

Container Gardening

Container gardening can be a great option for anyone who has little or no yard space but would like to grow their own food. With container gardening, you can grow almost anything, almost anywhere. Use your imagination and make the most out of a little space!



Choosing A Container

Planter boxes, hanging baskets, and terra cotta pots are what first come to mind when one thinks of container gardening but don't stop there! You can grow delicious food in something far less glamorous and expensive. Bigger is going to be better when we're talking vegetables, but you can grow food in containers as small as a cake pan. Here are some things to consider when choosing a container:

- Whatever you use for a container will need drainage holes. Holes should be about 1/2 inch across.
- Avoid containers with narrow openings. Cheap plastic pots will deteriorate faster, but they will get the job done.
- Wooden containers are susceptible to rot but Redwood and Cedar are relatively rot resistant. Avoid wood treated with creosote, penta or other toxic compounds as the vapors can damage the plants.
- Use containers that are between 1 and 5 gallon capacity. Small pots restrict the root area and dry out very quickly. The size and number of plants to be grown will determine the size of the container used. Deep rooted vegetables require deep pots.
- Set containers on bricks or blocks to allow free drainage.
- In hot climates use light-colored containers to lessen heat absorption and discourage uneven root growth.
- Make sure your container is not see-through in any way, or the roots will burn.

What to grow

Almost anything is possible! There are a few things to consider when deciding what to plant in your containers:

- Choose the right size container for the plant. Think about the root system of the plant you are growing, and plant accordingly. If a vegetable needs a large space between plants in the garden, the same is true of a container. You may only get one plant in a container.
- When possible, go with the recommended varieties.

Some are even specifically bred for containers. In general, go for quick maturing plant varieties, and also dwarf/miniature varieties. For example, baby carrots, scallions instead of onions, small or cherry tomatoes, and bush varieties of squash.

- Maximize vertical space for climbing veggies and espalier fruit by placing a container next to something climbable (a railing, some string or rebar posts).
- You can plant quick growing small herbs, leaf lettuces, and radishes around larger fruiting veggies. The small stuff will be ready for harvest by the time the big plant takes over the pot. That's right, companion planting works in container gardens too!

What not to grow

These things aren't worth the trouble, due to their root size, growing season, inefficient use of space, etc:

- full-size fruit trees
- watermelon and cantaloupes
- pumpkins & winter squash
- corn
- cabbage
- Mammoth sunflowers
- Beefsteak-type tomatoes

If you have your heart set on one of those, choose a bush or dwarf variety if possible.

Growing Mixture

When plants are growing in the ground, their roots bring up nutrients from the subsoil. Plants are also surrounded by critters that digest coarse matter and make nutrients available. This can't happen in containers, so the growing medium needs to be nutrient rich. This may seem high maintenance, but remember – you're growing food above cement instead of in the ground.

It's not a good idea to use garden soil as a planting medium, as it can't maintain its health in pots and tends to compact too quickly. You can get potting mixes from

nurseries that work great. Some contain pasteurized soil, others are soilless. Both contain additives that keep the soil aerated, help to retain nutrients, and allow for rapid drainage while still retaining moisture. Potting soil is “sterile” and will not contain weed seeds or diseases. You can also make your own potting soil from equal parts sand or perlite, loamy garden soil, and peat moss or coconut pith. Depending on your circumstances, this may be cheaper for you.

If your container garden is going to be on a rooftop or balcony, you should consider the more lightweight soilless potting mix if you are concerned about the weight you’re adding to the container. You’ll have to fertilize more, however, as these soilless mixtures cannot retain nutrients as well as mixes containing soil.

Make sure the planting medium drains rapidly but retains enough moisture to keep the roots evenly moist. Line the base of the pot with newspaper to prevent soil loss (don’t put rocks in the bottom of the pot).

Watering

Container plants lose moisture quickly. They’ll need to be monitored, and likely watered every day in the heat of summer. Try to grow plants with similar water requirements together:

salads with spinach

carrots with beans

potatoes with squashes

tomatoes with marigolds

sage with rosemary and thyme

Also, think about how far away your containers are from the water source.

Fertilizing

Containers also lose nutrients quickly. Liquid fish emulsion or liquid seaweed are good fertilizers for container gardens. Follow the instructions on the container for the amount to use. Containers should be fertilized once a week after the plant is firmly established. This might seem like a lot, but it’s one of the things we do to make up for the fact that the plants are growing in places besides the actual ground.

At the End of the Season

Unfortunately, container garden soil should be replaced or revitalized every year. It might seem expensive, but it won’t be worth it to grow a garden if the plants can’t reach full fruition. Replacing the soil will give the plants every advantage to be prosperous. If you dump your soil and start fresh, it’s fine to add the depleted soil to the garden.

If getting new soil every year is just too much, you can re-use spent soil several times if need be. Tip out the spent soil onto a tarp or plastic sheet, then add about 15-25% (by volume) of rich compost or well-rotted manure; you could also add a few handfuls of straw to improve drainage, as well as mineral supplements and lime. Lift up the ends of the sheet and roll everything backwards and forwards, to mix it up and improve aeration. You can safely renew spent soil 3 or 4 times before starting again from scratch.

Always clean your containers thoroughly at the end of the growing season, or when re-potting. This helps prevent spreading plant diseases. Scrub them with eco-friendly dishwashing soap, let them dry, then wipe them out with a dilute (20:1) solution of hydrogen peroxide bleach.

Cheap & Free Containers

In the springtime, home growers and nurseries have an abundance of cheap plastic pots that shrubs and trees come in.

Search the Freecycle Listserv for free containers at www.freecycle.org.

Five gallon buckets are plentiful at restaurants and grocery stores; ask around. This is a good size for the larger veggies like tomatoes and broccoli.

Search the Craigslist “Free” section www.craigslist.org

Thrift stores can be a great place to find creative containers like bowls, kitchen supplies, plastic totes.

Repurpose plastic containers you might otherwise throw away like yogurt containers, milk jugs and tin cans.

Resources

Penn State Extension **Gardening Hotline** - a free service to help Pennsylvania residents with gardening questions and concerns. During the off season leave a message (in English or Spanish) and someone will get back to you. You may also contact them via email with photos and a description of your issue or questions.

Chester County: 610-696-3500 chesterMG@psu.edu

Montgomery County: 610-489-4315
montgomeryMG@psu.edu

Philadelphia County: 267-314-8711
philadelphiaMG@psu.edu

For additional counties visit:

<https://extension.psu.edu/programs/master-gardener/counties>



PennState Extension



Books:

The Bountiful Container by McGee and Stuckey. Great resource for edible container plants, extended info about each plant you can grow.

The Edible Container Garden by Michael Guerra. An excellent resource, all geared toward growing vegetables as opposed to decorative floral displays. Good resources in the back for what to plant, and what size containers to use.



The Apartment Farmer by Duane Newcomb. This one might be difficult to find. Includes good charts of how many plants will fit in a container and what plants give the most yield.

The Container Gardening Encyclopedia compiled by Sue Phillips. Mostly flowers. Some info about making garden boxes from scratch. A small fruits/veggies section.

The Container Garden Month by Month by Jackie Bennett. Mainly all flowers but they do have an appendix in the back about veggies, discusses different fruit tree training methods for containers.

On the web...this is just a start!

Good overview of the basics (choosing containers, fertilizer, etc.), as well as recommended varieties. This info sheet is partially adapted from this site:

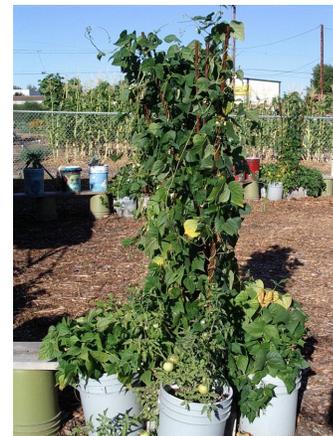
<http://www.gardenguides.com/container-gardens/>

A factsheet from the Ohio State University Extension service. Covers the basics as well as varieties:

<http://ohioline.osu.edu/hyg-fact/1000/1647.html>

Covers all the basics of container gardening. Check it out for a helpful troubleshooting chart highlighting common problems in container gardening:

www.gardening.cornell.edu/factsheets/misc/containers.pdf



Nutrient Content of Organic Fertilizers

From: Oregon State University Master Gardener's Handbook

	% Nitrogen (N)	% Phosphorus (P)	% Potassium (K)
Cottonseed meal	6-7	2	1
Blood meal	12-15	1	1
Bat Guano	10	3	1
Fish meal	10	4	0
Fish emulsion	3-5	1	1
Bone meal	1-4	12-24	0
Rock Phosphate	0	25-30	0
Greensand	0	0	3-7
Kelp meal	1	0.1	2-5

Vegetables & Varieties Ideal for Container Gardening

Cool season: April-May **Warm season:** May-June **Extended harvest:** Mid July-September

Flowering Plants (tomatoes, beans, zucchini, etc.) require a minimum of 6 hours of sunlight per day

Edible Leaves (lettuce, collards, kale, etc.) require a minimum of 4 hours of sunlight per day

Edible roots (turnips, carrots, beets, etc.) require a minimum of 3 hours of sunlight per day

VEGETABLE	TYPE OF CONTAINER	RECOMMENDED VARIETIES	WHEN TO PLANT	NOTES
Asian Greens	minimum container depth: 4-6"	Mizuna, Mustards, PakChoi (Green Fortune), Tatsoi	cool season	Fast growing, shallow rooted
Basil	minimum container depth: 8"	Genovese, Globe, Largeleaf Italian, Purple Ruffles, Red Rubin, Siam Queen, Spicy Globe, Sweet Basil	warm season	Grows well with tomatoes
Beans, Green	5 gal. window box, minimum container depth: 6"	Bush types such as Blue Lake, Bush Romano, Contender, Greencrop, Kentucky Wonder, Montepellier, Tender Crop, Topcrop, Tricolor come as both bush and pole bean	warm season	Climbing types work too, if you have a good trellis support
Beets	5 gal. window box, minimum container depth: 10"	Chiogga, Detroit Dark Red, Early Red Ball, Early Wonder, Golden, Little Egypt, Scarlet Supreme	cool season	Can grow in partial sun
Broccoli	1 plant/5 gal. pot, 3 plants/15 gal. tub	DeCicco, Green Comet, Italian Green Sprouting, Super Blend	cool season	Choose early maturing, compact varieties
Brussels Sprouts	1 plant/5 gal. pot, 2 plants/15 gal. tub	Evesham, Jade Cross	plant in early Spring, matures late Fall	
Cabbage	1 plant/5 gal. pot, 3 plants/15 gal. tub	Discovery, Dwarf Modern, Early Jersey Wakefield, Little Leaguer, Red Ace	plant in Spring to mature mid Summer	Take a second crop off a cabbage plant by harvesting the first head, then cutting a cross on the remaining stem which will then produce 4 smaller heads
Carrot	minimum container depth: 8"	Baby Finger, Baby Finger Nantes, Danvers Half Long, Goldenhart, Little Finger, Minicor, Ox Hart, Royal or Red Cored Chantenay, Short & Sweet, Thumbelina, Tiny Sweet	Extended harvest, succession plant all season long	Smaller, shorter varieties grow best but you can eat the ones you thin, too.
Chard	1 plant/2 gal. pot, minimum container depth: 8"	Bright Lights, Parma Giant, Scarlet Charlotte	cool season	
Collard Greens	1 plant/2 gal. pot, minimum container depth: 8"	Any variety	cool season	
Cucumber	1 plant/3-5 gal. pot	Burpee Hybrid, Burpless Farly Pik, Bush Champion, Bush Whopper, Crispy, Fanfare, Lemon, Marketmore 86, Parks Burpless Bush, Patio Pik, Pot Luck, Salad Bush, Salty, Spacemaster, Sweet Success	warm season	Look for bush variety as opposed to vining

Eggplant	1 plant/3 gal. pot	Asian Bride, Bambino, Black Beauty, Florida Market, Green Goddess, Ichiban, Long Tom, Mission Bell, Modern Midget, Slim Jim, Small Ruffled Red, Thai Green	warm season	
Garlic	8" deep container	Most varieties	plant in October to harvest in following July	
Green Onion	can be grown in a cake pan	Beltsville Bunching, Crystal Eax, Evergreen Bunching	Extended harvest, succession plant all season long	You'll have better luck growing these than full sized onions
Kale	1 plant/2 gal. pot, minimum container depth: 8"	Lacinato, Showbor dwarf	cool season	
Lettuce	minimum container depth: 4"	Bibb, Buttercrunch, Dark Green Boston, Grand Rapids, Little Gem, Oak Leaf (heat tolerant), Romaine, Ruby, Salad Bowl, Tom Thumb	succession plant all season long	If you eat it as baby lettuce, you can grow lettuce in a very shallow bowl, even a seed flat. Just cut the lettuce leaves and they will grow back. Can be grown in partial shade.
Parsley	minimum container depth: 8"	Evergreen, Gigante Italian, Moss Curled, Sweet Curly	Extended harvest, cool season	Can be grown in partial shade
Peas	minimum container depth: 6-12"	Super Sugar Snap, Oregon Giant (snowpea), Little Marvel, Sugar Bon, Sugar Mel, Laxton's Progress, Sugar Rae, Melting Sugar, Burpee's Blue Bantam, Early Patio, Snowbird	cool season	
Pepper	1 plant/2 gal. pot, 5 plants/15 gal. tub	Bell Boy, California Wonder, Canape, Jalapeno, Keystone Resistant, Long Red Cayenne, New Ace, Red Cherry, Sweet Banana, Thai Hot, Yolo Wonder	warm season	
Potatoes	pot should be at least 18" wide, start with 10" of soil in a 3 ft. deep container	Charlotte, Epicure, Irish Cobbler, Kennebec, Red Pontiac. Early (new) potato varieties are best.	Extended harvest, warm season	To sprout potatoes, stand them in a warm, dark place with the buds pointing upwards. Fill a pot half way with used soil, then place the sprouted potatoes sparsely in soil and cover with 1" of soil. Water well and wait for foliage to appear. Feel around for a tuber to see if
Radish	minimum container depth: 4-6"	Burpee White, Champion, Cherry Belle, Comet, Early Scarlet, French Breakfast, Icicle, Scarlet Globe, Sparkler	cool season	Consider interplanting these in pots among other slower growing vegetables (such as carrots or tomatoes); they'll be ready to harvest by the time the other plants need more space. Can be grown in partial shade.
Spinach	minimum container depth: 8"	America, Avon Hybrid, Dark Green Bloomsdale, Melody	Extended harvest, cool season	
Summer Squash	1 plant/5 gal. pot	Baby Crookneck, Creamy, Diplomat, Dixie, Early Prolific Straightneck, Gold Neck, Golden Nugget, Gold Rush, Scalopini, Senator, (Green) Zucco, most Zucchini varieties	warm season	Squash can really vary on how compact the plants are. Try for these varieties or anything that lists compact growing.
Tomatoes	1 plant/5 gal. pot Bushel Baskets	Better Boy VFN, Burpee's Pixie, Early Girl, Patio, Pixie, Red Robin, Saladette, Small Fry, Spring Giant, Sugar Lump, Sweet 100, Tiny Tim, Toy Boy, Tumbler Tom (for hanging baskets)	warm season	Lean toward cherry tomatoes and small tomatoes as opposed to Beefsteak tomatoes. Also, varieties that are determinate will be a bush variety which works better for containers. If you grow an indeterminate variety, make sure you have something for the vines to grow on.

Common crop chart

Crop W= Warm Season C= Cool Season	Planting Window for Chester County	Footprint	Planting method	Height	Days until harvest	Some shade ok?	Single or 2-week succession
Basil– W	May-July	12" x 12"	Transplant or row	Medium	60-90	Full sun only	Succession
Beans, snap (bush)- W	May-July	12" x 12"	Row	Medium	50-60	Some shade ok	Succession
Beans, snap (pole)- W	May-June	4" x 4" trellised	Row	Tall	60-70	Full sun only	Succession
Beets– C & W	April-Sept	4" x 4"	Transplant or row	Short	36-50	Some shade ok	Succession
Broccoli– C	April and Aug	18" x 18"	Transplant	Medium	55-90	Full sun only	Single
Cabbage– C	April and Aug	18" x 18"	Transplant	Medium	70-90	Full sun only	Single
Carrots– C	April-May and Aug	3" x 3"	Row	Short	56-70	Some shade ok	Succession
Cauliflower– C	April and Aug	18" x 18"	Transplant	Medium	50-90	Full sun only	Single
Chard– C	April and Aug	12" x 12"	Transplant or row	Medium	40-60	Some shade ok	Single
Cilantro– C & W	April-Sept	8" x 8"	Transplant or row	Short	30-60	Some shade ok	Succession
Collard greens– C	April and Aug	12" x 12"	Transplant	Medium	40-60	Some shade ok	Single
Corn (sweet)- W	May-Aug	12" x 12"	Row	Tall	70-110	Full sun only	Single
Cucumbers– W	May-June	12" x 12" trellised	Transplant or hill	Tall	50-75	Full sun only	Single
Eggplant– W	May-June	18" x 18"	Transplant	Medium	55-75	Full sun only	Single
Garlic– C	Oct-Nov	6" x 6"	Row	Medium	270-300	Full sun only	Single
Herbs (perennial)	Fall or spring	24" x 24" variable	Transplant or hill	Medium	Perennial	Some shade ok	Single
Kale– C	April and Aug	12" x 12"	Transplant	Medium	40-60	Some shade ok	Single
Leeks– C	April and Aug	6" x 6"	Transplant or row	Medium	110	Some shade ok	Single
Lettuce– C & W	April-Sept	8" x 8"	Row or banded	Short	40-65	Some shade ok	Succession
Onions– C	April-May	6" x 6"	Transplant	Short	100-120	Some shade ok	Single
Parsley– C & W	April-Sept	8" x 8"	Transplant or row	Short	40-75	Some shade ok	Succession
Parsnips– C	April-May	3" x 3"	Row	Short	110-120	Some shade ok	Single
Peas– C	April and July	6" x 6" trellised	Row	Medium	52	Some shade ok	Succession
Peppers– W	May-June	18" x 18"	Transplant or hill	Medium	65 Green, 85 Red	Full sun only	Single
Potatoes– C	April-May	12" x 12"	Hill	Medium	70-120	Some shade ok	Single
Radishes– C	April-May Aug-Sept	3" x 3"	Row or banded	Short	25-35	Some shade ok	Succession
Spinach– C	April & Sept	4" x 4"	Row or banded	Short	40-50	Some shade ok	Succession
Squash, summer– W	May-July	36" x 36"	Transplant or hill	Medium	50-70	Full sun only	Single
Squash, winter– W	May	6' x 6' vine	Transplant or hill	Medium	90-150	Full sun only	Single
Tomatoes– W	May	36" x 36"	Transplant	Tall	60-85	Full sun only	Single
Watermelon– W	June-July	12" x 12" trellised	Transplant or hill	Medium	75-85	Full sun only	Single

KEY	Planting method		Height		Sources: Edited for Southeastern PA using Johnny's Selected Seeds, and CCFB garden records
	Transplant	Transplant into garden as a seedling	Short	Under 12"	
	Row	Planted in long single rows (see seed packet instructions)	Medium	12"-35"	
	Banded	Seeds sown in wide rows	Tall	36" or taller	
Hill	A grouping of seeds planted close together in a small cluster				