

Subtropical Peach Production in Florida: Research and Extension Update



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UF | **IFAS Extension**
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Production

'UFSun'



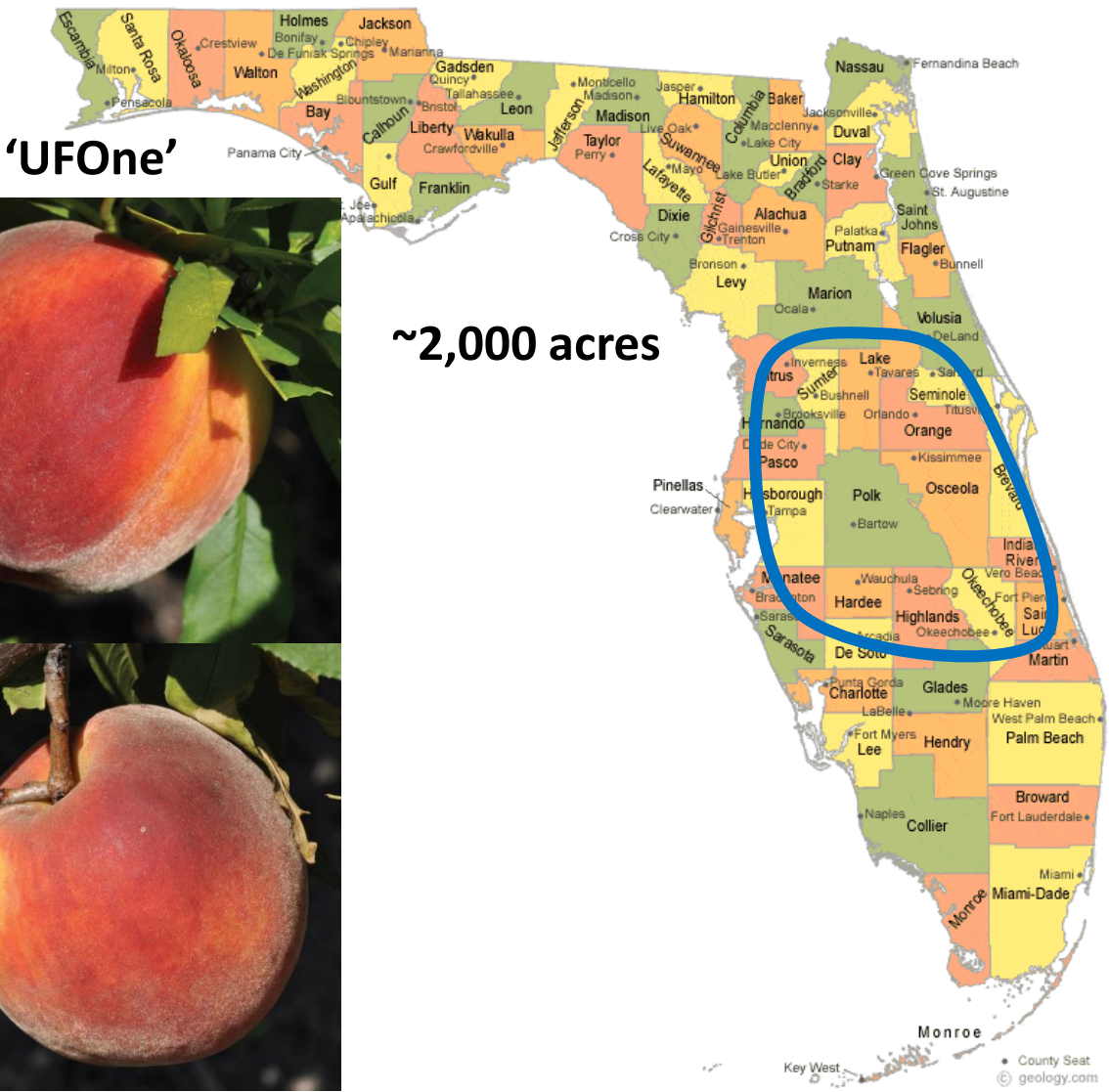
'UFOne'



'UFBest'



'Tropicbeauty'



~2,000 acres

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 $>45^{\circ}\text{F}$



Chilling hour

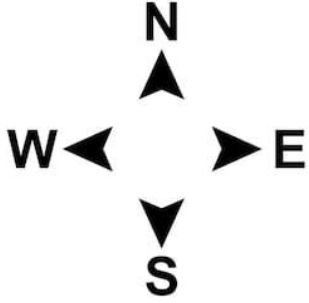
Chilling unit based on temperature: 32-45 F, <http://agroclimate.org/tools/chill-hours-calculator/>

Season/County	Indian River	Polk	Hillsborough	Pasco	Orange	Lake	Marion	Alachua
2018-2019	76	106	209	188	127	229	345	406
2017-2018	141	163	281	304	203	302	418	524
2016-2017	61	59	104	113	86	167	241	327
Historic average	211	233	288	267	282	420	417	625

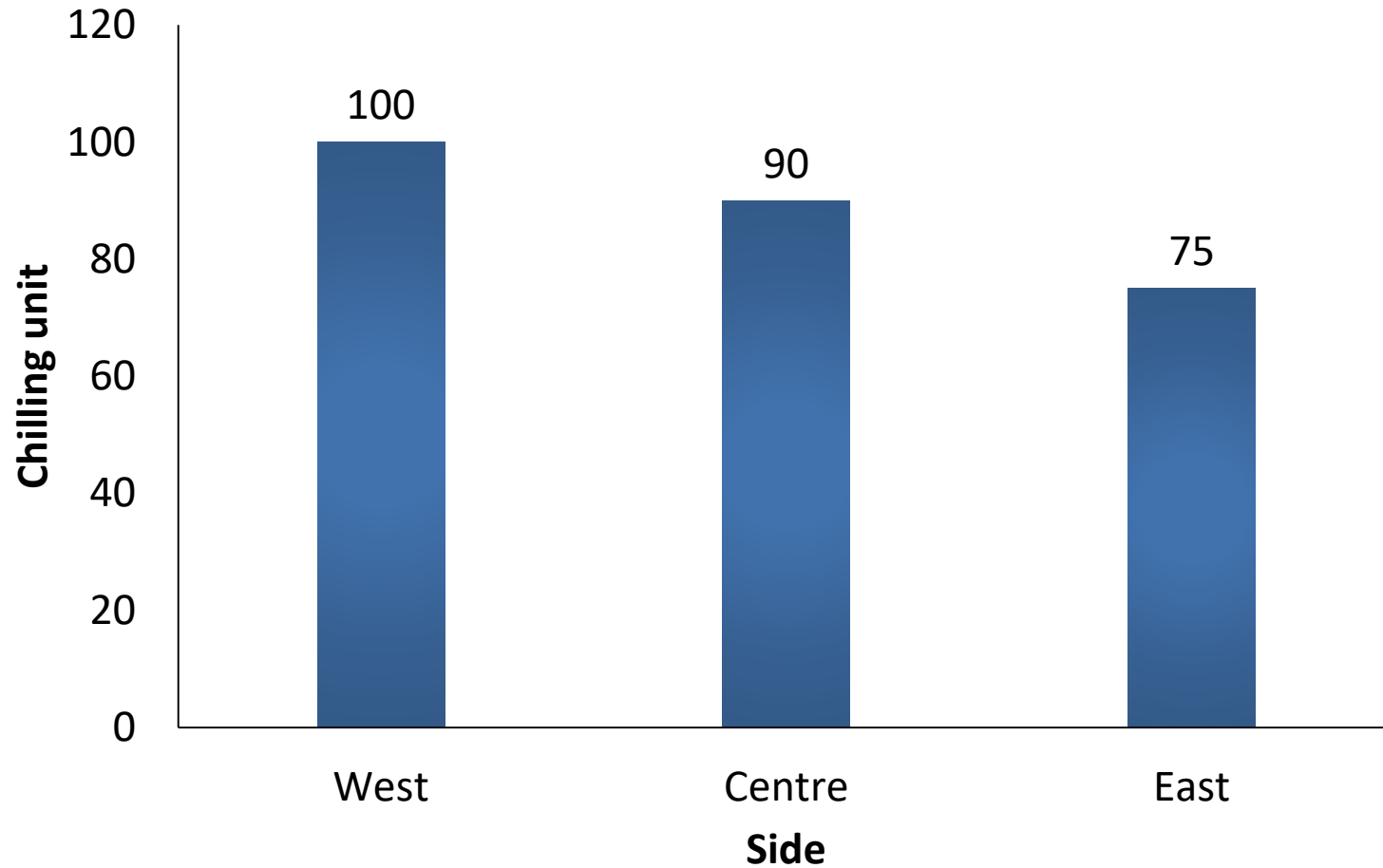
Shading







Windbreak shade effect on chilling unit



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.

ERGER



Application rates: control, 6gl/100gl of water, 8gal/100 gal of water

ERGER on 'Tropicbeauty' in Citra

01. 22. 2019

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

01. 14. 2019

First application, 12.18.18



Control



6 gallon ERGER/ 100 gallon



8 gallon ERGER/ 100 gallon

ERGER on 'UFGem' in Bartow

01. 14. 2019

Second application, 12.26.18



Control



6 gallon ERGER/ 100 gallon



8 gallon ERGER/ 100 gallon

ERGER on 'UFGem' in Bartow

01. 14. 2019

Third application, 01.03.19



Control

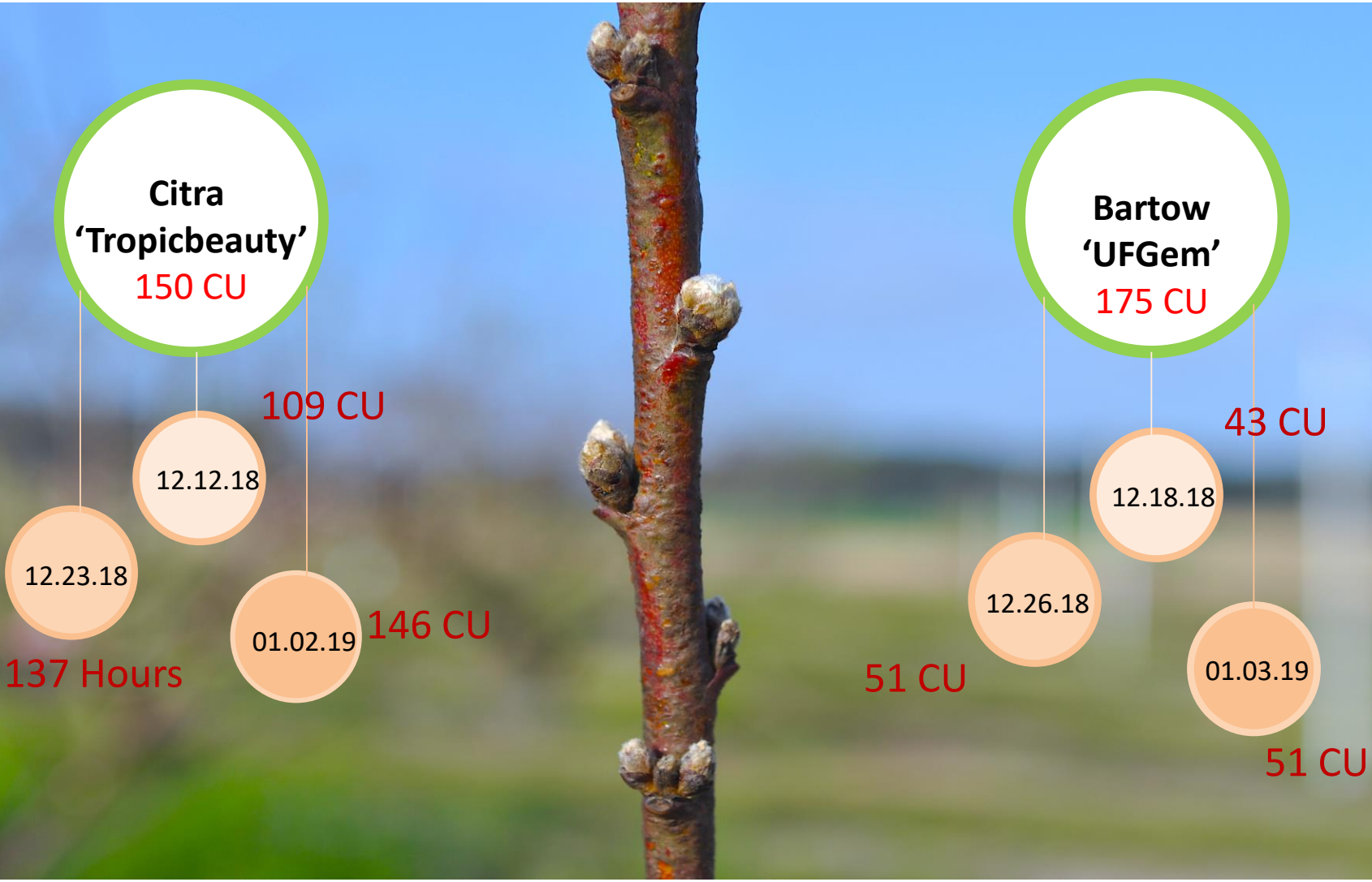


6 gallon ERGER/ 100 gallon



8 gallon ERGER/ 100 gallon

ERGER



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.

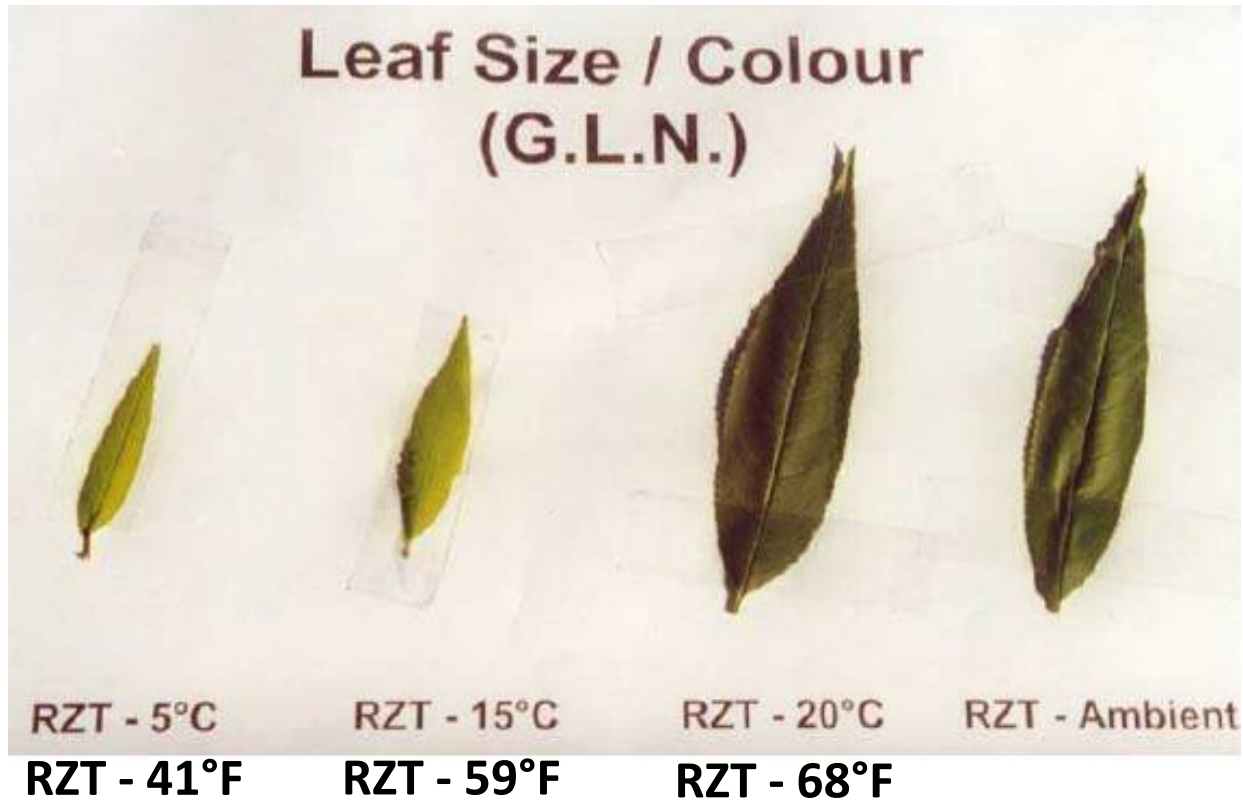


Spring shock syndrome



“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

Spring shock syndrome



“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

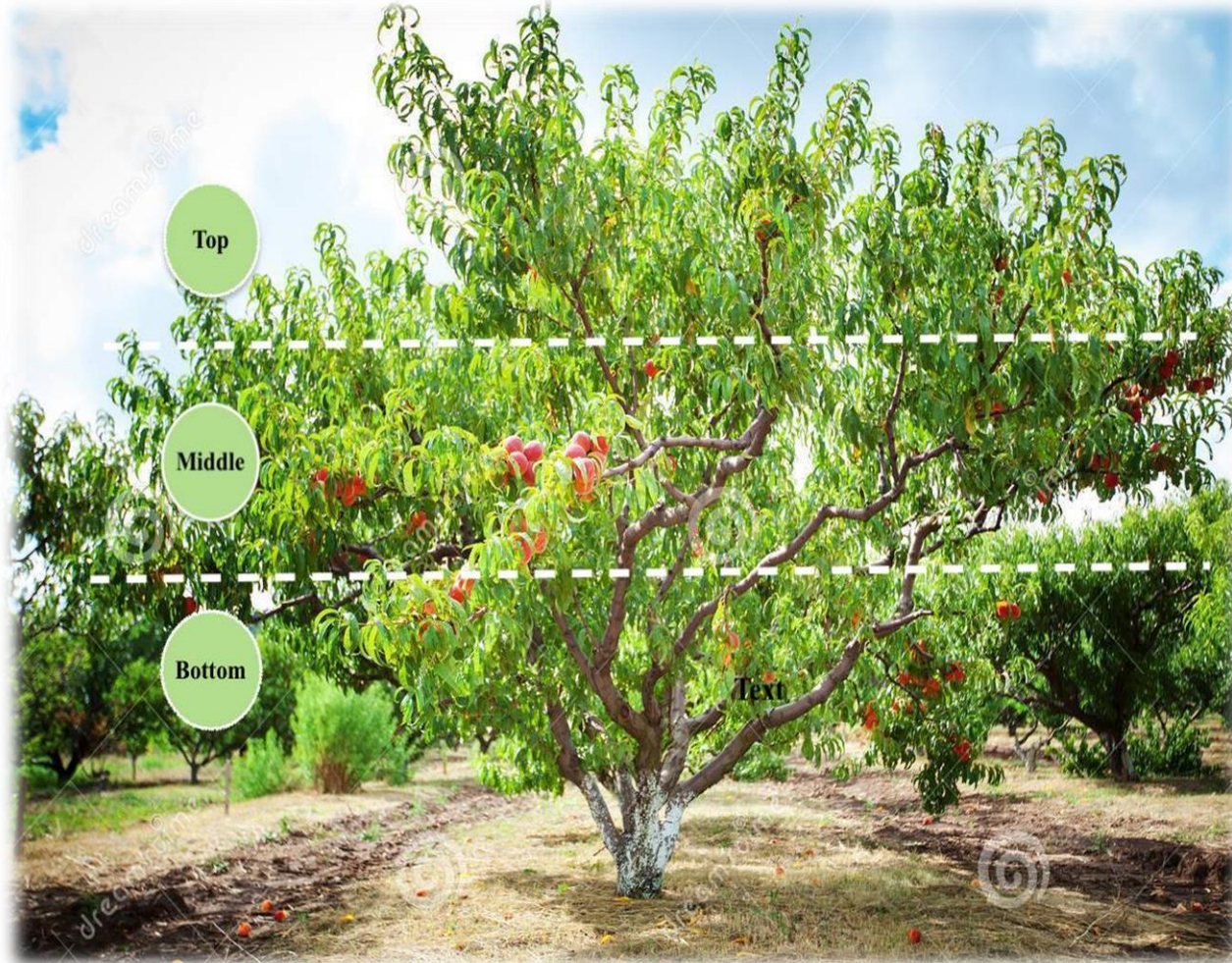
To investigate whether there are varietal differences between rootstocks in their response to root condition,?

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



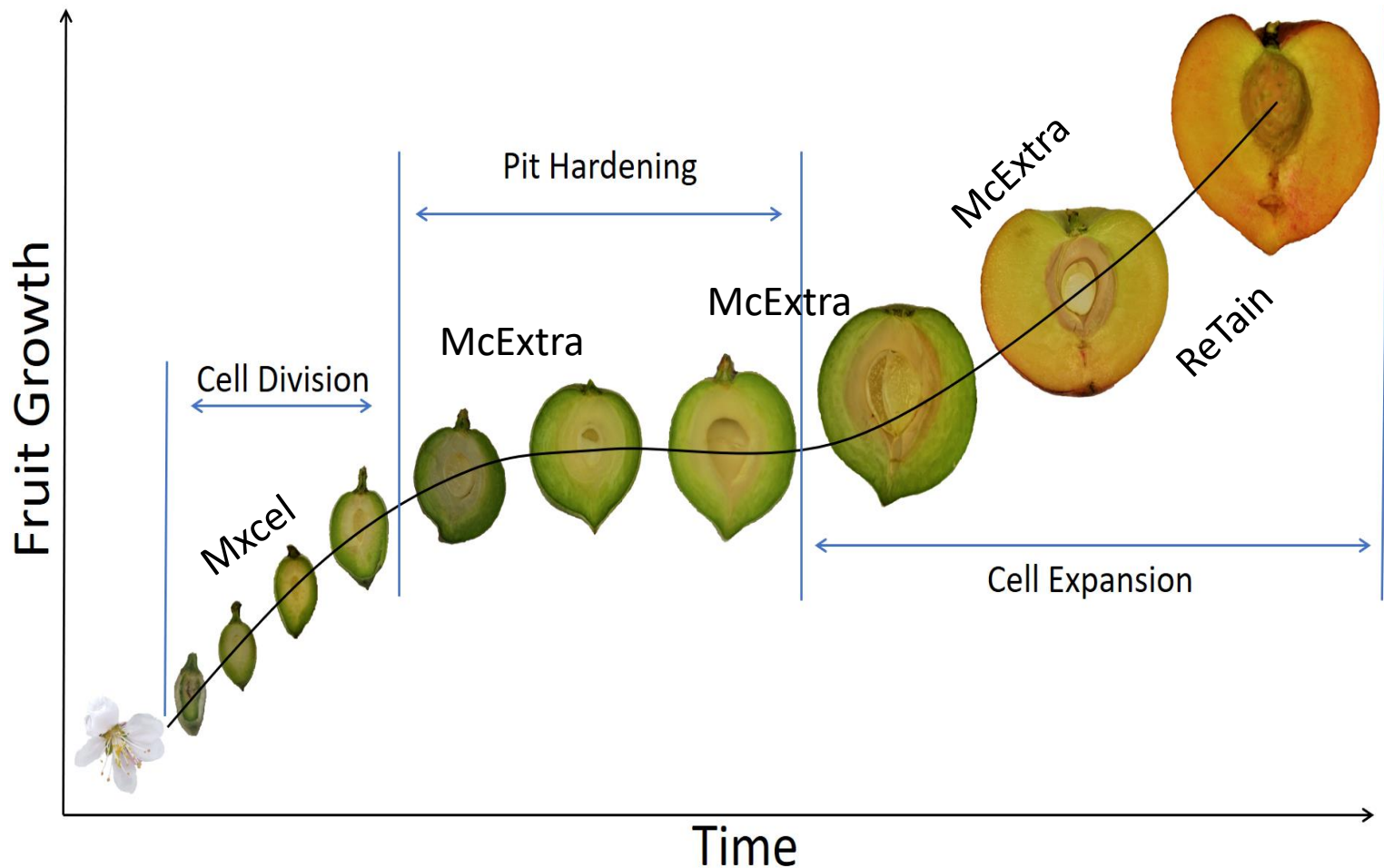
Determine the influence of fruit location within the canopy



Identify PGRs and biostimulante approaches

PGRs: ReTain {Aviglycine hydrochloride (AVG)}

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

The screenshot shows a web browser window with two tabs: 'Stone Fruit - University of Florida' and 'Sarkhosh, Ali'. The address bar displays 'https://hos.ifas.ufl.edu/stonefruit/'. The browser's bookmark bar includes 'Apps', 'ChemWatch', 'Flinders Learning O...', 'Faculties Schools a...', 'Flinders Learning O...', 'Flinders University...', 'Flinders University...', 'Flinders University...', and 'Other bookmarks'. The main content area is split into two columns:

- 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](#)

Extension

EDIS publication

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 Abrahan
- **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 Scab



Peach Leaf Rust



Brown rot

Peach Insects



Plum Curculio



Citrus root weevil



Stinkbugs



White Peach Scale



Caribbean fruit fly



San Jose Scale

Peach Tree Borers



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

