Scientific Research Committee Report



Agenda

- New Varieties Development and Management Corporation (NVDMC) Update – Peter Chaires

New Varieties Development and Management Corporation Update



26/27 NVDMC
Project Broad Overview

Top Line Focus of Each Project

IFAS Gainesville Dr. Chaparro

- Heaviest focus on orange-like. Secondary on grapefruit and specialty.
- Suffered some setbacks from freeze. Freeze provided greater segregation for cold tolerance.
- Continue to evaluate existing segregating populations to identify additional superior progeny. Existing populations at the Teaching Grove in Gainesville will continue to be evaluated.
- No new crosses are currently planned due to need to find solutions in existing material

Evaluation of Mandarin and Orange-like Selections for HLB Tolerance and Juice Quality

- Use C-54 and US 812 rootstocks in the evaluations
- Use Hamlin, Vernia, and Valencia for controls
- Juice samples will be analyzed for solids, acid, color, flavor

Selection	Types in Pedigree	Brix
FLA 20-07	Sweet Orange, Mandarin, Grapefruit	13.50
FLA 20-10	Sweet Orange, Mandarin, Trifoliate	12.00
FLA 21-10	Sweet Orange, Mandarin, Trifoliate	14.00
FLA 23-02b	Sweet Orange, Mandarin, Trifoliate	14.90
FLA 13-15	Mandarin	16.80
FLA 13-17	Sweet Orange, Mandarin, Trifoliate	16.10
FLA 23-19	Mandarin, Trifoliate	14.10
FLA 23-32	Sweet Orange, Mandarin	13.20
FLA 23-33	Sweet Orange, Mandarin, Trifoliate	17.10

IFAS Lake Alfred Dr. Dutt

Early Orange Program

- Evaluate Hamlin survivor trees in Lake County. Make Selections
  - ID Top 4 trees. Plant on various rootstocks (dirty wood)
- Evaluate HLB tolerance among irradiated Carney 3's
  - Many young trees damaged by freeze
  - Several with enhanced tolerance have been propagated for trial
- Plant and evaluate 16 early maturing sweet oranges (seed)
- Complete characterization of Lennon earlies
- Re-Evaluate a Brazilian orange collection previously introduced by Castle

IFAS CREC Grosser, Chater, Wang

- Reassessment of previously released cultivars and unreleased advanced selections under new regimen of OTC injection
  - This will be the 4th year of injections
  - First year was not typical. Product preparation was substandard. This is akin to a third year.
  - Included are sweet orange and sweet orange-like, as well as previously released specialty and grapefruit. Including un-injected controls.
- NVDMC Board requested testing of several released cultivars on CarriCea edited rootstock.

IFAS CREC, Cont.

- Expand testing of released cultivars and promising selections in the CUPs system
  - Document performance in absence of disease
  - Demonstrate value for CUPS, but also for potential performance with current and future HLB management tools and strategies.
- Documentation of performance attributes of new or recently released candidates. Sweet orange, grapefruit, and mandarins for juice and fresh market
  - Identify, characterize, and evaluate
  - Document yields and fruit and juice quality
  - Identify candidates for more rigorous trials

IFAS CREC, Cont.

- Continuation of core breeding program activities for scion improvement
  - Evaluations and selections from populations currently in the field
  - Balm Rescue Trees
    - Abandoned 50-acre research planting
    - Over 1,000 accessions were repropagated. Planted 5 years ago. Now many are flowing and bearing fruit. Will do a systematic evaluation.
- Continue work to introgress resistance from Khasi papeda. The team made nearly 500 early unique hybrids. Some are still Clas negative after 8 years. Next generation of 1200 unique hybrids aimed at lower acid and improved color.



R1T32 (1077-S266)





IFAS Post Harvest Dr. Ritenhour

- Post harvest Evaluation of new fresh selections
  - Degreening
  - Decay control
  - Harvesting methods
  - Washing and waxing treatments
  - Storage
- Evaluate internal and external quality
- Explore impact of OTC injection on new selections
- Assist with evaluation of ARS material

Dr. Mattia

USDA-ARS

Fort Pierce/Groveland

USDA ARS Dr. Mattia

- NVDMC Primary Focus:
  - Fund ability to evaluate and move material through the pipeline. Use fruit-forward approach to ID material with commercial potential
  - Collect preliminary data to reduce grower risk of planting
  - Screen for juice quality
  - ID crosses and irradiates justifying expanded trial and evaluation

Great American Sweet Orange Trial

- Plant all available sweet orange germplasm from USDA Citrus Germplasm Repository in one location
- Most have never been evaluated in Florida (since HLB)
- 111 true oranges in a 10 Acre trial at Whitmore
- Seek to ID direct industry solutions, but also varieties that can be used in mutation breeding and hybridization
- Preliminary work for this project was supported by FDOC
- NVDMC is supporting tree propagation, site establishment, trial planting, and long-term evaluation.

Field Challenge

- Transition from single-tree selection to commercial processing remains greatest challenge.
- In collaboration with The Coca-Cola Company, ARS completed a 3rd year large-scale evaluation and processing assessments (200 selections)
- This year, the 4th year, further validate production and processing and blending potential
- Seek to improve brix, color, and overall juice stream quality

USDA ARS Hot Points for 2026-27

- Screen newly fruiting trees for HLB tolerance and fruit quality
- Pasteurizing and processing single-tree selections
- Propagating, planting, and establishing the GASOT at the A.H. Whitmore Foundation Farm and replicated trials at USDA Picos Rd Farm
- Expand replicated field evaluations of advance HLB-tolerant selections coming out of DPI cleanup.

Displays, Field Days and Open Houses

Date	Event
September 17	8:30. Tour IFAS Trials. Jason Griffin's. Haines City
October 7	IFAS CREC CUPs and IPC Field Day. Lake Alfred
November 4	IFAS Finger lime Field Day. Citra
November 5	IFAS Field Day, Fresh and Processed Selections. Eagle Lake
November 13	IFAS Variety Display and Seminar. Gainesville
November 17	SWREC Open House & Tour. Immokalee
November 20	Whitmore Foundation Open House, Variety Display and Field Day. Groveland
December 17	IFAS Variety Display. CREC. Lake Alfred
January 23	IRREC Open House & Tour. Fort Pierce

Thank You