Pitaya production in Florida©

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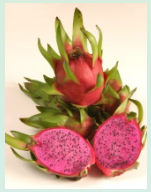





2016

- Area: ~500+ acres
- Est. production range: 10-13 million pounds
- Rough est. farm gate value: $7-$20 million
- Market: national

Current Counties ★

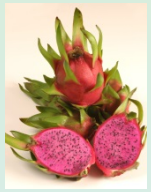
Potential Counties
- Indian River
- St. Lucie
- Martin
- Collier

Estimated statistics

Hylocereus undatus
Red/White

- Rosy red peel/white pulp
- 300-800 g (10-28 oz)
- Good to excellent quality
- Self compatible to partial self-incompatibility – cultivar dependent

‘Soule-kitchen’
Ian Maguire©

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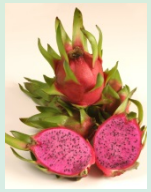
Hylocereus costaricensis (H. polyrhizus) Red/Red

May be hybrid

- Scarlet peel/red-purple pulp
- 250-600 g (8-21 oz)
- Good to excellent quality
- Self compatible to partial self-incompatibility – cultivar dependent

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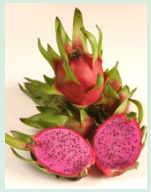
Other pitaya

H. costaricensis

H. polyrhizus



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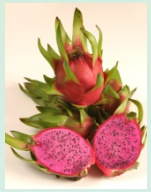
Environmental issues

- Cold (freeze) tolerance
  - Probably varies by species and clone
  - Observed tolerance to 24°F – however of relatively short duration
  - Symptoms of freeze damage include water soaking of stems, stem rotting, and dieback
- Chilling injury
  - Cool (<50°F) non-freezing temperatures – mostly in the low 40s and mid-30s
  - High and intense full sunlight
  - Symptoms – stem discoloration (burning) and potential disease problems

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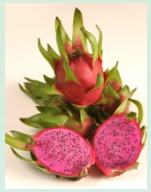
*Potential protected culture

Cold/freezing stress



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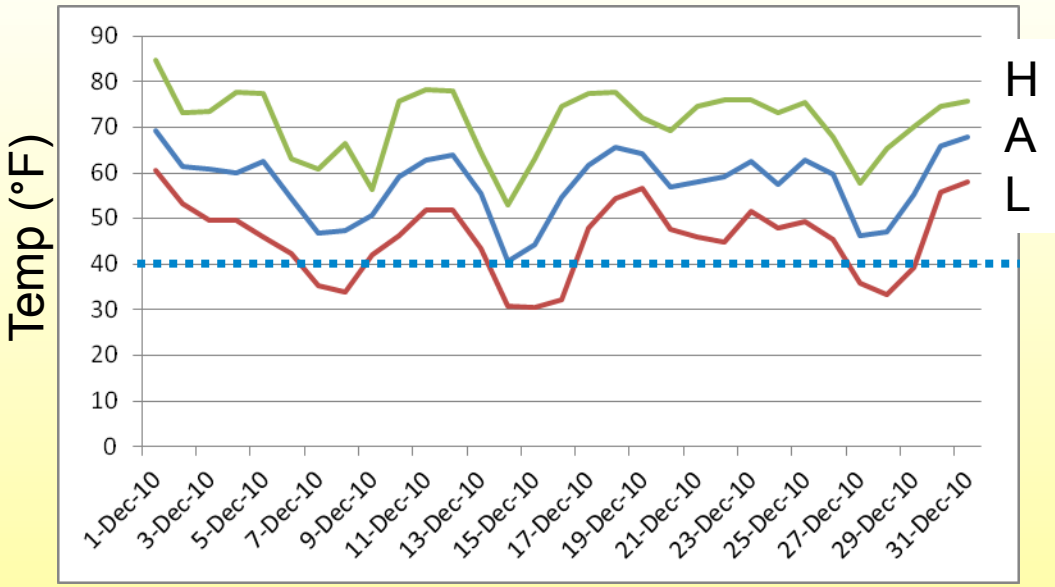
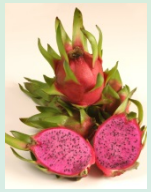
Chilling injury

Chilling: Monthly average temperature ~58°F, average minimum, ~31°F, and average max, ~85°F



Trellising strength and spacing

- Trellises need to be able to carry the weight of the vines
  - Wood
  - Metal
  - Concrete
- Trellises should be 10-18 ft apart and vines 9-15 ft apart in-row
- Crowding
  - Physical access and movement
  - Air movement
  - Pest pressure
  - Excessive shade – light issues

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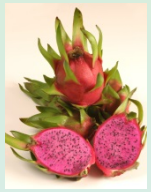
4 ft (in-row) x 8 ft (between-row)
Too dense and shade

11 ft (in-row) x 12 ft (between-row)
No pruning and shade

Too crowded

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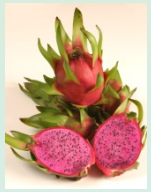
Crowding

Weak trellis (4” dia.)
(wind)

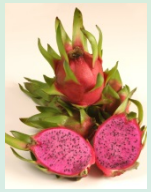
Diseases

- Bacteria – *Xanthomonas compestris*
- Fungi – *Bipolaris cactivora*, *Dothiorella*, *Erwinia, Cladisporium*
- Anthracnose (*Colletotrichum* spp.),
- *Fusarium oxysporum*
- *Cactus virus X*




Bipolaris fruit rot (Bipolaris cactivora)



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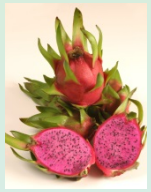
Anthracnose (*Colletotrichum gloeosporioides*)

Bacterial soft rot (*Erwinia* spp.)

Cladosporium sp.

Potexvirus Cactus Virus X



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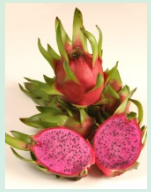
Stem/fruit canker (*Neoscytalidium dimidiatum*)



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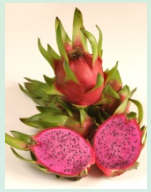
Factors that affect pitaya disease development

- Irrigation
  - Timing and rates
  - Pitaya have a shallow root system (long periods of irrigation not necessary)
  - Rockland soil is well drained and holds only about 0.1 inch of water per inch of soil depth (unless amended with organic matter)
  - Over irrigation may lead to root and/or stem rots
- Overhead irrigation
  - Wet surfaces
  - More potential disease
- Uneven irrigation may lead to fruit splitting
- Excessive irrigation may result in flower drop
- Small amounts at any one time
  - Daily, every other day or 2-3 times/week
- More frequently during hot dry periods
- Less frequently during cool/cold periods

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Overhead and microsprinkler irrigation systems

Factors that affect pitaya disease development

- Pruning (light, air)
  - Sanitation
  - Pruning tools
    - Sanitized
  - Pruned debris
    - Immediate disposal
- Use only disease-free propagation material

Other factors that may affect pitaya disease development

- Wind protection
  - Issue: wind driven soil particle damage
  - Solution: wind breaks
- Placement of soil amendments
  - Issue: Fertilizer (burn)
    - Solution: frequent low rates
  - Mulch against stem
    - Solution: keep mulch back from base of stems 15-30 cm (6-12 inches)