Vegetable Garden Basics

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Introduction

- Gardening for wellness and fresh food
- Spring most popular
- Summer least popular
- Fall/ winter great time
- Major problems: infertile soils, pests, and disorders related to weather
Objectives

You will learn...

- Where to place your garden
- How to prepare the soil
- What vegetables to grow
- How to plant seeds and starter plants
- How to care for plants
- What insects damage veggies
- What to do during the summer
Planning Your Garden

Considerations

- Where will the garden be?
- What type of garden?
- Which vegetables do you like?
- What will you do with surplus?
- Do you have time?
Finding the Right Spot

- Near your house
- On good soil
- Irrigation source
- Sunny spot (5 - 6 hrs/day)
- Avoid tree roots and septic lines
- Need a fence?
A traditional Florida vegetable garden
Preparing the Garden
Preparing the Garden

Garden plot
- Clear the ground
- Till or spade the soil to depth of 12 inches
- Apply amendments
- Collect soil for pH test

Raised Bed
- Build sides
- Fill with soil or potting medium and amendments
- Collect soil pH, if necessary
No-Dig Garden Beds

AKA, “lasagna gardening”

- grass and weeds buried under thick layers
- Cover the ground with 4-6 layers of newspaper or cardboard and wet thoroughly
- Add compost or manure, 2-3”
- Cover with layer of carbon (leaves, straw, sawdust, etc.)
- Then another compost layer
- Continue alt. layers until 18”-3’ thick- water well

http://ucanr.edu/sites/scmg/Lawn_Replacement/GrassRemoval_Methods/
Soil Amendments

Organic matter-
- Compost
- Rotted leaves,
- Grass clippings,
- Horse manure or cow manure
- Fine mulch

Add complete fertilizer right at planting time (4-6-8 or 6-6-6)
Preparing Soil

Three or more weeks prior to planting

- Spade amendments into soil – mix well
- Check soil pH
- Add lime or sulfur as needed based on soil pH test results
Other Gardening Techniques

- Container gardening
- Grow Boxes/Raised Beds
- Organic gardening
Container Gardening

Containers
- Pots and cans
- Buckets and baskets
- Styrofoam ice chests
- Plastic bags
- Barrels and drums
Other Containers
Grow Boxes/Raised Beds

Construction

- Approximately 4 feet wide
- 5-8 feet long
- 6-12 inch high
- 24 inches high for wheelchairs
- Materials variable
Growing Mix for Containers/Raised Beds

Some good media mixtures for container vegetables:

- 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
Organic Gardening

- Certification required (if selling produce)
- No synthetic chemicals (pesticides and fertilizers)
- Soil building
- Nature’s way
- Environmentally safe

- Composting
- Mulching
- Animal manures
- Green manures
- Crop rotation
- Natural predators
- Resistant varieties
Garden Design

- Start with “Florida Garden Guide”
- Draw a plan on paper
- Rows N & S vs. E & W
- Tall crops to the north
- Maximize space
Garden Planning - Crop Arrangement

- Group by family (for crop rotation)
- By planting/maturation dates
- Inter-planting
- By plant size (tall, medium, short)
- Similar spacing (ex: diff beans/same row)
- Herbs and long season crops together
Ways to Maximize Space: Trellis

Tip:

♫ Putting the trellis on
the north side of a
garden minimizes
shading of the garden.

♫ Peas, Beans,
Cucumbers
Ways to Maximize Space: Wide Rows
Corn Tips:

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- Corn should always be planted in blocks for good pollination.
- Corn requires large amounts of fertilizer and space (1 sq ft/plant)
Garden Design

Ways to Maximize Space: Inter-planting

Inter-plant short- and long-season vegetables
Example: Carrots and Radishes
Ways to Maximize Space: Inter-planting

Inter-plant tall and short vegetables
Example: Corn and Lettuce
Ways to Maximize Space: Inter-planting

Example: Beans trellised on corn
Way to Maximize Harvest: Succession Planting
Garden Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoe</td>
<td>Garden tractor</td>
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<tr>
<td>Rake</td>
<td>Roto-tiller</td>
</tr>
<tr>
<td>Spade</td>
<td>Sprayer</td>
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<tr>
<td>Trowel</td>
<td>Wheel-barrow</td>
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<tr>
<td>Yard-stick</td>
<td>Wheel-hoe</td>
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<tr>
<td>Labels</td>
<td>Garbage cans</td>
</tr>
<tr>
<td>Bucket</td>
<td>Storage shed</td>
</tr>
</tbody>
</table>
Planting Seeds

If your seed is very tiny-
- Mix seed with builders sand 1:1
- Make a ¼ inch deep dent in the soil
- Sprinkle seeds in the row
- Dust soil on top

If your seed is large like a bean –
- Make a trench in the soil the size of the seed

A good rule of thumb-
Plant the seed as deep as the seed is big
Planting Transplants & Growing Transplants

Tomato
Peppers
Lettuce
Eggplant
Strawberry
Broccoli
Cabbage
Cauliflower
1. Gently remove the seedling by pushing up the bottom of the container.

2. Use a spade to dig the hole a little larger than the root ball that came out of the container.

3. Place transplant in the soil at the same depth as in the container.


Some transplants can be planted deeper—tomatoes, peppers
Watering Your Garden

- Water in the mornings everyday for a week
- Second week every other day if the seeds sprouted - if not, continue every day
- As your plants get bigger water every 3rd day
- Taper off to about once per week
- Drip or trickle irrigation best - water at roots

Seeds need constant moisture to germinate
### Pests in the Garden

#### Types of Pests

**Insects**
- Piercing/sucking insects
- Chewing insects
- Insects in the soil

**Animals**
- Birds
- Deer/Rabbits/Raccoons
- Rodents
- Armadillos
Piercing/Sucking Insects

-have modified, needle-like mouthparts which they insert into the plant to remove sap.
-some transmit plant viruses and diseases from plant to plant -often release enzymes and toxins into the plant as they feed that can cause a plant to grow abnormally, crumpled leaves for example
Piercing/Sucking Insects

- damage often looks like stippling - seen here

- can be distorted leaves as well

Leaf-footed bug

Thrips

Spider mites
Chewing Insects

Beetles/Weevils

- Mexican Bean beetles
- Cucumber beetles
- Colorado Potato beetle
- Flea beetle
- Pepper weevil

-chewing damage from beetles
Chewing Insects

- chewing damage from caterpillars on strawberry

- can be controlled with Bt-a bacteria that kills only caterpillars, spares beneficials

Caterpillars

- Tomato hornworm
- Fall Armyworm
- Cabbage looper
- Corn Earworm
- Pickleworm
Soil Borne Pests

- Root-knot nematodes
- Cutworm
- Wireworm
- Slug
- Sweet Potato weevil
- White Grub
- Lesser Cornstalk borer
Nematodes

- Round, worm-shaped, microscopic
- Root-knot is most damaging
  - Galls, root swelling, stunting, wilting
  - Tomatoes, beans, cucumbers, okra
- Resistance?
  - Better Boy tomatoes
  - California Blackeye No. 5
  - Southern Peas
Nematodes

- In addition to galls, nematodes can cause other types of damage to occur such as this root splitting on carrots.
Nematodes

Strategies

Crop rotation

- Group crops by family
- Move families to different location each year

Heavy applications of Organic Soil Amendments

- Improved conditions of fertility and water holding capacity

Solarization
Beneficial Insects

- Black Swallowtail larvae
- Lady bug
- Green Lynx spider
- Honey Bee
- Lace wing
- Dragonfly
- Parasitized Hornworm
- Praying Mantis
Diseases of Vegetables

- Damping off Fungus
- Early Blight
- Late Blight
- Powdery mildew
- Rust
- Blossom End Rot
- Tomato Leaf Curl Virus
### Pest Control

- Not necessary to eliminate all pests
- Management is the key

#### Scouting
- Look for pests at least weekly

#### Use least toxic methods first such as hand removal or organic products

#### Read chemical pesticide labels carefully
- Follow directions to the letter – it’s the law!
Fertilizing Your Plants

use
4-6-8 or 6-6-6 or 15-15-15

N-P-K stands for Nitrogen-Phosphorus-Potassium

The numbers are the ratio. This is the fertilizer analysis.

Broadcast over whole garden prior to planting-dig it in!

USE SLOW RELEASE labeled for vegetables!
Fertilizing Your Plants

When the plants get 6 inches tall - side dress
- Band one side of the row of plants about 3 inches away from stem
- 3 weeks later band the other side
- Long season crops may need another application

Care to customize?
- Fertilize legumes with less nitrogen - too much will cause excess vegetative growth
- Leafy crops require more nitrogen
- Root and tuber crops need higher amounts of potassium
Fertilizing Your Plants

Organic Fertilizers

- made from plant and animal resources and sold as manures, meals, emulsions, and compost

- release nutrients very slowly lessening the chance that you’ll burn your plants and

- reduce the risk of water pollution with proper application; do not overwater

- calculate and apply the correct amount of fertilizer to avoid losing nutrients
Summer Soil Treatment

Soil Solarization

- Clear visqueen
- Thicker the better
- Wet soil well
- Seal around the edges
- 6 weeks is best

Hot sun can reduce disease organisms, nematodes and insects in the soil.
Summer Soil Treatment

Cover crop...

- black eyed peas

- Best if tilled under before they flower
- Plant breaks down and composts
- Returns nitrogen into the soil
Another Cover Crop

Sweet potatoes-
- Plant them in May
- Harvest in October
- Keeps weeds down
- Edible crop
What to Grow - Spring

Spring- (for Feb./Mar. planting)

- beans, bush or pole
- cantaloupes
- sweet corn
- cucumbers
- eggplant
- pumpkin
- winter and summer squash
- tomatoes
- watermelon
- sweet potatoes
What to Grow - Spring

Late Spring- (for as late as April planting)

- beans, bush and pole
- cantaloupe
- sweet potatoes
What to Grow - Fall

Fall- (for Aug./Sept. planting)

- beans, bush or pole
- onions
- broccoli
- tomatoes
- peppers
- eggplant
- celery
- collards
What to Grow - Fall

Fall- (for Oct./Nov. planting)

- beets
- brussels sprouts
- cauliflower
- spinach
- strawberries
- radish
- kohlrabi
- lettuce
Review

- Choose your garden site
- Decide what to plant and plan the garden
- Prepare the soil
- Plant seeds and transplants
- Water to establish and grow
- Fertilize as needed
- Monitor for pests and treat when necessary
- Prepare for summer and the next season
A Great Resource...

Author: Jim Stephens
University Press of Florida
www.upf.com
~$17.00
Questions

Help is available from Extension!

Email us at hort@pinellascounty.org,
Call us at 582-2110 on Mon., Tues., or Thurs. from 9am-12pm and 1pm-4pm.
Drop by our Help Desk Mon.-Fri. from 8am-5pm, excluding County holidays.

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