of soil work best, although you can use smaller containers. However, small containers dry out quickly and tend to blow over easily in windy weather, especially when tall plants are grown in them.

Usually, smaller plants like snap beans, leaf lettuce and most annual flowers grow successfully in 2-gallon containers. Larger plants—such as tomatoes, peppers, broccoli, cabbage, and bush-type cucumbers and summer squash—grow best

in containers holding at least 5 gallons of soil. If you don't know what container size to use, use the larger of the two sizes.

Once you have the containers, elevate them slightly to help the drainage holes work properly. Two parallel 2-ft by 4-ft boards, placed 6 to 12 inches apart, work well as a platform for elevating containers. Bricks and paving stones or other materials also can be used to elevate containers.

Preparing the Soil Mix

The soil mix or “growing medium” used in container gardening is as important as the container itself. While soil mixes may vary, all good mixes have several common characteristics—they provide essential plant nutrients, they hold adequate moisture, and they allow excess moisture to drain.

There are two basic kinds of growing media—those that contain soil and those that don't. The ones that don't are called soilless mixes.

Typically, **soilless mixes** are composed of peat moss mixed with perlite and/or vermiculite, and so are quite light. On the other hand, **soil-containing mixes** are usually much heavier, especially if clay soil is used. Because of their weight differences, you may want to use soilless mixes if you are going to move large containers regularly or will have many containers on a balcony or similar structure where excess weight can be a problem.

Pre-mixed soilless mixes are available at garden stores, but you can make them at home by combining equal parts peat moss and vermiculite or perlite.

A good recipe for soil-containing mixes is to mix 2 parts pasteurized potting soil, 1 part peat moss and 1 part drainage material—such as perlite or vermiculite. You can add well-rotted animal manure, compost, or rotted wood chips instead of the peat moss or in addition to it. Be aware that manure may contain many weed seeds.

A disadvantage of soil-containing mixes is that they may contain insects such as root maggots and soil-borne microorganisms that can cause diseases such as verticillium wilt. When in doubt, use pasteurized bagged soil that is free of harmful organisms and weed seeds.

Watering

Soilless mixes dry out quickly and are difficult to re-wet once they've become very dry (because of the large amount of peat moss they contain). Containers with soilless mix may require twice as much water as those filled with media containing soil. If the soilless mix becomes very dry, add a wetting agent, such as a few drops of liquid dish soap, to the watering can before watering. *Do not* use soilless mixes in clay pots since the mix will dry out quickly.

Proper watering is crucial to successful container gardening. You should check plants daily for water (more often during hot, dry weather), and water as often as needed. When the growing medium feels dry an inch or so below the surface, *water thoroughly*, until water comes out the drainage holes at the bottom. Frequent light watering promotes shallow root systems and concentrates salts near the soil surface where they can injure roots, stems, and leaves.

Also avoid wetting the foliage. Wet foliage is more susceptible to sun scald as well as disease.

Fertilizing

Fertilization is different for soil-containing and soilless mixes. Generally, soil-containing mixes require fertilization less often because soil particles contain plant nutrients as well as nutrient-releasing microorganisms; by contrast, soilless mixes have little or no nutritive value. This does not mean that soil-containing mixes never need fertilizer. Regular, timely fertilization is important for both kinds of media, although you'll need to fertilize more often with soilless mixes.

There are no hard-and-fast rules for fertilizing container gardens. Much depends on the plant types being grown, how they look, how well they are growing, and the fertilizer used.

All growing media should have fertilizer mixed in before planting. This provides a readily available source of nutrients to the plants right from the start. A good rule-of-thumb is to add 1 cup of 10-10-10, or a similar analysis fertilizer, to each bushel of soil mix.

While some people add a cup or so of limestone per bushel of soil mix and about 1/2 cup bone meal or superphosphate, limestone is only needed in regions of the state with a soil or water pH of 6 or lower. This does not generally include southern and eastern Wisconsin. Commercially available soilless mixes may have fertilizer and limestone already added.

In general, fertilize every 2 weeks. Match the fertilizer with the kind of plants being grown. For example, plants grown for their leaves—such as leaf lettuce and cabbage—grow best when fertilized with higher nitrogen fertilizers. Plants grown for their flowers or fruits—such as tomatoes, peppers, cucumbers, and most annual flowers—do best with lower nitrogen fertilizers. In addition, many garden supply stores carry specialty flower or tomato fertilizers.

Instead of fertilizing numerous times throughout the growing season, you can incorporate a slow-release fertilizer with your soil mix at planting time. Slow-release fertilizers come in various formulations just like other fertilizer types.

Some slow-release fertilizers are pelleted and covered with a plastic-type shell that releases small amounts of nutrients continually. Proper watering is essential for slow-release fertilizers to work effectively.

If you prefer using organic fertilizers like bone meal, remember that nutrients from organic fertilizers typically are released more slowly and are less concentrated per unit weight than commercial fertilizers. For these reasons, you may have trouble relying completely on organic fertilizers when container gardening, so two or three timely supplemental applications of a commercial fertilizer during the growing season should help.

Spacing Plants

Use the spacing guidelines indicated on seed packets. Planting slightly closer than recommended is fine if you follow a strict watering and fertilizing schedule while monitoring for disease.

Don't plant vegetables and flowers extremely close together in containers. Planting too close results in increased competition for light,

especially between taller plants like tomatoes. Close planting also can increase the likelihood of disease because it reduces air circulation around plants.

Selecting Plants and Cultivars

Although you can grow most annual vegetables and flowers in containers, there are some exceptions. Sweet corn needs numerous plants to ensure adequate pollination, and this requires too much space for practical container growing. Most of the vining crops are also impractical because of size constraints, including summer and winter squash, pumpkins, and most melons. Pole beans and some small-fruited cucumber and melon cultivars can be raised in containers and trained to grow up a trellis or fence.

Choosing the right cultivar for container gardening is important. Even though vining crops may be impractical for growing in containers, the new bush-type squash, cucumbers, and melons are ideal for small-space and container growing. These cultivars grow as a compact bush, rather than a sprawling vine.

While all tomatoes may be grown in containers, determinate cultivars work best since they grow to a predetermined height. Indeterminate tomato cultivars often grow too tall for container gardening.

The accompanying table lists vegetables, crops and herbs you can grow in containers, the size of containers needed, and the plants' light requirements. For more information on vegetable gardening, check the following publications:

- *Disease-Resistant Vegetables for the Home Garden* (A3110)
- *Growing Vegetables at Home—Questions and Answers* (A2801)
- *Harvesting Vegetables from the Home Garden* (A2727)
- *Home-Grown Tomatoes for Wisconsin* (A1691)
- *Managing Insects in the Home Vegetable Garden* (A2088)
- *Mulches for Home Gardens and Planting* (A3383)
- *Specialized Gardening Techniques* (A3384)
- *Vegetable Cultivars and Planting Guide for Wisconsin Gardens* (A1653)
- *The Vegetable Garden* (A1989)

Container size and light requirements for individual crops

CROP	HANGING BASKET	TUB OR 2- to 5-GAL CONTAINER	LARGE CONTAINER (8"-12" pot)	SMALL CONTAINER (4"-6" pot)	FULL SUN	PARTIAL SHADE	FULL SHADE
VEGETABLES <i>Most vegetables grow best in full sun; a few can tolerate light shade, but yields will decrease.</i>							
Bean		◆	◆		◆		
Beet			◆		◆		
Broccoli		◆			◆		
Brussels sprouts		◆			◆		
Cabbage		◆			◆		
Carrot			◆		◆		
Cauliflower		◆			◆		
Cucumber	◆	◆			◆		
Eggplant		◆	◆		◆		
Lettuce (leaf)			◆	◆	◆	◆	
Onion			◆		◆		
Onion (sets)			◆	◆	◆		

Container size and light requirements for individual crops (*continued*)

CROP	HANGING BASKET	TUB OR 2- to 5-GAL CONTAINER	LARGE CONTAINER (8"-12" pot)	SMALL CONTAINER (4"-6" pot)	FULL SUN	PARTIAL SHADE	FULL SHADE
Pea	◆		◆	◆	◆		
Pepper		◆	◆		◆		
Radish			◆	◆	◆	◆	
Spinach			◆	◆	◆	◆	
Squash		◆			◆		
Tomato		◆			◆		
Tomato (cherry)	◆	◆	◆		◆		
FLOWERS <i>Most flowers grow best in areas receiving at least 6 hours of full sun a day.</i>							
Ageratum			◆	◆	◆	◆	
Alyssum	◆			◆	◆	◆	
Begonia (tuberous)	◆			◆		◆	◆
Begonia (wax)	◆			◆	◆	◆	◆
Browallia	◆			◆	◆	◆	
Caladium			◆	◆		◆	◆
Calendula			◆		◆	◆	
Celosia		◆	◆		◆		
Coleus	◆			◆	◆	◆	◆
Dahlberg daisy	◆		◆	◆	◆		
Fuchsia	◆		◆				◆
Gazania			◆	◆	◆		
Geranium	◆	◆	◆		◆	◆	
Impatiens	◆		◆			◆	◆
Lobelia				◆	◆	◆	
Marigold			◆	◆	◆	◆	
Morning glory	◆		◆		◆	◆	
Nasturtium	◆		◆		◆	◆	
Nemesia	◆		◆	◆	◆	◆	
Nicotiana			◆		◆	◆	
Pansy	◆			◆	◆	◆	◆
Petunia	◆		◆	◆	◆	◆	
Portulaca	◆			◆	◆	◆	
Salvia			◆		◆	◆	
Thunbergia	◆				◆		
Vinca	◆			◆	◆	◆	◆
Zinnia		◆	◆		◆	◆	

Container size and light requirements for individual crops (*continued*)

CROP	HANGING BASKET	TUB OR 2- to 5-GAL CONTAINER	LARGE CONTAINER (8"-12" pot)	SMALL CONTAINER (4"-6" pot)	FULL SUN	PARTIAL SHADE	FULL SHADE
H E R B S							
Basil			◆		◆	◆	
Chives				◆	◆	◆	
Lavender			◆		◆	◆	
Mint		◆	◆		◆	◆	◆
Parsley	◆			◆		◆	
Rosemary		◆	◆		◆		
Sage			◆	◆	◆	◆	
Summer savory			◆		◆		
Thyme	◆			◆	◆	◆	



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