



GROWING VEGETABLES, HERBS, AND ANNUAL FLOWERS IN CONTAINERS

Would you like to have a garden but don't have space in your yard for one? Consider container gardening! Even if you do have space for a larger garden, there are places where containers of flowers or vegetables can add a decorative touch or fill a special need. Anything that can grow in a garden can also be grown in a container. Simply provide your plants with a few basic needs—a suitable container, a growing media, water, nutrients, and light, and watch them grow! The few simple steps outlined here will describe how.

Containers



Many different kinds of wood, clay, fiber, and plastic containers on the market are suitable for growing plants. However, you need not spend a lot of money on containers. Buckets, trash cans, crates, and milk cartons are some of the many items found around the home that can be used for a container garden. If you want to make your own container, redwood is the most weather-resistant wood. Other types of wood can be used, but they should be treated with a wood preservative which is relatively safe for plants and humans, such as copper naphthenate (*Cuprinol*).

Crates, wire baskets, and other open material should be lined with sheet plastic or sphagnum moss to keep growing medium in place.



All containers should have drainage holes near the bottom. Whatever you use, it must:

- Be big enough to support the plants when they are full grown
- Hold soil
- Provide adequate drainage

Drainage

Whatever kind of container you use, drainage is extremely important and may mean the success or failure of your mini-garden. Make sure your container has drainage holes on the bottom or sides. If located on the bottom, the container should be slightly elevated off the ground to allow excess water to drain. A better way to assure proper drainage is to make the drainage holes near the bottom of the container but located on the sides. Then the container can rest directly on the ground surface.

Size

Most beginner gardeners underestimate the size of container needed to support their fully-grown plants. The chart on the last page lists flowers, vegetables and herbs and the recommended minimum container size for their culture. For any given plant, the larger the container, the greater the number of plants that can be grown. Also, the variety of a given vegetable will influence the container size needed. Many dwarf varieties have been developed specifically for growing in containers. These varieties tend to have a more compact habit and thus require less room to grow. When in doubt, check the seed pack for spacing requirements.

Helping You Put Knowledge to Work

Soil

To grow in containers, it is desirable to use a lightweight, porous growing medium. It must remain loose, drain well and yet stay moist, and be able to hold nutrients for plant growth. An all-purpose commercial potting mix composed of peat moss, vermiculite and/or perlite is generally recommended. Garden soil should not be used in containers because it is usually too dense to provide adequate aeration and drainage.



Soilless mix

Fertilizing

Most all-purpose potting mixes are low in nutrients. Fertilizer must be added at some point. Compost or a soil high in organic matter can be incorporated into the potting mix right at the start. This should be done at no greater than a 3 to 1, potting mix to compost, ratio. Another option is to apply slow-release fertilizer pellets at planting. However, the recommended method of fertilizer application is to use a water-soluble fertilizer as the plants grow. Apply according to package directions. It is important to follow the recommended rate, since applying too much can cause fertilizer burn and death of your plants. If a little is good for your plants a lot is **NOT** better.

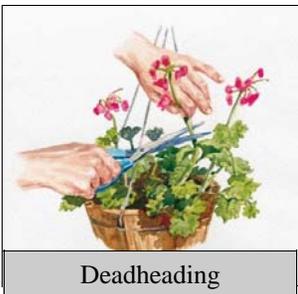
Watering

Proper watering is essential for container gardening success. Plants dry out much faster than when grown in the ground. Water plants thoroughly (until water runs out the bottom) whenever the planting material feels dry to the touch. This could be more than once a day in hot, dry weather. Try to shelter plants from strong, drying winds. Avoid allowing the soil to dry out excessively between waterings. If this is a problem, apply a wetting agent (1/4 to 1/2 teaspoon per gallon) once every 4 to 6 months or as directions specify. Excess watering can also be fatal, especially if your growing mix is not porous, so always feel the soil before watering. Morning is the best time for watering.

Light

Most vegetables and annual flowers need full sun for healthy growth. This means locating your containers in areas that receive at least six hours of light.

Planting and Grooming



Before planting, thoroughly water the soil mix in your container. If sowing seeds, plant at the depth indicated on the seed packet. It is generally a good idea to overseed and then thin seedlings to the appropriate spacing. Thinning is a job that is very hard for some to perform; nevertheless it is vitally important to prevent overcrowding. After the seed is planted, put containers in a warm place and keep soil moist. If transplanting, it is best to start with short, stocky plants that are not in bloom yet. Make sure to keep root ball intact and water thoroughly after planting. Few container plants need to be fussed over, but flowers can be persuaded to bloom longer and more profusely if blossoms are removed as they fade. This process, called deadheading, prevents flowers from going to seed. Vegetables can also be encouraged to produce abundant harvests if fruits are kept picked as they mature.

Insects and Diseases

Plants in containers are no more susceptible to insects or diseases than they would be growing in open soil. In fact, the use of soilless potting mixes can eliminate some pest and weed problems almost completely. Regular inspections of plants can help nip problems in the bud. Control insects by either handpicking or by spraying/dusting with a recommended insecticide. Select disease resistant plant varieties to help prevent disease. If disease does occur, either remove and discard infected plant or spray/dust with a recommended fungicide when problem is first noticed. Removing dead leaves and flowers is a good sanitation practice that helps discourage insects and disease organisms.

Common Problems in Container Gardening

<i>Problem</i>	<i>Cause</i>	<i>What to do</i>
Plants wilt although obtaining enough water	Insufficient drainage and aeration	Use lighter soil mix; increase number of drainage holes; use mix with higher percent of organic matter
Leaf edges die or “burn” turning dry and brittle	High salt content	At regular intervals, leach container by watering until water drains from drainage holes
Plants “leggy,” spindly and unproductive	Not enough light	Relocate plants to area receiving more light
	Too much nitrogen	Apply fertilizer less often and allow water to drain through drainage holes
Plants yellowing from bottom, lack vigor, poor color	Too much water	Water less frequently and check for good drainage
	Not fertile enough	Use fertilizer with higher level of nutrients
Plant leaves with spots or powdery, rusty or dead dried areas	Grown at temperature that is too low	Move container to a warmer area
	Low phosphate level	Use fertilizer with higher concentration of phosphate
	Plant diseases	Remove diseased portion of plant and use fungicide. If problem is severe, discard entire plant and replace soil
Leaves have small holes or are distorted in shape	Insect damage	Use insecticide suited to the insect causing the damage

<u>Plants</u>	<u>Hanging Basket</u>	<u>Small 4-6" pot</u>	<u>Medium 8-12" pot</u>	<u>Large >12" pot</u>
Vegetables				
Beans, bush			X	X
Beans, pole	X		X	X
Beets			X	
Broccoli				X
Cabbage				X
Carrots			X	X
Cauliflower				X
Corn				X
Cucumbers	X			X
Eggplant			X	X
Lettuce		X	X	X
Melons				X
Onions			X	X
Peas	X		X	X
Peppers			X	X
Radishes			X	X
Spinach		X	X	X
Squash				X
Swiss chard			X	X
Tomato			X	X
Tomato, cherry	X		X	X
Turnips			X	X
Herbs				
Basil		X	X	X
Chives		X	X	X
Dill			X	X
Lavender		X	X	X
Mint			X	X
Parsley	X		X	X
Rosemary			X	X
Sage			X	X
Savory, summer		X	X	X
Savory, winter			X	X
Thyme	X	X	X	X
Flowers				
Annuals less than 12" high	X	X	X	X
Annuals greater than 12" high			X	X
Annual vines	X	X	X	X
Perennials			X	X

This publication may pesticide recommendations. Changes in pesticide regulations occur constantly, some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. **READ THE LABEL BEFORE APPLYING ANY PESTICIDE.**

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