

## **Summary of 2006-2007 Citrus Budget for the Central Florida (Ridge) Production Region**

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Citrus budgets are tabulated annually for the Central, Southwest and Indian River citrus production regions of Florida. The attached budget costs are for the Central Florida (Ridge) citrus production region. These costs may not represent your particular grove situation. However, they represent the most current comparative cost estimates for Florida citrus. The budget costs items for the **Central Florida (Ridge)** represent a **custom managed operation**.

Budget analysis provides the basis for many grower decisions. Budgets can be used to calculate potential profits from an operation, determine cash requirements for an operation and determine break-even prices. The budget costs presented will serve as a format for growers to analyze their own individual records. The cost data was developed by surveying custom operators, suppliers, growers, colleagues with UF/IFAS and County Extension Agents in each production region.

Except for fertilizer materials, there were minimal price increases in fuel and chemicals. Most of the increases in fuel costs occurred during the 2005-2006 production season and stabilized during 2006-2007. The use of more generic formulations of commonly used spray chemicals kept prices about the same as reported in 2005-2006. Fertilizer had the highest increase in prices averaging about 8% above the previous year. Due to both domestic and international demands for fertilizer products, prices are expected to continue increasing into the 2007-2008 season. Chemicals may also show some increase into the next season with fuel prices hopefully remaining stable.

The 2006-2007 summary comparative budgets summary for a processed orange cultural program are shown in Table 1. Two scenarios are presented: 1) Typical/Historic Processed Orange Cultural Program **Without Citrus Greening** and 2) Processed Orange Cultural Program **With Citrus Greening**. Scenario one represents costs of typical grove practices which have been performed for citrus grown for the processed juice market. Scenario one does not include citrus canker and greening management control programs. Scenario two is the same processed market cultural program for scenario one but expanded to include the additional costs for managing citrus canker and greening summarized in Table 2.

With the introduction of citrus greening in 2005, Florida citrus growers have had to develop new management strategies to identify and remove infected trees along with adding new spray programs to control the insect vector, Asian citrus psyllid. Likewise, with the end of the citrus canker eradication program in 2006, to reduce the impact of canker infestations on new tree flushes and reduce fruit drop, copper spray material is being added with each spray tank mix. For fruit grown for the fresh fruit market, additional costs are incurred by growers to assure that the blocks and fruit can be certified "canker free" for shipments to the U.S. domestic and European markets. Table 2 presents the estimated additional costs required to manage citrus greening and canker and were based on the cultural programs being implemented in UF/IFAS CREC research groves and information from citrus growers. These costs were incorporated into Tables 1 and 3.

The budgets shown in Table 1 lists the costs of individual grove care practices normally performed in a citrus grove. These costs reflect current grove practices being performed by growers. The estimated costs are for a mature grove (10+ years old); the grove care costs for a specific grove site may differ depending upon the tree age; tree density and the grove practices actually performed. For example, tree losses due to blight, tristeza or citrus greening could double, if not increase more, the tree replacement costs. Travel and set-up costs may vary due to the size of a citrus grove and the distance from the grove equipment barn. Citrus canker and greening control costs will also vary between individual blocks due to variety and fresh or processed market destination.

The comparative budget costs are shown as an expanded “**delivered-in**” format in Table 3. The delivered-in costs include cultural/production, management, regulatory and harvesting costs. The costs are presented in per acre, per box and per pound solids cost units. The per acre yields used in Table 3 represent above average production for Valencias in the Central Florida (Ridge) production region. The decreased yield per are for the “with greening” expanded budget reflects an additional 2.3% average annual tree loss for all age trees.

Break-even prices for processed Valencia oranges are shown in Table 4 for yields ranging from 300 to 600 boxes per acre. **Without** the additional cultural management costs for citrus canker and greening, the delivered-in break-even price ranged from \$1.129 to \$0.769 per pound solids, respectively. **With** additional cultural management costs for citrus canker and greening, the delivered-in price break-even price ranged from \$1.373 to \$0.891 per pound solids, respectively.

Additional information on budgeting and cost analysis can be obtained by contacting the author or your County Extension Citrus Agent or going to the Lake Alfred UF/IFAS CREC **Extension-Economics** website: <http://www.crec.ifas.ufl.edu/Extension/Economics>.

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### Reference-Source Information

Muraro, Ronald P. “Summary of 2007 Ridge and Indian River-South Florida Citrus Caretaker Custom Rate Charges.” UF/IFAS CREC Website: [www.crec.ifas.ufl.edu/Extension/Economics](http://www.crec.ifas.ufl.edu/Extension/Economics) September 2007. 5 pages.

Muraro, Ronald P. “Average Packing Charges for Florida Fresh Citrus – 2006-07 Season.” UF/IFAS CREC Website: [www.crec.ifas.ufl.edu/Extension/Economics](http://www.crec.ifas.ufl.edu/Extension/Economics) September 2007. 2 pages.

Muraro, Ronald P. “Estimated Average Picking, Roadsiding and Hauling Charges for Florida Fresh Citrus – 2006-07 Season.” UF/IFAS CREC Website: [www.crec.ifas.ufl.edu/Extension/Economics](http://www.crec.ifas.ufl.edu/Extension/Economics) September 2007. 2 pages.

Muraro, Ronald P. “Summary of 2006-2007 Citrus Budgets for the Indian River Citrus Production Region.” UF/IFAS CREC Website: [www.crec.ifas.ufl.edu/Extension/Economics](http://www.crec.ifas.ufl.edu/Extension/Economics) December 2007. 8 pages.

Muraro, Ronald P. “Summary of 2006-2007 Citrus Budgets for the Southwest Florida Citrus Production Region.” UF/IFAS CREC Website: [www.crec.ifas.ufl.edu/Extension/Economics](http://www.crec.ifas.ufl.edu/Extension/Economics) December 2007. 11 pages.

Table 1. A Listing of Estimated Comparative **Central Florida (Ridge)** Production Costs Per Acre for **Processed Oranges**, 2006-2007<sup>z</sup>

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove.	Processed Cultural Program	
	Without Canker-Greening	With Canker-Greening
<b>PRODUCTION/CULTURAL COSTS<sup>v</sup></b>		
<u>Weed Management/Control:</u>		
Mechanical Mow Middles (4 times per year)	\$ 43.68	\$ 43.68
Chemical Mow Middles (2 times per year)	17.02	17.02
General Grove Work (2 labor hours per acre)	30.88	30.88
Herbicide (1/2 tree acre treated):		
Application (2 residual applications)	28.86	28.86
Material	73.90	73.90
Spot Treatment (material and application)	<u>25.46</u>	<u>25.46</u>
Total Herbicide Cost	128.22	128.22
<u>Spray/Pest Management:</u>		
Temik (33 lbs): Application	—	14.93
Material	<u>—</u>	<u>108.54</u>
Total Temik Cost	—	123.47
Winter-Spring #1: Application (125 GPA)	—	29.20
(February) Material	<u>—</u>	<u>34.09</u>
Total Spring #1 Cost	—	63.29
Winter Spring #2: Application (125 GPA)	—	29.20
Material	<u>—</u>	<u>38.41<sup>x</sup></u>
Total Spring #2 Cost	—	67.61
Summer Oil #1: Application (125 GPA)	29.20	29.20
Material	<u>44.59</u>	<u>35.09</u>
Total Summer Oil #1 Cost	73.79	64.29
Summer Oil #2: Application (125 GPA)	29.20	29.20
Material	<u>73.34<sup>x</sup></u>	<u>55.59</u>
Total Summer Oil #2 Cost	102.54	84.79
Fall Insecticide: Application (125 GPA)	—	29.20
Material	<u>—</u>	<u>14.33</u>
Total Fall Insecticide Cost	—	<u>43.53</u>
Total Spray/Pest Management Costs	176.33	446.98

Table 1. A Listing of Estimated Comparative **Central Florida (Ridge)** Production Costs Per Acre for **Processed Oranges**, 2006-2007 (cont'd.)<sup>z</sup>

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove.	Processed Cultural Program	
	Without Canker-Greening	With Canker-Greening
Field Inspections for Citrus Greening (4 inspections @ \$22.73)	—	90.92
Mandatory Citrus Canker Decontamination Costs	29.35	29.35
Fertilizer (Bulk):4 Applications	37.44	37.44
Material (16-2-16-3MgO @ 220 lbs N)	<u>197.04</u>	<u>197.04</u>
Total Fertilizer Cost	234.48	234.48
Dolomite (one ton applied every 3 yrs) – Material/Application	11.45	11.45
Pruning <sup>w</sup> : Topping (\$28.92/A ÷ 2.5 yrs)	11.97	11.97
Hedging (\$27.33/A ÷ 2 yrs)	13.67	13.67
Chop/Mow Brush after Hedging (\$11.99/A ÷ 2 yrs)	<u>6.00</u>	<u>6.00</u>
Total Pruning Cost	31.64	31.64
Tree Replacement – 1 thru 3 years of age <b>(3 trees/acre without greening; 6 trees/acre with greening)</b>		
Remove Trees: Pull, Stack & Burn (Clip-Shear & Front End Loader)	19.08	31.80
Prepare Site and Plant Tree (includes reset trees)	43.29	81.00
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	<u>37.62</u>	<u>98.40</u>
Total Tree Replacement Cost	99.99	211.20
Irrigation: Microsprinkler System <sup>v</sup>	<u>186.70</u>	<u>186.70</u>
<b>IRRIGATED PROCESSED FRUIT PRODUCTION COSTS</b>	<b><u>\$989.74</u></b>	<b><u>\$1,462.52</u></b>

<sup>z</sup>The listed estimated comparative costs are for the example grove situation described in the Economic Information Report Series entitled: “Budgeting Costs and Returns for Central Florida Citrus Production” and may not represent your particular grove situation in Central Florida.

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, December 2007.

<sup>y</sup>Central Florida production area refers to Polk and Highlands counties. However, the costs presented in this report are applicable to other counties such as Hardee, Hillsborough, Lake-Orange, Osceola and Pasco counties.

Where **equipment use** or **application** is listed (discing, hedging, spray application, etc.), an **average custom charge** (cost) is used which includes a charge for equipment repairs, maintenance, labor and overhead management charges/costs. A **management charge** for equipment supervision and fruit marketing is not included. Management charges/costs could be based on a monthly charge (\$3 to \$6/acre) or percentage of gross sales. In addition to these charges, a harvesting supervision cost (10¢ to 20¢/box) for overseeing and coordinating harvesting may be charged. Other cost items which are not included in the budget are ad valorem taxes and interest on grove investment. In addition to these cost items, overhead and administrative costs, such as water drainage/district taxes, crop insurance, and other grower assessments, can add up to 12 percent to the total grove care costs. These costs vary from grove to grove depending on age, location, and time of purchase or establishment and are estimated in the expended Table 3.

Included in the materials expense is a supervision (or handling) charge of 10% of cost/price of the materials.

The budget cost items have been revised to reflect current grove practices being used by growers—e.g., chemical mowing, different spray materials, and rates of fertilization, microsprinkler irrigation, more reset trees, hedging and topping practices, etc. Therefore, the revised costs for each grove practice shown may be higher, or lower, than previously reported.

Although the estimated annual per acre grove costs listed are representative for a mature citrus grove (10+ years old), the grove care costs for a specific grove site may differ depending upon the tree age, tree density and the grove practices performed; e.g., spot herbicide for grass/brush regrowth under trees could add an additional \$14.18 per acre; extensive tree loss due to blight, tristeza, or citrus greening could substantially increase the tree replacement and care costs; travel and set-up costs may vary due to size of the citrus grove and distance from grove equipment barn and could add \$36.08 per acre; etc.

<sup>x</sup>Spray materials include copper (Cu), oil and nutritional.

<sup>w</sup>Per acre costs shown in parenthesis are for 2007.

<sup>y</sup>Irrigation Expense includes the following:

	<u>Microsprinkler</u>
Variable Operating Expense (Diesel)*	\$ 73.24
Fixed-Variable Expense (annual maintenance repairs to system)	<u>56.90</u>
Total Cash Expenses	\$130.14
Fixed-Depreciation Expense	<u>56.56</u>
Total Cash and Fixed Expense	<u>\$186.70</u>

\*Reflects the higher fuel costs.

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Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, December 2007.

Table 2. Additional Costs for Managing Citrus Canker and Citrus Greening – 2007

	Oranges for Juice Processing	Grapefruit for Fresh Market
	----- \$/Acre -----	
<u>Citrus Canker</u>		
Copper Spray Costs (Additional Materials)	15.12	45.36
Clean Blocks Before Certification and Harvesting	—	31.08
Grove Inspections Before “Canker Free” Certification	—	45.46 (2 inspections)
Mandatory Citrus Canker Decontamination Costs	<u>29.35</u>	<u>29.35</u>
Total Additional Costs for Citrus Canker	44.47	151.25
<u>Citrus Greening (control psylla)</u>		
Temik (Application & Materials)	118.54	118.54
Spray Costs (Application & Materials)	132.10	172.87
Field Inspections for Identifying Trees with Greening	90.92 (4 inspections)	90.92 (4 inspections)
Total Additional Costs for Citrus Greening	341.55	382.32
Total Additional Costs for Citrus Canker and Greening	<u>386.02</u>	<u>533.57</u>

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, December 2007.

Table 3. Estimated Total Delivered-in Cost for Central Florida (Ridge) Valencia Oranges Grown for the Processed Juice Market **Without** and **With** Citrus Canker, 2006-07

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program <b>Without Canker-Greening and Resetting-Tree Replacement</b>			Processed Cultural Program <b>With Canker-Greening and Resetting-Tree Replacement</b>		
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.
Total Production/Cultural Costs	\$ 989.74	\$2.066	\$0.3039	\$1,462.52	\$3.499	\$0.5145
Interest on Operating (Cultural) Costs	49.49	0.103	0.0152	73.13	0.175	0.0257
Management Costs	48.00	0.100	0.0147	48.00	0.115	0.0169
Taxes/Regulatory Costs:						
Property Tax/Water Management Tax	<u>61.00</u>	<u>0.127</u>	<u>0.0187</u>	<u>61.00</u>	<u>0.146</u>	<u>0.0215</u>
Total Direct Grower Costs	\$1,148.23	\$2.397	\$0.3525	\$1,644.65	\$3.935	\$0.5786
Interest on Average Capital Investment Costs	<u>321.22</u>	<u>0.671</u>	<u>0.0986</u>	<u>321.22</u>	<u>0.768</u>	<u>0.1130</u>
Total Grower Costs	\$1,469.44	\$3.068	\$0.4511	\$1,965.86	\$4.703	\$0.6916
Harvesting and Assessment Costs:						
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,226.72	2.561	0.3766	1,070.50	2.561	0.3766
DOC Assessment	<u>105.38</u>	<u>0.220</u>	<u>0.0324</u>	<u>91.96</u>	<u>0.220</u>	<u>0.0324</u>
Total Harvesting and Assessment Costs	1,332.10	2.781	0.4090	1,162.46	2.781	0.4090
Total Delivered-In Cost	<u>\$2,801.54</u>	<u>\$5.849</u>	<u>\$0.8601</u>	<u>\$3,128.32</u>	<u>\$7.484</u>	<u>\$1.1006</u>
P.S. = Pound Solids	Refer to cultural program shown in Table 1.			Refer to cultural program shown in Table 1.		
120 trees per acre	Yield: 479 boxes/acre; 6.8 P.S./box			Yield: 418 boxes/acre; 6.8 P.S./box		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, December 2007.

Table 4. Break-even Price for Processed Valencia Oranges in Central Florida (Ridge), 2006-07

Boxes Per Acre						
300	350	400	450	500	550	600
<b>Delivered-in Price Per Pound Solides<sup>a</sup></b>						
<u>Without Canker-Greening</u>						
\$1.129	\$1.026	\$0.949	\$0.889	\$0.841	\$0.802	\$0.769
<u>With Canker-Greening</u>						
\$1.373	\$1.235	\$1.132	\$1.051	\$0.987	\$0.935	\$0.891

<sup>a</sup>Assumes 6.8 pounds solids per box.