Growing Annuals in Containers

Gardening in containers is perfect for the person who wants to have a garden but has limited time or space. Container gardens can be moved from one spot to another or even from one home to another. They add interest and color to outdoor areas and make patios, porches, steps, and walkways more inviting.

**Container selection**

Select containers that fit the setting and accent the plant's beauty without dominating it. Containers should be sturdy and have drainage holes. Clay pots provide excellent drainage and allow water to pass through them. Because clay pots are porous, they tend to dry out more rapidly and require more frequent watering than plastic, glazed ceramic, and other nonporous containers. Large clay pots should be emptied and stored in a protected place during the winter to avoid cracking and chipping.

Half (whiskey) barrels are popular containers because they are large enough to accommodate several plants, but don’t dry out as quickly as clay pots. Before planting, check the bottom of the barrel for drainage holes. If it lacks drainage holes, bore four or five 3/4-inch diameter holes in the bottom.

When selecting plants, choose those that will grow best in the container's location. How many hours of direct or filtered sunlight does the site receive? Does the site require plants that can tolerate full sun and the reflected heat of a cement or brick patio, or are shade-tolerant plants needed because of persistent shade? Is it protected from wind or out in the open?

When combining a variety of plants in one container or grouping several pots in the same location, select plants that have similar growing requirements. Sun-loving and shade-loving plants are not compatible unless the sun-loving plants serve as an umbrella for the shade-loving plants.

Also consider flower color, foliage color, texture, and plant habit. Trailing or cascading plants are good for hanging baskets and the front of window boxes. Upright or mounded plants look better in pots set on the ground. Foliage plants, such as asparagus fern, spikes, dusty miller, coleus, polka-dot plant, and grasses provide textural and height changes to the planter.

Garden centers, nurseries, and catalogs offer a wide variety of containers to choose from—window boxes, wood planters, hanging baskets, and planters that can be hung on the railings of decks and patios. Almost anything that holds soil and drains well is a potential plant container.
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Growing media
A well-drained growing medium is necessary to successfully grow plants in containers. Garden soil alone is not a reliable growing medium for containers as it may not drain well. Poor soil drainage often leads to root and crown rot and the eventual death of plants. Garden soil, however, can be used to make a homemade potting mix. A homemade soil mix can be prepared by mixing equal parts garden soil, compost or sphagnum peat moss, and perlite.

For most home gardeners, commercial soil-less potting mixes are the best choice when planting containers. Commercial potting mixes are lightweight, drain well, and are free of weed seeds and disease pathogens. When purchasing a commercial potting mix, select a high quality product. The quality of some inexpensive potting mixes is rather poor as they are often black in color, heavy, and don’t drain well.

Before using a commercial potting mix, moisten the material with water. Dry potting mixes are difficult to moisten after planting.

Planting
Space plants closely in containers. In general, twice as many plants can be used in a container compared to planting in the same amount of garden space. For example, alyssum can be planted three inches apart in a container while it requires six-inch spacing in the garden. Unless the container is only visible from one side, it’s usually best to place the taller-growing plants in the center with the short-growing and trailing plants around the edges. Set plants at the depth they were growing in the cell pack or pot.

Watering
Water thoroughly immediately after planting. Watering frequency through the growing season depends on the size and type of container, composition of the potting mix, plant species, and weather conditions. Plants like New Guinea impatiens and fuschia, prefer consistently moist soils. Plants that prefer moist soils may need to be watered once or twice a day in the summer. Other plants, such as vinca, dusty miller, and petunia, tolerate dry conditions. A thorough watering once every three or four days may be adequate for drought tolerant plants.

Plants growing in containers should be checked daily (especially in summer) to determine if they need to be watered. Continue to apply water until water begins to flow out the drainage holes in the bottom of the container.

Do not allow the potting mix to dry out completely. Potting mixes shrink and pull away from the sides of the containers when completely dry. Dry potting mixes are difficult to moisten as water tends to flow between the potting mix and container and then out the bottom of the container (while the potting mix remains dry). Containers that have been allowed to dry out completely should be placed in a tub of water for 20-30 minutes to re-moisten the potting mix.

Another option is to water the container several times over a period of 2-3 hours to slowly moisten the entire soil ball.

Fertilization
Plants grown in containers need to be fertilized on a regular basis as they have less soil from which to absorb essential nutrients. Additionally, frequent watering leaches nutrients from the potting mix. Plants in containers can be fertilized by applying a granular fertilizer to the soil surface. Another option is to use a water soluble fertilizer and water every two to four weeks with a dilute fertilizer solution.
Many commercial potting mixes contain a slow release fertilizer. When using a potting mix containing a slow release fertilizer, it shouldn’t be necessary to fertilize for several weeks after planting.

**Maintenance**

Remove yellow or dead leaves and spent blooms regularly to promote continuous bloom and keep plants attractive. It may be necessary to pinch or prune petunias or other annuals in the middle of summer when plants become spindly with few blooms. Cut stems back to 4-6 inches from the soil, fertilize, and water well. Within a couple weeks the plants will branch out and bloom beautifully for the remainder of the season. Plant species that are susceptible to insects or diseases should be inspected frequently for pest damage.

**Recommended annuals for containers**

Both ornamental and edible plants can be grown in containers. This publication focuses on ornamental plants suitable for containers. For edible options, refer to Iowa State University Extension and Outreach publication *Container Vegetable Gardening* (PM 870B) (https://store.extension.iastate.edu/Product/4179).

### Flowering

- Ageratum *Ageratum houstonianum* (SP)
- Alyssum *Lobularia maritima* (SP)
- Begonia *Begonia semperflorens-cultorum* (PF)
- Black-eyed Susan Vine *Thunbergia alata* (S)
- Celosia *Celosia argentea* (S)
- Cosmos *Cosmos sulphureus* (S)
- Dahlberg Daisy *Thymophylla tenuiloba* (S)
- Fan Flower *Scaevola aemula* (S)
- French Marigold *Tagetes patula* (S)
- Gazania *Gazania rigens* (S)
- Geranium *Pelargonium × hortorum* (S)
- Globe Amaranth *Gomphrena globosa* (S)
- Impatiens *Impatiens walleriana* (PF)
- Lantana *Lantana camara* (S)
- Lobelia *Lobelia erinus* (P)
- Moss Rose *Portulaca grandiflora* (S)
- Nasturtium *Tropaeolum majus* (S)
- Nierembergia *Nierembergia hippocanatica* (SP)
- Pansy *Viola × wittrockiana* (SP)
- Petunia *Petunia × hybrida* (SP)
- Salvia *Salvia splendens* (S)
- Silver Bells *Browallia speciosa* (PF)
- Trailing Petunia *Calibrachoa hybrids* (S)
- Verbena *Verbena hybrids* (S)
- Vinca *Catharanthus roseus* (SP)
- Wishbone Flower *Torenia fournieri* (PF)
- Zinnia (dwarf species) *Zinnia elegans* and *Zinnia angustifolia* (S)

### Foliage

- Asparagus Fern *Asparagus densiflorus* ‘Sprengeri’ or *Asparagus setaceus* (SPF)
- Coleus *Plectranthus scutellarioides* (SPF)
- Dusty Miller *Senecio cineraria* (S)
- Foxtail Fern *Asparagus meyeri* (SPF)
- Licorice Plant *Helichrysum petiolare* (SP)
- Purple Fountain Grass *Pennisetum setaceum* ‘Rubrum’ (SP)
- Plectranthus *Plectranthus species* (SP)
- Polka-dot Plant *Hypoestes phyllostachya* (SP)
- Silver Falls Dichondra *Dichondra argentea* ‘Silver Falls’
- Spikes *Cordyline indivisa* (SPF)
- Vinca Vine *Vinca major* (SPF)

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