

# 2<sup>nd</sup> International Research Conference on HLB

Horticultural Review  
Chris Oswalt  
UF/IFAS Polk County  
Bartow, FL

# Specific Topics

- Statewide Disease Levels
- Tree Removal
- Fruit Quality
- Novel Alternative Treatments
- Regional HLB Management
- Foliar Nutrition

# Statewide Disease Levels

- In 2008 HLB Disease Level 1.6 to 2.3%
- In 2009 Low Response Combined Number at 6.4% for Oranges Only
- Survey (2009) Adjusted to HLB Infection at 8% Statewide for all Varieties (2X Increase per Year)
- It is Estimated Today That HLB Disease Level Approximately 18%
- Highest Levels in South and East
- Central, Northern and Western 1% (2009)

# Tree Removal

- Factors Include: Tree Age, Infection Levels, Estimated Future Infection Rates and Production, Time Horizon and Costs of Treatments (nutritional)
- Average Annual Infection Rate Exceeds 4 - 5%

# Tree Removal

- Dependent on Production Costs and Fruit Prices (along with a number of other assumptions)
- Will be Implementing a Foliar Nutritional Program
- At \$1.50/Pound Annual HLB Infection Rates > 3.9%
- At \$1.25/Pound Annual HLB Infection Rates > 4.4%

# HLB Symptomatic Fruit Quality

- Dependent on Harvest Date
- Brix Lower to No Change
- Generally Higher in Acid
- Generally Lower Ratios
- Higher Levels (below thresholds) of Limonin and Nomilin
- A 25% Blend is Detectable by Panelists

# Novel Alternative Treatments

- Trunk Injection of Magna-Bon (copper sulfate pentahydrate)
  - Positive Response in Appearance
  - Resulted in Higher Ct Values With Treatment (Lower HLB)
  - Magna-Bon Systemic in Tree
- Penicillin and Streptomycin Trunk Injection
  - Reduced HLB Levels in Treated Citrus

# Regional HLB Management

- Brazilian Study (Regional vs. Local) on Inoculum Reduction and Vector Control
- Regional Management Resulted in Delayed Epidemic of HLB by 10 Months
- Reduced HLB Incidence by 90%
- Reduced HLB Progression by 75%
- Attributed to Smaller ACP Populations and Lower Frequency of HLB Infected ACP

# Foliar Nutrition Programs

- HLB Infected Trees are Deficient in Ca, Mg, Mn, Zn and B Compared to Healthy Citrus Trees
- These Mineral Nutrients are Important for Many Plant Functions
- Program Started Early at First HLB Detection
- Tree Health, Fruit Quality and Yields (above area average) Maintained for 5 Years in Grove

# Foliar Nutrition Programs

- Maintained Aggressive Psyllid Control Throughout
- Today Grove Close to 100% HLB Infected
- Tree Death Attributed to Blight not HLB
- This is Not a Replicated Statistically Valid Experiment a Real World Observation
- Has Been Repeated with Similar Success

# Foliar Nutrition Programs

- One Statistical Study
- Trees with Mild Symptoms HLB +
- Study Compared to a ACP Control Program
- Multiple Combinations of Nutritional Materials including Reportedly Successful Combinations
- No Treatment was Statistically Better than Control

# Foliar Nutrition Programs

- Treatments had No Effect on Tree HLB Levels
- Provides for the Continued Buildup of HLB Inoculum
- Enhanced Nutritional Programs along with Good Grove Management has been Shown to Increase Productivity