CONTAINER GARDENING: YOU GOT THIS!

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Objectives we’ll cover
• Site evaluation
• Design
• Preparation
  • Container, soil, plant choice
• Maintenance
  • Water and fertilizer
• Plant selection
  • Hot annual flower trends
  • Best veggies for containers

Why garden in containers?
• Limited time
• Portable
• Practice
• Impaired mobility or other health issues
• Gardening with children
• Lack of space
• Poor soil
• Exposure
• Sun
• Altered ecosystem
• Enjoy change

Site evaluation considerations
• Views to enhance or block
  • Fences, stones, water features, plants
• Available exposure/light
• Microclimates
• Use of space
  • Kids, pets, storage
  • Traffic patterns
    • Doors, gates and trash
• Availability of water

Use Height to Your Advantage
• Height makes small spaces seem larger with arbors, pergolas and trellises
• Annual vines
  • Scarlet Runner beans, black-eyed Susan, nasturtium
• Perennial vines
  • Honeysuckle, clematis, hops
• Roses
• Woody plants

Container Displays
• Grouping like-containers together increases impact
• Adds formal touch
• Creates “theatrics” in the garden
• Maximizes dramatic effect
Container Displays

- Place in unexpected places to add drama
- Hard-to-grow plants or those not hardy for Colorado can grow in containers

Choosing a container

- Types of containers to avoid
  - No drain hole
  - Containers that previously held toxic substances
  - Use with caution
  - Unlined moss baskets
  - Topsy-turvy planters

Porous Containers

- Porous containers “breathe” and allow for additional moisture loss from the sides
- These pots also need additional winter protection, because water may stay in the pores and cause cracking if freezing temperatures occur
- Wood and fiber pots are considered “semi-porous”

Nonporous Containers

- The pores are sealed and do not tend to let additional moisture escape
  - Glazed—but not on inside due to lead in glaze
  - Plastic
  - Metal
  - Glass

A Note about Wood Containers for Edibles:

- All treated lumber sold since 2004 is safe for use with edibles and should include containers
- Use rot-resistant wood, like redwood and cedar
- If in doubt, use another container

Choosing a Container

Pot color can enhance the plants
Choosing a Container

- Pot texture can showcase plant foliage
- Shape
- Texture

Media

- Requirements:
  - Provide water, nutrients and support for plants
  - Well-aerated
  - Well-drained
  - Lightweight
  - Using “garden soil” (native or purchased) is often too heavy, dense and compacts easily
  - Also may dry out rapidly, contain fungal pathogens, weed seeds and disease organisms

“Soilless” versus “Soil” Mixes

- Soilless:
  - Made up of peat moss, vermiculite, coarse sand or wood products
  - Very lightweight
  - Vermiculite can hold several times its weight in water and nutrients, keeping media more evenly moist
- Soil or Potting Mixes:
  - One part spagnum peat moss or compost
  - One part pasteurized soil
  - One part vermiculite or perlite
  - Composted manure
  - Tend to hold water better than soilless mixes

Re-using Media

- Replace at least 1/3 of the media each year
- If reused entirely, the mix can compact and harbor insects and disease
- If you do reuse the media, sterilize it: heat oven to 180 degrees, place no more than 4” of moist soil on a baking sheet, cover with foil and make sure the soil reaches 180 degrees for at least 30 minutes, let cool

Plant: Pot Ratio for Displays

Height should be balanced:
2/3 plant
1/3 pot

Thriller

- Add “shock” value and interest to the container
- Makes statement
- Taller than other plants
- May have unusual color, texture, shape or size
### Filler
- Adds “fluff”
- Medium height plants
- Adds bulk in the middle of the container

### Spiller
- Creates a fountain over the edge
- Drapes
- Softens container edges; makes it more natural looking

### Design Tips for Containers
- Height of plants should be 1½ to 2 times the height of the container
- Use plants with multiple heights, including trailing species
- Arrange plants according to how the container will be viewed
  - From all sides
  - From one side
  - Mix plant textures and colors

### Say It With Color
- Color is emotional and personal
- Makes a statement
- Creates feelings, memories
- Generates strong reactions

### Warm vs. Cool Colors
- **Warm:**
  - Conspicuous
  - Cheerful
  - Stimulating
  - Are visually dominant
- **Cool:**
  - Subdued
  - Restful
  - Recede into surroundings

### Maintenance
- Root systems will be more restricted
- Soil that is allowed to become too dry will result in root hair death
- Soil less mixes have low nutrient levels—**must** add fertilizer
### Fertilizer

- Time release vs. water soluble
- Use a complete, balanced type
- If time release
  - Add to soil before planting
  - Small amounts released at each watering
- If water soluble
  - Use every 2-3 weeks
  - Supplement time release with water soluble
- For best results, use BOTH

### Water

- Plants in containers generally need more frequent watering than plants in soil
- Always allow water to run out of the drain hole
- Ensures adequate water filtration
- Salt leaching
- Water holding polymers may increase water holding capacity

### CSU Annual Trial Gardens

- Located across campus in front of the old Fort Collins High School (now the Center for the Performing Arts) at 1401 Remington Street
- 1,200-1,400 plants on trial each summer
- Some plants are new introductions; others are improved varieties
- Companies use the evaluation information to determine market worth of plant material
- flowertrials.colostate.edu

### “Top Container Performers”

- Selected by CSU Horticulture Department and industry professionals
  - Hardiness
  - Overall appearance
  - Maintenance
  - Lack of problems
  - Flower color, abundance and vigor

### Overall Best of Show 2016

- *Argyranthemum ‘Pure White Butterfly™’*
  - Perfection covered with white flowers
  - Continuous blooms through the entire growing season and looked fresh, even during the summer heat
  - Plants maintained excellent uniformity and continuous growth helped “bury the dead” so that no deadheading was required

### Best Novelty for 2016

- *Begonia ‘Jurassic™ Red Splash’*
  - Fantastic foliage color gave this plant great interest as soon as it was planted in the garden
  - Foliage was a dramatic combination of red and silver with large jagged edges
  - A good choice for shady areas as it has iridescent foliage with the occasional beam of sunlight
  - Plants were well branched and also do well as an indoor plant
Best New Variety for 2016

- Lantana ‘Lucky™ Red’
- Flowers were abundant and had many citrus tones but predominately noted for a good dark red
- This plant was unique for combining both the red flower color with a very uniform growth habit
- Blooming started early in the season and was noted that it doesn’t cycle in and out of flowering like other lantanas

Best Calibrachoa 2016

- ‘Superbells Pomegranate Punch’
- Flowers had a unique color combination
- Bloom color was similar to that of a pomegranate around the edges with a very rich, dark center with a small speck of bright yellow in the throat
- Plants had a very uniform growth habit that was stunning in combination with the flowers in a container

Color of the Year 2017

- Violet verbena
  - A gray-purple hue that idealizes the popular bohemian, “gypset” lifestyle
  - A moody purple with a chameleon-like presence

Hot Color: Black

- Sweet potato vine, coleus and ornamental grasses all have plants with black foliage
- Can be combined with any color
- To really make an impact, pair with chartreuse or white

Hot Color: Chartreuse

- Surprisingly…a neutral!
- Can be paired with any color
- Will brighten dark spaces and make small spaces seem larger
- Coleus, sweet potato vine, petunia and ornamental grasses all come in chartreuse

Container Gardening Trends

- Natural dye gardens
- Containers with built-in speakers and LED lights
- Planting unusual things from thrift stores or the attic
- Containers for pollinators
- Containerized water gardens
- Succulent gardens (sedum, cacti, yucca)
**CONTAINER VEGETABLE GARDENING**

**Container Size**
- Size will depend on mature crop size and space available
- “The bigger the better”
- Needs to be deep enough to accommodate plant roots
- Smaller containers dry out faster

**General Guidelines**
- One to two gallon (soil volume) containers:
  - Peppers
  - Chard
  - Dwarf tomatoes
- Four to five gallon (soil volume) containers:
  - Large tomatoes
  - Cucumbers
  - Squash
  - Eggplant

**Pot Size Conversions**
- 8” pot: 1.5 gallons of soil
- 10” pot: 2.5 gallons
- 12” pot: 3.5 gallons
- 14” pot: 4.5 gallons
- 16” pot: 5.5 gallons
- 20” pot: 6.5 gallons

*Helpful tip: 4 quarts to 1 gallon
*If there are 32 quarts in a bag of potting mix, that is 8 gallons by volume

**Fertilizing Veggies**
- Needed for success!
- Two types:
  - Slow (timed) release
  - Water soluble

**Slow Release Fertilizer**
- Add at planting time and thoroughly mix into the media
- Balanced types best (i.e. 10-10-10)
- Follow instructions on fertilizer container for recommended amount
Liquid Feed Fertilizer
- Generally used in conjunction with slow release fertilizers, starting mid-season when plants begin to produce
- Mix with water and apply with a hose or watering can
- Apply according to directions

Supporting Plant Growth
- Many plants may need a cage or trellis to aid in growth
- Peas, beans, melons, cucumbers, indeterminate tomatoes, squash and others

Trellises
- If you choose not to trellis, consider buying “bush-type” plants
- Fruit should not weigh more than three pounds
- Can only support so much weight and plant material, so consider plant’s mature size
- Wide variety of materials
  - Generally two vertical supports with center supports in between

Trellises
- Can only support so much weight and plant material, so consider plant’s mature size
- Materials may be metal, bamboo, mesh, wood, plastic, etc.

Trellising Plants
- “Train” plants to climb the trellis every few days
- You can use ties or just gently weave plants around structure
- As fruit begins to grow, make sure it has room to expand

Tomato Cages
- Many cages are not tall enough or able to support indeterminate types
  - May not be as big an issue in containers
- For smaller, determinate varieties, a bamboo stake may be all that’s necessary
- Square cages take up less space in the off season
- Metal mesh is a sturdy option, but difficult to work with
Slinging Plants
- Larger fruit, like melons, may "slip" and drop pre-maturely due to weight
- Use materials like nylons, cloth or mesh to support the developing fruit
- Cucumbers and small squash do not need to be supported

Disease and Insect Control
- Scout and hand-pick insects
- Check underside of leaves
- Do not use systemic pesticides
  - Often take much longer to “run their course” in plants and may be harmful to human health

Disease and Insect Control
- If pressure warrants chemical use: Use products labeled for edible crops
  - Read label carefully and apply as directed
  - Most chemicals have a “waiting period" before you can harvest
  - Biggest threats: water and inconsistent fertility

Safe Gardening Practices
- E. coli concerns: well-composted manure has a very low risk of containing E. coli
  - Needs to reach a temp of 140 degrees for several days
  - Can let the compost “cure” or age for two to four months before using
  - Do not use pet waste as compost
  - Never use fresh manure in the garden

Safe Gardening Practices
- Wash all fruits and veggies before consuming
  - If storing, wait to wash before you eat, as washing may speed up spoilage
  - Trim and dispose of bruised plant parts
  - Do not use bleach or detergent when washing

Harvesting
- If plants are grown from seed, take note of the “days to harvest” on seed packet
  - But weather, temperature, water, soil fertility, etc. are factors to growth and fruit development
- Use your senses
  - Taste
  - Smell
  - Look
  - Touch
Varieties for containers

- Look for words: patio, tiny, baby, dwarf or pixie
- Vegetables that take up little space, like radishes and lettuce, or bear fruit over a longer period of time, like tomatoes and peppers, are ideal for containers

Cabbage, Kale

- Full sun to part shade
- Use 5 gallon container
- Space cabbage 12 to 18 inches apart, kale 10 to 15 inches
- Try Gonzales, Caraflex

Carrots

- Plant in 1 quart container or larger
- 2 to 3 inches between plants
- Full sun to part shade
- Succession sow
- Ruby Queen
- Nelson
- Short ‘n’ Sweet
- Thumbelina (AAS)

Cucumbers

- Use 1 gallon or larger pot
- Space 14 inches between plants
- Full sun, warm season crop
- Trellis vines or plant bush types
- Varieties:
  - Salad Bush Hybrid
  - Spacemaster
  - Bush Pickle
  - Burpless
  - Liberty
  - Dragon’s Egg

Eggplant

- 1 plant per 5-gallon container
- Full sun
- Fertilize
- Varieties:
  - Hansel (AAS)
  - Gretel (AAS)
  - Bambino
  - Slim Jim
  - Black Beauty
  - Long Tom
  - Japanese white egg
  - Lao (Green Stripe, Purple Stripe, white)

Green Beans

- Pole beans give bigger yield in small space
- Use 2 gallon pot or larger
- Space 2 to 3 inches between plants
- Full sun
- Succession sow bush types over several weeks
- Varieties:
  - Blue Lake
  - Kentucky Wonder
  - French Dwarf
  - Topcrop
**Green Onions**
- Minimum one-half gallon container
- Need consistent moisture; don’t let them dry out
- Thin to 2 to 3 inches between plants
- Varieties:
  - Beltsville Bunching
  - Crysta Wax
  - Evergreen Bunching
  - White Lisbon bunching

**Lettuce (and other spring greens)**
- Heat sensitive; needs part shade
- Use one-half gallon pot or larger
- Space 4 to 5 inches between plants
- Varieties:
  - Buttercrunch
  - Bibb
  - Salad Bowl
  - Dark Green Boston
  - Ruby
  - Little Gem
  - Romaine
  - Dark Green Boston
  - Sandy (AAS)

**Mini Lettuce!**
- Varieties to try:
  - Baby oakleaf
  - Claremont
  - Fenberg
  - Deer Tongue
  - Winter Density
  - Bambi
  - Rhazes
  - Breen

**More heat-resistant lettuce varieties**
- Adriana (Butterhead)
- Ermosa (Butterhead)
- Nevada (Summer Crisp)
- Cherokee (Summer Crisp)
- Green Star (Greenleaf)
- Tropicana (Greenleaf)
- New Red Fire (Redleaf)
- Vulcan (Redleaf)
- Coastal Star (Green Romaine)
- Jericho (Green Romaine)
- Concept (Green Summer Crisp)
- Magenta (Red Summer Crisp)

*Notes: these will still need some shading and still may not produce as well as they would with cooler temps*

**Peas**
- Plant Early
- Grow for shoots or pods
- Varieties:
  - Little Marvel- bush type, heavy yields
  - Tom Thumb – super dwarf, ideal for containers

**Sweet Peppers**
- Almost any pepper is suited to containers
- Peppers like it hot! Place in full sun
- One plant per 2-gallon container
- Varieties:
  - Tequila
  - Lipstick
  - Sweet Banana
  - Gypsy
  - Yolo Wonder
  - Pizza My Heart
  - Cherry Belle
Chile Peppers
- Jalapeno
- Cajun Belle (AAS)
- Red Cherry
- Cherry Bomb
- Apache Chile
- Long Red Cayenne
- Holy Mole (AAS)

Photos courtesy of All America Selections

Radishes
- 1 quart pot
- Keep seeds moist during germination
- Full sun
- Grow them rapidly – consistent water and fertilizer
- Cherry Belle
- Scarlet Globe
- (White) Icicle

Photos courtesy of All America Selections

Summer Squash
- Bush type is best
- Plant one plant per 5-gallon pot
- Full sun
- Varieties:
  - Ronde de Nice
  - Gold Rush
  - Gold Neck
  - Dixie
  - Early Prolific Straightneck

Everyone enjoys summer squash!

Winter Squash
- 1 plant per 5 gallon container
- Full sun
- Bush types best
- Varieties:
  - Honey Bear (AAS)
  - Bush Delicata (AAS)
  - Butterscotch (AAS)

Photos courtesy of All America Selections

Swiss Chard
- Plant in one-half- gallon or larger pot
- 4 to 6 inches between plants
- Full sun to part shade
- Pluck leaves, not entire plant
- Pot of Gold
- Bright Lights
- Peppermint
**Root Vegetables**
- Beets
- Turnips
- Potatoes

**Types of Tomatoes**

**Determinate**
- Smaller plants
- Do most of their growing before fruit set, then stop
- Mature early
- Ripen at the same time; yield in a short time frame

**Indeterminate**
- Larger plants
- Continue growth during flowering and fruit set
- Yield over entire growing season
- Set fruit later than determinate types

**Cherry Tomatoes**
- Vines can be huge, go with dwarf types
- 1 plant per 1-gallon pot, full sun
- Trellis
- Fantastico (AAS)
- Patio
- Pixie
- Tiny Tim
- Saladette
- Sweet 100 Patio
- Spring Giant
- Tumbling Tom
- Small Fry
- Lizzano (AAS)
- Sungold—larger container; needs support
- Heirlooms: Zebra, Black and Currant Tomatoes

**Larger Tomatoes**
- Use dwarf types so plant stays small
- Cage or trellis
- Prune off side suckers
- 1 plant per 5-gallon container
- Full sun
- Varieties: Super Bush
- Demidov
- ‘Husky’ family

**Herbs for Containers**
- Most herbs will grow well in containers
- Can keep them going well past fall by moving them inside/outside
- Good performers:
  - Parsley
  - Sage
  - Basil
  - Thyme
  - Rosemary
  - Mints
  - Chives
  - Dill

**References and Websites**
- CSU Extension: www.extension.colostate.edu
- Colorado Master Gardener GardenNotes: www.cmg.colostate.edu
- For research-based information, use “site:edu” at the end of your search to pull up only educational websites