Economic Importance of Florida Citrus

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USDA/ARS ‘SWAT Team’ Workshop, Ft. Pierce, Florida
April 22, 2008
Presentation Agenda

- The Department of Citrus
- Florida Orange Outlook and Situation
- Industry Effort to Solve Greening
Florida Orange Juice.
Healthy. Pure & Simple.

Florida Department of Citrus

“Who We Are”

www.floridajuice.com
Florida Citrus Commission
Florida Department of Citrus

Created in 1935
Responsible for:
- Regulation
- Research
- Market Promotion
First organization in USA established to insure quality and promote a food commodity

Model for subsequent marketing orders

- Idaho Potato Commission
- Washington State Apples
- Alaskan Seafood
‘Twelve practical citrus persons who are resident citizens of the State, each of whom is actively engaged in growing, ... packing and processing.’ 601.04 (1)(a) F.S.

“Appointed by the Governor, confirmed by the Senate.” 601.04 (2)(a) F.S.
Funding

- Financed by excise tax assessed on each box of citrus*

- Two to four percent of the orange grower’s annual return

- Historically, 75% spent on marketing. Reallocating to research in 2008-09.

*Imposing a tax on growers for generic advertising and promotion of Florida citrus is protected from First Amendment challenges.
Economic Impact

$9.3 Billion

- Over 600,000 acres
- Nearly 80,000 FTE jobs

Florida Farm Receipts Share, 2005

Field Crops: 7.5%
Foliage: 12.6%
Livestock: 18.7%
Other: 12.5%
Vegetables: 20.2%
Melons: 3.7%
Other Fruits and Nuts: 3.7%
Citrus: 21.1%

SOURCES: Food and Agriculture Organization of the United Nations (FAO), FASS.
Over 10,000 Florida Citrus Groves
Employee up to 40,000 People
30,000 to 40,000
Seasonal Pickers
Over 50 Harvesting and Hauling Companies
Over 40 Fresh Fruit Packinghouses
Packinghouses Employee Over 7,500 People and Generate >$400mm in Direct and Indirect Value
There are 18 Large Processing Facilities
Processing Fruit Alone Requires Up to 1,000 People at Each Processing Plant
Processing Facilities are Highly Capital Intensive
Requiring State of the Art Extraction, Evaporation, Pasteurization, Handling and Storage for >1,000,000,000 Ga of juice/year
There are 10 Packaging Plants Connected to a Fruit Processing Facility

Packaging Requires Another 500 People Per Plant and Produces >$3,000,000,000 in Added Value
Other Relevant Citrus Facts

- Provides >$2.7B in annual labor spending
- Generates >$300mm annually in indirect business taxes
- Over 90 intermediate fruit buyers and contractors
- 23 citrus organizations and agencies
Florida Importance in World Citrus Market

- Florida Share of global orange production
- Florida share of global grapefruit production
Florida Oranges, Grapefruit & Specialty, 02/03—06/07

- Oranges: 83.6%
- Grapefruit: 12.6%
- Specialty: 3.8%

SOURCE: Florida Agricultural Statistics Service (FASS).
World Orange Production
Selected Countries, 05/06—07/08 Averages

% of World Total Production

Brazil: 37.1
United States: 16.8
China: 10.2
Mexico: 8.5
Spain: 5.8
Italy: 4.8
Egypt: 3.8
Turkey: 3.1
South Africa: 2.6
Greece: 2.1
Argentina: 1.7
Morocco: 1.5
Australia: 0.9
Cuba: 0.5
Israel: 0.3
Cyprus: 0.2
Japan: 0.02

SOURCE: USDA.
World Fresh & Processed Orange Utilization, Selected Countries, 05/06—07/08 Averages

% Share of Country Orange Crop

<table>
<thead>
<tr>
<th>Country</th>
<th>Fresh</th>
<th>Processed</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>20%</td>
<td>80%</td>
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<tr>
<td>Brazil</td>
<td>25%</td>
<td>75%</td>
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<tr>
<td>Cuba</td>
<td>42%</td>
<td>58%</td>
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<tr>
<td>Cyprus</td>
<td>50%</td>
<td>47%</td>
</tr>
<tr>
<td>Italy</td>
<td>53%</td>
<td>44%</td>
</tr>
<tr>
<td>Israel</td>
<td>56%</td>
<td>34%</td>
</tr>
<tr>
<td>Greece</td>
<td>66%</td>
<td>33%</td>
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<tr>
<td>Australia</td>
<td>67%</td>
<td>25%</td>
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<tr>
<td>Spain</td>
<td>75%</td>
<td>21%</td>
</tr>
<tr>
<td>Argentina</td>
<td>79%</td>
<td>14%</td>
</tr>
<tr>
<td>Mexico</td>
<td>86%</td>
<td>12%</td>
</tr>
<tr>
<td>South Africa</td>
<td>88%</td>
<td>7%</td>
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<tr>
<td>Turkey</td>
<td>93%</td>
<td>3%</td>
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<tr>
<td>China</td>
<td>97%</td>
<td>2%</td>
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<tr>
<td>Egypt</td>
<td>98%</td>
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<tr>
<td>Morocco</td>
<td>99%</td>
<td>0%</td>
</tr>
<tr>
<td>Japan</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

SOURCE: USDA.
Utilization of Florida Oranges
Fresh Vs. Processed, 02/03—06/07

Processed 95.3%

Fresh 4.7%

SOURCE: FASS.
World Processed Oranges
Country Shares, 00/01—04/05

- Brazil: 50.2%
- Florida: 34.6%
- Other: 13.7%
- Total U.S.: 36.1%
- Other: 13.7%

SOURCES: Food and Agriculture Organization of the United Nations (FAO), FASS.
World Fresh Oranges
Selected Country Shares
05/06—07/08

- China: 19.5%
- Brazil: 18.3%
- Mexico: 14.3%
- Florida: 1.2%
- Other U.S.: 5.4%
- Other: 41.3%
- Total U.S.: 6.6%

SOURCE: USDA.
World Fresh & Processed Grapefruit Utilization, Selected Countries, 05/06—07/08 Averages
% of World Total Production

- China: 43.6%
- United States: 27.7%
- Mexico: 8.1%
- South Africa: 6.2%
- Israel: 5.4%
- Argentina: 4.1%
- Turkey: 3.6%
- Cyprus: 0.9%
- Cuba: 0.3%
- Italy: 0.1%

SOURCE: USDA.
World Fresh & Processed Grapefruit Utilization, Selected Countries, 05/06—07/08 Averages
% Share of Country Grapefruit Crop

- Argentina: 35% Fresh, 65% Processed
- Israel: 36% Fresh, 64% Processed
- United States: 47% Fresh, 53% Processed
- Cyprus: 64% Fresh, 36% Processed
- South Africa: 69% Fresh, 31% Processed
- Mexico: 71% Fresh, 29% Processed
- Cuba: 87% Fresh, 13% Processed
- China: 100% Fresh, 0% Processed
- Italy: 100% Fresh, 0% Processed
- Turkey: 100% Fresh, 0% Processed

SOURCE: USDA.
World Fresh Grapefruit
Selected Country Shares
05/06—07/08

China 58.3%
Florida 10.1%
Other U.S. 7.5%
Other 16.4%
Mexico 7.7%
Total U.S. 17.6%

SOURCE: USDA.
World Processed Grapefruit
Selected Country Shares
05/06—07/08

Florida
47.2%

Israel
13.6%

Argentina
10.4%

Mexico
9.3%

Other U.S.
10.3%

Other
9.2%

Total U.S.
57.5%

SOURCE: USDA.
U.S. Fresh Grapefruit Exports

![Graph showing U.S. fresh grapefruit exports from 2000-01 to 2007-08. The graph includes bars representing production for each season, with annotation indicating the percentage of world production for each year. The sources are USDA, FASS, and FAO.]
Long-Term Outlook

- Florida Citrus Production
- Florida Orange-Juice Production
- Production and Tree Losses
- Assumptions of Simulations
- Simulation Results
Production and Tree Losses

- Hurricanes
- Diseases
  - Canker
  - Greening
  - Tristeza
- Development
Path of Hurricanes:

**CHARLEY**
- August 13, 2004

**FRANCES**
- September 5, 2004

**JEANNE**
- September 26, 2004

**WILMA**
- October 24, 2005
<table>
<thead>
<tr>
<th>Item</th>
<th>2003-04 Actual</th>
<th>2007-08 Actual</th>
<th>Percent Decline</th>
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<tbody>
<tr>
<td>Orange</td>
<td>242</td>
<td>169</td>
<td>&lt;30&gt;</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>41</td>
<td>25</td>
<td>&lt;39&gt;</td>
</tr>
<tr>
<td>Specialty</td>
<td>9</td>
<td>6</td>
<td>&lt;33&gt;</td>
</tr>
<tr>
<td>TOTAL</td>
<td>292</td>
<td>200</td>
<td>&lt;32&gt;</td>
</tr>
</tbody>
</table>

Source: USDA/FASS, April 2007-08.
Florida Bearing Orange Trees

SOURCE: Florida Agricultural Statistics Service.
“There are known known's; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don’t know we don’t know.”

Defense Secretary – Donald Rumsfeld
Assumption: Yields

- Average (1993-94 thru 2003-04)
- Density: about 140 Trees/Acre
- Historical Yields/Acre by Age Group
Assumptions: Planting and Demand Growth

- 2007-08: 2.7 Million Trees
- Thereafter dependent on price
- cap: 6 million trees/year
- Demand growth: 1% U.S. and 2% rest of the world
Base Scenario Assumptions

- No-hurricane yields: average of 93/94-03/04.

- Canker yield reductions of 10% for early & midseason oranges and 5% for Valencia oranges.

- Greening loss rates of 150%, 113%, and 75% above base rates (Mid-90s: avg 2.5%) for 1-3, 4-11, and 12+ year-old trees, respectively.

- Restricted planting levels in 06/07 and 07/08; unrestricted levels dependent on price thereafter.

- Growth in U.S. and rest of the world OJ demands of 1% and 2% per year, respectively.
LOW GREENING:

- Greening loss rates of 100%, 75% and 50% above base rates for 1-3, 4-11, and 12+ year-old trees.

HIGH GREENING:

- Greening loss rates of 300%, 225% and 150% above base rates for 1-3, 4-11, and 12+ year-old trees.

HIGH DEVELOPMENT:

- Loss rates are increased by 1.5% across tree ages.

HURRICANE YIELDS:


HIGH DENSITY:

- Densities are increased to 200 per acre.
Florida Orange Production Projections

Season

08-09 09-10 10-11 11-12 12-13 13-14 14-15 15-16 16-17 17-18

Million Trees

180 170 160 150 140 130 120

High Density
Low Greening
Base
High Greening
High Development

SOURCE: Florida Agricultural Statistics Service.
Assumes existing trees die at an exponential rate. In 2009-10 a new, resistant tree is discovered and plantings begin at a rate of 6mm trees per year.

- **Scenario 1**: $2.0^t x$
- **Scenario 2**: $1.6^t x$
Scenario 1  -  $2.0^{tx}$

Production

New Acres

Old Acres

SOURCE: Florida Agricultural Statistics Service.
Scenario 2 - $1.6^t x$

Source: Florida Agricultural Statistics Service.