



## GARDENING IN CONTAINERS

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Container gardening allows plants to be grown on or above ground level and has become popular because of the flexibility it allows. At times it is impossible or undesirable to garden in the ground, but a person with a passion for plants can still grow many special favorites for food, beauty, or screen. Some situations/conditions that lend themselves to container gardening are:

- Too much shade (or sun) to grow desired plants.
- Garden soil contaminated by chemicals or disease organisms.
- City living: concrete and asphalt surroundings.
- Hi-rise apartments: balcony, window ledge, or rooftop.
- Too small yard space for much variety.
- Physical handicaps or disabilities that prevent gardening on the ground.
- Poorly drained garden soil.
- Plant-destroying animals or children.
- Need for a decorative feature on patio, deck, terrace, porch, etc.
- Need for mobility to "follow the sun" or for variety.

Many containers are available that can be used to adapt to a particular circumstance. They may be large, permanent architectural features or small, moveable temporary design elements. They may be concrete, wood, glass, ceramic, metal, or plastic, but they all must have good drainage. If a container has no holes for drainage, these are some options:

1. Use a drill, 10-penny nail, or soldering iron to make several holes.
2. Use the solid container as a decorative "shell," and insert a properly draining container inside it on a bed of gravel.
3. Put a deep layer of drainage material in the bottom of the container. Insert a pipe to allow oxygen to penetrate the drainage layer. (Not a terribly desirable option.)
4. Find another container.

### TYPES OF CONTAINERS

- **Flower pots: plain and decorative**  
Sizes: standard, azalea, bulb pan.  
Materials: terra-cotta, glazed or unglazed ceramic, plastic
- **Strawberry jars**
- **Barrels:** Old whiskey barrels are wonderful. The wood must be kept moist. If the soil in a barrel or an empty barrel dries out the wood (barrel stave) shrinks, and they fall apart.
- **Tubs:** includes bathtubs
- **Large Planters** (concrete, brick/mortar, or stone/mortar)
- **55-gallon drums:** *Be sure the drum did not hold any toxic substances before being used for planting.*
- **Plastic pipe**
- **Boxes:** hanging and stationary
- **Baskets:** hanging and stationary: plastic, wood, ceramic, wire.
- **Urns**
- **Tree stumps**
- **Concrete block**
- **Inverted tires**
- **Bags of potting soil or soil-less mix ("pillow gardening")**

### POTTING MIXES

The type of mix used depends on the size of the container and the plant(s) to be grown. Most mixes depend on a relatively large volume of organic matter (about 33% is good) to hold moisture and nutrients. All mixes made from scratch need the addition of 5 oz. per bushel each of lime and a 5-10-10 or equivalent fertilizer. Commercially prepared mixes are generally pH-corrected for most plants. Many now contain fertilizer. Do not use lime if the mix is for acid-loving plants. The addition of 2 cups of earthworm castings or 1/4 cup of kelp meal or granular seaweed will supply needed micronutrients.

There are water-absorbing polymer crystal products available that will absorb many times their weight in water. This water is held in the crystal gel, and then released slowly to the plant roots. These crystals are a useful addition to mixes when frequent watering is difficult or impractical. Follow the manufacturer's instructions for the amount to use per pot or container size. Do not exceed these rates or the polymer may bubble out over the side of the pot when they absorb the irrigation water.

#### **General Mixture:**

Lightweight commercial potting soil or soil-less mix -or-

Equal parts peat, vermiculite, and perlite -or-

One part potting or garden soil (use sterilized soil for indoor containers or when the garden soil might contain disease organisms or excessive numbers of weed seeds), one part sand, and two parts organic matter

#### **Mixture for evergreens trees and shrubs:**

Equal parts of soil, sand, and organic matter -or-

Equal parts coarse sand, peat, and ground bark -or-

3 parts loamy soil, 3 parts peat, 2 parts coarse sand, and 3 parts leaf compost

#### **Mix for hanging baskets:**

Equal parts of peat and vermiculite or perlite -or-

2 parts peat, 1 part vermiculite, and 1 part perlite

#### **Mix for window boxes:**

Equal parts soil, sand, and compost, peat or other organic matter -or-

2 parts soil-less mix and 1 part potting soil.

## **FERTILIZERS FOR CONTAINERS**

The three types of fertilizer most likely to be useful to container gardeners are water-soluble, slow-release, and organic. The numbers on the container (such as 10-6-4 or 5-10-10) indicate the percentage of available nitrogen (N), phosphorous (P), and potassium (K) in that fertilizer. Follow the manufacturer's recommendations on amount to use and timing of applications.

**Water-soluble fertilizers** Dissolve readily in water and are easy to use. Use about every 2 weeks for hanging baskets and barrels or weekly at reduced strength.

Miracle-Gro (15-30-15) and other analyses

Ra-Pid-Gro (13-26-13)

Hyponex (7-16-19)

Peters (various analyses for different types of plants)

**Slow-release fertilizers** Less frequent applications are needed. Mix with potting soil immediately before use, because exposure to moisture releases the nutrients.

Agriform (14-4-6) (tablets)

Mag-Amp (7-40-6)

Osmocote (14-14-14) lasts for 3-4 months (maybe)

Osmocote (18-6-12) lasts for 8-9 months (maybe)

**“Organic”** non-burning; nutrients come from organic and rock powder sources

Fish emulsion

Seaweed concentrate

Earthworm casting “tea”

Manure “tea” or manure “tea” (made by steeping a bushel of manure or compost in a barrel of water for a couple of weeks. Use the resulting brown liquid to fertilize plants.)

## PLANTING

The following steps are general for most container plantings:

1. Select the appropriate container, mix, and plants(s). Drill drain holes, if necessary. Place a screen over the holes so soil does not leak out. Fill container partially with mix.
2. Remove the plant from its pot. Loosen roots of pot-bound plants.
3. Set the plant in the container at the same depth it grew before. Allow at least a  $\frac{3}{4}$  inch drop from the edge of the pot to the top of the potting soil to allow room for watering without overflow.
4. Firm the soil around the roots lightly to eliminate air pockets.
5. Water thoroughly until water has saturated the mix and runs out the drain holes.
6. Use a decorative mulch (bark chips, Spanish moss, etc.) if desired.
7. Shade sensitive plants for at least one day while they recover from the transplanting. (Not necessary if transplanting is done in late afternoon or on an overcast day.)

## CARE OF CONTAINER PLANTS

After plants have been inserted in the container close enough to be attractive, but far enough apart to allow room for growth, the maintenance begins.

The soil mix in containers, especially wood boxes and tubs and in small containers, dries out rapidly. Pots in full sun and near reflective surfaces, such as white walls, also dry more quickly. **Watering**, sometimes as often as twice a day, is very important. In periods of overcast or rainy weather or if water-retention crystals have been mixed into the soil, this can be done less frequently. The “finger in the soil” method is probably the best for making sure the potting mix is constantly moist, but not soggy.

Constant watering and the small soil volume are also responsible for **fertilizer** nutrients leaching out or being used up quickly. The smaller the container, the faster this occurs. Every second or third week include a dilute dose of fertilizer with the watering to be sure there are always nutrients available. If slow-release products are used, follow the label for re-application.

Generally annual plants are grown that will flower well during the growing season, then set seed and die at the end of the year. Perennial plants that live for more than one year can also be grown, but need to be hardy two hardiness zones north to survive most New Jersey winters in above ground containers. For example, most of New Jersey is hardiness zone 6, so perennial and woody plants in above ground containers must be hardy to USDA zone 4.

Smaller pots, baskets, and other moveable containers can be placed indoors, in a greenhouse or in some other protected location to spend the winter. Large barrels, and other containers left outdoors can be left in place or clustered together, then surrounded with mulch or bales of straw to moderate the temperatures. Terra cotta pots will usually crack in winter because of the expansion of the water in the potting mix as it freezes, so these pots are usually stored away from sub-freezing temperatures or emptied for the winter.

## VEGETABLES AND HERBS IN CONTAINERS

Edible crops are popular for containers. The following rules apply:

1. Use dwarf or midget varieties, if available. Grow from seed or transplants.
2. Grow in a sunny location and water frequently to prevent drying out.

3. Use a container at least 8" deep.
4. Fertilize more frequently, but do not overfertilize, especially herbs.
5. Grow vining crops vertically (on trellis or stake) or support using bamboo poles laced with garden twine. Tomatoes, especially cherry tomatoes, can be grown as hanging vines.

Space needed for popular vegetables in containers:

Bush beans: 3-4 plants/sq. ft.  
Beets: thin to 12/sq. ft.  
Chard: thin to 4" apart  
Corn (midget): clusters 4-5" apart  
Eggplant: 1 sq. ft./plant  
Muskmelon: 1 sq ft./plant  
Peas: 15 seeds/ sq. ft.  
Pumpkins (midget): 2 sq. ft./plant  
Spinach: thin to 6 sq. in./plant  
Tomatoes, patio: 1 sq. ft./plant (varies)

Pole beans: 2 plants/12" pot  
Carrots: thin to 3/4" apart  
Cabbage (cole) crops: 10 sq. in./plant  
Cucumbers: 10 sq. in./plant  
Lettuce: 5" apart (leaf), 6-8" (head)  
Onion: scallions 1/2", mature 2-3"  
Peppers: 10-12 sq. in./plant  
Radishes: thin to 1" apart  
Squash (bush): 1 sq. ft./plant  
Turnip: thin to 2" apart

Strawberries do well in hanging baskets, strawberry jars, and strawberry pyramids.

Combinations of herbs are always useful. Rosemary, basil, flat-leaved Italian parsley, moss-curled parsley, chives, oregano, mints, garden sage, scented geraniums, lemon balm, lavender, and many others are excellent for container growing.