Growing Vegetables in Containers

Joan Cloutier, UCCE Master Gardener

- Growing vegetables in containers is an easy way to enjoy healthy fresh produce all year long
- Containers give you flexibility to choose a good spot for vegetables, even when space is limited
- Container gardening can be less labor intensive and cleaner than growing in the ground

Containers for Vegetables

Materials have different insulating ability, porosity, and texture
- Terracota, concrete, stone, ceramic
- Wicker, wood, wine barrels
- Plastic
- Polystyrene, resin
- Metal
- Other (bags, pulp pots, and more, be creative)

Size: height, depth, and shape  (see chart page 4)
- Large deep container needed for broccoli, cauliflower and tomatoes
- Smaller, shallower containers adequate for greens such as lettuces, arugula, mustard, radishes

Location of container
- Light: ideally would have at least 5-6 hours of sunlight, some exceptions
- Moisture: avoid putting container in area that may have standing water
- Easy Access for checking plants and harvesting

Other considerations: Pest Control
- May have to cover or cage area for critter (birds, squirrel, etc.) control
- Slugs: bait with iron phosphate is a good choice, or hand pick or copper barrier
- Aphids: control ants, heavy stream of water on infested area, for big infestations, insecticidal soap might be considered
Soil Mix and Fertilizer

Soil: drainage important

- Very important in winter: **soil mix that drains well**, should not hold too much water, or get soggy.
- Soil mix may contain composted bark, composted forest products, sphagnum peat moss, coir, rice hulls, perlite, lava rock, pumice, compost
- Need good porosity, water holding ability, nutrient holding ability
- Sand not considered a good component, adds weight but can decrease porosity of the mix
- Most components of potting soils have very little nutrient value

Fertilizer is VERY important to avoid nutrient deficiencies

- Primary nutrients N-P-K (nitrogen – phosphorus - potassium) important to have enough
- Secondary nutrients Calcium, Magnesium, Sulfur may not be as critical if present in water
- Minor elements iron, zinc, manganese, copper, boron, molybdenum are also essential
- Look at “Guaranteed Analysis” on fertilizer package
- Ideal fertilizer would have more Nitrogen (N) than any other nutrient
- Fertilizer must be in a liquid state to be absorbed by roots
- A consistent supply of water and nutrients is essential for vegetables in containers
- Too much or too little will affect the health of your plant and yield, read fertilizer label
- Dry organic fertilizers and slow release fertilizers take longer to become absorbed by roots, might have to supplement small amounts of water soluble or liquid fertilizer

Vegetables for Containers

Cool Season root vegetables such as beets, carrots, radishes, parsnips, turnips

- Beets of 2” or less are best quality, misshapen roots happen if planted to closely, may need to protect young seedlings from birds
- Carrots should be harvested when roots are good size but still tender, if leave too long in soil, carrots get woody, tough and may crack
- Parsnips germinate very slowly, must start early, has a growth period of 4 months, may get woody if left in soil too long
• Turnips are quick crop, 35 - 60 days, can also eat young turnip greens
• Radishes are very quick crop (25-30 days), take very little space, easy to grow in small containers and should be harvested before they get “pithy” or woody.

**Broccoli, cauliflower, Romanesco (cool season)**
- If starting from seed, must be started early (August is good), days to maturity approx. 60 – 110 days, may have to protect seedlings from birds
- Cauliflower and Romanesco only product 1 main head, broccoli will continue to produce side shoots once main head is harvested
- Cauliflower and Romanesco heads may be very small if long periods of cold frosty weather
- Main pests are cabbageworm and cabbage looper, may have to control with BT (Bacillus thuringiensis) or hand pick

**Peas (cool season)**
- May have to protect young plants from birds
- Does well in cool weather, not so well in hot temps.
- If growing shelling peas, harvest at first sign of seed development or they may become starchy

**Onions, garlic, shallots, leeks, scallions (most are cool season)**
- Seed or transplant early variety onions from Nov. – Jan for harvest in summer
- Shallots can be started from seed or transplants planted in fall for early summer harvest
- Use seed garlic and plant Oct – early Nov. for early summer harvest
- Onions, garlic, shallots and leeks are very frost tolerant (28°F no problem)
- Leeks started from seed or transplants can be planted in fall and harvested late winter-spring
- Scallions easy to grow, 65-70 days to harvest, can plant anytime

**Cool Season Greens such as arugula, spinach, chard, collards, kale, mustard, lettuces, pak choi and misc. vegetables**
- Lettuce easy to start from seed and transplant, is fairly frost tolerant, very shallow roots
- MANY lettuce varieties: popular are butterheads, loose leaf types, bibb, romaine
- Spinach, arugula, kale, mustard and collards easily survive temps. around 28°F
- All these greens do better in cool weather, some bolt easily or get bitter in hot temps.
- Can harvest any of these as very young plants (baby greens) or wait until leaves are larger
- Arugula can tolerate less sunlight then many other cool season vegetables
- Other vegetables: kohlrabi, broccoli raabe, Chinese cabbage also grow well in containers
Warm Season Vegetables in containers

- Tomatoes: Best if variety has somewhat compact growth, many now available, use large containers unless variety is extremely compact.
- Tomatoes: Nutrition is very important in containers, especially flowering stage.
- Eggplants, Peppers: Read seed package or tag, size of pot depends on variety, some are tall, others extremely compact.
- Squash, melons, cucumbers: Many compact varieties now available, still may need to stake or trellis.
- Beans: Easy to grow in containers, pole beans need staking or trellis.

**Plant Spacing & Depth for Vegetables in Containers** (just a guideline)

<table>
<thead>
<tr>
<th>Plant Spacing</th>
<th>Soil Depth</th>
<th>Plant Spacing</th>
<th>Soil depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beets</td>
<td>3” apart</td>
<td>9-12”</td>
<td>Beans</td>
</tr>
<tr>
<td>Leaf Lettuce</td>
<td>6” apart</td>
<td>6-12”</td>
<td>Cucumbers</td>
</tr>
<tr>
<td>Onions</td>
<td>3” apart</td>
<td>9-12”</td>
<td>Potatoes</td>
</tr>
<tr>
<td>Radish</td>
<td>1-2” apart</td>
<td>6-12”</td>
<td>Summer Squash</td>
</tr>
<tr>
<td>Spinach</td>
<td>5” apart</td>
<td>6-12”</td>
<td>Tomatoes</td>
</tr>
</tbody>
</table>

These need moderate depth

<table>
<thead>
<tr>
<th>Plant Spacing</th>
<th>Soil Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broccoli</td>
<td>12” apart</td>
</tr>
<tr>
<td>Cabbage</td>
<td>12” apart</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>12” apart</td>
</tr>
<tr>
<td>Eggplant</td>
<td>12” apart</td>
</tr>
<tr>
<td>Peas</td>
<td>3” apart</td>
</tr>
<tr>
<td>Peppers</td>
<td>12” apart</td>
</tr>
<tr>
<td>Carrots</td>
<td>2” apart</td>
</tr>
</tbody>
</table>

**IMPORTANT:** Plant spacing and soil depth are dependent upon variety planted! Many compact varieties are now available. READ SEED PACKAGE or PLANT TAG for information!

**References**
- Master Gardener website: mastergardeners.org/scc
- UC Davis Integrated Pest Management website: ipm.ucdavis.edu
- *Natural Enemies Handbook*, Mary Louise Flint, Steve H. Driestadt, Jack Kelly Clark
- California Master Gardener Handbook, UC ANR Publication 3382

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