



# Fruit Alternatives to Citrus

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# Fruit Alternatives to Citrus

## Why Alternatives?

- Citrus diseases killing trees
  - Canker
  - Greening
- Greater variety



# Types of Fruit

## Temperate Fruit

- Need rest time (dormancy) in winter
  - Chilling hours
    - Hours of temperatures below 45°F
    - Accumulate over winter months

## Sub-tropical fruit

- Some need chilling to bloom
  - Temperatures below 55°F
  - Can be damaged by freezing temperatures

# Other Considerations

## Cold hardiness

- Frost or freeze damage when plant not acclimated
- Depends on the variety or cultivar

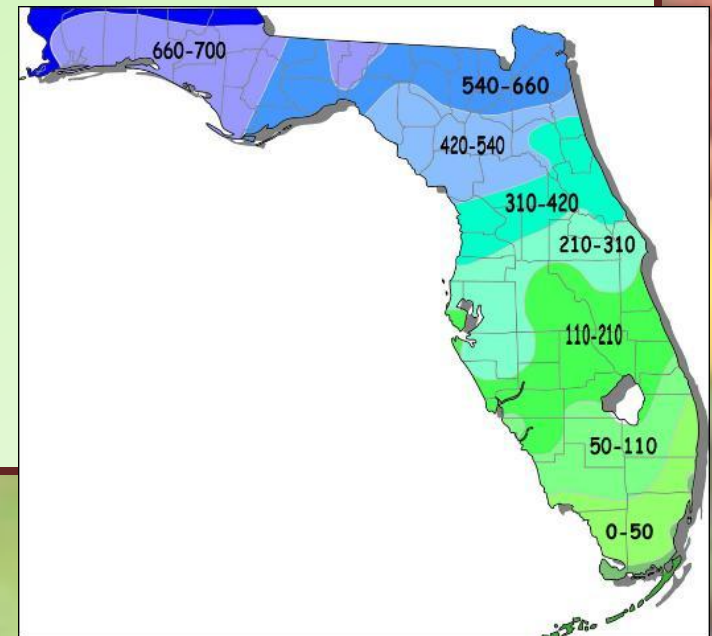
## Warm weather adaptability

- Poor tolerance to heat and humidity
- Minimal or no fruit production

# Other Considerations

## Fruit species

- Variety adaptation
  - Selected for tolerance to our weather profiles
  - Central Florida
    - 210 – 310 chilling hours in North Pinellas
    - 110 – 210 chilling hours in South Pinellas



# Temperate Fruits for Central Florida

- Usually deciduous
- Only specific varieties are appropriate
- Have chilling requirements of 300 hours or less
- Can be damaged by late frost



# Apples

## Three varieties

- From Israel
  - ‘Anna’
- From Bahamas
  - ‘Dorset Golden’
- From University of Florida
  - TropicSweet



## Choose two varieties for cross pollination

- ‘Anna’ and ‘TropicSweet’ cross
- ‘Anna’ and ‘Dorset Golden’ cross

# Apples

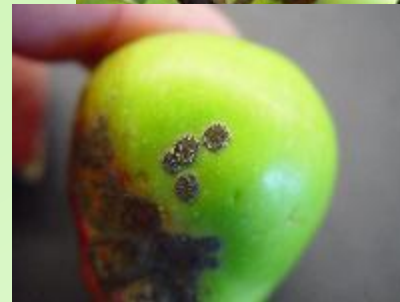
- Choose known grafted cultivars
  - Will not grow true from seed
- Soil
  - Well drained
  - Sandy loam
- Provide adequate water especially during dry spring months



# Apples

## Diseases

- Fireblight
  - Reduce Nitrogen fertilizer
- Apple Scab
  - Fungicides effective
  - Neem oil could be effective



## Animal pests

- Use physical barrier to protect trunk from browsing



# Stone Fruits

## Peaches, Nectarines, Plums

- All grafted to 'Flordaguard' peach rootstock
- Chilling hours accumulate from Nov. 1 to Feb 1
- Late frost & freeze can damage open blooms
  - Un-open blooms can survive 26° to 28° F
- No fruit first year after planting
  - Abundant crop by third year



# Stone Fruits

- Freestone vs Clingstone
- Melting or Non-melting flesh
- Do not become sweeter after harvest
- Controlling insect pests and disease can be daunting
- Protect trunk from deer and rabbits



# Stone Fruits

## Peaches

- Flordaprince
  - Flordaglo
  - UFSun
  - Tropic Beauty
- Do not require cross pollination
  - 100 – 150 chilling hours
  - Nice small tree – 10 – 15 ft. tall
  - Very showy flowers



# Stone Fruits

Nectarine – a peach without fuzz

- ‘Sunbest’ only variety
  - 250 chilling hours
  - Warmer winters could reduce fruiting
- Do not require cross pollination
- Flowers not showy



# Stone Fruits

## Plums

- 'Gulf' series – 5 varieties
  - Japanese type
  - Resistant to plum leaf scald & bacterial spot
  - Skin sour, flesh sweet
  - clingstone
- Require cross pollination
  - Some cross pollination with wild native plums
- Remove some developing fruit



# Blueberries

## Southern Highbush varieties (not Rabbiteye)

- Soil Requirement
  - Acidic (pH 4.0 – 5.5)
  - High in organic matter
  - Well drained
- Need cross pollinator
  - Plant two varieties that bloom at same time



# Blueberries

- Good for growing in containers
  - ‘Sunshine Blue’ dwarf variety
    - Does not need a cross pollinator
    - More tolerant of higher pH soils
- Fertilize lightly
  - Use Blueberry Special or Azalea & Camellia
- Water
  - Sparingly in winter
  - Regular irrigation during fruiting



# Blueberries

- Remove all blooms the first season
- Blueberry Stem Blight
  - Wounding and/or over fertilization
- Biggest stressors
  - Heavy fruiting on young plants
  - Drought
  - Nutrient deficiencies



# Sub-Tropical Fruit for Central Florida

- Exotic flavors
- Likely to be damaged by freeze or frost
- Some become medium to large trees
  - Avocado, Carambola, Mango
  - Routine pruning can manage size
- Cold tolerance varies



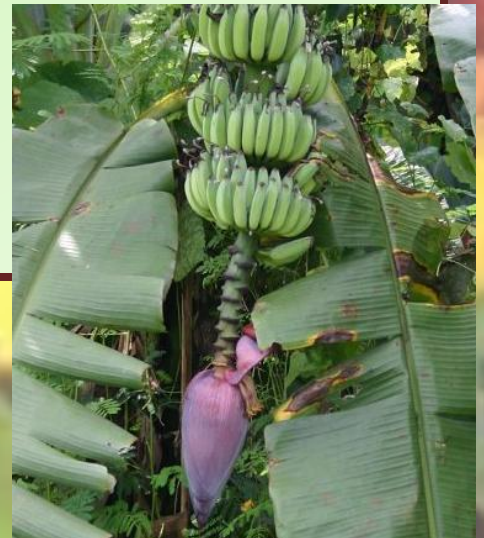
# Banana

- Cultivated for thousands of years
- Herbaceous plants – do not develop bark
  - ‘trunks’ arise from fibrous root system
  - Many tightly rolled leaf sheaths
  - Trunk dies after fruiting
- Time to harvest after planting  
9 – 20 mo.



# Banana

- Cold sensitive
  - Temps below 60°F cause fruit damage
  - Plant growth stops below 50°F
  - Severe damage at 32°F – top death below 28°F
  - Will usually re-sprout from roots



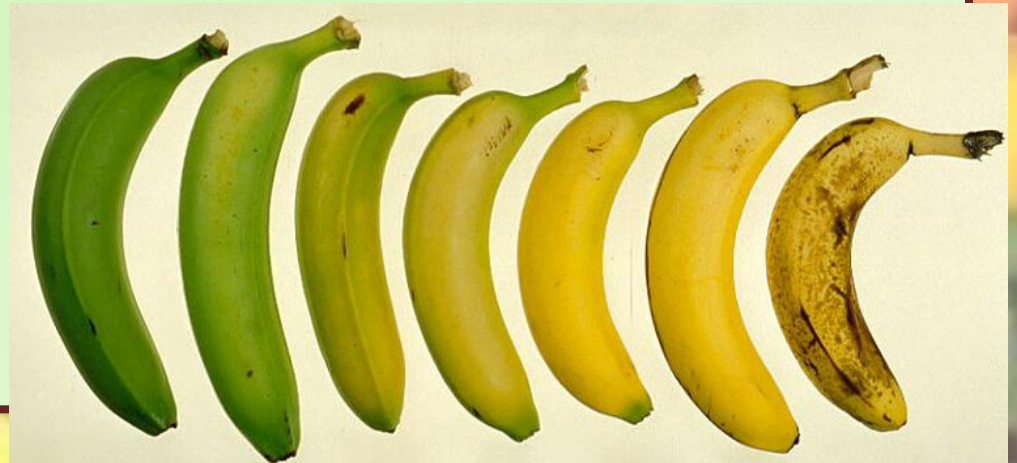
# Banana

- Varieties
  - ‘Cavendish’
  - ‘Dwarf Cavendish’
  - ‘Williams’
  - ‘Lady Finger’
- Soil
  - Consistent moisture but well drained
  - High organic matter
  - pH 5.5 – 7



# Bananas

- Harvesting
  - Cut whole hand while still green but fruit is very plump
  - Hang in a shady place
  - Hasten ripening by placing in a paper bag



# Avocados

- Do Not come true from seed
- Grafting is the standard
- Large tree – 30 – 65 ft. tall
- Need a cross pollinator
- Mexican & Mexican hybrids most cold hardy
  - ‘Brogdon’, ‘Ettinger’, ‘Gainesville’, ‘Mexicola’ & ‘Winter Mexican’
  - May be difficult to find



# Avocados

- Moderately cold-tolerant types (25°F-30°F)
  - 'Beta', 'Choquette', 'Loretta', 'Booth 8', 'Hall', 'Monroe', & 'Reed'
- Bear fruit in 3 - 4 years
- Can be self or insect pollinated
  - A and B types
  - B types are likely to need a cross
- Some trees alternate heavy crop years
- Fruit ripens in a few days after picking
- Insects and diseases can be a problem



# Mangos

- Considered one of the finest fruits
- Large tree 30 – 100 ft tall
  - Can maintain at 10 – 15 ft
- Two seed types
  - Monoembryonic
    - hybrid tree
  - Polyembryonic
    - tree genetically identical to the mother tree



# Mangos

## Two types

- Indian (most Florida commercial varieties)
  - Highly colored fruit
  - Susceptible to Anthracnose
  - Monoembryonic seeds
- Indochinese (good for home landscapes)
  - Fruit one color (green, light green or yellow)
  - Resistant to Anthracnose
  - Polyembryonic seeds
  - 'Siagon' and 'Florigon' good varieties



# Mangos

- The easiest method for avoiding disease
  - Grow anthracnose-resistant varieties
  - Plant in full sun
  - Keep irrigation water off foliage, flowers, and fruit
  - monitor the tree for disease problems during the flowering and fruiting season
- Grows in most well drained soils
- Fruit ripens several days after picking

# Papaya

Trees can grow up to 33 feet tall

- Single trunk
- Short lived – usually 1 – 3 years
- Large flat leaves each live about 6 – 8 months
- Three types
  - Male
  - Female
  - Bisexual



# Papaya

- Some plants exhibit degrees of male or femaleness due to
  - Temperature
  - Changing day length
  - Soil moisture availability
- May be self pollinated (bisexual flowers)
- Insect or wind cross pollinated



# Papaya

- Plants are damaged or killed below 31°F
- Temperatures above 90°F can cause flowers to drop
- Temperatures below 59°F can inhibit flowering or cause misshapen fruit
- Plant in full sun where protected from wind
- Can be grown from seeds in fruit
- Consistent water supply is important

# Carambola

- Star fruit
- Medium tree (20 – 30 ft)
- Fruit
  - Fleshy with 5 longitudinal ribs
  - Star shaped in cross section
  - Crisp and juicy
  - Allow to ripen on tree
- Can require cross pollination
- In wind protected areas can produce fruit 10 – 14 months after planting



# Carambola

- Two varieties
  - Sweet
  - Tart
- Freezing can kill
  - Young trees 30 – 32°F
  - Mature trees 20 - 24°F
- Limited tolerance to drought
- Intolerant of wind, salt and high pH soils



# Planting Fruit Trees

Planting – wait until rainy season

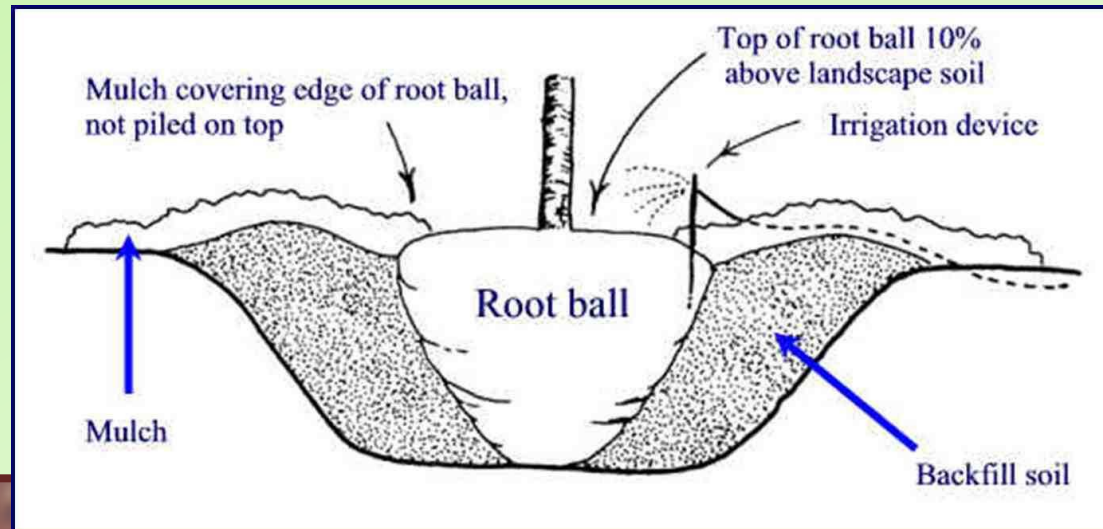
- Choose plant
  - 2 to 4 ft plant in 3 gal pot
- Site
  - Temperate fruit – choose coolest area of landscape
  - Sub-tropical fruit - choose warmest area of landscape
  - well drained soil rich in organic matter
  - Full Sun

# Planting Fruit Trees

- Dig hole 3 times as wide as root ball
  - No need to add fertilizer, top soil or compost
  - Plant top of plant slightly above the soil level
  - Fill in around hole watering as you go
  - Keep 3 – 5 feet around tree grass free
- Create a water reservoir over root ball with a raised soil ring
- Fill reservoir several times each time you water

# Planting Fruit Trees

- Mulch to within 8 inches of trunk
- Water daily for a week, then water 2 to 3 times a week for three weeks
- Consult fact sheets for specific plant water needs



# General Information

- Roots of trees extend out 3 times the canopy
- Turfgrass fertilizer is not appropriate to use near fruit trees
- Specific UF fruit fact sheets provide fertilizer recommendations
- Do not use “Weed & Feed” fertilizer near trees
- Fruit trees for sale in box stores might not be appropriate varieties for our growing conditions
- Choose trees from a local nursery specializing in fruit trees

A vibrant collage of various fruits including coconuts, pineapples, watermelon, kiwis, papayas, and berries.

Questions??