Raised Beds and Container Gardening

What are we going to talk about?

- Kinds of Gardens
- What's Critical?
- Watering
- Fertilizer
- Starting from Seed
- Buying Plants
- Needed Growing Space
- What Can I Grow
- Planting Timing
- Planting Strategies

Kinds of Gardens

Container or Raised Bed Gardens

Containers

Raised Beds

The Technical Difference

- A raised garden bed is considered any bed that is open to the ground.
- A container can be the same bed but closed at the bottom.

Containers for gardens come in all sorts of sizes and shapes…


Concrete blocks


Clay pot

Containers for gardens come in all sorts of sizes and shapes…

OLD TIRES

Ceramic

Heirloom
TONKA TOYS

MUST BE FREE OF TOXIC RESIDUES

Advantages of Raised Bed &Container Gardening

- Works in small spaces
  - apartment balconies, small courtyards, decks, patios,
  - Can be portable; follow the sun, *and* take it with you when move
  - add **color**, **shape** and **size**
  - protects plants from gophers, squirrels, rabbits, other critters by adding simple exclusion mechanisms

Advantages of Raised Bed & Container Gardening

- Add versatility, example: growing Meyer Lemons indoors/outdoors
- Great for areas with poor soil
- Limited mobility, limited time
- Excellent for beginners and advanced gardeners
- Almost everyone can find some space
- Fewer weeds

Advantages of Raised Bed & Container Gardening

Easily covered to extend the growing season

Disadvantages

- May need to be watered frequently due to heat absorption
- More fertilization may be needed – easier to have a nutrient imbalance
- Some plants need a vast amount of soil to spread roots to get nutrition
- Plants can outgrow the container
- Soil replenishment is required each year

What is CRITICAL?

- Drainage
- Type of Soil
- Location
- Watering

Adequate Drainage

- Adequate drainage is critical
- Plants need oxygen, will not grow if roots are continually in water- logged soil
- Drill holes in container with masonry drill bits

Container or Raised Bed Soil

- Drains well
- Able to retain moisture
- Well aerated
- Appropriate for the container or raised bed

Choosing the Right Soil

Sterile Potting Mix

Sterile Garden Soil

Potting Soil

BUY IT

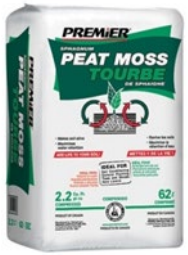
Sterile Potting Mix

MAKE IT

DIY Mixture

Native Soil

Perlite



Peat Moss

EQUAL AMOUNTS

Raised Bed Soil

Native Soil

Typically will need amending

Existing Containers or Raised Beds

- Remove any old plant remains
- Loosen and turn over the soil
- Add amendments (nutrients)
- Add organic matter
- Check your irrigation system (if exists)
- Get your soil moist

Zacsgarden.com

LOCATION, LOCATION, LOCATION

- 6 T0 8 hours full sun daily for most vegetables, annuals
- Filtered sun for herbs, lettuce, hostas
- Convenient to water
- Out of the wind
- Consider sun screens

Watering

- Water enough to keep soil moist – not wet
- Typically need to water when soil becomes crumbly when squeezed
- Use a spade or probe to determine moisture depth
- Moisture is needed for seed sprouting
- As plant grows increase watering period allowing deeper penetration
- Large plants need more water than smaller plants
- Shallow rooted vegies need water more often (cabbage, onion, lettuce, corn)
- Night time watering encourages disease growth

Fertilizing

- Frequent watering will leach nutrients out of the planting medium
- Vegetables: half strength liquid fertilizer every 10 to 14 days
- Annual flowers once a month

NPK= Nitrogen- Phosphorous-Potassium

N=leafy growth

P=root & fruit development

K=durability and disease resistance

Starting from Seed

- Mark out straight rows or planting spots
- Space seed properly as suggested on seed package
  - Lay toilet paper on soil before putting seeds down
- Plant at proper depth
  - Rule of thumb is depth should be 4 times diameter of seed
  - Very small seeds just lightly dusted with soil
- Cover seeds and firm the soil by tamping with hand or flat back of hoe
- Irrigate by sprinkling soil surface lightly
- Thin plants to desired number as soon as possible

Plant Choice Considerations

- Seed versus plant
- Time to germinate
- Time to maturity
- Height of plant
- Sensitivity to heat or frost

Buying Plants

- Make sure you get the variety labeled
- Check for insects
- Avoid containers that appear to have rootbound plants
- Should you buy plants with fruit?

How much growing space I need?

3 inch spacing -
16 plants per square foot

- Carrots
- Radishes

4 inch spacing -
9 plants per square foot

- Beets
- Bush beans
- Greens, baby
- Scallions
- Spinach
- Turnips

24 inch spacing –
1 plant per 4 square feet

- Melons
- Tomatoes
- Squash (large, vining)

36 inch spacing –
1 plant per 9 square feet

- Squash, bush
- Zucchini

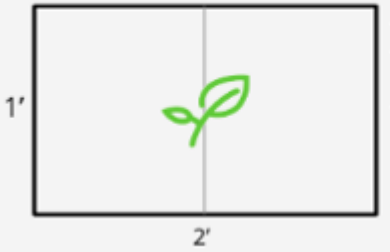
6 inch spacing -
4 plants per square foot

- Garlic
- Kohlrabi
- Leeks
- Leaf lettuce
- Onions
- Parsnips
- Parsley

12 inch spacing -
1 plant per square foot

- Broccoli
- Brussels Sprouts
- Cabbage, early
- Cauliflower
- Celery
- Chard
- Corn
- Cucumbers
- Eggplant
- Head lettuce
- Kale
- Okra
- Peppers
- Potatoes

24 inch spacing –
1 plant per 2 square feet



- Asparagus
- Cabbage, late
- Squash (small, vining)

Square Foot Gardening Can Provide a Guide to Spacing

What Can You Grow?

Turnips to tomatoes; match the container to what you want to grow

Vegetable	Root Depth	Container Size
tomatoes, eggplant, pepper, cucumbers, bush beans	12 to 18 inches	5 gallon
beets, carrots, lettuce, green onions	8 to 12 inches	3 gallon
radishes, most herbs, annual flowers (taller will have longer roots)	6 inches	1 gallon

Timing for Planting

Vegetable Species 3000-4500 feet

FROST TOLERANT	
Onion, dry (seeds)	Jan. 15-Mar. 15
Kohlrabi	Feb. 15-Apr. 1
Garlic	Feb. 15-Apr. 10
Leek	Feb. 15-Apr. 10
Onions, dry (sets)	Feb. 15-Apr. 15
Spinach	Feb. 15-Apr. 15
Mustard	Feb. 15-July 15
Lettuce, head	Feb. 15-Mar. 15
Pepper (seed)	Feb. 15-Mar. 30
Onion, green bunch	Feb. 15-May 1
Endive	Feb. 1-Apr. 1
Pea, spring	Feb. 1-Mar. 15
Kale	Feb. 1-Mar. 20
Horseradish	Feb.-Apr.
Asparagus	Feb. 15-Apr. 1
Broccoli	Feb. 15-Apr. 15
Cabbage (seed)	Feb. 15-Apr. 15
Cauliflower	Feb. 15-Apr. 15
Chard	Feb. 15-Apr. 30
Salsify	Mar. 15-June 1
Rutabaga	Mar. 1-Apr. 1
Tomato (seed)	Mar. 1-Apr. 1
Lettuce, leaf	Mar. 1-Apr. 15
Turnip	Mar. 1-Apr. 15
Rhubarb	Mar. 1-Apr. 20
Parsnip	Mar. 1-May 1
Radish	Mar. 1-May 15
Potato, Irish	Mar. 20-Apr. 20
Carrot	Mar. 1-May 10
Beet	Mar. 1-May 15
Broccoli (plants)	Mar. 15-May 1
Cabbage (plants)	Mar. 15-May 1
Cauliflower (plants)	Mar. 15-May 1
FROST SUSCEPTIBLE	
Bean, bush	Apr. 25-July 15
Bean, pole	Apr. 25-July 15
Bean, lima	Apr. 25-July 15

FROST SUSCEPTIBLE (cont.)	
Potato, sweet	May 10-25
Pepper (plants)	May 10-June 1
Cucumber	May 10-June 15
Muskmelon	May 10-June 15
Okra	May 10-July 1
Squash, winter	May 10-July 1
Corn, sweet	May 10-July 15
Corn, Mexican June	May 10-July 15
Squash. summer	May 10-July 15
Watermelon	May 10-July 15
Pumpkin	May 15-July 1
Eggplant (plants)	May 1-June 15
Parsley	May 1-June 15
Tomato (plants)	May 1-June 15
Bean, edible soy	May 15-July 1
Celery (plants)	May 15-June 20
Basil	May 1-June 15
Cantaloupe	May 1-June 20
Brussels Sprouts	July 1-Aug. 1
Chinese Cabbage	July 1-Sept.15
Collard	June 15-Aug. 1
Lettuce, head	July 15-Aug. 15
Lettuce, leaf	July 15-Sept. 15
Radish	July 15-Sept. 15
Potato, Irish	July 25-Aug. 15
FROST TOLERANT	
Carrot	July 15-Sept. 15
Chard	July 15-Sept. 15
Turnip	Aug. 15-Sept.15
Kale	Aug. 1-Sept. 15
Pea, fall	Aug. 25-Oct. 15
Cabbage (plants)	Aug. 20-Oct. 1
Broccoli	Sept. 1-Oct. 15
Spinach	Sept. 15-Oct. 15
Garlic	Sept. 15-Nov. 15
Onion, dry (seeds)	Sept. 15-Nov. 15
Onions, dry (sets)	Sept. 15-Nov. 15

Planting Strategies

Succession planting

- same crop; stagger starting dates
- different crop, vary by maturity
    - Simpson (45d) followed by Detroit beets (60d)

Intercropping/Companion Planting

- short maturity with long; radishes (35d) with carrots (70d)
- add a flower-marigolds repel some insects

Intensive Spacing

- reduce by as much as 50%, increase fertilizing, water as needed
- stagger rows (zig-zag) to maximize

What to take away?

- Good drainage critical
- Soilless growing medium has advantages
- Containers will need more watering than in-ground
- Size container to what you want to grow
- Fertilize vegetables often because of leaching effect
- Many planting strategies

Thanks to the following free clip art, images sources and container gardening information:

http://www.picgifs.com/clip-art/gardening/

http://www.goodhousekeeping.com/home/gardening/advice/g2258/perfect-potted-plants/

SFGate.com

Square Foot Gardening
By Mel Bartholomew

ONE MORE CONTAINER?

QUESTIONS?

The University of Arizona
Master Gardener Association
Yavapai County Cooperative Extension

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MASTER GARDENER
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