



Summary of 2005-2006 Citrus Budget for the Central Florida (Ridge) Production Region

Ronald P. Muraro, Extension Economist
University of Florida, IFAS, CREC, Lake Alfred, FL

Annually, citrus budgets are tabulated for the Central, Southwest and Indian River citrus production regions of Florida. The attached budget costs are for the example grove situation described in the expanded citrus budget series titled: "Budgeting Costs and Returns for the Central Florida" region. The budget 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 **Central Florida** represent a **custom managed operation**.

The 2005-2006 summary comparative budgets are shown in Table 1 and are presented in three scenarios: 1) Low Cost Processed Cultural Program Alternative; 2) Processed/Reduced Fresh Cost Cultural Program; and 3) Typical/Historical Fresh Cultural Program. Scenario one represents a low cost alternative that would allow growers to provide a maintenance cultural program in a low on-tree price situation. Scenario two represents a typical processed orange cultural program and/or reduced cost fresh fruit program. The third scenario represents typical costs of grove practices which have been performed for citrus grown for the fresh fruit market.

The 2005-2006 budgets reflect major price increases in all production inputs over the 2004-2005 season: fuel increased 8.5% to 12.5%; fertilizer products increased 10% to 13.5%; fungicides increased 3.5% to 5.0%; and spray oil increased 60%. Due to generic products, insecticides, nematicides and herbicides price changes were mixed; some products have increased 7% to 14% while others remained the same or decreased. Citrus trees were still recovering from the affects of the 2004 and 2005 hurricanes that crossed the Florida citrus production regions. The 2005-2006 Indian River region's citrus production was only 65% of typical average per acre yields with Central Florida yields for the same season about 85% of typical average production. Southwest Florida had the largest reduction in yields due to Hurricane Wilma in October 2005. Yields decreased 40% to 60% for most varieties in the Southwest Florida citrus production region. As a result of the decreased yields per acre for all citrus production regions, the unit per box, per pound solids and per carton costs were higher than in recent years.

Budget analysis provides the basis for many grower decisions. Budget analysis 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 costs from their own individual records. The cost data was developed by surveying custom operators, suppliers, growers, colleagues with UF/IFAS and County Extension Citrus Agents in each production region.

Each budget shown in Table 1 lists the cost of individual grove care practices normally performed in a citrus grove. These costs are categorized into cumulative sub-totals of irrigated processed and irrigated fresh fruit program and reflecting current grove practices being used 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 performed. For example, extensive tree loss due to blight or tristeza could at least double, if not increase more, the tree replacement and care costs. Also, travel and set-up costs may

vary due to the size of a citrus grove and the distance from the grove equipment barn. The mandatory decontamination requirements to control the spread of citrus canker add to the total operational costs. These costs are shown in the expanded “delivered-in” cost table.

The comparative budget costs are shown as an expanded “**delivered-in**” cost format in Table 2 for Central Florida Valencia oranges. The “delivered-in” costs represent cultural programs for both the processed juice fruit and fresh fruit markets. The estimated delivered-in costs include total cultural/production, management, regulatory and harvesting costs.

With the introduction of citrus greening in 2005, Florida citrus growers have had to develop new management strategies to identify infected trees to be removed along with a new spray program to control the insect vector, Asian citrus psyllid, which transmits the citrus greening disease. Likewise, with the discontinuation of the citrus canker eradication program in 2006, new management strategies are being implemented to assure fruit grown for the fresh market can be certified “canker free” for shipments to the U.S. domestic and European markets. Table 3 presents estimated costs required to manage citrus greening and canker that would be in addition to the costs shown in Tables 1 and 2. Since Florida’s citrus industry is in “beginning learning stages” for management of citrus greening and canker, at this time these costs are presented separately.

Additional information on budgeting and cost analysis can be obtained by contacting the author or your County Extension Agent or going to the Extension or Economics section of the EDIS website: <http://edis.ifas.ufl.edu> or UF/IFAS CREC website: <http://www.crec.ifas.ufl.edu> then click on **Extension** and then **Economics**.

Table 1. A listing of estimated comparative Central Florida (Ridge) citrus production costs per acre for oranges, 2005-2006^z

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove.	Low Cost Processed Cultural Program One-Year Alternative	Processed and Reduced Fresh Cost Cultural Program	Typical/Historical Fresh Fruit Cultural Program
PRODUCTION/CULTURAL COSTS:^y			
Weed Management/Control:			
Discing (2 times per year)	\$ 20.64	\$ 20.64	\$ 20.64
Mechanical Mow Middles (4 times per year)	47.36	47.36	47.36
General Grove Work (2 labor hours per acre)	29.32	29.32	29.32
Herbicide (1/2 tree acre treated):			
Application (4 glyphosate or 2 residual applications)	\$58.88	\$29.44	\$29.44
Material	23.72	71.82	71.82
Spot Treatment (Material/application)	—	<u>14.72</u>	<u>14.72</u>
Total Herbicide Cost	82.60	115.98	115.98
Spray:			
Summer Oil #1 (Processed @ 125 GPA) or Post Bloom (Fresh @ 250 GPA):			
Application	—	26.98	30.63
Material	—	<u>55.85</u>	<u>46.44</u>
Total Summer Oil #1 or Post Bloom Cost	—	82.83	77.07
Summer Oil #2: Application (PTO – 125 GPA; 250 GPA)			
Application (PTO – 125 GPA; 250 GPA)	26.98	26.98	30.63
Material	<u>67.59^w</u>	<u>46.09</u>	<u>86.35</u>
Total Summer Oil #2 Cost	94.57	73.07	116.98
Supplemental Fall Miticide:			
Application (PTO – 125 GPA)	—	—	26.98
Material	—	—	<u>12.59</u>
Total Supplemental Fall Miticide Cost	—	—	39.57
Fertilizer (Bulk): 4 Applications			
Material (16-0-16-4 MgO @ 204 lbs N per acre)	37.64	37.64	37.64
Total Fertilizer Cost	<u>186.15</u>	<u>186.15</u>	<u>186.15</u>
Dolomite (one ton applied every 4 years)	223.79	223.79	223.79
Material/Application	12.34	11.36	11.36
Pruning: Topping (\$37.50/A ÷ 2.5 yrs) ^v			
Hedging (\$34.17/A ÷ 2 yrs) ^v	14.92	14.92	14.92
Chop/Mow Brush after Hedging (\$10.62/A ÷ 2 yrs) ^v	17.09	17.09	17.09
Total Pruning Cost	<u>5.31</u>	<u>5.31</u>	<u>5.31</u>
37.32	37.32	37.32	37.32
Tree Replacement--1 thru 3 years of age: (3 trees/acre)			
Remove Trees: Pull, Stack & Burn 3 Trees with Front-end Loader			
18.27	18.27	18.27	18.27
Prepare Site & Plant Tree (Includes 3 reset trees)			
40.11	40.11	40.11	40.11
Supplemental Fertilizer, Tree Wraps Maintenance, Sprout, Etc. (Trees 1-3 years old)			
<u>38.27</u>	<u>38.27</u>	<u>38.27</u>	<u>38.27</u>
Total Tree Replacement Cost	96.65	96.65	96.65
Irrigation: Microsprinkler System ^u			
<u>175.97</u>	<u>175.97</u>	<u>175.97</u>	175.97
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS	<u>\$820.56</u>	<u>\$914.29</u>	
Fall Miticide: Application (125 GPA)			
Material		26.98	26.98
Total Fall Miticide Cost		<u>32.52</u>	<u>32.52</u>
		59.50	59.50
IRRIGATED FRESH FRUIT PRODUCTION COSTS		<u>\$973.79</u>	<u>\$1,051.51</u>

^zThe 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 2006.

^yCentral 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.

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; Diaprepes control could add \$93.18 per acre for each foliar application; extensive tree loss due to blight or tristeza could substantially increase the tree replacement and care costs; spray applications to control citrus leafminer and nematicide applications of such as Temik (\$117.23/acre) could increase the total cultural costs per acre above the average costs shown in the comparative budgets; 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.

^xSpray materials include copper (Cu), oil, miticide and nutritional.

^wSpray materials include copper (Cu), oil and nutritional.

^vPer acre costs shown in parenthesis are for 2006.

^uIrrigation Expense includes the following:

	<u>Microsprinkler</u>
Variable Operating Expense (Diesel)*	\$ 65.98
Fixed-Variable Expense (annual maintenance repairs to system)	<u>53.43</u>
Total Cash Expenses	\$119.41
Fixed-Depreciation Expense	<u>56.56</u>
Total Cash and Fixed Expense	<u>\$155.04</u>

*Reflects the higher fuels costs.

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, December 2006.

Table 2. Estimated total delivered-in cost for Central Florida (Ridge) Valencia oranges grown for the processed market under three cultural cost programs, 2005-06

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Valencia Orange Low Cost Cultural Program			Processed Valencia Orange Cultural Program			Fresh/Processed Valencia Orange Historical Cost Cultural Program		
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.
Total Production/Cultural Costs	\$ 820.56	\$2.126	\$0.3126	\$ 914.29	\$2.369	\$0.3483	\$973.79	\$2.523	\$0.3710
Interest on Operating (Cultural) Costs	22.57	0.058	0.0086	25.14	0.065	0.0096	26.78	0.069	0.0102
Management Costs	48.00	0.124	0.0183	48.00	0.124	0.0183	48.00	0.124	0.0183
Taxes/Regulatory Costs:									
Property Tax and Water Management Tax	64.96	0.168	0.0247	61.87	0.160	0.0236	61.87	0.160	0.0236
Canker Decontamination Costs	<u>8.25</u>	<u>0.021</u>	<u>0.0031</u>	<u>8.25</u>	<u>0.021</u>	<u>0.0031</u>	<u>8.25</u>	<u>0.021</u>	<u>0.0031</u>
Total Direct Grower Costs	\$ 964.34	\$2.498	\$0.3674	\$1,057.55	\$2.740	\$0.4029	\$1,118.69	\$2.898	\$0.4262
Interest on Average Capital Investment Costs	<u>321.22</u>	<u>0.832</u>	<u>\$0.1224</u>	<u>321.22</u>	<u>0.962</u>	<u>0.1435</u>	<u>321.22</u>	<u>0.962</u>	<u>0.1435</u>
Total Grower Costs	\$1,285.55	\$3.330	\$0.4898	\$1,378.76	\$3.701	\$0.5464	\$1,439.90	\$3.860	\$0.5697
Harvesting and Assessment Costs:									
Pick/Spot Pick, Roadside & Haul and Canker Decontamination Costs	1,042.20	2.700	0.3971	1,042.20	2.700	0.4030	1,042.20	2.700	0.4030
DOC Assessment	<u>71.41</u>	<u>0.185</u>	<u>0.0272</u>	<u>71.41</u>	<u>0.185</u>	<u>0.0276</u>	<u>71.41</u>	<u>0.185</u>	<u>0.0276</u>
Total Harvesting and Assessment Costs	1,113.61	2.885	0.4243	1,113.61	2.885	0.4306	1,113.61	2.885	0.4306
Total Delivered-In Cost	<u>\$2,399.16</u>	<u>\$6.215</u>	<u>\$0.9140</u>	<u>\$2,492.37</u>	<u>\$6.586</u>	<u>\$0.9770</u>	<u>\$2,553.51</u>	<u>\$6.745</u>	<u>\$1.0003</u>
P.S. = Pound Solids	Refer to cultural program shown in Table 1.			Refer to cultural program shown in Table 1.			Refer to cultural program shown in Table 1.		
Yield: 386 boxes/acre @ 6.8 P.S. per box 120 trees per acre	Only summer oil sprays with oil, copper and Agri-mek & Nutritionals.			Refer to cultural program shown in Table 1.			A Fall Miticide Spray added to the cultural program shown in Table 1.		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, December 2006.

Table 3. Additional costs for managing Citrus Canker and Citrus Greening, 2005-2006

	Hamlin Oranges and Grapefruit for Juice Processing	Valencia Oranges for Juice Processing	Grapefruit for Fresh Market
	\$/Acre	\$/Acre	\$/Acre
<u>Citrus Canker</u>			
Spray Costs (Application & Materials)	118.54	65.40	53.14
Grove Inspections for Managing Canker for Fresh Fruit Market	—	—	39.15 ^a (2 inspections)
Total Additional Costs for Citrus Canker	118.54	65.40	92.29
<u>Citrus Greening (control psyllia)</u>			
Temik (Application & Materials)	117.23	117.23	117.23
Spray Costs (Application & Materials)	47.98	47.98	— ^b
Field Inspections for Identifying Trees with Greening	58.72 (3 inspections)	58.72 (3 inspections)	58.72 ^a (3 inspections)
Total Additional Costs for Citrus Greening	223.93	223.93	175.95
Total Additional Costs for Citrus Canker and Greening	<u>342.47</u>	<u>289.33</u>	<u>268.24</u>

^aField inspections can be combined or fresh fruit market production program.

^bSpray program for psyllid control is already included in fresh grapefruit production program.

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, December 2006.