The Future of Florida Citrus Production

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Agenda

• State of the Industry
• Production and HLB
• Costs of HLB
  – Production cost
  – Economic cost
• Economic Proposal
STATE OF THE INDUSTRY
Orange Juice Demand Trends

[Graph showing trends for Florida production per capita, US presumed consumption per capita, and average OJ price from 1996-97 to 2013-14f.]

Source: Florida Citrus Outlook 2013.
Mirror, Mirror

• Concentrate was king
• Supply was abundant
• Cost was manageable
• Price was low
• Consumption was high

• NFC is primary product
• Supply is diminished
• Costs are soaring
• Prices are high
• Consumption is low
FL Orange Production Trends

Millions of Boxes

140 | 242 | 129 | 115 | 130 | 150 | 170 | 190 | 210 | 230 | 250 | 270 |
Long-Range Production Methodology

• Projecting future citrus production:
  – Assumed average loss rates: 3.5%
  – Assumed average planting rates: 2.0%
  – Apply average yields to projected acreage
    • Use average between 2010-11 through 2012-13 season: 2.3 boxes per tree

• Model shortcomings
  – Over-simplification of parameters.
  – Predicting the known and unknown.
## Forecast Comparison: 2012 vs. Today

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<tbody>
<tr>
<td><strong>Current</strong></td>
<td>115.0</td>
<td>110.7</td>
<td>106.9</td>
<td>103.3</td>
<td>100.3</td>
<td>97.5</td>
<td>94.7</td>
<td>92.2</td>
<td>89.9</td>
<td>87.9</td>
<td>86.0</td>
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<tr>
<td><strong>Prior</strong></td>
<td>139.1</td>
<td>138.2</td>
<td>136.9</td>
<td>135.4</td>
<td>134.2</td>
<td>132.9</td>
<td>131.5</td>
<td>130.1</td>
<td>128.7</td>
<td>127.1</td>
<td>125.6</td>
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Long-Range Production Relevance

• Current Model is losing relevance in the current production environment
  – Dramatic changes in crop forecast components: Fruit Drop and Size.
  – Price has become uninformative.

• Critical question is not the production forecast itself
  – More attention needed on the factors contributing to the declining trend.
PRODUCTION AND HLB
Bearing Acres and Acreage Yield

Source: Florida Agricultural Statistics Service.
Production Trends

• Decline in bearing acres and yield are contributing to total decline in production.

• The question is, what’s behind the downward trend in both acres and yield?

• Need to take a close look at the key USDA forecast components.
  – Number of Fruit Per Tree (Tree Yield)
  – Rate of Fruit Drop (Fruit Loss)
  – Number of Fruit Per Box (Fruit Size)
Number of Fruit Per Tree

Source: Florida Agricultural Statistics Service.
Orange Drop Rate

Source: Florida Agricultural Statistics Service.
Source: Florida Agricultural Statistics Service.
Key Production Insight

• The trees are bearing fruit and expected yields ought to be high for a growth trend.

• Acute losses to total production are the result of abnormal fruit drop and small size.

• What about tree mortality?
Florida Orange Bearing Tree Population

Source: Florida Agricultural Statistics Service.
Bearing Tree Loss Rates

Florida Orange Tree Planting and Loss Rates

Source: Florida Agricultural Statistics Service.
Bearing tree population is declining but tree loss rates are holding relatively constant.
- Losing trees, yes, but we are not hemorrhaging trees like we are hemorrhaging fruit.

Loss rates far exceed planting rates as oranges are below the replacement level.
- Declining tree population is being affected more by lack of planting than tree losses from HLB.
PRODUCTION COSTS AND HLB
Production Background

Despite the recent high on-tree returns, the number of new trees remains very low in large part because of uncertainty.

Source: Florida Agricultural Statistics Service.
Total Citrus Grower Costs (2012 Dollars)

Source: Ron j, Citrus Research and Education Center, Lake Alfred, UF.
Total Caretaking & Administrative Costs

Hurricanes, Canker, Greening

Source: Ron Muraro, Citrus Research and Education Center, Lake Alfred, UF.
Total Pest Control Costs (2012 Dollars)

Source: Ron Muraro, Citrus Research and Education Center, Lake Alfred, UF.
Total Fertilization Costs (2012 Dollars)

Source: Ron Muraro, Citrus Research and Education Center, Lake Alfred, UF.
Summary of Cost Trends

• Total grove care costs continue to rise in the face of economic and disease pressures.

• Introduction of citrus greening in 2005:
  – New management strategies while successful in mitigating disease losses have also lead to increased costs of production.

• Although on-tree returns are high, soaring costs result in higher break-even prices.
ECONOMIC COSTS AND HLB
Number of Processor & Packers

Source: FDOC Processors’ Statistics Database.
Top 5 Processors/Packers

Source: FDOC Processors’ Statistics Database.
Contraction of Citrus Industry

• Comparing 2012/13 to 2000/01 season:
  – The top 5 packinghouses ran 32% less fruit
  – The top 5 processors ran 30% less fruit

• Processor and Packinghouse operations are becoming more inefficient:
  – Running less than optimal capacity
  – More contraction/consolidation could ensue
  – These facilities are huge capital investments
  – Provides economic impact to surrounding areas

• Aggravates an existing uncertainty problem
Economic Impact of Greening

• The direct economic impact of HLB:
  – Between 2006-11, 8,000+ lost jobs & $4.5 billion loss in economic output (Spreen & Hodges 2012).

• Impacts of HLB on local economies:
  – St. Lucie, DeSoto, Hendry, and others.
  – Tax base (20%+), employment, local services.
  – Schools, libraries, emergency services, water, etc.

• The indirect economic impact of HLB:
  – Unknown but likely more detrimental than the direct effects of HLB.
    • Declining production
    • Soaring costs
ECONOMIC PROPOSAL
Tree Loss & Planting Rates

Then and now…

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<th>1996-2000</th>
<th>2008-2012</th>
<th>Difference (over time)</th>
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<tbody>
<tr>
<td>Loss rate</td>
<td>2.0%</td>
<td>3.5%</td>
<td>+1.5%</td>
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<tr>
<td>Planting rate</td>
<td>3.0%</td>
<td>2.0%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>Difference (over rates)</td>
<td>+0.9%</td>
<td>-1.5%</td>
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- Only a modest positive wedge between losses and plantings is needed for setting the path towards a sustainable future!
Enhanced Planting Incentives

• Ways to design economic incentives to enhance new citrus plantings:

  - Creative contracts (private sector)
    • Long-term contracts (10-20 years) with guaranteed payment to the grower
    • Cost-plus contract with ceiling?
    • Contract with upfront payment (trees cost, etc.)?
    • Buyer of fruit shares in cost of new grove planting?

  - Change IRS tax code (public sector)
    • Allow for the expense of new trees or for the deduction of tree losses?

  - Public/Private Partnership
    • Public investment in new planting?
Public Investment in Planting?

- Not a “10-year plan” but a “right now plan”
  - 5 million trees in the ground right now
  - Annual added boxes to total production, maybe:
    - 4 million boxes after 3-5 years
    - 8.5 million boxes after 6-8 years
    - 11.5 million boxes after 9-13 years
    - Assumes zero losses or 100% replacement planting
Summary

• Impact of HLB is a double-edged sword:
  - Evidence suggest HLB contributes to escalating drop rates and smaller fruit size.
    • Studies are needed to confirm this
  - HLB creates an environment of uncertainly putting a stranglehold on new investment.
  - Research is a critical part of the HLB fight, but additional resources are needed for action now.
Thank You!

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