ECONOMIC IMPACTS OF THE FLORIDA CITRUS INDUSTRY IN 2007-08

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Total citrus production acreage declined by 20 percent compared to 2003-04.

Total citrus production volume declined by 30 percent compared to 2003-04.

The total on-tree value of citrus fruit increased by 36 percent ($892 Mn to $1,212 Mn) due to higher citrus prices.
METHODOLOGY

- Used published data for the value of fresh citrus fruit, processed citrus juice and by-products in 2007-08 production season.

- Data sources:
  - The United States Department of Agriculture/National Agricultural Statistics Service (USDA/NASS),
  - The Florida Department of Citrus, and the Florida Agricultural Statistics Service (FASS),
  - The Florida Department of Citrus, Economic Market Research,
  - Citrus Research and Education Center, University of Florida (Citrus Budgets by Dr. Muraro),
  - Florida Citrus Processors Association,
  - Feedstuff's Magazine,
  - Florida Distillers, Inc. and Peace River Citrus Products.

- Used IMPLAN Pro program to evaluate economic impacts.
CANKER-GREENING CULTURAL PROGRAM CONSIDERATION

- Citrus production budgets were estimated “with and without” canker-greening cultural program.
- Citrus production budget estimates included four types of citrus fruit in four regions of Florida.
- Florida citrus production expenditure budgets were constructed under the assumption (based on the citrus industry expert opinion) that two-thirds of citrus growers follow the recommended citrus canker-greening cultural program and one-third do not follow the canker-greening program.
- Production costs per acre for cultural program with canker-greening were higher by 7 to 16 percent based on citrus type and region.
The economy is driven by consumption or final demand, including exports, and local purchases.

Model constructed for a specific region.

Represents economic linkages between industries, households, and governments in terms of purchases and expenditures.
Market Structure and Economic Impact Linkages of the Florida Citrus Industry

- Fruit growers (groves)
- Harvesting & Transport Contractors
- Fresh fruit packing-houses
- Processing sector: canned & frozen juices, byproducts
- Commodity exports

Citrus Industry

Rest of United States and world economy

- Local and state government
- Input and service suppliers
- Wholesale and retail distribution
- Local consumption and intermediate demand

Rest of local economy

- Jobs: labor/wages
- Personal and business taxes
- Purchased inputs (indirect effects)
- Local consumption and intermediate demand

Rest of local economy

- Goods and services (money flows)
- Imports (Leakages)

- Purchased inputs (indirect effects)
- Consumer household spending (induced effects)

- Resident population employee households
- Local and state government

- Wholesale and retail distribution
- Input and service suppliers
- Local consumption and intermediate demand

- Local and state government
- Input and service suppliers
- Wholesale and retail distribution

- Local consumption and intermediate demand
- Goods and services (money flows)
- Imports (Leakages)
IMPLAN SYSTEM

- Microcomputer system for I-O model construction and impact analysis.
- Software licensed by MIG, Inc. since 1995 (www.implan.com)
- Regional economic database for US states and counties, updated annually, purchased separately.
- Data includes Industry Output (440 industry sectors), Employment, Value Added, Labor Income, Property Income, Taxes, Final Demands, Transfer Payments, Commodity Trade, and Capital Investment.
Output: The dollar amount goods or services produced or sold by an industry.

Employment: A measure of the number of jobs generated by an economic activity.

Value Added: The total labor and property income generated (value added = industry output – industry purchases).

Labor Income: All wages and salary earnings plus proprietor’s income to business owners.

Other Property Income: Rent, interest, dividends, royalties.

Indirect Business Taxes: Local and state taxes such as property taxes, sales taxes, water management district levies, intangible taxes, vehicle taxes, and excise taxes.
Multipliers describe the response of the economy to a stimulus (a change in demand or production) in a given region and for a particular sector. Multipliers express the degree of interdependency between sectors in a region's economy.

- **Direct Effects:** Changes in economic activity of industry or activity analyzed.
- **Indirect effects:** Changes in inter-industry purchases ("supply chain") as they respond to the new demands of directly affected industries.
- **Induced effects:** Changes in spending by employee households as income increases (or decreases).
- **Total effects:** Are the sum of direct, indirect, and induced effects.
## INDUSTRY PURCHASES FOR FLORIDA CITRUS FRUIT PRODUCTION, BY IMPLAN SECTORS, 2007-08

<table>
<thead>
<tr>
<th>IMPLAN Sectors</th>
<th>Fresh Fruit</th>
<th>Processed Fruit</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse &amp; Nursery Production</td>
<td>3.6</td>
<td>34.8</td>
<td>38.4</td>
</tr>
<tr>
<td>Agricultural Support services</td>
<td>80.7</td>
<td>710.5</td>
<td>791.2</td>
</tr>
<tr>
<td>Petrochemical Manufacturing</td>
<td>6.1</td>
<td>42.3</td>
<td>48.4</td>
</tr>
<tr>
<td>Fertilizer mixing &amp; Manufacturing</td>
<td>17.9</td>
<td>205.5</td>
<td>223.5</td>
</tr>
<tr>
<td>Pesticides &amp; Agricultural Chemicals</td>
<td>19.7</td>
<td>168.6</td>
<td>188.3</td>
</tr>
<tr>
<td>Monetary Authorities &amp; Depository Credit Intermediaries</td>
<td>17.9</td>
<td>170.0</td>
<td>178.9</td>
</tr>
<tr>
<td>Other State &amp; Local Government Enterprises</td>
<td>10.0</td>
<td>73.7</td>
<td>83.7</td>
</tr>
<tr>
<td>Total Intermediary Commodity Purchases</td>
<td>155.9</td>
<td>1,405.4</td>
<td>1,561.4</td>
</tr>
</tbody>
</table>

(Million dollars)
## VALUE OF FRESH FLORIDA CITRUS FRUIT AND PACKINGHOUSE MARGINS, 2007-08

<table>
<thead>
<tr>
<th>Citrus type</th>
<th>Fresh Fruit</th>
<th>Fresh Shipments</th>
<th>Packinghouse Marketing Margins*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early, Mid-season, &amp; Naval oranges</td>
<td>44</td>
<td>79</td>
<td>35</td>
</tr>
<tr>
<td>Valencia oranges</td>
<td>21</td>
<td>38</td>
<td>18</td>
</tr>
<tr>
<td>White seedless grapefruit</td>
<td>23</td>
<td>40</td>
<td>17</td>
</tr>
<tr>
<td>Red seedless grapefruit</td>
<td>113</td>
<td>187</td>
<td>73</td>
</tr>
<tr>
<td>Tangelos</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Tangerines and Mandarins</td>
<td>48</td>
<td>86</td>
<td>38</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>253</strong></td>
<td><strong>438</strong></td>
<td><strong>185</strong></td>
</tr>
</tbody>
</table>

* Fresh shipment value (F.O.B.) minus cost of purchased fruit (Fresh value).
### VALUE OF FLORIDA FROZEN AND CANNED CITRUS JUICE FOR LOCAL CONSUMPTION AND EXPORT, 2007-08

<table>
<thead>
<tr>
<th>Products</th>
<th>Out-of-State Shipments</th>
<th>In-State Consumption</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen orange juice</td>
<td>972.4</td>
<td>57.5</td>
<td>1,029.9</td>
</tr>
<tr>
<td>Chilled &amp; canned (bottled) orange juice</td>
<td>2,141.0</td>
<td>132.7</td>
<td>2,273.7</td>
</tr>
<tr>
<td>Frozen grapefruit juice</td>
<td>50.6</td>
<td>1.5</td>
<td>52.1</td>
</tr>
<tr>
<td>Chilled &amp; canned (bottled) grapefruit juice</td>
<td>87.8</td>
<td>4.3</td>
<td>92.1</td>
</tr>
<tr>
<td>Total for all citrus juice products</td>
<td>3,251.8</td>
<td>196.0</td>
<td>3,447.8</td>
</tr>
</tbody>
</table>

*(Million dollars)*
<table>
<thead>
<tr>
<th>Products</th>
<th>Production Volume</th>
<th>Unit</th>
<th>Price (dollars/unit)</th>
<th>Total Value (Million dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrus pulp &amp; meal</td>
<td>722,895</td>
<td>Tons</td>
<td>$140.00</td>
<td>$101.2</td>
</tr>
<tr>
<td>Molasses</td>
<td>57,058</td>
<td>Tons</td>
<td>$125.00</td>
<td>$7.1</td>
</tr>
<tr>
<td>Citrus oil</td>
<td>24,041,791</td>
<td>Pounds</td>
<td>$1.15</td>
<td>$27.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>$136.0</td>
</tr>
</tbody>
</table>
## TOTAL IMPACTS OF THE FLORIDA CITRUS INDUSTRY BY ECONOMIC IMPACT MEASURES, 2007-08

<table>
<thead>
<tr>
<th>Type of effect</th>
<th>Output</th>
<th>Employment*</th>
<th>Value Added</th>
<th>Labor Income</th>
<th>Other Property Income</th>
<th>Indirect business taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Million $)</td>
<td>(Jobs)</td>
<td>(Million $)</td>
<td>(Million $)</td>
<td>(Million $)</td>
<td>(Million $)</td>
</tr>
<tr>
<td>Direct</td>
<td>4,020</td>
<td>27,256</td>
<td>1,715</td>
<td>848</td>
<td>699</td>
<td>80</td>
</tr>
<tr>
<td>Indirect</td>
<td>1,372</td>
<td>16,967</td>
<td>776</td>
<td>543</td>
<td>176</td>
<td>57</td>
</tr>
<tr>
<td>Induced</td>
<td>4,020</td>
<td>31,436</td>
<td>2,128</td>
<td>1,376</td>
<td>579</td>
<td>173</td>
</tr>
<tr>
<td>Total</td>
<td>8,906</td>
<td>75,828</td>
<td>4,619</td>
<td>2,767</td>
<td>1,454</td>
<td>310</td>
</tr>
</tbody>
</table>

*Employment impact represents full-time, part-time, and seasonal jobs
Employment impact represents full-time, part-time, and seasonal jobs.
VALUE ADDED IMPACTS OF THE FLORIDA CITRUS INDUSTRY, 2007-08

Million dollars

- Citrus juice processing and byproducts
- Citrus production for juice processing
- Citrus production for fresh consumption
- Fresh citrus marketing margins

- Direct
- Induced
- Indirect
LABOR INCOME IMPACTS OF THE FLORIDA CITRUS INDUSTRY, 2007-08
OUTPUT AND VALUE ADDED IMPACTS OF THE FLORIDA CITRUS INDUSTRY BY MAJOR INDUSTRY GROUP IN 2007-08

Million dollars

- Manufacturing: 746
- Agriculture, forestry, fisheries & Hunting: 1,167
- Wholesale trade: 356
- Real estate and rental: 376
- Government & non-classifieds sectors: 393
- Construction: 409
- Finance and insurance: 363
- Health and social services: 347
- Others*: 343
- Professional, technical & scientific services: 318
- Retail trade: 216
- Transportation and warehousing: 181
- Accommodation and food services: 163
- Information: 155
- Management of companies: 137
- Administration and waste services: 129

*Mining, Utilities, Education, Art-entertainment & Recreation, and Other services
EMPLOYMENT IMPACTS OF THE FLORIDA CITRUS INDUSTRY BY MAJOR INDUSTRY GROUP IN 2007-08

- Agriculture, forestry, fisheries & Hunting: 30,568
- Manufacturing: 7,607
- Government & non-classifieds sectors: 5,284
- Retail trade: 4,682
- Health and social services: 4,143
- Others*: 3,749
- Wholesale trade: 3,134
- Construction: 2,943
- Professional, technical & scientific services: 2,612
- Accommodation and food services: 2,602
- Administration and waste services: 1,987
- Finance and insurance: 1,897
- Real estate and rental: 1,844
- Transportation and warehousing: 1,582
- Management of companies: 627
- Information: 566

*Mining, Utilities, Education, Art-entertainment & Recreation, and Other services