Ronald P. Muraro
John W. Hebb

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Budgeting Costs and Returns for Indian River Citrus Production, 2003-04

UNIVERSITY OF FLORIDA
IFAS EXTENSION

Institute of Food and Agricultural Sciences
Food and Resource Economics Department
Florida Agricultural Experiment Station
Florida Cooperative Extension Service
Gainesville, FL 32611

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ABSTRACT

Estimated costs and returns of growing seedless grapefruit in the Indian River area of Florida are presented for the twentieth year. The format presented may be used by individual growers to budget costs and returns, utilizing individual data on specific groves.

Key words: citrus, Indian River, budgeting, costs and returns, seedless grapefruit.

NOTE: The Indian River production area refers to the citrus producing counties on Florida's east coast, including Brevard, Indian River, Martin, Palm Beach, and St. Lucie.

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.). Thus the 2003-04 budget costs reflect reduced fertilizer for fresh market grapefruit and lower fertilizer and pesticide materials costs and increased per acre yield due to higher per acre tree densities.

The budget costs in this report represent a *custom-managed operation*. Therefore, all equipment costs are based on the average custom rate costs along with a 10 percent handling and supervision charge added to the material cost.

Although the estimated annual per acre grove costs listed are representative of a mature citrus grove (10+ years old), the grove care costs for a specific grove site may differ depending on tree age, tree density and the grove practices performed (e.g., spot herbicide for grass/brush regrowth under trees could add an additional $16.60 per acre; Diaprepes control could add $73.20 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 at $119.33/acre, could increase the total cultural costs per acre above the average costs shown in the comparative budgets; or travel and set-up costs may vary due to size of the citrus grove and distance from grove equipment barn and could add $25.98 per acre; etc.

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Appreciation is extended to Mrs. Jane Wilson for typing the final draft of this manuscript. Appreciation is also extended to the citrus growers and production managers of the Indian River citrus production area who provided suggestions for the revision of this manuscript.

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BUDGETING COSTS AND RETURNS FOR INDIAN RIVER CITRUS PRODUCTION, 2003-04

Ronald P. Muraro and John W. Hebb

INTRODUCTION

Budget analysis provides the basis for many grower decisions. Budget analysis can be used to calculate potential profits from an operation, to determine cash requirements for an operation, or to determine break-even prices. This report presents a budget constructed from current data and serves as a format for growers to analyze costs and returns from their individual records.

METHOD OF DATA COLLECTION

The data presented here were developed by surveying custom operators, input suppliers, growers, and colleagues at both the Indian River Research and Education Center in Fort Pierce and the Citrus Research and Education Center in Lake Alfred and County Extension Citrus Agents in the Indian River production region. The survey is conducted annually in February and March.

COSTS AND INPUTS

Costs for various production inputs are those collected from citrus growers as well as the average of the data obtained from annual custom rate, chemical, and fertilizer surveys. The ADDENDA shows grower's costs (Tables 1-A through 7-A0, custom rate costs (Table 8-A), and various chemical and fertilizer costs (Tables 9-A and 10-A). The budget costs represent a custom-managed operation. Therefore, all equipment costs are based upon the average custom-rate costs along with a 10 percent handling and supervision charge added to the material cost.

Although brand names are used in many of the tables in the ADDENDA, this does not imply endorsement by the University of Florida. It is merely an attempt to depict typical production practices.

All tables have a column reserved for the individual growers to insert data from a particular grove. This will allow a comparison of the grower's costs with those presented.

Ronald P. Muraro, Professor and Extension farm management economist, Department of Food and Resource Economics, Citrus Research and Education Center, Lake Alfred, and John W. Hebb, Extension citrus agent, St. Lucie County, Fort Pierce, Florida Cooperative Extension Service, Institute of Food and Resource Economics, University of Florida, Gainesville, FL.

THE GROVE SITUATION

Production practices for an Indian River grapefruit grove are shown in Table 1along with times during the year when they are normally performed. There are two benefits to developing such a table for an individual grove. First, it shows what work is needed and when so that operations can be planned well in advance. Second, it an annual cash flow analysis can be helpful in financial planning. The individual grower may benefit from developing a plan for a particular grove.

Specific production practices vary from grove to grove, making it difficult to define a "typical" grove. Many combinations of practices and various tree variety combinations produce acceptable yields and returns. Although the example represents a white seedless grapefruit grove, the cost and return data are designed to be applicable to most grove situations. A grower, realtor, or land appraiser can substitute individual grove costs and expected returns into the budget format and develop a budget for a particular grove. A "your cost" column is appropriately provided for this purpose in subsequent tables.

In the following budget, above average management and cultural practices are assumed. Beyond this general assumption, the following specifics are assumed.

1. A mature (10+ years old), low volume-irrigated grove.
2. Variety is white seedless on sour orange rootstock.
3. Tree loss is 5.0 percent annually.
4. Trees are pulled and replaced when production falls below 50 percent of expected yield.
5. Production is for fresh market.
6. Tree density is 95 trees per acre.
7. Custom-caretaker is providing grove management.

Tree ages will vary due to tree losses and replacement. The budget reflects the following age distribution and yield for Indian River white seedless grapefruit:

Table 1.--Schedule of production practices and budget items for an Indian River Florida grapefruit grove, 2003-04[a]

		Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total revenue:		20% deposit		Final payment									
Less:	Pick & haul cost			X									
	DOC advertisement tax			X									
Grove expenses:													
Mow			X			X	Chemical Mow		Chemical Mow			X	
Labor, general grove work, pull vines		X								X			
Herbicide (sprayed strip estimated as 1/2 grove acre equivalent)				X			X				X		
Spray:	Post bloom/nutritional				X	X							
	Summer oil/greasy spot							X					
	Fall miticide									X			
	Supplemental miticide											X	
Fertilizer			42# N/A				42# N/A					42# N/A	Dolomite
Hedging and topping					Hedge								
Brush removal/chop brush				Chop brush									
Tree removal			X										
Young tree care				X	X		X	X		X			
Microjet irrigation (times/week)		1	1	2	3	3	3	2	2	2	2	1	1
Miscellaneous (clean ditches)			X										
Grove taxes including water management												X	
Interest expense								X					
Annual principal payment on mortgage								X					

[a]This is a suggested schedule of practices. Actual practices would not necessarily be done on the exact schedule shown here.

% of Grove	Tree Age and Condition	Yield Boxes/Tree
5.0%	pulled and reset	0.0
5.0%	1 year old	0.0
5.0%	2 years old	0.0
5.0%	3 years old	1.0
5.0%	4 years old	1.7
55.0%	5-15 years old	5.9
5.0%	producing 50% of expected yield	3.5
15.0%	over 15 years	7.5

Calculation of normal production per acre is shown in Table 2. Note that the proportion-of-trees-by-age column only adds to 85 percent since 15 percent of the trees are non-bearing.

Table 2.--Calculation of normal production per acre, 2003-04

Age of Tree	Trees						Boxes /Tree		Total Boxes
	Total no. all ages		Proportion each age[a]		No. each age		-------- Number --------		
3 years	95	x	0.05	=	4.75	x	1.0	=	4.8
4 years	95	x	0.05	=	4.75	x	1.7	=	8.1
5-15 years	95	x	0.55	=	52.30	x	5.9	=	308.6
Prod. 50% of expected yield	95	x	0.05	=	4.75	x	3.5	=	16.6
Over 15 years	95	x	0.15	=	14.30	x	7.5	=	107.3
						Total boxes		=	445.4

[a]Proportion adds up to 0.85 (85 percent) as 15 percent of the trees were non-bearing (pulled and reset, 1- and 2-year-old trees).

BUDGET COSTS AND RETURNS

Estimated budget costs and returns for an Indian River grove situation are shown in Table 3. Gross revenue estimates are based on the projected yields (Table 3) and estimated preliminary on-tree prices for the 2003-04 season. The budgeted costs represent one possible citrus production program and were selected from the costs shown in the ADDENDA tables (grove establishment and reset costs are shown in Tables 11-A through 14-A and historical on-tree prices for selected Florida citrus varieties are shown in Table 15-A).

As shown in Table 3, the total revenue for fresh-market white seedless grapefruit is estimated to be $2,069.25 per acre. Total specified costs are $1,089.13, comprised of grove care costs of $1,041.13 plus management costs of $48.00. Return to land, trees, and ownership of $980.12 per acre loss represents net return above variable costs. At 325 and 525 boxes per acre, respectively, the break-even prices required to cover grove care costs for seedless white grapefruit range from $3.20 to $1.98 per box on-tree and $1.43 to $1.17 per pounds solids delivered-in.

Ad valorem taxes, and overhead and administrative costs (e.g., water drainage district taxes, crop insurance, and other grower assessments) can add up to 12 percent of total grove care costs. These costs vary from grove to grove, depending on age, location, or variety of fruit, and should be considered in arriving at a net return to land, trees, and ownership (total return minus total costs). Harvest costs (pick, roadside, and hauling costs) also add to the total fruit cost delivered to either a processing plant or fresh fruit packinghouse. Average annual debt payment (principal and interest) may be as high as $460 per acre ($3,900 average debt per acre at 10 percent interest amortized over 20 years) which would reduce total available cash for grove expansion or other investment.

Estimated “delivered-in” costs for fresh packed white grapefruit are shown in Table 4. “Delivered-in” costs include grove care costs (Table 3) plus harvesting, regulatory, and grower assessment costs. The "delivered-in" cost is presented as a cost per acre, per box, per carton, and per pound solids. Three possible budget cost scenarios are presented (Table 11-A): Low Cost Processed Cultural Program; Processed and Reduced Cost Fresh Cultural Program; and Typical/Historical Fresh Fruit Cultural Program. Scenario 1 represents costs of a cultural program directed toward reducing expenditures for fruit grown primarily for the processed market. Scenario 2 represents a program using reduced inputs but with production directed at the fresh market. Scenario 3 represents typical costs of grove practices that 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.* Also, in Table 5, the total estimated F.O.B. cost for fresh packed white grapefruit is shown. The F.O.B. costs are presented for "fresh fruit packout percentage rates" ranging from 50 percent to 100 percent.

HISTORICAL COST TRENDS

Annual budgets of costs and returns for mature, fresh, white seedless grapefruit in the Indian River area have been developed and published the past four years. Estimated cost and return histories for 1999-00 through 2002-03 along with 2003-04, and a five-year average are presented in Table 6. The effect of over planting, following recent freezes, on Florida's annual grapefruit supply has resulted in a fluctuating on-tree price per box. Despite general reduction in operating costs, annual net return to land and trees has decreased over the five-year period. To allow comparisons in current values, these same costs and returns, adjusted to 2043 dollars, are presented in Table 7.

Table 3.--Estimated annual per acre costs and returns for a mature, white seedless grapefruit grove producing for the fresh market, Indian River area, 2003-04[a]

	Item	Description	Amount		Your Cost
			Dollars		
I.	Revenue	445 boxes @ $4.65[b]		2,069.25	
II.	Expenses[c]				
	Weed control				
	Mow middles	3 times per year	29.73		
	Chemical mow (Table 2-A, Option #9)	2 times per year	11.24		
	General grove work/sprouting, etc.	(2 labor hours per acre)	25.34		
	Herbicide (Table 2-A, Options #1, #6 & #7)		125.52	191.83	
	Spray program (Table 1-A, Options #1, #3, #4 @ 2, #8 & #12)			349.81	
	Fertilizer (Table 3-A, Option #2)			122.65	
	Dolomite (Table 7-A, Option #1)			12.54	
	Pruning (maintenance)				
	Topping	($275.00/hr. ÷ 10 A/hr.) ÷ 2 yrs.	13.75		
	Hedging	($245.00/hr. ÷ 10 A/hr.) ÷ 1.5 yrs.	16.33		
	Removing/chop brush	($8.52/A ÷ 1.5 yrs.)	5.68		
	Raise skirts of trees	($13.00/A ÷ 2 yrs.)	6.50	42.26	
	Tree replacement and care	(1 through 3 years)			
	Remove trees (Table 12-A)	5 trees per acre	23.70		
	Prepare sites, repair mound, and plant resets	Including 5 trees per acre	59.55		
	Supplemental fertilizer, sprout, etc. (Trees 1-3 years)	Including application	46.20	129.45	
	Microsprinkler irrigation (Table 7-A, Option #4)			152.07	
	Drainage ditch annual cost (Table 7-A, Option #5)			40.52	
	Total grove care expenses			1,041.13	
III.	Management	$4.00 per acre per month[d]		48.00	
IV.	Total specified costs[e]			1,089.13	
V.	Return (loss) to land, trees, and ownership			980.12	
VI.	Break-even price for total grove care expenses				

Boxes per acre					Boxes per acre				
325	375	425	475	525	325	375	425	475	525
$ On-tree price per box					$ Delivered-in price per pound solids for eliminations[f]				
3.20	2.78	2.45	2.19	1.98	1.43	1.34	1.27	1.22	1.17

[a] While estimated annual per acre grove costs Table 3 are representative of a mature Indian River white seedless grapefruit grove, grove care costs for specific grove site may differ depending on grove practices performed (e.g., Temik application would add $119.33 per acre; extensive tree loss due to blight or tristeza may double tree replacement and care costs).

[b] On-tree price per box is preliminary; assumes average of all methods of sale (fresh and processed).

[c] Assumes material custom applied; therefore, a 10 percent handling and supervision charge is added to material cost.

[d] Other methods to estimate a management cost (e.g., 5% of gross sales or 10% of total grove care costs) are used in the industry and vary from situation to situation.

[e] Other cost items which are not included in budget are ad valorem taxes and interest on grove investment. In addition to these cost items, overhead and administrative costs (e.g., 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.

[f] Assumes 4.7 pounds solids per box, $2.27 pick and haul cost per box (spot picking and fruit drenching plus DOC $0.25 advertising tax and canker decontamination costs), $0.55 per box handling through packinghouse, and $0.45 per box delivery to processing plant.

Table 4. Estimated total delivered-in cost for Indian River White grapefruit grown for the fresh/processed market under three cultural cost programs, 2003-04

Represents a mature (10+ years old) Indian River White Grapefruit Grove	Processed White Grapefruit Low Cost Cultural Program One-Year Alternative			Fresh Packed White Grapefruit Reduced Cost Cultural Program			Fresh Packed White Grapefruit Cultural Program		
	$/Acre	$/Box	$/P.S.	$/Acre	$/Box	$/Carton	$/Acre	$/Box	$/Carton
Total Production/Cultural Costs	$ 753.52	$1.693	$0.3603	$1,019.85	$2.292	$1.1459	$1,041.13	$2.340	$1.1698
Interest on Operating (Cultural) Costs	20.72	0.047	0.0099	50.99	0.115	0.0573	52.06	0.117	0.0585
Management Costs	48.00	0.108	0.0230	48.00	0.108	0.0539	48.00	0.108	0.0539
Taxes/Regulatory Costs:									
Property Tax/Water Management Tax	47.04	0.106	0.0225	44.80	0.101	0.0503	44.80	0.101	0.0503
Water Drainage District Tax	63.00	0.142	0.0301	60.00	0.135	0.0674	60.00	0.135	0.0674
Fly Protocol Cost	–	–	–	54.73	0.123	0.0615	52.13	0.117	0.0586
Canker Decontamination Costs	6.18	0.014	0.0030	6.18	0.014	0.0069	4.54	0.010	0.0051
Total Taxes/Regulatory Costs	116.22	0.261	0.0556	165.71	0.372	0.1862	161.47	0.363	0.1814
Total Direct Grower Costs	$ 938.46	$2.109	$0.4487	$1,284.55	$2.887	$1.4433	$1,302.66	$2.927	$1.4637
Interest on Average Capital Investment Costs	321.22	0.722	0.3609	321.22	0.722	0.3609	321.22	0.722	0.3609
Total Grower Costs	$1,259.68	$2.831	$0.8096	$1,605.77	$3.608	$1.8042	$1,623.87	$3.649	$1.8246
Harvesting and Assessment Costs:									
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	838.83	1.885	0.4011	928.27	2.086	1.0430	928.27	2.086	1.0430
Fruit Drenching (Fresh)	–	–	–	75.65	0.170	0.0850	75.65	0.170	0.0850
DOC Assessment	106.80	0.240	0.0511	111.25	0.250	0.1250	111.25	0.250	0.1250
Total Harvesting and Assessment Costs	945.63	2.125	0.4521	1,115.17	2.506	1.2530	1,115.17	2.506	1.2530
Total Delivered-In Cost	$2,205.30	$4.956	$1.2617	$2,720.94	$6.114	$3.0572	$2,739.04	$6.155	$3.0776
Two cartons per box P.S. = Pound Solids Yield: 445 boxes/acre @ 4.7 P.S. per box 95 trees per acre	Cultural program (Table 11-A) Two summer oil sprays with oil, copper, and miticide			Cultural program (Table 3). Assumes 100% packout			Cultural program (Table 11-A) Assumes 100% packout		

Table 5.--Estimated F.O.B. cost for fresh market Indian River White grapefruit, 2003-04

	Percent Packout 50.00% Box Yield Per Acre 445			Percent Packout 60.00% Box Yield Per Acre 445			Percent Packout 70.00% Box Yield Per Acre 445		
	Per Acre	Per Packed Box	Per Carton	Per Acre	Per Packed Box	Per Carton	Per Acre	Per Packed Box	Per Carton
Total Production/ Cultural Costs	$1,041.13	$4.679	$2.3396	$1,041.13	$3.899	$1.9497	$1,041.13	$3.342	$1.6712
Interest on Operating (Cultural) Costs	52.06	0.234	0.1170	52.06	0.195	0.0975	52.06	0.167	0.0836
Management	48.00	0.216	0.1079	48.00	0.180	0.0899	48.00	0.154	0.0770
Taxes/Regulatory	161.47	0.726	0.3629	161.47	0.605	0.3024	161.47	0.518	0.2592
Interest on Average Capital Investment	321.22	1.444	0.7218	321.22	1.203	0.6015	321.22	1.031	0.5156
Harvesting (Pick/Spot Pick, Haul, DOC Tax, Etc.)	1,115.17	5.012	2.5060	1,115.17	4.177	2.0883	1,115.17	3.580	1.7900
Total Delivered-In Cost	$2,739.04	$12.310	$6.1551	$2,739.04	$10.259	$5.1293	$2,739.04	$8.793	$4.3965
Packing & Selling (Export)	1,642.05	7.380	3.6900	1,970.46	7.380	3.6900	2,298.87	7.380	3.6900
Net Fresh Eliminations Costs[a]	-289.92	-1.303	-0.6515	-231.93	-0.869	-0.4343	-173.95	-0.558	-0.2792
Total F.O.B. Costs	$4,091.17	$18.387	$9.1936	$4,477.57	$16.770	$8.3850	$4,863.96	$15.615	$7.8073

	Percent Packout 80.00% Box Yield Per Acre 445			Percent Packout 90.00% Box Yield Per Acre 445			Percent Packout 100.00% Box Yield Per Acre 445		
	Per Acre	Per Packed Box	Per Carton	Per Acre	Per Packed Box	Per Carton	Per Acre	Per Packed Box	Per Carton
Total Production/ Cultural Costs	$1,041.13	$2.925	$1.4623	$1,041.13	$2.600	$1.2998	$1,041.13	$2.340	$1.1698
Interest on Operating (Cultural) Costs	52.06	0.146	0.0731	52.06	0.130	0.0650	52.06	0.117	0.0585
Management	48.00	0.135	0.0674	48.00	0.120	0.0599	48.00	0.108	0.0539
Taxes/Regulatory	161.47	0.454	0.2268	161.47	0.403	0.2016	161.47	0.363	0.1814
Interest on Average Capital Investment	321.22	0.902	0.4511	321.22	0.802	0.4010	321.22	0.722	0.3609
Harvesting (Pick/Spot Pick, Haul, DOC Tax, Etc.)	1,115.17	3.133	1.5663	1,115.17	2.784	1.3922	1,115.17	2.506	1.2530
Total Delivered-In Cost	$2,739.04	$7.694	$3.8470	$2,739.04	$6.839	$3.4195	$2,739.04	$6.155	$3.0776
Packing & Selling (Export)	2,627.28	7.380	3.6900	2,955.69	7.380	3.6900	3,284.10	7.380	3.6900
Net Fresh Eliminations Costs[a]	-115.97	-0.326	-0.1629	-57.98	-0.145	-0.0724	0.00	0.000	0.0000
Total F.O.B. Costs	$5,250.35	$14.748	$7.3741	$5,636.75	$14.074	$7.0371	$6,023.14	$13.535	$6.7676

[a] "Net Eliminations Cost" equals the average yield of 4.70 pound solids per box times $0.49 per pound solids less packinghouse elimination charge and cannery hauling charge of $1.00 per box.

Table 6.--Estimated annual per acre costs and returns and 5-year average costs and returns for a mature, white seedless grapefruit grove producing citrus for fresh fruit market in the Indian River area, 1999-00–2003-04

Year	On-tree Price/Box[a]	Yield	Gross Revenue	Total Grove Care Eexpenses	Total Specified Costs[e]	Net Return to Land, Trees, and Ownership
			Dollars			
1999-00	$4.20	469	1,969.80	951.47	999.47	970.33
2000-01	$2.15	425[c]	913.75	974.46	1,022.46	(108.71)
2001-02	$1.95	417[d]	813.15	1,008.77	1,056.77	(243.62)
2002-03	$2.08[b]	417[d]	867.36	1,024.54	1,072.54	(205.18)
2003-04	$4.65[b]	445	2,069.25	1,041.13	1,089.13	980.12
5-yr. avg.	$3.01	435	1,309.35	1,000.07	1,048.07	261.28

[a]On-tree prices for all sales methods as reported by the Florida Agricultural Statistics Service.

[b]Preliminary estimate by authors at time of printing and is not a published price.

[c]The severe drought affected yields for the 2001-02 season.

[d]Increased tree loss due to citrus tristeza virus reduced yields.

[e]A management cost of $4.00 per acre per month is included. Fixed costs such as taxes, debt service, and crop insurance are not included.

Table 7.--Estimated annual per acre costs and returns and 5-year average costs and returns (adjusted to 2004 dollars) for a mature, white seedless grapefruit grove producing citrus for fresh fruit market in the Indian River area, 1999-00–2003-04

Year	Inflation Factor Index[a]	Adjusted On-tree Price/Box	Yield	Gross Revenue	Total Specified Costs[b]	Net Return to Land, Trees, and Ownership
				---------- Dollars ----------		
1999-00	111.1	$4.67	469	2,190.23	1,110.41	1,079.82
2000-01	109.8	$2.36	425	1,003.00	1,122.66	(119.66)
2001-02	112.4	$2.19	417	913.23	1,187.81	(274.58)
2002-03	106.7	$2.22	417	925.74	1,144.40	(218.66)
2003-04	100.0	$4.65	445	2,069.25	1,089.13	980.12
5-yr. avg.	--	$3.22	435	1,400.70	1,130.88	269.82

[a]Producer price index for each year adjusted to 2004 prices (2004 = 100), with 2004 consumer price index estimated to be 147.4. Producer price index for other years are: 2000 = 132.7; 2001 =134.2; 2002 = 131.1; and 2003 = 138.1.

[b] Management cost of $4.00 per acre, per month is included. Fixed costs (e.g., taxes, debt service, and crop insurance) are not included (Table 6.)

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ADDENDA: Listing of Grove Care Options for Indian River Citrus Production for Both Round Oranges and Grapefruit[a]

Abbreviations for important chemicals are:

Cu = Copper	Mg = Magnesium	N = Nitrogen
Fe = Iron	Mn = Manganese	Zn = Zinc

[a]Costs in ADDENDA represent a custom managed operation. All equipment costs are based on average custom rate costs along with a 10 percent handling and supervision charge added to material cost.

Table 1-A.--Spray options

POST BLOOM SPRAY

Spray Option #1	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Micromite	1.25 pounds	$ 39.88	_____
	Oil 97+%	5 gallons	11.30	_____
	Cu (50% metallic)	7 pounds	9.24	_____
	Zn	5 pounds	4.35	_____
	Mn	10 pounds	3.40	
	Ground Application (PTO driven airblast)	250 gallons	28.67	_____
	Total per Application		$85.54	_____

Spray Option #2	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Agri-Mek	10 ounces	$45.38	_____
	Cu (50% metallic)	10 pounds	13.20	_____
	Oil 97+%	3 gallons	6.78	_____
	Ground Application (Curtec sprayer)	25 GPA	20.00	_____
	Total per Application		$85.36	_____

Spray Option #3	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	7 pounds	$ 9.24	_____
	Oil 97+%	5 gallons	11.30	_____
	Ground Application (PTO driven airblast)	250 gallons	28.67	_____
	Total per Application		$49.21	_____

Spray Option #4	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	7 pounds	$ 9.24	_____
	Ground Application (PTO driven airblast)	125 gallons	24.67	_____
	Total per Application		$33.91	_____

Table 1-A.--Spray options (continued)

SUMMER SPRAY

Spray Option #5	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	5 gallons	$11.30	
	Cu (50% metallic)	7 pounds	9.24	
	Micromite	1.25 pounds	39.88	
	Ground Application (PTO driven airblast)	250 gallons	28.67	
	Total per Application		$89.09	

Spray Option #6	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	7 pounds	$ 9.24	
	Oil 97+%	5 gallons	11.30	
	Agri-Mek	10 ounces	45.38	
	Ground Application (PTO driven airblast)	250 gallons	28.67	
	Total per Application		$94.59	

Spray Option #7	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	7 pounds	$ 9.24	
	Oil 97+%	10 gallons	22.60	
	Agri-Mek	5 ounces	22.69	
	Ground Application (PTO driven airblast)	500 gallons	36.00	
	Total per Application		$90.53	

Spray Option #8	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Enable	8 ounces	$11.36	
	Oil 97+%	5 gallons	11.30	
	Micromite	1.25 pounds	39.88	
	Ground Application (PTO driven airblast)	250 gallons	28.67	
	Total per Application		$91.21	

Spray Option #9	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	7 pounds	$ 9.24	
	Oil 97+%	5 gallons	11.30	
	Zn	5 pounds	4.35	
	Mn	10 pounds	3.40	
	B	0.25 pounds	1.13	
	Ground Application (PTO driven airblast)	250 gallons	28.67	
	Total per Application		$58.09	

Table 1-A.–Spray options (continued)

SUMMER SPRAY (continued)

Spray Option #10	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
(Scale insects)	Lorsban 4EC	5 pints	$21.20	
	Ground Application (engine driven airblast)	500 gallons	36.00	
	Total per Application		$57.20	

FALL SPRAY

Spray Option #11	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Vendex 50WP	2 pounds	$31.36	
	Microthiol (sulfur)	15 pounds	9.60	
	Ground Application (PTO driven airblast)	250 gallons	28.67	
	Total per Application		$69.63	

Spray Option #12	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Vendex WP	2 pounds	$31.36	
	Ground Application (PTO driven airblast)	125 GPA	24.67	
	Total per Application		$56.03	

Spray Option #13	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Microthiol (sulfur)	15 pounds	$ 9.60	
	Aerial Application	15 GPA	8.02	
	Total per Application		$17.62	

Table 2-A.--Herbicide options

Herbicide Option #1	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Solicam 80DF	3 pounds	$22.73	
	Karmex WP	4 pounds	7.42	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$50.44	

Table 2-A.–Herbicide options (continued)

Herbicide Option #2	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Surflan A80 DF	2 quarts	$21.06	
	Simazine 4L	4 quarts	7.08	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$48.43	

Herbicide Option #3	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Karmex WP	4 pounds	$ 7.42	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$27.71	

Herbicide Option #4	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Solicam 80DF	4 pounds	$30.30	
	Simazine 4L	4 quarts	7.08	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$57.67	

Herbicide Option #5	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Roundup Ultra Max	2 quarts	$ 8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$20.29	

Herbicide Option #6	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Krovar I	5 pounds	$27.78	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$48.07	

[a]For herbicide materials, amount per grove acre *does not equal* amount per treated acre shown on label, only a strip or band is being treated. This report assumes that only half a grove surface is being treated.

Table 2-A.–Herbicide options (continued)

Herbicide Option #7	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Roundup Ultra Max	2 quarts	$ 8.08	
	Princep (Caliber 90)	4 pounds	6.72	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$27.01	

Herbicide Option #8	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Direx 4L	3 quarts	$ 5.88	
	Solicam	3 pounds	22.73	
	Ground Application (1 time)		12.21	
	Total for 1 Application		$40.82	

Herbicide Option #9	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Chemical mow)	Roundup Ultra Max	1 pt	$ 2.02	
	Ground Application (1 time)		3.60	
	Total for 1 Application		$ 5.62	

Herbicide Option #10	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Chemical mow)	Roundup Ultra Max	1.5 pints	$ 3.03	
	Ground Application (1 time)		3.60	
	Total for 1 Application		$ 6.63	

Herbicide Option #11	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Spot treatment for grass/brush regrowth under trees)	Roundup Ultra Max	2 quarts	$ 8.08	
	Ground Application (1 time)		4.50	
	Total for 1 Application		$12.58	

Table 3-A.--Dry fertilizer options

Option #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(100 lbs N/Acre)	12-2-12-2.4 MgO	835 pounds	$ 80.91	
	Application	3 times	21.87	
	Total for 3 Applications		$102.78	

Option #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(125 lbs N/Acre)	12-2-12-2.4 MgO	1040 pounds	$100.78	
	Application	3 times	21.87	
	Total for 3 Applications		$122.65	

Option #3	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(162 lbs N/Acre)	12-2-12-2.4 MgO	1350 pounds	$129.60	
	Application	3 times	21.87	
	Total for 3 Applications		$151.47	

Option #4	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	15-2-15-2.4 MgO	1200 pounds	$ 121.20	
	Application	3 times	21.87	
	Total for 3 Applications		$143.07	

Option #5	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(204 lbs N/Acre)	17-4-17-2.4 MgO	1200 pounds	$132.00	
	Application	3 times	21.87	
	Total for 2 Applications		$153.87	

Option #6	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(225 lbs N/Acre)	15-2-15-2.4 MgO	1500 pounds	$144.00	
	Application	3 times	21.87	
	Total for 3 Applications		$165.87	

Table 4-A.--Liquid fertilizer (double boom application)

Option #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	10-0-10	1800 pounds	$138.42	
	Double Boom Application	3 times	36.75	
	Total for 3 Applications		$175.17	
Option #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	10-2-10	1800 pounds	$ 140.22	
	Double Boom Application	3 times	36.75	
	Total for 3 Applications		$176.97	
Option #3	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	10-0-10	1800 pounds	$ 138.42	
	Solicam 80DF	3 pounds*	22.73	
	Karmex WP	4 pounds*	7.42	
	Double Boom Application	3 times	36.75	
	Total for 3 Applications		$205.32	

*Treated acre (one herbicide application)

Table 5-A.--Nematicides options

Option #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
	Temik 15G	33 pounds	$107.58	
	Application	1 time	11.75	
	Total per Application		$119.33	

Table 6-A.--Soil amendment options

Option #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(Every 3 years)	Dolomite (Delivered)	1 ton	$30.27	
	Application	1 time	7.35	
	Total for 1 Application		$37.62	
	(Average 1/3 Ton Applied/Yr)		$12.54	
Option #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(Every year)	Dolomite (Delivered)	1000 pounds	$15.14	
	Application	1 time	7.35	
	Total per Application		$22.49	

Table 7-A.--Irrigation (annual cost per acre)

DRIP

	Option #1	Your Cost/Acre	Option #2	Your Cost/Acre
Operating	(Electric) $ 50.44		(Diesel) $ 45.38	
Maintenance of System	41.46		41.25	
Total Cash Expenses	$ 91.90		$ 86.63	
Fixed Depreciation Expense	42.35		45.25	
Total Cash and Fixed Expenses	$134.35		$131.88	

MICROSPRINKLER

	Option #3	Your Cost/Acre	Option #4	Your Cost/Acre
Operating	(Electric) $ 57.35		(Diesel) $ 48.28*	
Maintenance of System	46.21		47.23	
Total Cash Expenses	$103.56		$ 95.51	
Fixed Depreciation Expense	52.94		56.56	
Total Cash and Fixed Expenses	$156.50		$152.07	

DRAINAGE DITCH ANNUAL COSTS

	Option #5	Your Cost/Acre
Ditches/Canals Maintenance ($41.88/acre ÷ 3 years)	$14.76	
Weed Control in Ditches/Canals	13.05	
Water Control: In/Out of Ditches and Canals	12.71	
Total	$40.52	

*Indicates higher cost for fuel; diesel or electric.

Table 8-A.--A listing of 2004 custom rates reported by fifteen Indian River and South Florida citrus caretakers

Grove Practice	Unit	Range of Rate Reported		Average Rate[y]	Comments
CULTIVATION AND EQUIPMENT:					
Hand Labor	Hour	$ 9.50-	$15.00	$12.67	Plus transportation and equipment
Mechanic Labor	Hour	32.00-	40.00	36.00	Labor and service truck
Rotovate	Hour	30.00-	45.00	36.70	
Disc 7-8'	Hour	25.00-	31.00	27.83	
Disc 10-12'	Hour	27.50-	35.50	32.00	
Mow: 7-8'	Hour	27.50-	32.00	30.05	
9-10'	Hour	30.00-	35.00	31.69	
9-10'	Acre	9.00-	11.00	9.91	
15-16'	Hour	34.00-	41.00	37.42	Average $8.88/acre
V-Mower	Hour	—	—	27.50	
Sickle Mower	Hour	—	—	34.00	
Herbicide[z] (Strip/Band–Single Boom)	Hour	30.00-	32.00	31.33	Plus materials
Herbicide[z] (Strip/Band–Single Boom)	Acre	12.00-	13.40	12.63	Plus materials
Herbicide[z] (Strip/Band–Double Boom)	Acre	11.50-	13.00	12.21	Plus materials
Herbicide[z] (Chemical Mow)	Acre	2.50-	5.00	3.60	Plus materials
Temik[z]	Acre	10.00-	13.00	11.75	Plus materials
Plow	Hour	—	—	32.50	
Backhoe	Hour	40.00-	50.00	46.21	
Vine Puller/Deviner	Hour	—	—	32.00	
Middle Buster	Hour	31.00-	34.00	32.71	With tractor and driver
Mound Builder	Hour	33.00-	35.00	34.17	With tractor and driver
Grader Blade	Hour	28.00-	33.00	30.88	Tractor/blade and driver
Caterpillar Grader	Hour	—	—	65.00	
Water Truck with Driver	Hour	30.00-	34.00	32.33	
Pickup Truck with Driver	Hour	28.00-	35.00	30.33	Average miles traveled per year: Pick-up truck – 22,663 miles
Flatbed/Transport Truck with Driver	Hour	40.00-	45.00	42.50	
Tractor with Driver	Hour	27.00-	33.00	30.00	
ATV with Driver	Hour	20.00-	23.50	21.60	

SPRAYING:[z]		PTO AIR BLAST SPRAYER						
		1,000 Gallon Tank with Electronic Sensing			1,000 Gallon Tank without Electronic Sensing			500 Gallon Tank Average
500 GPA	Acre	37.75-	38.00	37.83	35.00-	38.00	36.00	36.50
250 GPA	Acre	28.00-	33.00	30.85	25.00-	32.00	28.67	29.75
125 GPA	Acre	23.00-	26.50	24.94	24.00-	26.00	24.67	25.50
100 GPA	Acre	—	—	21.50	20.25-	21.00	20.75	—
Curtec (25 GPA)	Acre	—	—	20.00				
Aerial	Fixed Wing: $ 4.81/acre @ 5 gallons per acre							
Aerial	Fixed Wing: $ 6.52/acre @ 10 gallons per acre Bell Helicopter: $15.00/acre @ 10 GPA							
Aerial	Fixed Wing: $ 8.02/acre @ 15 gallons per acre							
Aerial	Fixed Wing: $10.14/acre @ 20 gallons per acre							
	Hand Sprayer (500 gallon tank) with tractor and 2 workers – $45.00/hour							

FERTILIZING:[z]						
Liquid Boom Application: Double Boom		Acre	11.00-	13.50	12.25	
Dry (Bulk)		Acre	7.00-	7.75	7.29	
Lime or Dolomite		Acre	7.00-	7.75	7.35	Average $34.00/ton
Fertilize Young Trees:[z]	Hand Spread	Hour	9.50-	15.00	12.67	Plus transportation and materials
	Fert. Spreader	Hour	30.00-	32.00	30.67	Plus materials; Average $7.25/acre

Table 8-A.--A listing of 2004 custom rates reported by fifteen Indian River and South Florida citrus caretakers (continued)

Grove Practice	Unit	Range of Rate Reported		Average Rate[y]	Comments
IRRIGATION:					
Ditch Mower	Hour	$33.00-	$48.00	$ 39.60	
Water Furrow Disc	Hour	30.00-	37.50	33.63	
Water Furrow Cleaner	Hour	—	—	34.50	
Water Furrow Shaper (Laser Control)	Hour	—	—	75.00	
Rotary Ditcher or Auger	Hour	33.00-	35.00	34.17	
Microsprinkler/Drip Irrigation Maintenance	Acre/Month	3.50-	6.00	4.38	Check & repair system; parts extra
Microsprinkler	30.00/setting-application				Start/stop and supervision
REMOVING TREES:					
Front-end Loader	Hour	$45.00-	$57.20	$52.74	Avg. range 3-15 trees per hour
Tree Shearing (Cutting Tree at Ground Level)	Hour	45.00-	55.00	51.33	Avg. range 5-20 trees per hour
PRUNING:					
Power Saw with Operator	Hour	$17.00-	$ 22.50	$ 19.88	
Hedging:					
Double Side (Tractor Pulled)	Hour	100.00-	145.00	130.00	6 to 10 acres/hour
Double Side (Tractor Mounted)	Hour	145.00-	200.00	172.50	
Double Side (Self Propelled)	Hour	225.00-	265.00	245.00	8 to 20 A/H depending on wood size; $14/A annual cut
Double Side Rotary Boom (Self Propelled)[x]	Hour	—	—	320.00	5 to 15 A/H bed tops only; add 25% for furrows only
Double Side Self-Propelled Fixed Boom Hedger[x]	Hour	—	—	360.00	12 to 30 A/H - bed tops only; 8 to 20 acres - bed top \and furrow; depending on wood size
Topping:					
Tractor Pulled	Hour	115.00-	175.00	145.00	2-5 acres/hour depending on wood size
Double Sided Topper (Self Propelled)	Hour	265.00-	285.00	275.00	Avg. 8-15 A depending on wood size type of cut;$25/A
Double Boom (Self Propelled)	Hour	—	—	550.00	15 to 30 A flattop cut from bed tops annual maint. cut
Limb Lifter/Tree Skirt Trimmer	Acre	—	—	13.00	3 to 5 acres/hour
Limb Lifter/Tree Skirt Trimmer (Double Sided Rotary)	Hour	—	—	120.00	6 to 20 acres/hour
Removing Brush:					
Haul Brush out of Grove (Front-end Loader)	Hour	45.00-	55.00	52.00	
Mow/Chop Brush	Hour	32.00-	45.00	37.85	
OTHER CUSTOM RATES:					
Install Tree Wraps	15¢-45¢/tree depending on type of wrap and number of trees; Annual maintenance cost: 25¢/tree				
Plant Trees (Solid Set)	Tree	$ 0.90-	$ 1.50	$ 1.10	Varies as to density
Plant Trees (Resets)	Tree	2.00-	3.25	2.42	Varies as to the number of resets
Travel/Setup Charge	Hour	—	—	25.23	
Grove Management Charge/Month:					
Supervising Grove Care Operations	Acre	3.25-	8.00	4.78	In addition to caretaking charges
Handling Fruit Marketing	$0.10-$0.25/box – For Supervising and Marketing fruit				
Supervising/Handling Chemicals/Fertilizer	10% to 20% of materials cost				
Charge for personnel to oversee harvesting operations and coordinate harvest in different blocks/groves and keeping of harvesting labor compliance records.	Box	$ 0.10-	$ 0.25	$ 0.17	
Consulting	Hour	$ 85.00	$200.00	$136.00	Horticultural Evaluation and/or Financial Analysis/prospectus.
Total Reported Acreage Provided Grove Service to:	Acre	600-	8,000	2,922	Total acres reporting: 26,298

[z]Plus materials. Caretakers reporting rates include labor, tractor and sprayer; supply truck included by most caretakers.
[y]Calculated by dividing total number of caretakers reporting rate into sum reported. Unless otherwise stated, labor included with all charges.
[x]Low acres is for 2 years regrowth hedging; high acres is for annual maintenance hedging.

Source: Ronald P. Muraro, Extension Farm Management Economist, Lake Alfred CREC, July 2004.

Table 9-A.--2004 summary of average chemical price estimates

Item		Unit	Average Price	Your Price (2004)
Fungicides:	Abound EC	gallon	196.38	
	Aliette 80WP	pound	10.16	
	Basic Copper Sulfate	pound	1.20	
	Copper Hydroxide	pound		
	Copper (Kocide 101)	pound	1.58	
	Copper (Kocide 2000)	pound	2.07	
	Copper (Champ II Flowable)	gallon	21.80	
	Cuprofix Disperss	pound	1.79	
	Nu-Cop 50 DF	pound	1.78	
	Enable	gallon	51.60	
	Gem 25	40 ounces	103.33	
	Headline EC	gallon	182.52	
	Oil - 435 or 455	gallon	2.05	
	Oil - 470 (Bio-lever)	gallon	2.35	
	Ridomil Gold EC	gallon	591.67	
	Topsin	pound	13.40	
Insecticides/Nematicides:				
	Admire 2F	gallon	454.00	
	Agri-Mek (0.15EC)	gallon	526.67	
	Carbaryl 4L	gallon	26.55	
	Carbaryl 80S	pound	4.46	
	Chlorpyrifos 4E	gallon	50.18	
	Clinch Fire Ant Bait	pound	8.63	
	Danitol	gallon	129.38	
	Guthion 2L	gallon	29.96	
	Guthion 50WP	pound	8.19	
	Imidan 70W (Diaprepes)	pound	7.50	
	Lorsban 4EC	gallon	30.82	
	Lorsban 15G	pound	1.74	
	Malathion 5 EC	gallon	21.66	
	Micromite 25 WS	pound	29.00	
	Micromite 80 WG	gallon	82.25	
	Microthiol	pound	0.58	
	Nexter 75WP	pound	85.16	
	Sevin 80S	pound	4.59	
	Sevin XLR	gallon	26.62	
	Sulphur 6F	gallon	3.10	
	Temik 15G	pound	2.96	
	Vendex 50W	pound	14.25	

Table 9-A.--2004 summary of average chemical price estimates (continued)

Item		Unit	Average Price	Your Price (2004)
Herbicides:	Aqua Master	gallon	42.53	
	Diuron 4L	gallon	16.13	
	Direx 4L	gallon	14.23	
	Direx 80 DF	pound	3.06	
	Fusilade DX 2E	gallon	117.67	
	Glyphosate:			
	Glyphomax Plus	gallon	15.25	
	Roundup (Original)	gallon	22.25	
	Roundup - Ultra Max	gallon	29.37	
	Touchdown	gallon	33.17	
	Gramoxone E (Paraquat)	gallon	34.92	
	Hyvar X 80 WP	pound	16.98	
	Karmex 80 DF	pound	3.37	
	Krovar I	pound	10.10	
	Landmaster II	gallon	17.39	
	Mandate 2E	gallon	161.53	
	Pendimax	gallon	22.73	
	Poast Plus 1.0 EC	gallon	52.39	
	Princep (Caliber 90)	pound	3.05	
	Princep 4L	gallon	13.22	
	Prowl	gallon	21.48	
	Simazine 90 DF	pound	2.66	
	Simazine 4L	gallon	12.87	
	Solicam 80 DF	pound	13.77	
	Simtrol		18.00	
	Surflan	gallon	76.53	
Growth Regulators:				
	Citrus Fix	gallon	457.00	
	Pro-Gibb 3.91%	20-ounce bottle	30.79	
	Tree-Hold	gallon	79.17	
Other Spray Materials:				
	Borates (15%)	pound	0.68	
	Manganese (32%)	pound	0.31	
	Zinc (78%)	pound	0.79	
	Adjuvant (Surfactant)	gallon	22.50	

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, August 2004.

Table 10-A.--2004 summary of average fertilizer price estimates

Item	Unit	Average Price	Your Price (2004)
FERTILIZER (FOB Price @ Plant)			
		$	
Dry Mix (Bulk)			
17-0-17-3$_{Mg}$	ton	196.99	_____
17-4-17-2.4$_{Mg}$	ton	200.79	_____
16-0-16	ton	181.72	_____
16-0-16-4$_{Mg}$	ton	200.13	_____
16-2-16-3$_{Mg}$	ton	198.99	_____
15-2-15-2.4$_{Mg}$	ton	183.26	_____
12-2-12-2.4$_{Mg}$	ton	176.29	_____
8-8-8 w/minors*	ton	169.82	_____
8-4-8 w/minors*	ton	155.77	_____
8-2-8 w/minors*	ton	141.94	_____
6-6-6 w/minors*	ton	150.77	_____
Liquid Mix (Bulk)			
8-2-8	ton	126.89	_____
8-4-8	ton	126.55	_____
9-3-9	ton	130.31	_____
9-4-9	ton	138.77	_____
10-0-10	ton	139.81	_____
10-2-10	ton	141.62	_____
12-0-6	ton	143.28	_____
12-3-6	ton	150.88	_____

*With organic nitrogen, the price averaged 25% higher.

Table 10-A.--2004 summary of average fertilizer price estimates (continued)

Item	Unit	Average Price	Your Price (2004)
Other Fertilizer Materials (Bulk)			
Ammonium Nitrate (21% N Liquid)	ton	168.83	_____
Ammonium Nitrate (33.5% N Dry)	ton	235.60	_____
Ammonium Sulfate (21% N)	ton	147.92	_____
Calcium Nitrate (19% Ca, 15.5% N)	ton	223.85	_____
Dolomite (at mine--49% $CaCO_3$, 36% $MgCO_3$)	ton	15.90	_____
Muriate of Potash (60% K_2O)	ton	183.78	_____
Potassium Nitrate (14% N; 46% K_2O)	ton	370.75	_____
Sul-Po-Mag (SPM--21.9% K_2O)	ton	183.33	_____
Super Phosphate (20% P_2O_5)	ton	204.17	_____
Triple Superphosphate (48% P_2O_5)	ton	225.36	_____
Average Delivery Cost	ton	12.78	_____
Foliar Macronutrients			
Phos Might 0-22-20	gallon	24.87	_____
Nutriphite Magnum 2-40-16	gallon	30.00	_____
MKP (0-52-34) (Mono-Potassium Phosphate)	pound	0.65	_____

**SRN, Slow Release Nitrogen

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, Florida, August 2004.

Table 11-A.--A listing of estimated comparative Indian River citrus production costs per acre for grapefruit, 2003-2004[z]

Costs represent a mature (10+ years old) Indian River Grapefruit 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:			
Mechanical Mow Middles (3 times per year)	$ 29.73	$ 29.73	$ 29.73
Chemical Mow Middles (2 times per year)	11.24	11.24	11.24
General Grove Work (2 labor hours per acre)	25.34	25.34	25.34
Herbicide (1/2 tree acre treated):			
Application (6 glyphosate or 3 residual applications)	$73.26	$36.63	$36.63
Material	48.48	88.89	88.89
Total Herbicide Cost	121.74	125.52	125.52
Spray:			
Post Bloom: Application (150 GPA)	—	28.67	28.67
Material	—	56.87	56.87
Total Post Bloom Cost	—	85.54	85.54
Summer Oil #1: Application (250 GPA)	28.67	28.67	28.67
Material	60.42	62.54	62.54
Total Summer Oil #1 Cost	89.09	91.21	91.21
Summer Oil #2: Application (PTO -- 250 GPA)	28.67	28.67	28.67
Material	29.42[x]	20.54	20.54
Total Summer Oil #2 Cost	58.09	49.21	49.21
Fertilizer (Bulk): 3 Applications	21.87	21.87	21.87
Material (12-2-12-2.4 MgO @ 125 lbs N and 100 lbs N per acre)	100.78	80.91	100.78
Total Fertilizer Cost	122.65	102.78	122.65
Dolomite (one ton applied every 3 years)			
Material/Application	12.54	12.54	12.54
Pruning: Topping ($27.50/A ÷ 2 yrs)[w]	13.75	13.75	13.75
Hedging ($24.50/A ÷ 1.5 yrs)[w]	16.33	16.33	16.33
Chop/Mow Brush after Hedging ($8.52/A ÷ 1.5 yrs)[w]	5.68	5.68	5.68
Raise Skirts of Trees ($13.00/A ÷ 2 yrs)[w]	—	6.50	6.50
Total Pruning Cost	35.76	42.26	42.26
Tree Replacement — 1 thru 3 years of age: (5 trees/acre)			
Remove Trees: Pull, Stack & Burn 5 Trees with Front-end Loader	23.70	23.70	23.70
Prepare Site and Plant Tree (Includes 5 reset trees)	—	59.55	59.55
Supplemental Fertilizer, Tree Wraps Maintenance, Sprout, etc. (Trees 1-3 years old)	31.05	46.20	46.20
Total Tree Replacement Cost	54.75	129.45	129.45
Irrigation: Microsprinkler System[v]	152.07	152.07	152.07
Clean Ditches (Weed Control)	13.05	13.05	13.05
Ditch and Canal Maintenance	14.76	14.76	14.76
Water Control (Pump water in/out of Ditches and Canals)	12.71	12.71	12.71
Total Irrigation Cost	192.59	192.59	192.59
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS	$753.52	$897.41	
Supplemental Post Bloom Spray: (2 Applications)			
Application (125 GPA)		49.70	49.34
Material (Copper)		19.60	18.48
Total Supplemental Post Bloom Spray Cost		69.30	67.82
Fall Miticide Spray: Application (125 GPA)		20.42	24.67
Material		32.72	31.36
Total Fall Miticide Spray Cost		53.14	56.03
IRRIGATED FRESH FRUIT PRODUCTION COSTS		$1,019.85	$1,041.13

[z]Estimated comparative costs are for example grove situation described in Economic Information Series, Budgeting Costs and Returns for Indian River Citrus Production, and may not represent your particular grove situation in Indian River.

SOURCE: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, August 2004.

Table 12-A.--Estimated cost of planting and maintaining a reset citrus tree through three years of age, July 2004

	Number of Resets/Replacement Trees Per Acre				
	1-2	3-5	6-10	11-25	26+
	---------- Cost Per Tree ----------				
Year #1:	$	$	$	$	$
Tree Removal	5.45	4.74	3.79	3.07	2.45
Tree Cost (Container Tree)	4.50	4.50	4.35	4.25	4.25
Site Preparation[a]	5.71	4.95	4.19	3.88	3.04
Plant Tree and First Watering	2.84	2.46	2.08	1.93	1.51
Total Planting Cost	13.05	11.91	10.62	10.06	8.80
Supplemental Fertilization – 4 Times (Application & Materials)	1.37	1.20	1.10	1.00	0.92
Supplemental Spraying (Application & Materials)[b]	0.48	0.41	0.38	0.35	0.32
Spot Herbicide (Application & Materials)	0.21	0.18	0.16	0.14	0.13
Tree Wrap (Corrugated)	1.00	1.00	1.00	1.00	1.00
Sprouting/Pruning	0.42	0.42	0.39	0.39	0.35
Miscellaneous	0.17	0.16	0.15	0.14	0.14
Supervision & Overhead	0.27	0.25	0.24	0.23	0.21
Total Tree Care Cost Year #1	3.92	3.62	3.42	3.25	3.07
Total Cost Year #1	22.42	20.27	17.83	16.38	14.32
Year #2:					
Supplemental Fertilization – 3 Times (Application & Materials)	1.81	1.61	1.41	1.19	1.09
Supplemental Spraying (Application & Materials)[b]	0.55	0.49	0.43	0.36	0.33
Spot Herbicide (Application & Materials)	0.20	0.18	0.16	0.14	0.13
Sprouting/Pruning	0.50	0.50	0.42	0.42	0.38
Miscellaneous	0.15	0.14	0.12	0.11	0.10
Supervision & Overhead	0.24	0.20	0.19	0.17	0.15
Total Cost Year #2	3.45	3.12	2.73	2.39	2.18
Year #3:					
Supplemental Fertilization – 3 Times (Application & Materials)	2.48	2.21	1.90	1.62	1.37
Miscellaneous	0.12	0.11	0.09	0.08	0.07
Supervision & Overhead	0.20	0.17	0.15	0.13	0.11
Total Cost Year #3[b]	2.80	2.49	2.14	1.83	1.55
Total Three-Year Cumulative Costs	28.67	25.88	22.70	20.60	18.05

[a]Site preparation for bedded citrus grove; cost of root removal, rotovating/leveling tree planting site. Fumigate planting site would cost approximately $2.50 per tree.

[b]Additional spray costs may be incurred if leafminer is a problem.

Source: Ronald P. Muraro, Farm Management Economist, CREC, Lake Alfred, FL, July 2004.

Table 13-A.--Estimated average picking, roadsiding and hauling charges for Florida citrus, 2003-04

	Fresh Fruit		Processed Fruit	
	Range	Average	Range	Average
	$/Box	$/Box	$/Box	$/Box
Picking Charges:				
Early and Mid-Season Oranges	0.80 - 1.00	0.840	0.65 - 0.95	0.772
Valencia Oranges	0.80 - 1.00	0.840	0.65 - 0.95	0.791
Pink/Red Grapefruit	0.60 - 0.85	0.658	0.55 - 0.70	0.590
White/Marsh Grapefruit	0.60 - 0.70	0.633	0.55 - 0.70	0.590
Temples/Tangelos	0.85 - 1.25	0.950	0.70 - 1.25	0.851
Tangerines	1.35 - 1.75	1.563	–	–

	Fresh Fruit		Processed Fruit	
	Range	Average	Range	Average
	$/Box	$/Box	$/Box	$/Box
Roadsiding Charges:				
Early and Mid-Season Oranges	0.70 - 1.06	0.860	0.65 - 1.07	0.801
Valencia Oranges	0.75 - 1.06	0.868	0.65 - 1.07	0.817
Pink/Red Grapefruit	0.65 - 0.87	0.766	0.55 - 0.66	0.620
White/Marsh Grapefruit	0.65 - 0.85	0.743	0.55 - 0.66	0.620
Temples/Tangelos	0.75 - 1.11	0.938	0.75 - 1.07	0.833
Tangerines	1.12 - 1.21	1.155	–	–

	Fresh Fruit	Processed Fruit
	All Varieties	All Varieties
	$/Box	$/Box
Hauling Charges:		
0 - 30 miles	0.410	0.392
31 - 50 miles	0.460	0.457
51 - 80 miles	0.553	0.530
81 - 100 miles	0.625	0.570
100 + miles	0.687	0.625

Table 14-A.--Estimated average packing charges for Florida citrus, 2003-04

	Domestic Grapefruit	Export Grapefruit	Oranges	Temples/ Tangelos	Tangerines
	----------	----------	$/Carton	----------	----------
Total Packing Charge[a]	3.636	3.741	3.993	4.026	4.795
	----------	----------	$/Box	----------	----------
Drenching Charge	0.158	0.158	0.173	0.173	0.173
Packinghouse Elimination Charges	0.523	0.523	0.544	0.544	0.544
Hauling Charges for Eliminations	0.423	0.423	0.496	0.496	0.496

[a]Total Packing Charge includes the following items:

1. Materials, including mesh/plastic bags, labels/PLUs, etc.
2. Includes supervisor/foreman labor, grading, palletizing, shipping and general labor. Includes payroll taxes (FICA), workers' compensation, ground insurance, etc.
3. Other direct packing costs include fruit treating; power, lights and water; repairs maintenance; miscellaneous supplies; etc.
4. Indirect packing costs include items such as insurance-fire and casualty; taxes and licenses; depreciation and rent.
5. G&A costs include office personnel (FICA, w/comp); packinghouse and general manager; office supplies; telephone; etc.
6. Selling Expenses include sales salaries, travel, telephone and telegraph and brokerage fees.
7. Special assessments include items such as advertising taxes; inspection fees; Florida Citrus Packers; CAC.

Note: Packing charges represent a total of nine citrus packinghouses from both the Indian River and Interior Production regions.

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, August 2004.

Table 15-A.--Historic prices[a] for selected citrus varieties

Crop year	Variety						
	Early[b] and Mid[c]-season Oranges	Late Season Oranges[d]	Temple Oranges	All Tangerines	Tangelos	Seedless Grapefruit[e]	
						(white)	(colored)
1961-62	$1.93	$1.81	$2.17	$2.04	$3.36	$0.68	$0.86
1962-63	2.17	3.50	3.09	3.02	4.66	1.29	1.81
1963-64	4.43	4.45	4.45	3.18	4.83	2.24	2.54
1964-65	2.57	2.28	2.77	2.68	4.00	1.51	1.82
1965-66	1.44	1.79	1.80	2.14	2.85	1.39	1.64
1966-67	0.81	1.08	0.88	1.06	1.64	0.73	0.94
1967-68	1.86	2.28	2.79	4.29	3.22	2.05	2.48
1968-69	1.56	1.83	2.22	2.55	2.47	0.98	1.15
1969-70	1.15	1.13	1.47	2.23	1.13	1.72	1.92
1970-71	1.10	1.91	1.91	1.88	1.04	1.89	2.15
1971-72	1.98	2.11	1.95	2.97	1.69	2.27	2.69
1972-73	1.43	1.71	1.95	2.37	1.39	2.06	2.53
1973-74	1.38	1.59	1.64	2.82	1.25	1.58	2.12
1974-75	1.46	1.82	1.68	3.05	1.45	1.55	2.59
1975-76	1.69	1.88	1.79	3.02	1.42	1.29	2.23
1976-77	1.89	2.63	2.16	3.29	1.42	1.49	2.04
1977-78	3.90	4.40	3.92	4.79	3.29	1.47	2.09
1978-79	4.44	4.95	4.89	4.99	3.90	2.21	3.13
1979-80	3.59	3.89	2.89	4.25	2.87	3.12	3.80
1980-81	3.67	4.63	4.21	5.45	3.92	3.46	4.22
1981-82	4.27	4.29	4.01	6.23	3.58	1.92	2.80
1982-83	4.88	5.41	3.99	7.57	4.37	1.51	3.20
1983-84	5.09	6.72	5.34	5.93	4.28	2.08	4.05
1984-85	7.30	6.88	5.59	15.91	7.08	3.02	4.84
1985-86	3.92	3.97	3.01	12.69	4.06	3.56	4.98
1986-87	4.56	6.02	3.60	10.92	3.72	4.45	5.80
1987-88	6.72	8.73	5.69	12.99	5.58	5.35	5.93
1988-89	6.63	8.41	5.46	12.64	6.31	4.33	4.71
1989-90	6.01	6.53	5.64	15.28	5.10	5.21	6.30
1990-91	5.38	6.58	6.31	17.10	6.11	4.59	6.85
1991-92	5.44	6.65	6.51	18.00	7.16	6.46	6.87
1992-93	3.23	3.88	2.99	13.75	3.31	2.22	3.11
1993-94	3.76	4.61	2.73	9.83	2.38	3.23	3.38
1994-95	3.25	4.41	3.47	11.98	2.64	2.58	1.66
1995-96	3.62	5.57	4.44	12.59	3.63	2.14	1.77
1996-97	3.18	4.07	3.22	7.99	2.19	1.12	1.91
1997-98	2.81	4.88	3.07	8.49	1.66	0.93	1.50
1998-99	4.35	5.58	5.12	12.07	4.53	1.95	2.65
1999-00	3.19	4.33	2.55	6.67	2.52	3.87	3.36
2000-01	2.60	4.02	2.05	6.40	1.27	2.07	2.28
2001-02	2.88	4.20	2.19	7.81	2.47	1.96	2.54
2002-03[f]	2.81	3.95	2.35	8.53	3.23	1.62	2.49

[a]On-tree average price per box (1-3/5 bushel box equivalent) for all methods of sale minus pick and haul charges.

[b]Navel and Hamlin [c]Parson Brown and Pineapple [d]Valencia [e]Marsh (white) or pink [f]Preliminary

Source: Florida Agricultural Statistics Service.

Table 16-A.--Debt which can be supported per $1,000.00 annual payment capacity

Loan Term (years)	Interest Rate Paid on the Loan														
	8.0%	8.5%	9.0%	9.5%	10.0%	10.5%	11.0%	11.5%	12.0%	12.5%	13.0%	13.5%	14.0%	14.5%	15.0%
1	926	922	917	913	909	905	901	897	893	889	885	881	877	873	870
2	1,783	1,771	1,759	1,747	1,754	1,724	1,713	1,701	1,690	1,679	1,668	1,657	1,647	1,636	1,626
3	2,577	2,554	2,531	2,509	2,487	2,465	2,444	2,423	2,402	2,381	2,361	2,341	2,322	2,302	2,283
4	3,312	3,276	3,240	3,204	3,170	3,136	3,102	3,070	3,037	3,006	2,974	2,944	2,914	2,884	2,855
5	3,993	3,941	3,890	3,840	3,791	3,743	3,696	3,650	3,605	3,561	3,517	3,475	3,433	3,392	3,352
6	4,623	4,554	4,486	4,420	4,355	4,292	4,230	4,170	4,111	4,054	3,998	3,942	3,889	3,836	3,784
7	5,206	5,119	5,033	4,950	4,868	4,789	4,712	4,640	4,564	4,492	4,423	4,355	4,288	4,224	4,160
8	5,747	5,639	5,535	5,433	5,335	5,239	5,146	5,056	4,968	4,882	4,799	4,718	4,639	4,562	4,487
9	6,247	6,119	5,995	5,875	5,759	5,646	5,537	5,431	5,328	5,228	5,132	5,038	4,946	4,858	4,772
10	6,710	6,561	6,418	6,279	6,145	6,015	5,889	5,768	5,650	5,536	5,426	5,319	5,216	5,116	5,019
11	7,139	6,969	6,805	6,647	6,495	6,348	6,207	6,070	5,938	5,810	5,687	5,568	5,453	5,341	5,234
12	7,536	7,345	7,161	6,984	6,814	6,650	6,492	6,341	6,194	6,054	5,918	5,787	5,660	5,538	5,421
13	7,904	7,691	7,487	7,291	7,103	6,923	6,750	6,583	6,424	6,270	6,122	5,979	5,842	5,710	5,583
14	8,244	8,010	7,786	7,572	7,367	7,170	6,982	6,801	6,628	6,462	6,302	6,149	6,002	5,861	5,724
15	8,559	8,304	8,061	7,828	7,606	7,394	7,191	6,997[a]	6,811	6,633	6,462	6,299	6,142	5,992	5,847
16	8,851	8,576	8,313	8,062	7,824	7,596	7,379	7,172	6,974	6,785	6,604	6,431	6,265	6,106	5,954
17	9,122	8,825	8,543	8,276	8,022	7,779	7,549	7,329	7,119	6,920	6,729	6,547	6,373	6,207	6,048
18	9,372	9,056	8,756	8,471	8,201	7,945	7,702	7,470	7,250	7,040	6,840	6,649	6,467	6,294	6,128
19	9,603	9,268	8,950	8,650	8,365	8,095	7,839	7,596	7,366	7,146	6,938	6,739	6,551	6,370	6,198
20	9,818	9,463	9,129	8,812	8,514	8,231	7,963	7,710[a]	7,469	7,241	7,025	6,819	6,623	6,437	6,259
25	10,675	10,234	9,823	9,438	9,077	8,739	8,422	8,123	7,843	7,579	7,330	7,095	6,873	6,663	6,464
30	11,258	10,747	10,274	9,835	9,427	9,047	8,868	8,364	8,055	7,766	7,496	7,242	7,003	6,778	6,566
35	11,655	11,088	10,567	10,087	9,644	9,234	8,855	8,503	8,175	7,870	7,586	7,320	7,070	6,836	6,617
40	11,925	11,315	10,757	10,247	9,779	9,348	8,951	8,587	8,244	7,928	7,634	7,361	7,105	6,866	6,642

[a]Example. Assumes a $10,000 after tax income at 11.5% interest rate and a 15-year term mortgage, the total debt which can be supported is $69,970 ($6,997 x 10). At 11.5% interest rate and a 20-year term mortgage, the total debt which can be supported is $77,100 ($7,710 x 10).