UNIVERSITY OF FLORIDA
EXTENSION
Institute of Food and Agricultural Sciences

2001-2002 Comparative Citrus Budgets[1]

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Annually, comparative citrus budgets are tabulated for the Central Florida, Southwest Florida, and Indian River citrus producing areas. The listed estimated comparative costs in Tables 1, 2, and 3 (Table 4 contains footnotes u, v, w, x, and y for Tables 1, 2,and 3) are examples only and may not represent your particular grove situation. The budget cost items for Central Florida and Indian River represent a *custom-managed operation*, and the budget cost items for Southwest Florida costs represent an *owner-managed operation*.

The 2001-2002 comparative budgets are presented in three scenarios:

1. Low Cost Processed Fruit Cultural Program.
2. Reduced Cost Processed/ Fresh Fruit Cultural Program.
3. Typical/Historical Fresh Fruit Cultural Program.

Scenarios 1 and 2 represent costs of two possible cultural programs directed toward reducing expenditures for fruit grown primarily for the processed market. The third scenario represents typical costs of grove practices which have been performed for citrus grown for the fresh fruit market. Modified herbicide and/or spray and fertilizer programs account for the reduced costs. *Note: Before modifying a grove management program to reduce costs, an evaluation of the market program (processed or fresh), yield, and specific cultural problems (nutrition, disease, etc.) for the specific grove site should be made*.

Each budget (Tables 1, 2, and 3) lists the costs of individual grove care practices normally performed in a citrus grove. The costs are categorized into cumulative sub-totals for the unirrigated processed program and the irrigated fresh fruit program. Although the estimated annual per-acre grove costs listed in each budget are representative for a mature citrus grove (10+ years old), the grove care costs for a specific grove site may differ depending upon tree age, tree density, and grove practices. 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 setup costs may vary due to the size of the citrus grove and distance from the grove equipment barn. The mandatory decontamination requirements to help control the spread of Citrus Canker add to the total operational costs as illustrated in Table 5.

Included with the comparative budget sheets are estimated "delivered-in" costs for Central Florida

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Valencia oranges, Southwest Florida Hamlin oranges, and Indian River grapefruit (Table 5). The "delivered-in" costs for oranges represent the processed fruit market, while the cost for grapefruit represents the fresh market. The estimated "delivered-in" costs include total cultural/production costs, management and regulatory costs, and harvesting costs.

The budgeted cost information presented herein is the most current available. 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, etc.). Although average per-acre yields have increased due to higher per-acre tree densities, the drought situation in recent years has increased tree stress and may have affected yields. Additional information on budgeting and cost analysis can be obtained by contacting the author or your County Extension Citrus Specialist.

For a more detailed report, see the following websites:

Economic Information Report EI-02-9, Budgeting costs and returns for Central Florida citrus production 2001-02, http://www.lal.ufl.edu/extension/central-florida-budget.pdf

Economic Information Report EI-02-11, Budgeting costs and returns for Indian River Florida citrus production 2001-02, http://www.lal.ufl.edu/extension/indian-river-budget.pdf

Economic Information Report EI-02-10, Budgeting costs and returns for Southwest Florida citrus production 2001-02, http://www.lal.ufl.edu/extension/southwest-florida-budget.pdf

Table 1. A listing of estimated comparative central Florida (Ridge) citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ years old Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($/acre)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
PRODUCTION/CULTURAL COSTS[y]						
Weed Management Control						
Discing (2/year)		17.96		17.96		17.96
Mechanical mow middles (4/year)		42.00		42.00		42.00
General grove work (2 hours/acre)		24.76		24.76		24.76
Herbicide (1/2 tree acre treated)						
Application (2)	27.14		27.14		27.14	
Material	62.77		89.41		89.41	
Spot treatment (material/application)	17.99		17.99		17.99	
Total herbicide cost		107.90		134.54		134.54
Spray						
Summer oil #1 (processed/250 GPA) or Post-bloom (fresh/150 GPA)						
Application	27.50		27.50		25.89	
Material	50.50		64.04		63.51	
Total spray cost		78.00		91.54		89.40
Summer oil #2 (250 GPA)						
Application	27.50		27.50		27.50	
Material	31.25[x]		31.25[x]		74.38	
Total spray cost		58.75		58.75		101.88
Supplemental fall miticide						
Application (150 GPA)	—		—		24.82	
Material	—		—		10.50	
Total miticide cost		—		—		35.32
Fertilizer (bulk)						
Application (3)	24.81		24.81		24.81	
Material (16-0-16-4 MgO @ 180 lbs N per acre & 204 lbs N per acre)	92.25		104.55		104.55	
Total fertilizer cost		117.06		129.36		129.36
Dolomite (1 ton/every 4 years)						
Material/application		8.90		8.90		8.90
Pruning						
Topping ($36.75/A ÷ 2.5 years)[w]	14.70		14.70		14.70	
Remove brush from trees after topping ($24.41/A ÷ 2.5 years)[w]	9.76		9.76		9.76	

Table 1. A listing of estimated comparative central Florida (Ridge) citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ years old Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($/acre)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
Hedging ($33.90/A ÷ 2 years)[w]	16.95		16.95		16.95	
Chop/mow brush after hedging ($8.53/A ÷ 2 years)[w]	4.27		4.27		4.27	
Total pruning cost		45.68		45.68		45.68
Tree Replacement @ 1-3 years of age (3 trees/acre)						
Remove trees: pull, stack, burn (3 trees, using front-end loader)	14.94		14.94		14.94	
Prepare Site & Plant Trees (3 reset trees)	26.45		26.45		26.45	
Supplemental fertilizer, tree wraps, sprout, maintenance (trees 1-3 years old)	29.67		29.67		29.67	
Total tree replacement cost		71.06		71.06		71.06
Irrigation						
Microsprinkler system		143.22		143.22		143.22
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS		715.29		767.77		
Fall Miticide Spray						
Application (150 GPA)			25.89		25.89	
Material			34.52		34.52	
Total fall miticide cost				60.41		60.41
IRRIGATED FRESH FRUIT PRODUCTION COSTS				828.18		904.49

Source: Ronald P. Muraro, University of Florida, Citrus Research and Education Center, Lake Alfred, FL, June 2002.

[u, v, w, x, y] See Table 4.

[z] Estimated comparative costs are for the example grove situation described in the Economic Information Report Series "Budgeting Costs and Returns for Central Florida Citrus Production" and may not represent your particular situation. Central Florida production area refers to Polk and Highlands Counties, but costs in this report are also applicable to Hardee, Hillsborough, Lake, Orange, and Pasco Counties.

Table 2. A listing of estimated comparative southwest Florida citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ Years) Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($/acre)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
PRODUCTION/CULTURAL COSTS[y]						
Weed Management Control						
Mechanical mow middles (3/year)		25.10		25.10		25.10
Chemical mow middles (2/year)		13.84		13.84		13.84
General grove work (2 hours/acre)		24.92		24.92		24.92
Herbicides (1/2 tree acre treated)						
Application (3)	25.65		25.65		25.65	
Material	74.67		95.28		95.28	
Total herbicide cost		100.32		120.93		120.93
Spray						
Post-bloom						
Application (PTO-150GPA)	—		—		22.67	
Material	—		—		27.30	
Total post-bloom cost		—		—		49.97
Summer oil #1						
Application (PTO-150 GPA)	23.81		23.81		23.81	
Material	42.68		61.51		71.06	
Total summer oil #1 cost		66.49		85.32		94.87
Summer oil #2						
Application (PTO-150 GPA)	22.67		22.67		21.90	
Material	28.44[x]		28.44[x]		20.19	
Total summer oil #2 cost		51.11		51.11		42.86
Fertilizer (bulk)						
Application (3)	21.60		21.60		21.60	
Material (15-2-15-2.4 MgO @ 180 lbs N per acre & 204 lbs N per acre)	89.64		92.40		92.40	
Total fertilizer cost		111.24		114.00		114.00
Dolomite (1 ton/every 3 years)						
Material/Application		10.66		10.66		10.66
Pruning						
Topping ($29.63/A ÷ 2.5 years)[w]	11.88		11.88		11.88	
Remove brush from trees after topping ($25.47/A ÷ 2.5 years)[w]	10.19		10.19		10.19	
Hedging ($29.79/A ÷ 2 years)[w]	14.90		14.90		14.90	
Chop/mow brush after hedging ($8.00/A ÷ 1.5 years)[w]			4.00		4.00	
Total pruning cost		40.97		40.97		40.97

Table 2. A listing of estimated comparative southwest Florida citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ Years) Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($/acre)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
Tree Replacement @ 1-3 years of age (4 trees/acre)						
Remove trees: pull, stack, burn (3 trees, using front-end loader)	19.92		19.92		19.92	
Prepare site and plant trees (4 reset trees)	43.44		43.44		43.44	
Supplemental fertilizer, tree wraps, sprout, maintenance (trees 1-3 years old)	35.56		35.56		35.56	
Total tree replacement cost		98.92		98.92		98.92
Irrigation						
Microsprinkler System[v]	143.22		143.22		143.22	
Clean ditches (weed control)	13.00		13.00		13.00	
Ditch & canal maintenance	14.49		14.49		14.49	
Water control (pump water in/out of ditches & canals	10.85		10.85		10.85	
Total irrigation cost		181.56		181.56		181.56
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS		725.13		767.33		
Supplemental Post-Bloom Spray						
Application (250 GPA)			23.81		23.81	
Material			42.68		42.68	
Total post-bloom spray				66.49		66.49
Fall Miticide Spray						
Aerial application (15 GPA)			7.67		7.67	
Material			31.86		31.86	
Total fall miticide cost				39.53		39.53
IRRIGATED FRESH FRUIT PRODUCTION COSTS				873.35		924.62

Source: Ronald P. Muraro, University of Florida, Citrus Research and Education Center, Lake Alfred, FL, June 2002.

[u, v, w, x, y] See Table 4.

[z] Estimated comparative costs are for the example grove situation described in the Economic Information Report Series "Budgeting Costs and Returns for Southwest Florida Citrus Production" and may not represent your particular situation. Southwest Florida production area refers to counties in the Florida Agricultural Service "Southern Production Area". However, costs shown are applicable in South Central Florida counties such as DeSoto and Sarasota.

Table 3. A listing of estimated comparative Indian River citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ Years) Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
PRODUCTION/CULTURAL COSTS[y]						
Weed Management Control						
Mechanical mow middles (3/year)		27.51		27.51		27.51
Chemical mow middles (2/year)		14.34		14.34		14.34
General grove work (2 hours/acre)		24.92		24.92		24.92
Herbicides (1/2 tree acre treated)						
Application (3)	36.57		36.57		36.57	
Material	78.27		104.80		104.80	
Total herbicide cost		114.84		141.37		141.37
Spray						
Post-bloom						
Application (PTO - 250GPA)	—		29.40		29.40	
Material	—		28.60		41.08	
Total post-bloom cost		—		58.00		70.48
Summer oil #1						
Application (250 GPA)	29.40		29.40		29.40	
Material	50.50		67.37		67.37	
Total summer oil #1 cost		79.90		96.77		96.77
Summer oil #2						
Application (PTO - 250 GPA)	29.40		29.40		29.40	
Material	31.25[x]		22.18		22.18	
Total summer oil #2 cost		60.65		51.58		51.58
Fertilizer (bulk)						
Application (3)	21.60		21.60		21.60	
Material (12-2-12-2.4 MgO @ 125 lbs N per acre & 100 lbs N per acre)	74.88		60.12		74.88	
Total fertilizer cost		98.48		81.72		96.48
Dolomite (1 ton/every 3 years)						
Material/Application		11.66		11.66		11.66
Pruning						
Topping ($26.39/A divided by 2 years)[w]	13.20		13.20		13.20	
Remove brush from trees after topping ($25.47/A divided by 2 years)[w]	12.74		12.74		12.74	
Hedging ($23.83/A divided by 1.5 years)[w]	15.89		15.89		15.89	
Chop/mow brush after hedging ($8.00/A divided by 1.5 years)[w]	5.33		5.33		5.33	

Table 3. A listing of estimated comparative Indian River citrus production costs per acre for 2001-2002.[z]

Costs for Mature (10+ Years) Central Florida (Ridge) Orange Grove[u]	Low Cost Processed Fruit Cultural Program ($/acre)		Reduced Cost Processed/Fresh Fruit Cultural Program ($/acre)		Typical/Historical Fresh Fruit Cultural Program ($)	
	Subtotals	*Totals*	*Subtotals*	*Totals*	*Subtotals*	*Totals*
Raise Tree Skirts ($14.20/A ÷ 2 years)[w]	—		7.10		7.10	
Total pruning cost		47.16		54.26		50.26
Tree Replacement @ 1-3 years of age (5 trees/acre)						
Remove trees: pull, stack, burn (4 trees using front-end loader)	24.90		24.90		24.90	
Prepare Site and Plant Trees (3 reset trees)	57.90		57.90		57.90	
Supplemental fertilizer, tree wraps, sprout, maintenance (trees 1-3 years old)	44.45		44.45		44.45	
Total tree replacement cost		127.25		127.25		127.25
Irrigation						
Microsprinkler System[v]	143.22		143.22		143.22	
Clean Ditches (weed control)	13.00		13.00		13.00	
Ditch & Canal Maintenance	14.49		14.49		14.49	
Water Control (pump water in/out of ditches & canals	10.85		10.85		10.85	
Total irrigation cost		181.56		181.56		181.56
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS		786.27		870.94		
Supplemental Post Bloom Spray						
2 Applications (PTO-250 GPA)			48.94		48.94	
Material			19.46		19.46	
Total supplemental post-bloom spray				68.40		68.40
Fall Miticide Spray						
Aerial application (15 GPA)	—		7.67		7.67	
Material	—		34.52		34.52	
Total fall miticide cost		—		42.19		42.19
IRRIGATED FRESH FRUIT PRODUCTION COSTS				981.53		1,008.77

Source: Ronald P. Muraro, University of Florida, Citrus Research and Education Center, Lake Alfred, FL, June 2002.

[u, v, w, x, y] See Table 4.

Table 4. Footnotes for Tables 1, 2, and 3.

Footnotes for Tables 1, 2, and 3

[u] Although estimated annual per-acre grove costs are representative for mature citrus groves (10+ years), grove-care costs for specific grove sites may differ based on tree age, tree density, and grove practices. The budget cost items have been revised to reflect current grove practices, so revised costs for each grove practice shown may be higher or lower than previously reported. Budget costs for Central Florida, Indian River, and Southwest Florida represent custom-managed operations, which means all equipment costs are based on average custom rate costs and a 10% handling and supervision charge is added to material cost. A management charge for equipment supervision is not included. The extended drought situation during the last two seasons has increased tree stress, especially trees weakened from blight and tristeza. This has resulted in greater tree loss as reflected in higher reset replacement costs. Also, average per-acre yields have been affected by drought conditions.

[v] Irrigation Expense includes the following:

	Microsprinkler	*Drip*
	($/acre)	
Variable Operating Expense (diesel)	40.30	37.88
Fixed-Variable Expense (annual maintenance)	46.37	40.40
Total Cash Expenses	86.67	78.38
Fixed-Depreciation Expense	56.56	45.25
Total Cash and Fixed Expenses	143.22	123.63

[w] Per-acre costs shown in parenthesis are for 2002.

[x] Spray materials include copper (Cu), oil, and nutritionals.

[y] Where "equipment use" or "application" is listed (discing, hedging, spray application), "average custom charge" (cost) represents charges for equipment repairs, maintenance, labor, and overhead. Exceptions are mowing, spraying, and herbicide application costs for Southwest Florida which "represent costs for non-custom managed (owner-managed) operations." Management charges/costs are based on monthly charges or percentage of gross management sales. There can be harvesting supervision costs for overseeing/coordinating harvesting. Cost items not included in the budget are ad valorem taxes and interest on grove investments. Overhead and adminstrative costs may be 12% of total grove-care costs; costs vary from grove to grove, depending on age, location, and time of purchase or establishment. Except for Southwest Florida, a 10% supervision/handling charge of cost/price of materials is included in "materials expense."

Table 5. Total delivered-in cost for central Florida (Ridge) valencia oranges, southwest Florida hamlin oranges and Indian River fresh packed grapefruit, 2001-2002.[a]

	Central (Ridge) Florida (Processed Valencia Oranges)			Southwest Florida (Processed Halmin Oranges)			Indian River Florida (Fresh Packed Grapefruit)		
	$/Acre	*$/Box*	*$/P.S.*	*$/Acre*	*$/Box*	*$/P.S.*	*$/Acre*	*$/Box*	*$/Carton*
Total Production/ Cultural Costs	767.77	1.721	0.2532	767.33	1.522	0.2456	1,008.77	2.419	1.2006
Interest on Operating (Cultural) Costs	38.39	0.086	0.0127	38.37	0.076	0.0123	50.44	0.121	0.0605
Management Costs	48.00	0.118	0.0158	48.00	0.095	0.0154	48.00	0.102	0.0512
Taxes/Regulatory Costs									
Property & water mgmt taxes	58.92	0.132	0.0194	61.00	0.121	0.0195	44.80	0.107	0.0537
Drainage district tax	—	—	—	—	—	—	60.00	0.144	0.0719
Fly protocol cost[b]	—	—	—	—	—	—	44.70	0.107	0.0536
Canker decontamination costs[c]	27.72	0.062	0.0091	27.72	0.055	0.0089	27.72	0.066	0.0332
Total taxes/ regulatory costs	86.64	0.194	0.0286	88.72	0.176	0.0284	177.22	0.425	0.2125
Total Direct Grower Costs	940.80	2.109	0.3102	942.42	1.870	0.3016	1,284.43	3.067	1.5337
Interest on Average Capital Investment Costs	375.85	0.843	0.1239	367.85	0.730	0.1177	389.85	0.935	0.4674
Total Grower Costs	1,316.65	2.952	0.4341	1,310.27	2.600	0.4194	1,674.28	4.002	2.0011
Harvesting Costs[d]									
Pick, haul, & canker decontamination	933.03	2.092	0.3076	1,088.64	2.160	0.3484	810.23	1.943	0.9715

Table 5. Total delivered-in cost for central Florida (Ridge) valencia oranges, southwest Florida hamlin oranges and Indian River fresh packed grapefruit, 2001-2002.[a]

	Central (Ridge) Florida (Processed Valencia Oranges)			Southwest Florida (Processed Halmin Oranges)			Indian River Florida (Fresh Packed Grapefruit)		
	$/Acre	*$/Box*	*$/P.S.*	*$/Acre*	*$/Box*	*$/P.S.*	*$/Acre*	*$/Box*	*$/Carton*
Fruit drenching (fresh)	—	—	—	—	—	—	62.55	0.150	0.0750
DOC assessment	73.59	0.165	0.0243	83.16	0.165	0.0266	125.10	0.300	0.1500
Total Harvesting and Assessment Costs	1,006.62	2.257	0.3319	1,171.80	2.375	0.3750	977.88	2.393	1.1965
Total Delivered-In Cost	2,323.27	5.209	0.7660	2,482.07	4.925	0.7944	2,672.16	6.395	3.1976
P.S. = Pound Solids (2 cartons per box)	446 boxes/acre @ 6.8 P.S./box Valencia Oranges			504 boxes/acre @ 6.2 P.S./box Hamlin Oranges			417 boxes/acre (white and red grapefruit) 100% Packout		
Average Tree Density	112 Trees Per Acre			145 Trees Per Acre			95 Trees Per Acre		

Source: Ronald P. Muraro, University of Florida, Citrus Research and Education Center, Lake Alfred, FL, June 2002.

[a] Total production/cultural costs for Central (Ridge) Florida and Southwest Florida represent a "reduced cost processed orange cultural program" that many growers are currently using. Production/cultural costs for Indian River represent a "historical cost cultural program" for fresh packed/export grapefruit. The costs represent a mature productive citrus grove that is 10 years or older.

[b] "Fly protocol cost" is a certification program for exporting citrus to Japan. Depending on the number of times the fruit is harvested, bait/spray treatment costs may be as high as $70/acre.

[c] Canker decontamination costs ranged from an averge of $5.80/acre for spraying citrus groves to an average of $36.85 in quarantine areas.

[d] Harvesting costs do not include charges for unloading/rejecting fruit at a processing plant or handling/hauling costs for packinghouse eliminations.