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Budgeting Costs and Returns for Central Florida Citrus Production, 2003-04

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ABSTRACT

Estimated costs and returns of growing round oranges in the Central Florida citrus area are presented for the twentieth consecutive year. Due to the freezes of the 1980s, the Central Florida citrus area refers primarily to Polk and Highlands Counties. The format presented may be used by individual growers to budget costs and returns, utilizing individual data on specific groves.

Key words: citrus, Central Florida, budgeting, costs and returns

NOTE: The Central Florida production area refers to Polk and Highlands Counties. However, the costs presented in this report are applicable to other counties such as Hardee, Hillsborough, Lake, and Orange.

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 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 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 grove practices performed (e.g., spot herbicide for grass/brush regrowth under trees could add an additional $19.23 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 $122.22 per 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).

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BUDGETING COSTS AND RETURNS FOR CENTRAL FLORIDA CITRUS PRODUCTION, 2003-04

Ronald P. Muraro, W. Greg Hartt and W. C. Oswalt

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. During the 1980s, several freezes occurred which changed the character of the Central Florida citrus production area. The December 1983 and January 1985 freezes caused extensive tree and acreage losses in north central counties such as Lake and Orange. The December 1989 freeze resulted in severe tree damage and tree loss in north and central Polk County. Thus, Central Florida in this report refers primarily to Polk and Highlands Counties.

METHOD OF DATA COLLECTION

The data presented here were developed by surveying custom operators, input suppliers, growers, colleagues at the Citrus Research and Education Center in Lake Alfred, and County Extension citrus agents in the Central Florida 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-A), custom rate costs (Table 8-A), and various chemical and

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fertilizer costs (Tables 9-A and 10-A). The budget costs 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 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 individual growers to insert data from a particular grove. This will allow a comparison of the grower's costs with those presented.

THE GROVE SITUATION

Production practices for a Central Florida round orange grove are shown in Table 1 along 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, 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 Valencia orange 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 to 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 10+ year-old, low volume-irrigated grove.
2. Variety is Valencia round orange.
3. Tree loss is three percent annually.
4. Trees are pulled and replaced when production falls below 50 percent of expected yield.
5. Production is for processed use.
6. Tree density is 112 trees per acre.
7. Custom-caretaker is providing grove management.

Table 1.--Schedule of production practices and budget items for a Central Florida citrus grove, 2003-04[a]

		Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total revenue:				20% deposit		50% Partial payment							Final payment
Less:	Pick & haul cost			X									
	DOC advertisement tax			X									
Grove expenses:													
Disc				X							X		
Chop													
Mow						X		X		X			
Labor, general grove work, pull vines		X								X			
Herbicide (1/2 grove acre equivalent)				X			X						
Spray:	Post bloom/nutritional				X								
	Summer oil/greasy spot							X					
	Fall miticide										X		
	Supplemental miticide												
	Dust												
Fertilizer			68# N/A			68# N/A					68# N/A		Dolomite
Hedging and topping				Hedge									
Brush removal/chop brush				Chop brush									
Tree removal				X	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													
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.

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Tree ages will vary due to tree losses and replacement. The budget reflects the following age distribution and yield for Central Florida Valencia oranges:

	Situation	Yield Boxes/Tree
3%	pulled and reset trees	0.0
3%	1-year1old trees	0.0
3%	2-year-old trees	0.0
3%	3-year-old trees	0.7
3%	4-year-old trees	0.9
45%	5- to 19-year-old trees	4.2
3%	trees producing 50% of expected yield	3.1
37%	mature producing trees	6.0

Calculation of normal production per acre is shown in Table 2. Note that the proportion-of-trees-by-age column only adds up to 91 percent since 9 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	112	x	0.03	=	3.4	x	0.7	=	2.4
4 years	112	x	0.03	=	3.4	x	0.9	=	3.1
5-19 years	112	x	0.45	=	50.4	x	4.2	=	211.7
Prod. 50% of expected yield	112	x	0.03	=	3.4	x	3.1	=	10.5
20 years	112	x	0.37	=	41.4	x	6.0	=	248.4
						Total boxes		=	476.1

[a]Proportion adds up to 0.91 (91 percent) as 9 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 a Central Florida grove situation are shown in Table 3. Gross revenue estimates are based on 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 and harvesting and packing charges 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).

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As shown in Table 3, the total revenue for processed-market Valencia oranges is estimated to be $1,190.00 per acre. Total specified costs are $822.18, comprised of grove care costs of $774.18 plus management costs of $48.00. A return to land, trees, and ownership of $367.82 per acre loss represents net return above variable costs. At 300 and 500 boxes per acre, respectively, the break-even prices required to cover grove care costs for Valencia oranges range from $2.58 to $1.55 per box on-tree and $0.74 to $0.58 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 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 $440 per acre ($3,750 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 processed oranges 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 and per pound solids. Three possible budget cost scenarios are presented (Table 11-A): Low Cost Processed Cultural Program; Reduced Cost Cultural Program; and Typical/Historical 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. Scenario 3 represents typical costs of grove practices that have been performed for citrus grown for the fresh/processed 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*.

HISTORICAL COST TRENDS

Annual budgets of costs and returns for mature, processed Valencia oranges in the Central Florida 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 5. To allow comparisons in current values, these same costs and returns (adjusted to 2004 dollars) are presented in Table 6.

Table 3.--Estimated annual per acre costs and returns for a mature, Valencia orange grove producing for the processed market, Central Florida area, 2003-04[a]

	Item	Description	Amount		Your Cost
			---------- Dollars ----------		
I.	Revenue	476 boxes @ $2.50[b]		1,190.00	
II.	Expenses[c]				
	Weed control				
	Discing	2 times per year	20.00		
	Mow middles	4 times per year	40.76		
	General grove work/sprouting, etc.	(2 labor hours per acre)	26.56		
	Herbicide (Table 2-A, Program #1, #2 & #7)		117.73	205.05	
	Spray program (Table 1-A, Programs #8 & #10)			135.74	
	Fertilizer (Table 3-A, Program #3)			166.29	
	Dolomite (Table 6-A, Program #2)			9.74	
	Pruning (maintenance)				
	Topping	($361.69/hr. ÷ 10 A/hr.) ÷ 2.5 yrs.	14.47		
	Hedging	($338.75/hr. ÷ 10 A/hr.) ÷ 2 yrs.	16.94		
	Mow/chop brush	($8.92/A ÷ 2 yrs.)	4.46	35.87	
	Tree replacement and care (Table 12-A)	(1 through 3 years)			
	Remove trees/stack/burn	3 trees per acre	14.22		
	Prepare sites and plant resets	Including 3 trees per acre	26.82		
	Supplemental fertilizer, tree wraps, maintenance, sprout, etc.	Including application	28.38	69.42	
	Microsprinkler irrigation (Table 7-A, Program #4)			152.07	
	Total grove care expenses			774.18	
III.	Management	$4.00 per acre per month[d]		48.00	
IV.	Total specified costs[e]			822.18	
V.	Return to land, trees, and ownership			367.82	
VI.	Break-even price for total grove care expenses				

Boxes per acre					Boxes per acre				
300	350	400	450	500	300	350	400	450	500
$ On-tree price per box					$ Delivered-in price per pound solids[f]				
2.58	2.21	1.94	1.72	1.55	0.74	0.69	0.64	0.61	0.58

[a]While estimated annual per acre grove costs in Table 3 are representative for a mature Central Florida Valencia orange grove, grove care costs for specific grove site may differ depending on grove practices performed (e.g., Temik application would add $122.22 per acre; extensive tree loss due to blight or tristeza would double tree replacement/care costs).

[b]On-tree price per box is preliminary; assumes price for processed oranges only.

[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 revenue or 10% of total grove care costs are used in the industry).

[e]Other cost items 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% of total grove care costs). These costs vary from grove to grove.

[f]Assumes 6.6 pounds solids per box and $2.19 pick and haul cost per box (including canker decontamination costs) and Department of Citrus advertising assessment of $0.15 per box.

Table 4.--Estimated total delivered-in cost for Central Florida (Ridge) Valencia oranges grown for the processed market under three cultural cost programs, 2003-04

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Valencia Orange Low Cost Cultural Program One-Year Alternative			Processed Valencia Orange Cultural Program			Fresh/Processed Valencia Orange Cultural Program		
	$/Acre	$/Box	$/P.S.	$/Acre	$/Box	$/P.S.	$/Acre	$/Box	$/P.S.
Total Production/Cultural Costs	$ 692.43	$1.455	$0.2204	$ 774.18	$1.626	$0.2464	$828.49	$1.741	$0.2637
Interest on Operating (Cultural) Costs	19.04	0.040	0.0061	21.29	0.045	0.0068	22.78	0.048	0.0073
Management Costs	48.00	0.101	0.0153	48.00	0.101	0.0153	48.00	0.101	0.0153
Taxes/Regulatory Costs:									
Property Tax and Water Management Tax	61.87	0.130	0.0197	61.87	0.130	0.0197	61.87	0.130	0.0197
Canker Decontamination Costs	5.52	0.012	0.0018	5.52	0.012	0.0018	5.52	0.012	0.0018
Total Direct Grower Costs	$ 826.86	$1.737	$0.2632	$ 910.86	$1.914	$0.2899	$ 966.66	$2.031	$0.3077
Interest on Average Capital Investment Costs	321.22	0.675	$0.1022	321.22	0.675	0.1022	321.22	0.675	0.1022
Total Grower Costs	$1,148.07	$2.412	$0.3654	$1,232.07	$2.588	$0.3922	$1,287.87	$2.706	$0.4099
Harvesting and Assessment Costs:									
Pick/Spot Pick, Roadside & Haul and Canker Decontamination Costs	1,042.44	2.190	0.3318	1,042.44	2.190	0.3318	1,042.44	2.190	0.3318
DOC Assessment	71.40	0.150	0.0227	71.40	0.150	0.0227	71.40	0.150	0.0227
Total Harvesting and Assessment Costs	1,113.84	2.340	0.3545	1,113.84	2.340	0.3545	1,113.84	2.340	0.3545
Total Delivered-In Cost	$2,261.91	$4.752	$0.7200	$2,345.91	$4.928	$0.7467	$2,401.71	$5.046	$0.7645
P.S. = Pound Solids Yield: 476 boxes/acre @ 6.6 P.S. per box 112 trees per acre	Cultural program (Table 11-A) Two summer oil sprays with oil, copper, miticide and nutritionals			Cultural program (Table 3)			Cultural program (Table 11-A). A Fall Miticide Spray added to cultural program (Table 3)		

Table 5.--Estimated annual per acre costs and returns and 5-year average costs and returns for a mature, Valencia orange grove producing citrus for processing in the Central Florida area, 1999-00–2003-04

Year	On-tree Price/Box[a]	Yield	Gross Revenue	Total Grove Care Expenses	Total Ppecified Costs[f]	Net Return to Land, Trees, and Ownership
			---------- Dollars ----------			
1999-00	$4.31	448	1,930.88	783.43	831.43	1,099.45
2000-01	$3.70	436[d]	1,613.20	758.85[e]	806.85	806.35
2001-02	$4.17	446	1,859.82	767.77	815.77	1,044.05
2002-03	$3.91	446	1,743.86	777.69	825.59	918.27
2003-04	$2.50[b]	476[c]	1,190.00	774.18	822.18	367.82
5-yr. avg.	$3.72	450	1,674.00	772.38	820.38	853.62

[a]On-tree prices for processed oranges only as reported by the Florida Agricultural Statistics Service.

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

[c]Higher per acre yield is due to increased statewide production of Valencia oranges in 2003-04 season.

[d]The severe drought affected yields for the 2000-01 season.

[e]Began using two summer oil sprays (one with nutritionals) in budget estimates.

[f]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 6.-- Estimated annual per acre costs and returns and 5-year average costs and returns (adjusted to 2004 dollars) for a mature, Valencia orange grove producing citrus for processing in the Central Florida 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	$4.79	448	2,145.92	923.72	1,222.20
2000-01	109.8	$4.06	436	1,770.16	885.92	884.24
2001-02	112.4	$4.69	446	2,091.74	916.93	1,174.81
2002-03	106.7	$4.17	446	1,859.82	880.90	978.92
2003-04	100.0	$2.50	476	1,190.00	822.18	367.82
5-yr. avg.	–	$4.04	450	1,818.00	885.93	932.07

[a]Producer price index for each year adjusted to 2004 prices (2004 = 100), with 2004 producer 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 such as taxes, debt service, and crop insurance are not included (Table 5).

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REFERENCES

1. *Citrus Summary 2002-03*. 2003. Florida Agricultural Statistics Service, Orlando, FL. http://www.nass.usda.gov/fl.

2. Muraro, Ronald P. 2004. *A Listing of Estimated Comparative Central Florida (Ridge) Citrus Production Costs Per Acre for 2003-04*. CREC Report, Citrus Research and Education Center, Lake Alfred, FL (July).

3. _____. 2004. *Estimated Cost of Planting and Maintaining a Reset Citrus Tree through Three Years of Age*. CREC Report, Citrus Research and Education Center, Lake Alfred, FL (July).

4. _____. 2004. *A Listing of 2004 Custom Rates Reported by Twenty-Eight Ridge Citrus Caretakers*. CREC Report, Citrus Research and Education Center, Lake Alfred, FL (July).

5. Savage, Zach. 1960. *Citrus Yields Per Tree Age*. UF Agricultural Extension Service Staff Paper SP60-8, University of Florida, Gainesville, FL.

6. Timmer, L.W., editor. 2004. *2004 Florida Citrus Pest Management Guide*. Florida Cooperative Extension Service Staff Paper SP43, University of Florida, Gainesville, FL, 150pp (January).

7. Tucker, D. P.H., A.K. Alva, L.K. Jackson, and T.A. Wheaton (editors). 1995. Nutrition of Florida Citrus Trees. Florida Cooperative Extension Service Staff Paper SP169, University of Florida, Gainesville, FL, 61pp.

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ADDENDA: Listing of Grove Care Programs for Central Florida Citrus Production for Both Round Oranges and Grapefruit[a]

Abbreviations for important chemicals are:

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

[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.

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Table 1-A.--Spray programs

POST BLOOM SPRAY

Spray Program #1	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	5 gallons	$11.50	
	Cu (50% metallic)	10 pounds	13.20	
	Zn	5 pounds	4.35	
	Mn	10 pounds	3.40	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$55.40	

Spray Program #2	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
(Scab/melanose)	Cu (50% metallic)	10 pounds	$13.20	
	Zn	5 pounds	4.35	
	Mn	10 pounds	3.40	
	Micromite 25WP	1.25 pounds	39.88	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$83.78	

Spray Program #3	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Cu (50% metallic)	15 pounds	$19.80	
	Agri-Mek	10 ounces	45.38	
	Ground Application (engine driven airblast)	250 gallons	29.67	
	Total per Application		$75.05	

Spray Program #4	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Vendex 50WP	2 pounds	$31.36	
	Zn	5 pounds	4.35	
	Mn	10 pounds	3.40	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$62.06	

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

POST BLOOM SPRAY (continued)

Spray Program #5	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
(Scale insects)	Lorsban 4EC	5 pints	$21.20	
	Ground Application (engine driven airblast)	500 gallons	31.00	
	Total per Application		$52.20	

SUMMER SPRAY

Spray Program #6	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	5 gallons	$11.30	
	Cu (50% material)	7 pounds	9.24	
	Micro-Mite	1.25 pounds	39.88	
	Ground Application (PTO driven airblast)	250 gallons	29.67	
	Total per Application		$90.09	

Spray Program #7	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	5 gallons	$11.30	
	Agri-Mek	10 ounces	45.38	
	Cu (50% material)	7 pounds	9.24	
	Ground Application (engine driven airblast)	250 gallons	29.67	
	Total per Application		$95.59	

Spray Program #8	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	5 gallons	$11.30	
	Micromite	1.25 pounds	39.88	
	Cu (50% material)	7 pounds	9.24	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$83.37	

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

SUMMER SPRAY (continued)

Spray Program #9	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Oil 97+%	7 gallons	$15.82	
	Ground Application (engine driven airblast)	250 gallons	29.67	
	Total per Application		$45.49	

Spray Program #10	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)	125 gallons	22.95	
	Total per Application		$52.37	

FALL SPRAY

Spray Program #11	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Vendex 50WP	2 pounds	$31.36	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$54.31	

Spray Program #12	Materials/Ingredients	Amount /Acre	Cost/Acre	Your Cost/Acre
	Microthiol	15 pounds	$ 9.60	
	Ground Application (PTO driven airblast)	125 gallons	22.95	
	Total per Application		$32.55	

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 2-A.--Herbicide

Herbicide Program #1	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Solicam 80 DF	3 pounds	$22.73	
	Karmex WP	4 pounds	7.42	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		14.01	
	Total for 1 Application		$52.24	

Herbicide Program #2	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Mandate	2 pints	$22.21	
	Direx 4L	3 quarts	5.88	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		14.01	
	Total for 1 Application		$50.18	

Herbicide Program #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)		14.01	
	Total for 1 Application		$29.51	

Herbicide Program #4	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Strip/band)	Roundup Ultra Max	2 quarts	$ 8.08	
	Ammonium Sulfate	17 pounds	1.39	
	Ground Application (1 time)		14.01	
	Total for 1 Application		$23.48	

Herbicide Program #5	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)		14.01	
	Total for 1 Application		$28.81	

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 2-A.--Herbicide (continued)

Herbicide Program #6	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	
	Roundup Ultra Max	2 quarts	8.08	
	Ground Application (1 time)		14.01	
	Total for 1 Application		$50.70	

Herbicide Program #7	Materials	Amount/ Treated Acre	Cost/ Grove Acre[a]	Your Cost/ Grove Acre
(Spot herbicide for grass/brush regrowth under trees.)	Roundup Ultra Max	2 quarts	$ 8.08	
	Ground Application (1 time)	15 gallons	7.23	
	Total for 1 Application		$15.31	

[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 3-A. Dry Fertilizer

Program #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(162 lbs N/Acre)	12-2-12-2.4 MgO	1350 pounds	$ 130.82	
	Application	3 times	26.04	
	Total for 3 Applications		$156.86	

Program #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	16-0-16-4 MgO	1125 pounds	$ 123.75	
	Application	3 times	26.04	
	Total for 3 Applications		$149.79	

Program #3	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(204 lbs N/Acre)	16-0-16-4 MgO	1275 pounds	$140.25	
	Application	3 times	26.04	
	Total for 3 Applications		$166.29	

Program #4	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(225 lbs N/Acre)	15-2-15-2.4 MgO	1500 pounds	$151.50	
	Application	3 times	26.04	
	Total for 3 Applications		$177.54	

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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

Program #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	45.99	
	Total for 3 Applications		$184.41	

Program #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	45.99	
	Total for 3 Applications		$186.21	

Program #3	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(180 lbs N/Acre)	10-0-10	1800 pounds	$ 138.42	
	Solicam 80 DF	3 pounds*	22.73	
	Karmex WP	4 pounds*	7.42	
	Double Boom Application	3 times	45.99	
	Total for 3 Applications		$214.56	

*Treated acre (one herbicide application)

Table 5-A.--Nematicides

Program #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
	Temik 15G	33 pounds	$107.58	
	Application		14.64	
	Total per Application		$122.22	

Program #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
	Temik 15G	17 pounds	$ 55.42	
	Application		14.64	
	Total per Application		$ 70.06	

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 6-A.--Soil Amendment

Program #1	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(Every 3 years)	Dolomite (Delivered)	1 ton	$30.27	
	Application	1 time	8.68	
	Total for 1 Application		$38.95	
	(Average 1/3 Ton Applied/Yr)		$12.98	

Program #2	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
(Every 4 years)	Dolomite (Delivered)	1 ton	$30.27	
	Application	1 time	8.68	
	Total for 1 Application		$38.95	
	(Average 1/4 Ton Applied/Yr)		$ 9.74	

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

PERMANENT OVERHEAD

	Program #1	Your Cost/Acre	Program #2	Your Cost/Acre
Operating	(Electric) $119.15		(Diesel) $ 96.78	
Maintenance of System	42.34		44.41	
Total Cash Expenses	$161.49		$141.19	
Fixed Depreciation Expense	55.73		59.54	
Total Cash and Fixed Expenses	$217.22		$200.73	

MICROSPRINKLER

	Program #3	Your Cost/Acre	Program #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	

*Reflects the higher cost of fuel; diesel and electricity.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 8-A.--A listing of 2004 custom rates reported by twenty-eight Ridge citrus caretakers

Grove Practice	Unit	Range of Rate Reported		Average Rate[y]	Comments
CULTIVATION AND EQUIPMENT:					
Hand Hoe/Hand Labor	Hour	$11.00-	$15.35	$13.28	Plus transportation
Mechanic Labor	Hour	25.00-	47.50	34.28	Includes truck
Rotovate	Hour	27.50-	45.00	32.53	
Disc 7'	Hour	26.70-	35.00	31.40	
Disc 7'	Acre	7.00-	12.00	9.56	One-way discing
Disc 9'-10'	Hour	27.50-	40.00	32.13	
Disc 9'-10'	Acre	9.00-	12.00	10.00	One-way discing
Chop	Hour	28.00-	40.00	33.95	
Chop	Acre	7.00-	10.00	9.00	
Mow 5'-7'	Hour	27.90-	40.00	31.19	
Mow 9'-12'	Hour	34.50-	40.00	35.61	
Mow 5'-7'	Acre	8.50-	11.25	9.69	
Mow 9'-12'	Acre	9.00-	12.50	10.19	
Mow 15'-16'	Acre	10.00-	12.75	10.80	
Herbicide[z] (Strip/Band--Single Boom)	Hour	26.40-	35.00	30.19	Plus materials
Herbicide[z] (Strip/Band--Single Boom)	Acre	12.50-	17.00	13.16	Plus materials
Herbicide[z] (Strip/Band--Double Boom)	Acre	12.50-	15.70	14.01	Plus materials; Avg. $31.17/hour
Herbicide[z] (Chemical Mow)	Acre	6.00-	9.25	7.44	Plus materials
Temik[z]	Acre	12.00-	16.00	14.64	Plus materials
Plow	Hour	25.00-	35.00	30.85	
Deviner	Hour	—	—	40.00	
Bush Hog	Hour	28.50-	44.00	35.11	One reporting $13.00/acre
Backhoe	Hour	40.00-	65.00	50.00	
Pickup Truck with Driver	Hour	23.00-	35.00	30.21	Average miles/year/pickup: 21,089
Pickup Truck w/out Driver	Hour	15.00-	22.00	19.38	
Flatbed Transport Truck with Driver	Hour	30.00-	40.00	35.00	Average miles/year: 24,213
Low-Boy Transport	Hour	50.00-	65.00	55.00	Average miles/year: 30,000
Tractor with Driver	Hour	25.00-	35.00	29.83	
Water/Supply Truck	Hour	28.00-	40.00	32.25	
ATV	Hour	19.00-	29.80	22.98	

SPRAYING:[z]		AIR BLAST SPRAYER						Average with Electronic Sensing Technology
		Engine Driven 1,000 gallon tank			PTO Powered 1,000 gallon tank			
500 GPA	Acre	30.00-	35.75	33.61	28.00 -	35.00	31.00	$33.60/acre
250 GPA	Acre	25.00-	33.50	29.79	24.00 -	35.00	29.67	$29.75/acre
125 GPA	Acre	25.00-	31.50	28.50	20.00 -	25.00	22.95	$26.45/acre
100 GPA	Acre	—	—	—	19.00 -	25.00	22.06	$23.60/acre
50 GPA	Acre	—	—	—	15.00 -	18.00	16.00	$20.35/acre
Aerial (Bell-47 Helicopter)	$10.00 @ 5 GPA; $15.00 @ 10 GPA; $17.50 @ 15 GPA; $22.00 @ 20 GPA							

FERTILIZE AND SOIL AMENDMENTS:[z]					
Inject Liquid Fertilizer into Irrigation System	Hour	$25.00-	$40.00	$31.28	Truck plus labor
Inject Liquid Fertilizer into Irrigation System	Acre	1.50-	3.50	2.69	Average $66.25/irrigation injection hookup
Liquid Boom Application: Double Boom	Acre	13.50-	16.50	15.33	
Dry (Bulk)	Acre	7.50-	10.75	8.95	
Lime or Dolomite	Acre	7.50-	10.75	8.68	
Lime or Dolomite	Ton	7.50-	9.00	8.17	
Fertilize Young Trees:[z] Hand Spread	Hour	11.00-	15.35	13.28	Plus transportation and materials
Fert. Spreader	Hour	25.50-	35.00	30.91	Plus materials; Average $8.33/acre
IRRIGATION:					
Microsprinkler	Avg. $3.98/acre; Avg. $37.50/month				Start/stop and supervision
Microsprinkler	Hour	25.00-	35.00	28.86	Start/stop and supervision; truck and driver
ATV with Driver	Hour	19.00-	29.80	22.98	Check/repair microsprinkler irrigation system-plus materials
Ring Young Trees: Hand Labor	Hour	11.00-	15.35	13.28	Plus transportation
Mechanical	Hour	23.10-	27.00	25.34	Labor and equipment

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 8-A.--A listing of 2004 custom rates reported by twenty-eight Ridge citrus caretakers (continued)

Grove Practice	Unit	Range of Rate Reported		Average Rate[y]	Comments
REMOVING TREES:					
Tree Shearing (Cutting Tree at Ground Level)	Hour	$50.00-	$65.00	$59.13	Average trees sheared: 5 to 20 trees/hour
Front-end Loader	Hour	50.00-	60.00	54.02	Average trees removed: 5 to 15 trees/hour
Bulldozer	Hour	—	—	50.00	
Front-end Loader with Tree Spade	Hour	—	—	65.00	
PRUNING:					
Power Saw with Operator	Hour	$17.00-	$25.00	$ 19.94	Plus transportation
Limb Lifter/Tree Skirt Trimmer (Double Sided)	Hour	—	—	205.00	Cover 9-18 acres one pass
Hedging:					
Single Side (Tractor Mounted)	Hour	75.00-	80.00	76.67	Cover 2-5 acres/hour
Double Side (Tractor Pulled)	Hour	80.00-	100.00	88.96	Cover 3-5 acres/hour
Double Side (Tractor Mounted)	Hour	—	—	250.00	
Double Side (Self Propelled)[x]	Hour	325.00-	360.00	338.75	Cover 10-25 acres/hour depending on wood size
Double Side (Self Propelled)[x]	Hour	250.00-	300.00	277.50	Cover 4-12 acres/hour depending on wood size
Topping:					
Tractor Mounted	Hour	195.00-	200.00	196.67	
Tractor Pulled	Hour	—	—	100.00	Cover 1-3 acres/hour
Self Propelled	Hour	345.00-	375.00	361.69	Cover 5-10 acres/hr (Roof Top); 5-20 acres/hr (Flat Top)
Double Boom (Self Propelled)	Hour	—	—	550.00	Cover 2-12 acres/hr (Roof Top);15-30 acres/hr (Flat Top)
Removing Brush:					
Haul Brush out of Grove	Hour	29.00-	40.00	35.17	Tractor-trailer/truck, driver plus 1 person; plus 2 people
Front-end Loader (Push Brush)	Hour	50.00-	60.00	53.56	2-10 acres/hour
Chop/Mow Brush	Hour	30.00-	37.50	33.95	3-6 acres/hour; Average $11.67/acre
COLD PROTECTION:					
Mechanical (Bank and Unbank)	Hour	$ —	$ —	$ 23.43	
Install Wraps	Each	0.15-	0.50	0.36	
Cost Wraps	Each	0.30-	0.50	0.41	
OTHER CUSTOM RATES:					
Plant Resets	Per Tree	$ 2.00-	$ 4.00	$ 2.50	Stake, plant and first watering
Solid Set Planting	Per Tree	1.00-	1.50	1.33	Stake, plant and first watering
Travel/Setup Charge	Hour	—	—	30.00	Average for those reporting; One reporting $75.00
Grove Management Charge/Month:					
Supervising Grove Care Operations	Acre	2.00-	5.50	3.15	In addition to caretaking charges; One reporting 6% of
Handling Fruit Marketing	Box	0.10-	0.25	0.15	\equipment labor charge
Supervising/Handling Chemicals/Fertilizer	10% to 25% of materials cost				
Charge for personnel to oversee harvesting operations and coordinate harvest in different blocks/groves and keeping of harvesting labor compliance record.	10¢/box to 18¢/box; average 16¢/box				Note: One reporting adding a 5% fuel surcharge if gasoline price is above $1.50/gallon and diesel fuel above $1.00/gallon.
Consulting	Cultural Management/Horticultural Evaluation - $50/hr to $200/hr Financial Analysis Prospectus - $350/hr				
Total Reported Acreage Provided Grove Service to:	Acre	500-	13,872	3,342	Total acres reporting: 63,498

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

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

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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 ozs.	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	

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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, Citrus Research and Education Center (CREC), Lake Alfred, Florida, August 2004.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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, Citrus Research and Education Center (CREC), Lake Alfred, Florida, August 2004.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

Table 11-A.--A listing of estimated comparative Central Florida (Ridge) citrus production costs per acre for 2003-2004[z]

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove	Low Cost Processed Cultural Program One-Year Alternative		Processed and Reduced Fresh Cost Cultural Program		Typical/Historical Fresh Fruit Cultural Program	
PRODUCTION/CULTURAL COSTS:[y]						
Weed Management/Control:						
Discing (2 times per year)		$ 20.00		$ 20.00		$ 20.00
Mechanical Mow Middles (4 times per year)		40.76		40.76		40.76
General Grove Work (2 labor hours per acre)		26.56		26.56		26.56
Herbicide (1/2 tree acre treated):						
Application (6 glyphosate or 2 residual applications)	$84.06		$28.02		$28.02	
Material	48.48		74.40		74.40	
Spot Treatment (Material/application)	—		15.31		15.31	
Total Herbicide Cost		132.54		117.73		117.73
Spray:						
Summer Oil #1 (Processed @ 125 GPA) or						
Post Bloom (Fresh @ 150 GPA):						
Application	—		22.95		22.95	
Material	—		60.42		60.83	
Total Summer Oil #1 or Post Bloom Cost		—		83.37		83.78
Summer Oil #2: Application (PTO – 125 GPA)	22.95		22.95		29.67	
Material	69.30[x]		29.42[w]		65.92	
Total Summer Oil #2 Cost		92.25		52.37		95.59
Supplemental Fall Miticide:						
Application (PTO – 150 GPA)	—		—		22.95	
Material	—		—		9.60	
Total Supplemental Fall Miticide Cost		—		—		32.55
Fertilizer (Bulk): 3 Applications	26.04		26.04		26.04	
Material (16-0-16-4 MgO @ 180 lbs N and 204 lbs N per acre)	123.75		140.25		140.25	
Total Fertilizer Cost		149.79		166.29		166.29
Dolomite (one ton applied every 4 years)						
Material/Application		9.74		9.74		9.74
Pruning: Topping ($36.17/A ÷ 2.5 yrs)[v]	14.47		14.47		14.47	
Hedging ($33.88/A ÷ 2 yrs)[v]	16.94		16.94		16.94	
Chop/Mow Brush after Hedging ($8.92/A÷2 yrs)[v]	4.46		4.46		4.46	
Total Pruning Cost		35.87		35.87		35.87
Tree Replacement--1 thru 3 years of age: (3 trees/acre)						
Remove Trees: Pull, Stack & Burn 3 Trees with Front-end Loader	14.22		14.22		14.22	
Prepare Site & Plant Tree (Includes 3 reset trees)	—		26.82		26.82	
Supplemental Fertilizer, Tree Wraps Maintenance, Sprout, Etc. (Trees 1-3 years old)	18.63		28.38		28.38	
Total Tree Replacement Cost		32.85		69.42		69.42
Irrigation: Microsprinkler System[u]		152.07		152.07		152.07
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS		$692.43		$774.18		
Fall Miticide: Application (125 GPA)			22.95		26.83	
Material			31.36		32.72	
Total Fall Miticide Cost				54.31		59.55
IRRIGATED FRESH FRUIT PRODUCTION COSTS				$828.49		$909.91

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

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

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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, Citrus Research and Education Center, Lake Alfred, FL, August 2004.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.

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

	Variety						
						Seedless Grapefruit[e]	
Crop year	Early[b] and Mid[c]-season Oranges	Late Season Oranges[d]	Temple Oranges	All Tangerines	Tangelos	(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).