

Summary of 2007-2008 Citrus Budget for the Indian River 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 Indian River 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 **Indian River** represent a **custom managed operation**.

Budget analysis provides the basis for many grower decisions. Budgets can be used to calculate potential profits, determine cash requirements 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.

Average cultural production costs increased 19% between 2006-2007 and 2007-2008 seasons. The high cost of fuel and energy increased equipment application costs 11% over the 2006-2007 season. Overall increase in chemical prices average 8%. However, fertilizer prices had the greatest impact on costs in 2007-2008 increasing an average of 80% over 2006-2007. High demand for plant nutrients throughout the developing world, especially Brazil, China and India, along with the increases in transportation costs, were the causes for the increase in fertilizer costs.

The 2007-2008 summary comparative budgets summary for a fresh market cultural program are shown in Table 1. Two scenarios are presented: 1) Typical/Historic Fresh Cultural Program **Without Citrus Canker and Greening** and 2) Fresh Fruit Cultural Program **With Citrus Canker and Greening**. Scenario one represents costs of typical grove practices which have been performed for citrus grown for the fresh fruit market, but does not include citrus canker and greening management control programs. Scenario two is the same fresh fruit market cultural program for scenario one but expanded to include the additional costs for managing citrus canker and greening. Each budget scenario shows a Total Per Acre **Without** and **With resetting-tree replacement**.

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 program to control the insect vector, the 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. Additional costs required to manage citrus greening and canker based on the cultural programs being implemented in UF/IFAS CREC research groves and information from citrus growers were incorporated into Tables 1 and 2.

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 actual grove practices 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 without resetting/tree replacement are shown as an expanded “**delivered-in**” format in Table 2. The delivered-in costs include cultural/production, management, regulatory and harvesting costs. The costs are presented in per acre, per box and per packed carton cost units. The per acre yields used in Table 2 represent above average production for grapefruit in the Indian River production region. The decreased yield per acre for the “with greening” expanded budget reflects an additional 2.3% average annual tree loss for all age trees. Table 3 shows the delivered-in costs with resetting.

Break-even prices for fresh market grapefruit are shown in Table 4 for yields ranging from 350 to 650 boxes per acre and are presented **with** and **without** the additional citrus greening cultural management costs as well as no resetting and resetting. **Without** the additional cultural management costs for citrus canker and greening and **no resetting**, the delivered-in breakeven price ranged from \$8.27 to \$5.82 per box; **with resetting** the breakeven prices ranged from \$12.10 to \$7.83 per box. **With** the additional citrus canker and greening costs and **no resetting**, the delivered-in breakeven prices ranged from \$10.03 to \$6.71 per box; **with resetting** these breakeven prices ranged from \$13.53 to \$8.60 per box. Also, in Table 9, the total estimated F.O.B. cost for fresh packed grapefruit is shown. The F.O.B. costs are presented for “fresh fruit packout percentage rates” ranging from 25% to 100%.

The three ADDENDA tables provide the detailed information on the herbicide, spray and fertilizer programs used in the comparative budgets.

Additional information on budgeting and cost analysis can be obtained by contacting the author, 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>.

Reference-Source Information

- Muraro, Ronald P. “Summary of 2008 Ridge and Indian River-South Florida Citrus Caretaker Custom Rate Charges.” UF/IFAS CREC Website: www.crec.ifas.ufl.edu/Extension/Economics September 2008. 5 pages.
- Muraro, Ronald P. “Average Packing Charges for Florida Fresh Citrus – 2007-08 Season.” UF/IFAS CREC Website: www.crec.ifas.ufl.edu/Extension/Economics September 2008. 2 pages.
- Muraro, Ronald P. “Estimated Average Picking, Roadsiding and Hauling Charges for Florida Fresh Citrus – 2007-08 Season.” UF/IFAS CREC Website: www.crec.ifas.ufl.edu/Extension/Economics September 2008. 2 pages.
- Muraro, Ronald P. “Summary of 2007-2008 Citrus Budgets for the Central Florida Citrus Production Region.” UF/IFAS CREC Website: www.crec.ifas.ufl.edu/Extension/Economics September 2008. 8 pages.
- Muraro, Ronald P. “Summary of 2007-2008 Citrus Budgets for the Southwest Florida Citrus Production Region.” UF/IFAS CREC Website: www.crec.ifas.ufl.edu/Extension/Economics September 2008. 13 pages.

Table 1. A Listing of Estimated Comparative **Indian River** Production Costs Per Acre for **Fresh Market Grapefruit**, 2007-2008^z

Costs represent a mature (10+ years old) Indian River White Grapefruit Grove.	Fresh Market Cultural Program	
	Without Canker-Greening	With Canker-Greening
PRODUCTION/CULTURAL COSTS^y		
<u>Weed Management/Control:</u>		
Mechanical Mow Middles (3times per year)	\$ 37.01	\$ 37.01
Chemical Mow Middles (3 times per year)	27.37	27.37
General Grove Work (2 labor hours per acre)	31.30	31.30
Herbicide (1/2 tree acre treated): (See Addenda Table 1 - Herbicide Programs #1, #2 and #3)	<u>136.27</u>	<u>136.27</u>
Total Weed Management Costs	231.95	231.95
<u>Spray/Pest Management:</u> (See Addenda Table 2)	378.68	743.58
Without Greening: Spray Programs #4, #5 @ 2, #7, #10 & #12		
With Greening: Spray Programs #1, #2, #4, #5 @ 3, #6, #9, #10 & #11		
Fertilizer (Bulk): 4 Applications (See Addenda Table 3 - Fert Prog #3; 16-2-16-3MgO @ 160 lbs N)	349.00	349.00
Dolomite (one ton applied every 3 years) (Material/Application)	14.76	14.76
<u>Pruning^x:</u> Topping (\$30.00/A ÷ 2 yrs)	15.00	15.00
Hedging (\$30.37/A ÷ 2 yrs)	15.33	15.33
Chop/Mow Brush after Hedging (\$15.60/A ÷ 2 yrs)	7.80	7.80
Raise Skirts of Trees (\$14.80/A ÷ 2 yrs)	<u>7.40</u>	<u>7.40</u>
Total Pruning Cost	45.53	45.53
<u>Irrigation:</u> Microsprinkler System ^w	210.32	210.32
Clean Ditches (Weed Control)	18.56	18.56
Ditch and Canal Maintenance	17.48	17.48
Water Control (Pump water in/out of Ditches and Canals)	<u>16.72</u>	<u>16.72</u>
Total Irrigation Cost	263.08	263.08
Field Inspections for Citrus Greening (4 inspections @ \$25.99)	—	103.96
Clean Blocks Before Certification and Harvesting	—	32.91
Inspections Before “Canker Free” Certification (2 inspections @ \$25.99)	—	51.98
Mandatory Citrus Canker Decontamination Costs	<u>31.67</u>	<u>31.67</u>
TOTAL PROCESSED PRODUCTION COSTS WITHOUT TREE REPLACEMENT-RESET COSTS	<u>1,314.67</u>	<u>1,868.42</u>
Tree Replacement – 1 thru 3 years of age (4 trees/acre without greening; 7 trees/acre with greening)		
Remove Trees: Pull, Stack & Burn (Clip-Shear & Front End Loader)	27.32	39.83
Prepare Site and Plant Tree (includes reset trees)	61.12	99.89
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	<u>68.92</u>	<u>140.28</u>
Total Tree Replacement Cost	<u>157.36</u>	<u>280.00</u>
TOTAL PROCESSED PRODUCTION COSTS WITH TREE REPLACEMENT-RESET COSTS	<u>1,472.03</u>	<u>2,148.42</u>

^zThe listed estimated comparative costs are for the example grove situation and may not represent your particular grove situation in the Indian River Production Area.

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, September 2008.

^yIndian River production area refers to the citrus producing counties on Florida's east coast.

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 expanded Table 2.

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 \$18.69 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 \$40.05 per acre; etc.

^xPer acre costs shown in parenthesis are for 2008.

^wIrrigation Expense includes the following:

	<u>Microsprinkler</u>	<u>Drip</u>
Variable Operating Expense (Diesel)*	\$ 93.16	\$ 89.14
Fixed-Variable Expense (annual maintenance repairs to system)	<u>60.60</u>	<u>53.82</u>
Total Cash Expenses**	\$153.76	\$142.96
Fixed-Depreciation Expense	<u>56.56</u>	<u>45.25</u>
Total Cash and Fixed Expense	<u>\$210.32</u>	<u>\$188.21</u>

* Reflects higher fuel costs.

** Where applies, there may be an additional cost of \$16.72 per acre for water control in/out of ditches and canals plus \$18.56 per acre for ditch and canal maintenance plus \$17.48 for weed control in ditches and canals.

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2008.

Table 2. Estimated Total Delivered-in Cost for **Indian River White Grapefruit** Grown for the **Fresh Fruit Market Without** and **With** Citrus Canker and Greening, 2007-08

Represents a mature (10+ years old) Indian River Grapefruit Grove	Fresh Market Cultural Program Without Canker-Greening and NO Resetting - Tree Replacement*			Fresh Market Cultural Program With Canker-Greening and NO Resetting - Tree Replacement**		
	\$/Acre	\$/Box	\$/Carton	\$/Acre	\$/Box	\$/Carton
Total Production/Cultural Costs	\$1,314.67	\$2.961	\$1.4805	\$1,868.42	\$4.891	\$2.4456
Interest on Operating (Cultural) Costs	65.73	0.148	0.0740	93.42	0.245	0.1223
Management Costs	48.00	0.108	0.0541	48.00	0.126	0.0628
Taxes/Regulatory Costs:						
Property Tax/Water Management Tax	61.00	0.137	0.0687	61.00	0.160	0.0798
Fly Protocol Cost	56.65	0.128	0.0638	56.65	0.148	0.0741
Water Drainage District Tax	<u>65.21</u>	<u>0.147</u>	<u>0.0734</u>	<u>65.21</u>	<u>0.171</u>	<u>0.0853</u>
Total Direct Grower Costs	\$1,611.25	\$3.629	\$1.8145	\$2,192.69	\$5.740	\$2.8700
Interest on Average Capital Investment Costs	<u>321.22</u>	<u>0.723</u>	<u>0.3617</u>	<u>321.22</u>	<u>0.841</u>	<u>0.4204</u>
Total Grower Costs	\$1,932.47	\$4.352	\$2.1762	\$2,513.91	\$6.581	\$3.2905
Harvesting and Assessment Costs:						
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,107.34	2.494	1.2470	952.71	2.494	1.2470
DOC Assessment	<u>155.40</u>	<u>0.350</u>	<u>0.1750</u>	<u>133.70</u>	<u>0.350</u>	<u>0.1750</u>
Total Harvesting and Assessment Costs	1,262.74	2.844	1.4220	1,086.41	2.844	1.4220
Total Delivered-In Cost	<u>\$3,195.21</u>	<u>\$7.196</u>	<u>\$3.5982</u>	<u>\$3,600.31</u>	<u>\$9.425</u>	<u>\$4.7125</u>
119 trees per acre	Refer to cultural program shown in Table 1.*			Refer to cultural program shown in Table 1.**		
Two cartons per box	Assumes 100% packout Yield: 444 boxes/acre			Assumes 100% packout Yield: 382 boxes/acre		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2008.

Table 3. Estimated Total Delivered-in Cost for **Indian River White Grapefruit** Grown for the **Fresh Fruit Market Without** and **With** Citrus Canker and Greening, 2007-08

Represents a mature (10+ years old) Indian River Grapefruit Grove	Fresh Market Cultural Program Without Canker-Greening and WITH Resetting - Tree Replacement			Fresh Market Cultural Program With Canker-Greening and WITH Resetting - Tree Replacement		
	\$/Acre	\$/Box	\$/Carton	\$/Acre	\$/Box	\$/Carton
TOTAL PRODUCTION/CULTURAL COSTS	\$1,472.03	\$3.315	\$1.6577	\$2,148.42	\$5.624	\$2.8121
Other Grower Costs	<u>504.07</u>	<u>1.135</u>	<u>0.5676</u>	<u>504.07</u>	<u>1.320</u>	<u>0.6598</u>
TOTAL GROWER COSTS	\$1,976.10	\$4.451	\$2.2253	\$2,652.49	\$6.944	\$3.4718
TOTAL HARVESTING & ASSESSMENT COSTS	1,262.74	2.844	1.4220	1,086.41	2.844	1.4220
TOTAL DELIVERED-IN COST	<u>\$3,238.83</u>	<u>\$7.295</u>	<u>\$3.6473</u>	<u>\$3,738.89</u>	<u>\$9.788</u>	<u>\$4.8938</u>

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2008.

Table 4. Break-even Price for Fresh Market Grapefruit in Indian River Florida, 2007-08

Boxes Per Acre						
350	400	450	500	550	600	650
Delivered-in Price Per Box						
<u>Without Canker-Greening</u>						
NO Resetting-Tree Replacement						
\$8.37	\$7.68	\$7.14	\$6.71	\$6.36	\$6.06	\$5.82
WITH Resetting-Tree Replacement						
\$12.10	\$10.94	\$10.04	\$9.32	\$8.73	\$8.24	\$7.83
<u>With Canker-Greening</u>						
NO Resetting-Tree Replacement						
\$10.03	\$9.13	\$8.43	\$7.87	\$7.41	\$7.03	\$6.71
WITH Resetting-Tree Replacement						
\$13.53	\$12.19	\$11.15	\$10.32	\$9.64	\$9.08	\$8.60

Table 5.--Estimated F.O.B. cost for fresh market Indian River White grapefruit, 2007-08 – with Citrus Canker and Greening and Resetting

	Percent Packout 25.00% Box Yield Per Acre 382			Percent Packout 40.00% Box Yield Per Acre 382			Percent Packout 55.00% Box Yield Per Acre 382		
	Per Acre	Per Box	Per Carton	Per Acre	Per Box	Per Carton	Per Acre	Per Box	Per Carton
Total Production/ Cultural Costs	\$2,148.42	\$22.497	\$11.2483	\$2,148.42	\$14.060	\$7.0302	\$2,148.42	\$10.226	\$5.1129
Interest on Operating (Cultural) Costs	65.73	0.688	0.3442	65.73	0.430	0.2151	65.73	0.313	0.1564
Management	48.00	0.503	0.2513	48.00	0.314	0.1571	48.00	0.228	0.1142
Taxes/Regulatory	182.85	1.915	0.9573	182.85	1.197	0.5983	182.85	0.870	0.4352
Interest on Average Capital Investment	321.22	3.364	1.6818	321.22	2.102	1.0511	321.22	1.529	0.7644
Harvesting (Pick/Spot Pick, Haul, DOC Tax, Etc.)	<u>1,086.41</u>	<u>11.376</u>	<u>5.6880</u>	<u>1,086.41</u>	<u>7.110</u>	<u>3.5550</u>	<u>1,086.41</u>	<u>5.171</u>	<u>2.5855</u>
Total Delivered-In Cost	\$3,852.63	\$40.342	\$20.1708	\$3,852.63	\$25.214	\$12.6068	\$3,852.63	\$18.337	\$9.1686
Packing & Selling (Export)	849.00	8.890	4.4450	1,358.39	8.890	4.4450	1,867.79	8.890	4.4450
Net Fresh Eliminations Costs ^a	<u>-487.91</u>	<u>-5.109</u>	<u>-2.5545</u>	<u>-390.33</u>	<u>-2.555</u>	<u>-1.2773</u>	<u>-292.75</u>	<u>-1.393</u>	<u>-0.6967</u>
Total F.O.B. Costs	<u>\$4,213.71</u>	<u>\$44.123</u>	<u>\$22.0613</u>	<u>\$4,820.69</u>	<u>\$31.549</u>	<u>\$15.7745</u>	<u>\$5,427.67</u>	<u>\$25.834</u>	<u>\$12.9169</u>
	Percent Packout 75.00% Box Yield Per Acre 382			Percent Packout 85.00% Box Yield Per Acre 382			Percent Packout 100.00% Box Yield Per Acre 382		
	Per Acre	Per Box	Per Carton	Per Acre	Per Box	Per Carton	Per Acre	Per Box	Per Carton
Total Production/ Cultural Costs	\$2,148.42	\$7.499	\$3.7494	\$2,148.42	\$6.617	\$3.3083	\$2,148.42	\$5.624	\$2.8121
Interest on Operating (Cultural) Costs	65.73	0.229	0.1147	65.73	0.202	0.1012	65.73	0.172	0.0860
Management	48.00	0.168	0.0838	48.00	0.148	0.0739	48.00	0.126	0.0628
Taxes/Regulatory	182.85	0.638	0.3191	182.85	0.563	0.2816	182.85	0.479	0.2393
Interest on Average Capital Investment	321.22	1.121	0.5606	321.22	0.989	0.4946	321.22	0.841	0.4204
Harvesting (Pick/Spot Pick, Haul, DOC Tax, Etc.)	<u>1,086.41</u>	<u>3.792</u>	<u>1.8960</u>	<u>1,086.41</u>	<u>3.346</u>	<u>1.6729</u>	<u>1,086.41</u>	<u>2.844</u>	<u>1.4220</u>
Total Delivered-In Cost	\$3,852.63	\$13.447	\$6.7236	\$3,852.63	\$11.865	\$5.9326	\$3,852.63	\$10.085	\$5.0427
Packing & Selling (Export)	2,546.99	8.890	4.4450	2,886.58	8.890	4.4450	3,395.98	8.890	4.4450
Net Fresh Eliminations Costs ^a	<u>-162.64</u>	<u>-0.568</u>	<u>-0.2838</u>	<u>-97.58</u>	<u>-0.301</u>	<u>-0.1503</u>	<u>0.00</u>	<u>0.000</u>	<u>0.0000</u>
Total F.O.B. Costs	<u>\$6,236.98</u>	<u>\$21.770</u>	<u>\$10.8848</u>	<u>\$6,641.63</u>	<u>\$20.455</u>	<u>\$10.2273</u>	<u>\$7,248.61</u>	<u>\$18.975</u>	<u>\$9.4877</u>

^a "Net Eliminations Cost" equals the average yield of 5.00 pound solids per box times \$0.58 per pound solids less packinghouse elimination charge and cannery hauling charge of \$1.20 per box.

Addenda Table 1. Herbicide programs used in the Indian River citrus production budgets – 2007-2008.

Program	Materials/Ingredients	Amount treated acre	Cost/acre*
#1	Solicam 80 DF	3 lbs	\$25.62
	Karmex WP	4 lbs	10.25
	Roundup Weather Max	4 pts	<u>12.99</u>
			\$48.86
	Application Cost/Acre	1 time	<u>\$14.51</u>
	Total Cost/Application		<u>\$63.37</u>
#2	Prowl H20	4 pts	\$ 8.06
	Simazine 4L	8 pts	9.83
	Roundup Weather Max	4 pts	<u>12.99</u>
			\$30.88
	Application Cost/Acre	1 time	<u>\$14.51</u>
	Total Cost/Application		<u>\$45.39</u>
#3	Simazine 4L	0 pts	\$ 0.00
	Roundup Weather Max	4 pts	<u>12.99</u>
			\$12.99
	Application Cost/Acre	1 time	<u>\$14.51</u>
	Total Cost/Application		<u>\$27.50</u>
#4	Roundup Weather Max (chemical mow)	1 pt	<u>\$3.25</u>
			\$3.25
	Application Cost/Acre	1 time	<u>\$5.88</u>
	Total Cost/Application		<u>\$9.13</u>

*Herbicide applied to 50% of grove area.

Addenda Table 2. Spray programs used in the Indian River citrus production budgets – 2007-2008.

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#1 (January)	Temik 15G	33 lbs	\$109.63
	Custom application		<u>15.67</u>
	Total Spray Program #1		<u>\$125.30</u>
#2 (at first Flush or February; Fresh Fruit)	Danitol	1 pt	\$18.98
	Copper (Kocide 3000)	2.5 lbs	<u>16.69</u>
	Total materials cost		\$35.67
	PTO-Air Blast Sprayer @ 125 GPA		<u>\$30.29</u>
	Total Spray Program #2		<u>\$65.96</u>

Addenda Table 2. Spray programs used in the Indian River citrus production budgets – 2007-2008 (cont'd.).

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#3 (at first Flush or February and/or October; Processed Fruit)	Danitol	1 pt	\$18.98
	PTO-Air Blast Sprayer @ 125 GPA		<u>30.29</u>
	Total Spray Program #3		<u>\$49.27</u>
#4 (April – Post Bloom and Nutritional)	Lorsban 4EC	5 pts	\$11.64
	Copper (Kocide 3000)	2.5 lbs	16.69
	Zn (Zinc)	3 lbs	6.96
	Mn (Manganese)	3 lbs	2.15
	B (Borates)	0.25 lb	0.21
	PTO-Air Blast Sprayer @ 125 GPA		<u>30.29</u>
Total Spray Program #4		<u>\$68.14</u>	
#5 (Spray every 3 weeks from late April-early May)	Copper (Kocide 3000)	2.5 lbs	\$16.69
	PTO-Air Blast Sprayer @ 125 GPA		<u>30.29</u>
	Total Spray Program #5		<u>\$46.98</u>
#6 (late May or early June)	Agrimek (if no mite resistance)	5 ozs	\$23.22
	Mustang	4.3 ozs	6.24
	Copper (Kocide 3000)	2.5 lbs	16.69
	Spray Oil (97+%)	3 gals	<u>15.64</u>
	Total material cost		61.79
	PTO-Air Blast Sprayer @ 125 GPA		<u>30.29</u>
	Total Spray Program #6		<u>\$92.08</u>
#7 (late May or early June)	Agrimek (if no mite resistance)	5 ozs	\$23.22
	Copper (50%; Kocide 3000)	4 lbs	16.69
	Spray Oil (97+%)	3 gals	<u>15.64</u>
	Total material cost		55.55
	PTO Air Blast Sprayer @ 125 GPA		<u>30.29</u>
Total Spray Program #7		<u>\$85.84</u>	
#8 (early July or mid-August)	Spray Oil (97+%)	5 gals	\$15.64
	Copper (50%; Kocide 3000)	4 lbs	16.69
	Agrimek (if no mite resistance)	5 ozs	23.22
	Zn (Zinc)	3 lbs	6.96
	Mn (Manganese)	3 lbs	2.15
	B (Borates)	0.25 lbs	<u>0.21</u>
	Total material cost		\$64.87
PTO Air Blast Sprayer @ 125 GPA		<u>30.29</u>	
Total Spray Program #8		<u>\$95.16</u>	
#9 (late June or July)	Provado	16 ozs	\$28.30
	Copper (Kocide 3000)	2.5 lbs	16.69
	Spray Oil (97+%)	3 gals	<u>26.07</u>
	Total material cost		71.06
	PTO Air Blast Sprayer @ 125 GPA		<u>30.29</u>
Total Spray Program #9		<u>\$101.35</u>	

Addenda Table 2. Spray programs used in the Indian River citrus production budgets – 2007-2008 (cont'd.).

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#10 (late July or August)	Lorsban 4EC	5 pts	\$11.84
	Copper (Kocide 3000)	2.5 lbs	16.69
	Spray Oil (97+%)	5 gals	<u>26.07</u>
	Total materials cost		54.60
	PTO Air Blast Sprayer @125 GPA		<u>30.29</u>
	Total Spray Program #10		<u>\$84.89</u>
#11 (late September or October)	Danitol	1 pt	\$18.98
	Vendex 50W	2 lbs	<u>38.09</u>
	Total material costs		57.07
	Fixed Wing Aerial Spray @ 10 GPA		<u>7.75</u>
	Total Spray Program #11		<u>\$64.82</u>
#12 (late September or October)	Vendex 50W	2 lbs	\$38.09
	Fixed Wing Aerial Spray @ 10 GPA		<u>7.75</u>
	Total Spray Program #12		<u>\$45.84</u>

Addenda Table 3. Fertilizer programs used in the Indian River citrus production budgets – 2007-2008.

Program	Analysis/Material Applied	Amount/Acre (lbs)	Cost/Acre
#1 – 4 applications	12-2-12-2.4 MgO	180 lbs	\$373.72
	Application cost		<u>38.68</u>
	Total Program #1		<u>\$412.40</u>
#2 – 4 applications	16-0-16-4 MgO	200 lbs	\$380.88
	Application cost		<u>38.68</u>
	Total Program #2		<u>\$419.56</u>
#3 – 4 applications	16-2-16-3 MgO	160 lbs	\$310.60
	Application cost		<u>38.68</u>
	Total Program #3		<u>\$349.88</u>