

Why Container Gardening?

- Fun way to grow edible crops in just about any situation.
- Easy to get started.
- Cure "brown thumb."
- Availability of edible containers of herbs and salad greens near the kitchen.

Growing Advantages

- Perfect for everybody - kids, people with physical limitations, novice gardeners, a gardener wanting to downsize and save time
- No digging or tilling
- Weed free (mostly)
- Inexpensive to start up
- Overcome typical garden complaints:
 - too shady for tomatoes
 - poor quality soil
 - persistent soil-borne disease

Growing Advantages

- Temporary or permanent containers can be fitted in any location.
- Locate containers where they are most convenient.
- Better control over growing conditions water, sunlight and nutrients.

Growing Advantages

- Easier to protect plants from extreme weather conditions, insect pests and bigger critters
- Vertical growth saves space and allows space of exterior walls
- Start earlier in the spring and extend growing season into fall

Why Grow Organic?

- Improves the soil over time through the addition of organic material.
- Biological and genetic diversity to help with disease and insect problems.
- Reduces your exposure to chemical pesticides.
- Ideas: use recycled containers, make your own compost, plant flowers to attract beneficial pollinators.

What you will need...

- A little bit of room—patio, deck, steps, etc.
- Sunlight (at least 6 hours)
- Containers (that drain!)
- Growing medium
- Water
- Nutrients
- Attention and care

Location

- Containers can be placed on any level surface - decks, balconies, along driveways, side walks, hanging baskets and window boxes.
- 6-8 hrs sun for warm season crops
- Access to water - some containers will need water every day.
- The water that drains from containers can stain concrete and wood decking.
- A 20-inch container filled with moist growing medium can weigh 100 pounds!



Containers come in all shapes and sizes...



About Containers

- All containers should have holes or slats in the bottom to allow water to drain out.
- Dark colors will create higher soil temperatures that could injure young tender roots and prevent the full development of a plant's root system.
- Containers made from porous materials (clay, ceramic, concrete, and wood) will dry out more quickly than containers made from plastic, or metal.

Getting the "dirt"

- Select light and fluffy growing media for good aeration and root growth.
- Add last season's growing media to your garden, but not in your containers. It could be re-used for containers but nutrients will be depleted and particle size and pore spaces decreased.

Why not to use garden soil...

- It is very compact, which can hold water and nutrients very well, but can drown roots growing in a container.
- Diseases and weed seeds can be a problem.

Using Commercial "soil-less" Mixes

- Lightweight, drains well, holds water and nutrients, and are generally free of weeds, insects, and diseases.
- May include sphagnum peat moss, perlite, vermiculite, compost, coir, and small amounts of lime and fertilizer.
- Organic soil-less mixes contain no chemical wetting agents and substitute organic for chemical fertilizers.
- Examples of soil-less mixes are: ProMix™, ReddiEarth™, Jiffy Mix™, and Sunshine Mix™

Most people use synthetic soil.



Lightweight; holds water and air; ideal for plant growth.

About Compost

- Compost is the dark, crumbly, earthy-smelling product of organic matter decomposition.
- Leaves, grass clippings, wood waste, and farm animal manures are some of the common ingredients that are combined with water in piles or windrows and digested by huge populations of oxygen loving microorganisms.

About Compost


- Compost contains all the major and minor nutrients that plants need for good growth. This makes it an excellent substitute for sphagnum peat moss, which has very few nutrients (although it does hold water better than compost).
- Composting effectively recycles the nutrients from gardens, landscapes, and farms, thereby reducing nutrient pollution of waterways.

Creating the Right Mix

- Some good media mixtures for container vegetables are:
 - 100% compost
 - 100% soil-less mix
 - 25% garden soil + 75% compost
 - 25% soil-less mix + 25% garden soil + 50% compost
 - 25% garden soil + 75% soil-less mix
 - 50% soil-less mix + 50% compost


Water

- The limited volume of growing medium available to container vegetable plants makes it critical to keep the root system moist at all times.
- Watering needs will vary depending on container size, ambient temperature, wind, sunlight, and humidity.




Water

- Count on watering most container vegetable plants daily during the summer months. The growing media should always be moist, but not soggy.
- Use a watering can or nozzle on the end of a hose that produces a soft stream of water. Be careful not to use hot water! It can burn leaves and young roots.




Make sure those roots are happy!

- Eating quality and yield are greatly reduced by wilting from a lack of water.
- Drought stress will kill feeder roots and slow plants down.
- Small containers dry out more quickly than large containers.
- Use a saucer to catch excess water.




Make sure those roots are happy!

- Large, mature plants need more water than seedlings and young plants.
- Micro-irrigation with soaker hoses and drip emitters is efficient, convenient, and relatively inexpensive. Consider a combination of drip emitters plus timer for automatic watering.




Feed your plants

- Regardless of the growing medium used you will need to fertilize plants regularly.
- Nitrogen, required in large quantities by vegetables, is easily lost in the water that drains from the bottom of your containers.




Feed your plants...

- How much and how often to fertilize depends on many factors: type of fertilizer, plant needs, type of container, etc.
- Even “quick” crops like leaf lettuce or that mature in 35-45 days may need to be fertilized several times.
- Long-season crops like tomato, cucumber, eggplant, and pepper may need to be lightly fertilized every 2 weeks or so, to produce a continuous harvest.



Feed your plants

- Liquid sea kelp and fish fertilizer, and compost tea are excellent organic fertilizers that are mixed with water and poured around plants.
- Examples of dry organic fertilizers: Blood meal, composted chicken manure, nitrate of soda, cottonseed meal, alfalfa meal, worm castings.



What can I grow?


- Just about any vegetable or herb!
- Popular, easy container crops: salad greens, peppers, eggplant, tomatoes, beans, chard, beets, radish, squash and cucumbers.
- More challenging crops include melons, corn, potatoes, and sweet potatoes.
- Look for “bush” or “dwarf” varieties, esp. tomatoes, cucumbers, squash.
- The key is to experiment.



Planting & Care

Recommended media depth:


- 4-6 inches: salad greens, Asian greens, mustards, garlic, radish, basil, cilantro, thyme, mint, marjoram.
- 8-12 inches: beans, beets, chard, carrots, chard, cabbage, pepper, eggplant, tomato, squash, rosemary, parsley, lavender, fennel.



Planting & Care


Required pot volume:

- 1-3 gallons: herbs, green onions, radishes, onion, chard, pepper, dwarf tomato or cucumber, basil.
- 4-5 gallons: full-size tomato, cucumber, eggplant, beans, peas, cabbage, and broccoli.




Planting & Care

- Don't fill the bottom of the container with pebbles, gravel, or rocks unless you need the added weight to prevent tipping.
- Cover drainage holes with mesh, gravel, paper towels, or a coffee filter, to prevent soil from washing away.
- Prior to planting, use a trowel or your hands to thoroughly work water into the growing medium. This is especially important for soil-less mixes containing peat moss.



Planting & Care

- Fill loosely (don't cram!) to within an inch or so of top of container. Follow seed packet directions for planting, spacing, and care.
- Plant seedlings (except tomatoes) at same level as they were growing in pot or six-pack. Tomatoes can be planted deeper, for stronger root growth.



Planting & Care

- For attractive and versatile containers, mix herbs and annual flowers in with the vegetable plants.
- Herbs such as lavender, thyme, oregano, marjoram, and chives require a loose growing medium, and dry conditions. Plant them together in porous clay pots and add some sand to the mix.
- Keep containers together to increase humidity and water retention.

Planting & Care

- Succession planting.
- Give them support.
- Move containers around.

Self-Watering Containers

Materials:

- 5- gallon plastic bucket and lid (food grade).
- 7.5-inch section of 4-inch diameter perforated drain tile
- 6-inch section of ½ inch (inside diameter) plastic tubing
- 1 ½ inch wood or decking screw
- electrical tape
- empty 1-gallon milk jug

Self-Watering Containers

Tools:

- Saber saw, drill, 5/16 inch and 3/4 inch drill bits, utility.
- knife, hacksaw.



Resources

- *Contain Yourself*, Kerstin P. Ouellet, 2003. Ball Publishing.
- *The Edible Container Garden*- Michael Guerra; 2000; Fireside.
- *The Bountiful Container*, Rose Marie Nichols McGee and Maggie Stuckey; 2002; Workman Publishing Co., Inc.
- *Container Gardening for Dummies*, Bill Marken; 1998; IDG Books.
- *The Contained Garden*, Kenneth Beckett, David Carr, and David Stevens; 1992; Penguin Books.
- *Movable Harvests*, Chuck Crandall & Barbara Crandall; 1995; Chapters Publishing
- *Incredible Vegetables from Self-Watering Containers*, 2006; Edwin C. Smith; Storey Pub.

Resources

- Fleet Farm: <http://www.fleetfarm.com>
- Woods Farmer Seed: <http://www.woodsfarmerseed.com>
- Seed Savers Exchange: <http://www.seedsavers.org>
- Windowbox.com: <http://www.windowbox.com>
- Gardener's Supply Company: <http://www.gardeners.com>
- Drip Works: <http://www.dripworks.com>

 UNIVERSITY OF MINNESOTA | EXTENSION
Driven to Discover™

Discover more at
extension.umn.edu

© 2011, Regents of the University of Minnesota. All rights reserved.
The University of Minnesota is an equal opportunity educator and employer. In accordance with the Americans with Disabilities Act, this PowerPoint is available in alternative formats upon request. Direct requests to the Extension Store at 800-656-6868.

MAKING A DIFFERENCE IN MINNESOTA: ENVIRONMENT • FOOD & AGRICULTURE • COMMUNITIES • FAMILIES • YOUTH

Questions?