



Summary of 2005-2006 Citrus Budgets for the Southwest Florida 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 Southwest 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 **Southwest Florida** are more representative of an **owner-managed operation**.

The 2005-2006 summary comparative budgets are shown in Tables 1 and 2 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%; 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 Tables 1 and 2 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" format cost in Tables 3 and 4 for Southwest Florida Hamlin oranges and red grapefruit. 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 5 presents estimated costs required to manage citrus greening and canker that would be in addition to the costs shown in Tables 1 through 4. 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://edis.ifas.ufl.edu or UF/IFAS CREC website: http://www.crec.ifas.ufl.edu then click **Extension** and then **Economics**.

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

Costs represent a mature (10+ years old) Southwest Florida Orange Grove.		Cultural	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							8	
Weed Management/Control:								
	Middles (3 times per year)		\$ 22.98		\$ 22.98		\$22.98	
	iddles (2 times per year)		11.90 32.44		11.90 32.44		11.90 32.44	
Herbicide (1/2 tree	ork (2 labor hours per acre)		32.44		32.44		32.44	
	yphosate or 3 residual applications)	\$ 40.24		\$ 30.12		\$ 30.12		
Material	77	21.56		99.79		99.79		
Total Herbicide (Cost		61.80		129.91		129.91	
Spray								
Post Bloom:	Application (125 GPA)	_		_		25.47		
	Material Total Post Bloom Cost	_				25.21	50.68	
Summer Oil #1:	Application (125 GPA)		_	25.47	_	25.47	30.00	
Summer on Wi	Material	_		49.68		49.68		
	Total Summer Oil #1 Cost		_		75.15		75.15	
Summer Oil #2:	Application (PTO – 125 GPA)	25.47		25.47		25.47		
	Material Track of the Control of the	<u>62.81</u> ^x	00.00	_43.31 ^w	60.50	31.18	56.65	
Fertilizer (Bulk):	Total Summer Oil #2 Cost 4 Applications	26.12	88.28	26.12	68.78	26.12	56.65	
reitilizei (Buik).	4 Applications Material (17-4-17-2.4 MgO @ 204 lbs N	20.12		20.12		20.12		
	per acre)	165.60		165.60		165.60		
	Total Fertilizer Cost		191.72		191.72		191.72	
Dolomite (one ton a	applied every 3 years)							
D ' T '	Material/Application	11.20	16.20	11.00	16.20	11.20	16.20	
	g (\$28.00/A ÷ 2.5 yrs) ^v g (\$25.17/A ÷ 2 yrs) ^v	11.20 12.59		11.20 12.59		11.20 12.59		
	Mow Brush after Hedging $(\$9.85/A \div 2 \text{ yrs})^{\text{v}}$	4.93		4.93		4.93		
	runing Cost	1,55	28.72		28.72		28.72	
	- 1 thru 3 years of age: (4 trees/acre)							
	Pull, Stack & Burn 4 Trees with							
Front-end Los		24.36		24.36		24.36		
-	lant Tree (Includes 4 reset trees)	56.00		56.00		56.00		
	ertilizer, Tree Wraps Maintenance, Trees 1-3 years old)	56.60		56.60		56.60		
Total Tree Repla	· · · · · · · · · · · · · · · · · · ·	<u>56.60</u>	136.96	<u>56.60</u>	136.96	<u>56.60</u>	136.96	
	prinkler System ^u	175.97	130.70	175.97	130.70	175.97	130.70	
-	Ditches (Weed Control)	15.75		15.75		15.75		
	nd Canal Maintenance	16.72		16.72		16.72		
	Control (Pump water in/out of Ditches and							
Can		14.86		14.86		14.86		
Total Is	rrigation Cost		223.30		223.30		223.30	
IRRIGATED PROCI	ESSED FRUIT PRODUCTION COSTS		\$ <u>814.30</u>		\$938.06			
Supplemental Post I			· 		· 			
Application (25				30.77		30.77		
Material	/			43.44		43.44		
	ental Post Bloom Cost				74.21		74.21	
Fall Miticide Spray: Aerial Application (15 GPA)				8.50		8.50		
	Material			29.56		29.56		
Total Fall Miticide Cost					38.06		38.06	
IRRIGATED FRESH FRUIT PRODUCTION COSTS					\$ <u>1,050.33</u>		\$ <u>1,088.88</u>	
				<u> </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 Southwest Florida Citrus Production" and may not represent your particular grove situation in Southwest Florida.

Table 2. A listing of estimated comparative Southwest Florida citrus production costs per acre for grapefruit, 2005-06^z

Costs represent a mature (10+ years old) Southwest Florida Red Grapefruit Grove.		Low Cost Processed Cultural Program One-Year Alternative		Processed an Fresh Cultural	Cost	Typical/Historical Fresh Fruit Cultural Program	
PRODUCTION/CULTU	JRAL COSTS: ^y						
Weed Management/Cor	ntrol:						
Mechanical Mow Mic	ddles (3 times per year)		\$ 22.98		\$ 22.98		\$22.98
Chemical Mow Middl			11.90		11.90		11.90
	(2 labor hours per acre)		32.44		32.44		32.44
Herbicide (1/2 tree ac							
	nosate or 3 residual applications)	\$40.24		\$30.12		\$30.12	
Material		<u>21.56</u>	(1.00	<u>99.79</u>	120.01	<u>99.79</u>	120.01
Total Herbicide Cost	t		61.80		129.91		129.91
Spray Post Bloom: A	pplication (125 GPA)					25.47	
	[aterial					25.21	
	otal Post Bloom Cost					23.21	50.68
	pplication (125 GPA)	_		25.47		25.47	20.00
	aterial	_		49.68		49.68	
	otal Summer Oil #1 Cost		_		75.15		75.15
Summer Oil #2: A	pplication (PTO – 125 GPA)	25.47		25.47		25.47	
M	aterial	62.81 ^x		43.31 ^w		31.18	
To	otal Summer Oil #2 Cost		88.28		68.78		56.65
	Applications	26.12		26.12		26.12	
	faterial (15-2-15-2.4 MgO @ 180 lbs N						
	and @150 lbs N)	<u>148.80</u>		<u>124.00</u>		<u>124.00</u>	
	otal Fertilizer Cost		174.92		150.12		150.12
Dolomite (one ton appl			16.20		16.20		16.20
	faterial/Application	11.20	16.20	11.20	16.20	11.20	16.20
	28.00/A ÷ 2.5 yrs) ^v 25.17/A ÷ 2 yrs) ^v	12.59		12.59		12.59	
	Brush after Hedging $(\$9.85/A \div 2 \text{ yrs})^{\text{v}}$	4.93		4.93		4.93	
	s of Trees $(\$14.00 \div 2 \text{ yrs})^{\text{v}}$	———		7.00		7.00	
Total Pruni			28.72	7.00	35.72	7.00	35.72
	thru 3 years of age: (3 trees/acre)						
Remove Trees: Pul	l, Stack & Burn 3 Trees with						
Front-end Loade	r	18.27		18.27		18.27	
	t Tree (Includes 3 reset trees)	42.00		42.00		42.00	
	izer, Tree Wraps Maintenance,						
Sprout, Etc. (Tre		38.37		38.37		38.37	
Total Tree Replacer		175.07	98.64	175.07	98.64	175.07	98.64
	kler System ^u	175.97		175.97		175.97	
	hes (Weed Control)	15.75		15.75		15.75	
	Canal Maintenance trol (Pump water in/out of Ditches and	16.72		16.72		16.72	
Canals)	·	14.86		14.86		14.86	
Total Irriga		11.00	223.30		223.30	11.00	223.30
_	SED FRUIT PRODUCTION COSTS		\$ <u>759.18</u>		\$ <u>865.14</u>		220.00
			\$ <u>139.18</u>		\$ <u>603.14</u>		
Supplemental Post Blo	• •			20.77		30.77	
Application (250 C Material	JI A)			30.77 43.44		30.77 43.44	
Total Supplementa	al Post Bloom Cost			43.44	74.21	43.44	74.21
Fall Miticide Spray:	Aerial Application (15 GPA)			8.50	/ T. 2 1	8.50	77.21
- all little oping.	Material			29.56		29.56	
	Total Fall Miticide Cost				38.06		38.06
IRRIGATED FRESH FRUIT PRODUCTION COSTS					\$977.41		\$1,015.96
² The listed estimated comparative costs are for the example grove situation des				<u> </u>		<u> </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 Southwest Florida Citrus Production" and may not represent your particular grove situation in Southwest Florida.

^ySouthwest Florida refers to those counties in the Florida Agricultural Statistics Service "Southern Production Area." However, the costs shown are applicable to other South Central Florida counties such as DeSoto and Sarasota counties.

Where **equipment use** or **application** is listed (mowing, spray and herbicide application, etc.), the costs include a charge for equipment repairs, maintenance, labor and overhead management charges/costs. The exception are costs items such as hedging and topping where average custom charges are used. 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.

The budget costs in this report represent an **owner-managed operation** for the production of oranges for processing and grapefruit for the fresh market. Therefore, the **10 percent handling and supervision charge** added to the material cost for a custom-managed operation is **not included** in the costs.

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 \$10.26 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 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.

*Spray materials include copper (Cu), oil, miticide and nutritionals.

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

Per acre costs shown in parenthesis are for 2006.

"Irrigation Expense includes the following:

	Microsprinkler	<u>Drip</u>
Variable Operating Expense (Diesel)*	\$ 65.98	\$ 63.13
Fixed-Variable Expense (annual maintenance repairs to system)	53.43	46.67
Total Cash Expenses**	\$119.41	\$109.79
Fixed-Depreciation Expense	56.56	45.25
Total Cash and Fixed Expense	\$ <u>175.97</u>	\$ <u>155.04</u>
* A1' 4 1C 1' 1 C 1 4		

* Adjusted for higher fuel costs.

^{**} Where applies, there may be an additional cost of \$14.86 per acre for water control in/out of ditches and canals plus \$16.72 per acre for ditch and canal maintenance plus \$15.75 for weed control in ditches and canals.

Table 3. Estimated total delivered-in cost for Southwest Florida Hamlin oranges grown for the processed market under three cultural cost programs, 2005-06

Represents a mature (10+ years old) Southwest Florida Orange Grove	Processed Hamlin Orange Low Cost Cultural Program One-Year Alternative			Processed Hamlin Orange Low Cost Cultural Program			Fresh/Processed Hamlin Orange Historical Cost Cultural Program		
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.
Total Production/Cultural Costs	\$ 814.30	\$3.231	\$0.5386	\$ 938.06	\$3.722	\$0.6204	\$1,050.33	\$4.168	\$0.6947
Interest on Operating (Cultural) Costs	22.39	0.089	0.0148	46.90	0.186	0.0310	52.52	0.208	0.0347
Management Costs	48.00	0.190	0.0317	48.00	0.190	0.0317	48.00	0.190	0.0317
Taxes/Regulatory Costs:									
Property Tax/Water Management Tax	64.05	0.254	0.0424	61.00	0.242	0.0403	61.00	0.242	0.0403
Canker Decontamination Costs	8.25	0.033	0.0055	8.25	0.033	0.0055	8.25	0.033	0.0055
Total Direct Grower Costs	\$ 956.99	\$3.798	\$0.6329	\$1,102.21	\$4.374	\$0.7290	\$1,220.10	\$4.842	\$0.8069
Interest on Average Capital Investment Costs	321.22	1.275	0.2124	321.22	1.275	0.2124	321.22	1.275	0.2124
Total Grower Costs	\$1,278.21	\$5.072	\$0.8454	\$1,423.43	\$5.649	\$0.9414	\$1,541.31	\$6.116	\$1.0194
Harvesting and Assessment Costs:									
Pick/Spot Pick, Roadside & Haul and									
Canker Decontamination	1,329.05	2.637	0.4395	1,329.05	2.637	0.4395	1,329.05	2.637	0.4395
DOC Assessment	93.24	0.185	0.0308	93.24	0.185	0.0308	93.24	0.185	0.0308
Total Harvesting and Assessment Costs	1,422.29	2.822	0.4703	1,422.29	2.822	0.4703	1,422.29	2.822	0.4703
Total Delivered-In Cost	\$ <u>2,700.50</u>	\$ <u>7.894</u>	\$ <u>1.3157</u>	\$ <u>2,845.72</u>	\$ <u>8.471</u>	\$ <u>1.4118</u>	\$ <u>2,963.60</u>	\$ <u>8.938</u>	\$ <u>1.4897</u>
P.S. = Pound Solids	Refer to cultural program shown on Table 1. Only summer oil sprays with oil, copper and Micromite & Nutritionals.		am shown	Refer to cultural program			Refer to cultural program shown in Table 1.		
Yield: 252 boxes/acre @ 6.0 P.S. per box 145 trees per acre			shown in Table 1.			A Fall Miticide Spray added to the cultural program shown in Table 1.			

Table 4. Estimated total delivered-in cost for Southwest Florida Red Grapefruit grown for the fresh/processed market under three cultural cost programs, 2005-06

Represents a mature (10+ years old) Southwest Florida Red Grapefruit Grove	Processed Grapefruit Low Cost Cultural Program One-Year Alternative		Fresh Packed Grapefruit Reduced Cost Cultural Program			Fresh Packed Grapefruit Typical/Historical Cultural Program			
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/Carton	\$/Acre	\$/Box	\$/Carton
Total Production/Cultural Costs	\$ 759.18	\$2.843	\$0.6050	\$ 977.41	\$3.661	\$1.0144	\$1,015.96	\$3.805	\$1.0144
Interest on Operating (Cultural) Costs	20.88	0.078	0.0166	26.88	0.101	0.0503	27.94	0.105	0.0523
Management Costs	48.00	0.180	0.0383	48.00	0.180	0.0899	48.00	0.180	0.0899
Taxes/Regulatory Costs:									
Property Tax/Water Management Tax	51.24	0.192	0.0408	51.24	0.192	0.0478	51.24	0.192	0.0478
Fly Protocol Cost	_	_	_	54.73	0.205	0.0477	54.73	0.205	0.0477
Canker Decontamination Costs	8.25	0.031	0.0066	8.25	0.031	0.0045	8.25	0.031	0.0045
Total Taxes/Regulatory Costs	59.49	0.223	0.0474	114.22	0.428	0.1000	114.22	0.428	0.1000
Total Direct Grower Costs	\$ 887.55	\$3.324	\$0.7073	\$1,166.51	\$4.369	\$1.2547	\$1,206.12	\$4.517	\$1.2567
Interest on Average Capital Investment Costs	321.22	1.203	0.2560	321.22	1.203	0.6015	321.22	1.203	0.6015
Total Grower Costs	\$1,208.76	\$4.527	\$0.9632	\$1,487.72	\$5.572	\$1.8562	\$1,527.33	\$5.720	\$1.8582
Harvesting and Assessment Costs:									
Pick/Spot Pick, Roadside & Haul and									
Canker Decontamination	626.12	2.345	0.4989	645.34	2.417	1.2085	645.34	2.417	1.2085
Fruit Drenching (Fresh)	_	_	_	50.20	0.188	0.0940	50.20	0.188	0.0940
DOC Assessment	64.08	<u>0.240</u>	0.0511	66.75	0.250	<u>0.1250</u>	<u>66.75</u>	<u>0.250</u>	<u>0.1250</u>
Total Harvesting and Assessment Costs	690.20	2.585	0.5500	762.29	2.855	1.4275	762.29	2.855	1.4275
Total Delivered-In Cost	\$ <u>1,898.96</u>	\$ <u>7.112</u>	\$ <u>1.5132</u>	\$ <u>2,250.01</u>	\$ <u>8.427</u>	\$ <u>3.2837</u>	\$ <u>2,289.62</u>	\$ <u>8.575</u>	\$ <u>3.2857</u>
Two cartons per box P.S. = Pound Solids	S. = Pound Solids on Table 2.		am shown	Refer to cultural program shown in Table 2.		Refer to cultural program shown in Table 2.			
Yield: 267 boxes/acre @ 4.7 P.S. per box 119 trees per acre	Two summer oil sprays with oil, copper and Micromite.		Assumes 100% packout.			Assumes 100% packout			

Table 5. 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
Citrus Canker			
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
Citrus Greening (control psyllia)			
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.