Topics for Today

- Coca-Cola’s Response to Citrus Greening
- What we have done
- What we have learned
- What we are thinking about
THE COCA-COLA COMPANY IS THE LARGEST USER OF CITRUS IN THE WORLD

Together with our Partner Cutrale we have invested more than $14 Million Dollars in HLB Research
HLB Impact

- HLB now affects every major citrus producing geography other than the Mediterranean (vector now in Spain, vector and pathogen in California & Argentina)

- HLB economic impact in Florida
  - Loss of thousands of permanent jobs
  - Loss of millions of citrus trees
  - Loss of billions of dollars

- HLB affects all citrus species
  - Fruit yield down, Fruit size down, Fruit drop up
  - Fruit & Juice quality trending down
  - Potentially by-products compromised

![Florida Orange Production Chart]
On the current trajectory, citrus production forecasts in Florida are bleak!

Actual production has been below worst case models for last four years!

**FL Oranges (MM of Boxes)**

Critical threshold - potential reduction of industry infrastructure support

Brazil is also at risk

- 34 Million Trees lost in the last 10 years
- Another 40 Million Trees at risk

= actual

= estimate

[Initial estimate]
Industry & Coca-Cola Response Timeline

2008
- Industry contacted National Academy of Sciences
- Expert panels formed in April
- Research projects prioritized in December

2009
- Formation of CRDF (Citrus Research and Development Foundation)
- Current operating practices put in place for selecting & funding projects
- Initial projects funded at ~ $20MM/yr.

2010
- Coca-Cola HLB conference in Miami
- Coca-Cola & Cutrale announce funding program for CRDF – combined $1 MM per year for 3 years

2011
- Initial TCCC & Cutrale funding of three year commitment to CRDF ($500K per year each)
- Focus on Psyllid management, RNAi, antimicrobials, genetic resistance or tolerance in citrus trees

2013
- Coca-Cola announces long term purchase agreements to incentivize planting trees in Florida - $2 Billion
- TCCC – Fortune 100 – CRDF collaboration initiated to explore therapeutics for infected trees

2014
- Coca-Cola engages Agrochemical companies: Bayer, BASF, Monsanto, Syngenta and others
- Coca-Cola renews funding for CRDF at same level ($500K per year)
Current Activity

• 2013-2014: Developed therapeutic platform with fortune 100 company
• 2015: Entered collaboration with agrochemical company to evaluate efficacy, bioavailability and design methodology of the therapeutic platform as proof of concept
• 2015: Recruiting and developing funding for world class expert to culture C. Las the causative bacterium for HLB
• 2015: Continued support of industry effort and recruiting additional resources
• In the last five years TCCC has invested more than $14,000,000 in HLB research

<table>
<thead>
<tr>
<th>Year</th>
<th>CRDF</th>
<th>USDA/MAC</th>
<th>USDA/NIFA</th>
<th>Total</th>
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<tr>
<td>2009</td>
<td>7</td>
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<tr>
<td>2015</td>
<td>15</td>
<td>7</td>
<td>25</td>
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</table>

Total 2009 - 2015 => 170
Road Map for Florida – “Pockets of Sustainability”

What will happen to citrus in Florida over the next 20 years?

Pockets of Devastation 2007 - 2012

- High population of psyllids
- Rapid spread of bacteria
- Trees showing signs of disease and decline
- Significant drop in production
- Research programs initiated

Widespread Devastation 2013 - 2018

- Maximum concentration of pathogen
- More than 90% of trees infected
- Orange production falls below 100 MM boxes
- 3-5 Citrus plants continue operation
- Significant acreage and trees are lost
- Flavor management and Brazilian imports are critical to sustain supply and quality

Pockets of Sustainability 2018 - 2025

- Large scale new plantings provide improved yields
- High density plantings
- Therapeutic strategies initiated begin to reduce pathogen
- New psyllid management technologies dramatically reduce populations
- Old acreage continues to decline

Widespread Sustainability 2026 - 2035

- Citrus is grown in large plantings
- All new groves are high density
- Trees planted with HLB tolerance are increasing in number with improved fruit yield
- Improved therapeutics maintain tree health
- Psyllid populations are in decline
Assessment & Next Steps

- Aggressive and costly grove management practices are known and work
- Cost of best practices is too high for long term stability and contributes to the decline in OJ consumption
- The pace of replanting in FL is too slow
- Long term HLB solutions are years away

Two Opportunities to Consider

- Coordinated industry effort to Replant FL under best management guidelines
- Industry consortium working with commercial companies with capabilities, infrastructure and an economic incentive to deliver new products and services
Goals of Replant Florida

- Manage HLB in the Bridge to Citrus Generation II
- Restore Florida Citrus Productivity
- Improve Florida Fruit & Juice Quality
- Survive & Search for the Cure
  - Single solutions will not be sufficient
  - Integrated systems will be needed
Enablers for Replant Florida

- Science & Education
  - Best Practices
  - Strategy & Roadmap for Success
- Infrastructure
- Political Support
  - Tax Incentives
  - Abandoned Acreage Solution
  - Inoculum Removal Solution
HLB Consortium Concept

The Opportunity:
To engage key Agro Chemical Companies and other related businesses and challenge them to work on viable solution sets to help control Citrus Greening/HLB. Obtain access to untapped expertise, know-how, trade secrets and IP residing in commercial companies.

The Challenge:
Citrus is a small market for agrochemical companies. Return on investment may not meet required business threshold.

The Solution:
Build a consortium of companies with common interests in citrus to engage agrochemical companies and subsidize early R&D investments in Proof of Concept and Early Development phases.

<table>
<thead>
<tr>
<th>Agrochemical and Biotech R&amp;D cost &amp; time</th>
<th>Discovery</th>
<th>Proof of Concept</th>
<th>Early Development</th>
<th>Advanced Development</th>
<th>Prelaunch</th>
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<td>Duration (months)</td>
<td>54</td>
<td>27</td>
<td>30</td>
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Why B to B?

• Leverage influence across entire business portfolio not limited to citrus not limited by geography
• Expedite access to business case development and justification
• Mutual shared interests drives urgency
• Commercial focus is foundation
• Members have global reach and access with broad capabilities and Market Power