Subtropical Peach Production in Florida: Research and Extension Update

Ali Sarkhosh, Assistant Professor & Extension Specialist
Email: sarkhosh@ufl.edu
Tel. 352-273-4788
Production

~2,000 acres

‘UFBest’

‘UFSun’

‘UFOne’

‘Tropicbeauty’
Research emphasis

• Climate change
  – Chilling hour
  – High temperature
  – Abiotic stresses

• Fruit quality and size
  – Fruit size
  – Shelf life
  – Fertilizer

• Labor costs
  – Training system
  – Pruning
  – Fruit thinning
Climate change

• Chilling hour

  1 chilling unit = 1 hour > 45°F
## Chilling hour


<table>
<thead>
<tr>
<th>Season/County</th>
<th>Indian River</th>
<th>Polk</th>
<th>Hillsborough</th>
<th>Pasco</th>
<th>Orange</th>
<th>Lake</th>
<th>Marion</th>
<th>Alachua</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-2019</td>
<td>76</td>
<td>106</td>
<td>209</td>
<td>188</td>
<td>127</td>
<td>229</td>
<td>345</td>
<td>406</td>
</tr>
<tr>
<td>2017-2018</td>
<td>141</td>
<td>163</td>
<td>281</td>
<td>304</td>
<td>203</td>
<td>302</td>
<td>418</td>
<td>524</td>
</tr>
<tr>
<td>2016-2017</td>
<td>61</td>
<td>59</td>
<td>104</td>
<td>113</td>
<td>86</td>
<td>167</td>
<td>241</td>
<td>327</td>
</tr>
<tr>
<td>Historic average</td>
<td>211</td>
<td>233</td>
<td>288</td>
<td>267</td>
<td>282</td>
<td>420</td>
<td>417</td>
<td>625</td>
</tr>
</tbody>
</table>
Shading
Windbreak shade effect on chilling unit

- West: 100
- Centre Side: 90
- East: 75
Foliar application of ERGER as dormancy break agent on peach tree

- ERGER is a mineral fertilizer specially designed to be sprayed on dormant wood in a specific period of time.
- ERGER is intended to supplement a standard fertility program with a source of Nitrogen and Calcium prior to the new growing season.
- It ensures the supply of nitrogen to plant tissues in the first stages of development, such as buds.
- It is beneficial to plant development even prior to bud break.
Application rates: control, 6gl/100gl of water, 8gal/100 gal of water
ERGER on ‘Tropicbeauty’ in Citra

First application, 12.12.18

Control 12.12.18
6 gallon ERGER/ 100 gallon
8 gallon ERGER/ 100 gallon
ERGER on ‘Tropicbeauty’ in Citra

01. 22. 2019

Second application, 12.23.18

Control

6 gallon ERGER/ 100 gallon

8 gallon ERGER/ 100 gallon
ERGER on ‘Tropicbeauty’ in Citra

01. 22. 2019

Third application, 01.02.19

Control

6 gallon ERGER/ 100 gallon

8 gallon ERGER/ 100 gallon
ERGER on ‘UFGem’ in Bartow

Control

6 gallon ERGER/ 100 gallon

8 gallon ERGER/ 100 gallon
ERGER on ‘UFGem’ in Bartow

Control

6 gallon ERGER/ 100 gallon

8 gallon ERGER/ 100 gallon

01. 14. 2019

Second application, 12.26.18
ERGER on ‘UFGem’ in Bartow

01. 14. 2019
Third application, 01.03.19

Control

6 gallon ERGER/ 100 gallon

8 gallon ERGER/ 100 gallon
Application rates: control, 6gl/100gl of water, 8gal/100 gal of water
Rootstock selection against waterlogging
Rootstock selection against waterlogging

**Root stock**
- Flordaguard
- MP-29
- Nemaguard
- P-22
- R5064-5
- SC3-17-7

**Objective**
To investigate whether there are varietal differences between rootstocks in their response to waterlogging.
“Symptoms of spring shock syndrome. Flordagold grafted onto Golden Queen rootstock. The image was taken in September, 1993, eight weeks before harvest.”

Credits: Peter Malcolm
Spring shock syndrome

“Effects of RZT on leaf color and leaf size of the peach rootstock, Green Leaf Nemaguard, after 6 weeks of RZT treatment at 41, 59, 68°F (5, 15, 20 °F).”

Credits: Peter Malcolm
“Effects of low RZTs in inducing mineral deficiency symptoms in the peach rootstock, Green Leaf Nemaguard, after 6 weeks of RZT treatment.” Credits: Peter Malcolm
Rootstock selection against spring shock syndrome

Root stock
Nemaguard
MP-29
SC3-17-7
P-22
Flordaguard

Objective
To investigate whether there are varietal differences between rootstocks in their response to root condition, .....?
Fruit quality and size

- Cv.: UFSun
- Location: Citra and Ft. Pierce

**Objectives:**
- Determine the influence of fruit location within the canopy on fruit size and quality
- Identify PGRs and biostimulante approaches on fruit size and quality
Determine the influence of fruit location within the canopy
Identify PGRs and biostimulante approaches

**PGRs:** ReTain {Aviglycine hydrochloride (AVG)} and Mxcel
**Biostimulant:** McExtra 20%K+1%N
Fruit quality and Size

• Over 3000 of fruit was harvested for both locations
  – Weight
  – Size
  – TSS
  – TA
  – Color
  – Firmness
  – ..........
Extension: webpage

- https://hos.ifas.ufl.edu/stonefruit/
- https://www.facebook.com/stonefruitUFIFAS/
- https://ufstonefruit.wordpress.com/
- STONEFRUIT-GROWERS-L@LISTS.UFL.EDU

RESOURCES
- The "Operation Peaches in Florida" Blog
- UF Stone Fruit Program History
- Stone Fruit Varieties and Availability
- Other Related Links and Resources
- Stone Fruit at the University of Florida

STONE FRUIT PRODUCTION
- 2019 Peach, Nectarine and Plum Spray Guide for the Southeastern U.S.
- Orchard Establishment and Production
- Best Management Practices (UF Extension, Citrus and Non-Citrus Crops)
- Disease Management
- Insect Management
- Weed Management
- Nutrition
- Irrigation
- Thinning and Cropload Management
1. Alternative Opportunities for Small Farms: Peach and Nectarine Production Review
2. Florida Peach and Nectarine Varieties
3. Fungal Gummosis in Peach
4. Growing Plums in Florida
5. Peach Root-knot Nematode
6. Peach Rust (*Transchelia* spp.)
7. Peach Scab
8. Rootstocks for Florida Stone Fruit
9. Thinning Florida Peaches for Larger Fruit
10. Training and Pruning Florida Peaches, Nectarines, and Plums
Thank you

- **Sponsors:** Maxijet, AgXplore, Florida Foundation Seed Producers

- **Industry:** Adrian Morales, Steven Callaham, John Sizemore

- **Fresh From Florida**

- **PSREU Staff:** Jim Boyer, Buck Nelson, Staci Sanders

- **Postharvest Lab:** Jeff Brecht, Carolina Abraham

- **Stone Fruit lab:** Dustin, Shirin, Yuru, Logan, Austyn, Tiago, Muhammad
Thank you

“I cannot do all the good that the world needs. But the world needs all the good that I can do.” - Jana Stanfield
Peach diseases

- Fungal Gummosis
- Peach Leaf Rust
- Peach Scab
- Brown rot
Peach Insects

- Plum Curculio
- Citrus root weevil
- Stinkbugs
- White Peach Scale
- Peach Tree Borers
- Caribbean fruit fly
- San Jose Scale
Vegetative growth

- Producing high-quality fruit
- Pests management
- Improving spray coverage and penetration
- High density orchard
- Reducing production cost
- Simplify operational practices
Dr. Tom Beckman
USDA-ARS
Research Horticulturist
Stone fruit rootstock breeder