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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	
<u>Total revenue:</u>			20% deposit		50% Partial payment								Final payment
Less: Pick & haul cost			X										
DOC advertisement tax			X										
<u>Grove expenses:</u>													
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	1
Miscellaneous													
Grove taxes including water management												X	
Interest expense							X						
Annual principal payment on mortgage							X						

^aThis is a suggested schedule of practices. Actual practices would not necessarily be done on the exact schedule shown here.

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

<u>Situation</u>	<u>Yield Boxes/Tree</u>
3% pulled and reset trees	0.0
3% 1-year old 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

<u>Age of Tree</u>	<u>Trees</u>			<u>Boxes /Tree</u>	<u>Total Boxes</u>
	<u>Total no. all ages</u>	<u>Proportion each age^a</u>	<u>No. each age</u>	<u>Number</u>	
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	= <u>248.4</u>
				Total boxes	= 476.1

^aProportion 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).

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	Dollars	Your Cost			
I.	Revenue		1,190.00				
II.	Expenses ^c						
	Weed control						
	Discing	20.00					
	Mow middles	40.76					
	General grove work/sprouting, etc.	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	14.47					
	Hedging	16.94					
	Mow/chop brush	4.46	35.87				
	Tree replacement and care (Table 12-A)						
	Remove trees/stack/burn	14.22					
	Prepare sites and plant resets	26.82					
	Supplemental fertilizer, tree wraps, maintenance, sprout, etc.	28.38	69.42				
	Microsprinkler irrigation (Table 7-A, Program #4)		152.07				
	Total grove care expenses		774.18				
III.	Management		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					
		300	350	400	450	500	
			\$ Delivered-in price per pound solids ^f				
			0.74	0.69	0.64	0.61	0.58

^aWhile 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).

^bOn-tree price per box is preliminary; assumes price for processed oranges only.

^cAssumes material custom applied; therefore, a 10 percent handling and supervision charge is added to material cost.

^dOther methods to estimate a management cost (e.g., 5% of gross revenue or 10% of total grove care costs are used in the industry).

^eOther 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.

^fAssumes 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 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 Ppccified 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

^aOn-tree prices for processed oranges only as reported by the Florida Agricultural Statistics Service.

^bPreliminary estimate by authors at time of printing and is not a published price.

^cHigher per acre yield is due to increased statewide production of Valencia oranges in 2003-04 season.

^dThe severe drought affected yields for the 2000-01 season.

^eBegan using two summer oil sprays (one with nutritional) in budget estimates.

^fA 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

^aProducer 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.

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

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Abbreviations for important chemicals are:

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

^aCosts 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 programs

POST BLOOM SPRAY

Spray Program #1	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
	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	<u>22.95</u>	_____
	Total per Application		<u>\$55.40</u>	=====

Spray Program #2	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
(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	<u>22.95</u>	_____
	Total per Application		<u>\$83.78</u>	=====

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

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

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

POST BLOOM SPRAY (continued)

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

SUMMER SPRAY

Spray Program #6	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
	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	<u>29.67</u>	_____
	Total per Application		<u>\$90.09</u>	=====

Spray Program #7	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
	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	<u>29.67</u>	_____
	Total per Application		<u>\$95.59</u>	=====

Spray Program #8	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
	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	<u>22.95</u>	_____
	Total per Application		<u>\$83.37</u>	=====

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

SUMMER SPRAY (continued)

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

Spray Program #10	<u>Materials/Ingredients</u>	<u>Amount</u> <u>/Acre</u>	<u>Cost/Acre</u>	<u>Your</u> <u>Cost/Acre</u>
	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	<u>22.95</u>	_____
	Total per Application		<u>\$52.37</u>	=====

FALL SPRAY

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

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

Table 2-A.--Herbicide

Herbicide Program #1	<u>Materials</u>	<u>Amount/ Treated Acre</u>	<u>Cost/ Grove Acre^a</u>	<u>Your Cost/ Grove Acre</u>
(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)		<u>14.01</u>	_____
	Total for 1 Application		<u>\$52.24</u>	=====

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

Herbicide Program #3	<u>Materials</u>	<u>Amount/ Treated Acre</u>	<u>Cost/ Grove Acre^a</u>	<u>Your Cost/ Grove Acre</u>
(Strip/band)	Karmex WP	4 pounds	\$ 7.42	_____
	Roundup Ultra Max	2 quarts	8.08	_____
	Ground Application (1 time)		<u>14.01</u>	_____
	Total for 1 Application		<u>\$29.51</u>	=====

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

Herbicide Program #5	<u>Materials</u>	<u>Amount/ Treated Acre</u>	<u>Cost/ Grove Acre^a</u>	<u>Your Cost/ Grove Acre</u>
(Strip/band)	Roundup Ultra Max	2 quarts	\$ 8.08	_____
	Princep (Caliber 90)	4 pounds	6.72	_____
	Ground Application (1 time)		<u>14.01</u>	_____
	Total for 1 Application		<u>\$28.81</u>	=====

Table 2-A.--Herbicide (continued)

Herbicide Program #6 (Strip/band)	Materials	Amount/ Treated Acre	Cost/ Grove Acre ^a	Your Cost/ Grove Acre
	Direx 4L	3 quarts	\$ 5.88	_____
	Solicam	3 pounds	22.73	_____
	Roundup Ultra Max	2 quarts	8.08	_____
	Ground Application (1 time)		<u>14.01</u>	_____
	Total for 1 Application		<u>\$50.70</u>	=====

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

^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 (162 lbs N/Acre)	Analysis/Material Applied	Amount /Acre	Cost/Acre	Your Cost/Acre
	12-2-12-2.4 MgO	1350 pounds	\$ 130.82	_____
	Application	3 times	<u>26.04</u>	_____
	Total for 3 Applications		<u>\$156.86</u>	=====

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

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

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

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

Program #1	<u>Analysis/Material Applied</u>	<u>Amount /Acre</u>	<u>Cost/Acre</u>	<u>Your Cost/Acre</u>
(180 lbs N/Acre)	10-0-10	1800 pounds	\$ 138.42	_____
	Double Boom Application	3 times	<u>45.99</u>	_____
	Total for 3 Applications		<u>\$184.41</u>	=====

Program #2	<u>Analysis/Material Applied</u>	<u>Amount /Acre</u>	<u>Cost/Acre</u>	<u>Your Cost/Acre</u>
(180 lbs N/Acre)	10-2-10	1800 pounds	\$ 140.22	_____
	Double Boom Application	3 times	<u>45.99</u>	_____
	Total for 3 Applications		<u>\$186.21</u>	=====

Program #3	<u>Analysis/Material Applied</u>	<u>Amount /Acre</u>	<u>Cost/Acre</u>	<u>Your Cost/Acre</u>
(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	<u>45.99</u>	_____
	Total for 3 Applications		<u>\$214.56</u>	=====
	*Treated acre (one herbicide application)			

Table 5-A.--Nematicides

Program #1	<u>Analysis/Material Applied</u>	<u>Amount /Acre</u>	<u>Cost/Acre</u>	<u>Your Cost/Acre</u>
	Temik 15G	33 pounds	\$107.58	_____
	Application		<u>14.64</u>	_____
	Total per Application		<u>\$122.22</u>	=====

Program #2	<u>Analysis/Material Applied</u>	<u>Amount /Acre</u>	<u>Cost/Acre</u>	<u>Your Cost/Acre</u>
	Temik 15G	17 pounds	\$ 55.42	_____
	Application		<u>14.64</u>	_____
	Total per Application		<u>\$ 70.06</u>	=====

Table 6-A.--Soil Amendment

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

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

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

PERMANENT OVERHEAD

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

MICROSPRINKLER

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

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

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								
		Engine Driven			PTO Powered		Average with Electronic Sensing Technology	
		1,000 gallon tank			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 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			

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 ²	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				
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

² Plus materials. Caretakers reporting rates include labor, tractor and sprayer; supply truck included by most caretakers.

³ 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.

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

Item	Unit	Average Price	Your Price (2004)
<u>Fungicides:</u>			
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	_____
<u>Insecticides/Nematicides:</u>			
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, Citrus Research and Education Center (CREC), Lake Alfred, Florida, August 2004.

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

Item	Unit	Average Price	Your Price (2004)
<u>FERTILIZER</u> (FOB Price @ Plant)			
		\$	
<u>Dry Mix (Bulk)</u>			
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	_____
<u>Liquid Mix (Bulk)</u>			
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)
<u>Other Fertilizer Materials (Bulk)</u>			
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 ₂ O)	ton	183.78	_____
Potassium Nitrate (14% N; 46% K ₂ O)	ton	370.75	_____
Sul-Po-Mag (SPM--21.9% K ₂ O)	ton	183.33	_____
Super Phosphate (20% P ₂ O ₅)	ton	204.17	_____
Triple Superphosphate (48% P ₂ O ₅)	ton	225.36	_____
Average Delivery Cost	ton	12.78	_____
<u>Foliar Macronutrients</u>			
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.

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:^v			
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)	—	<u>15.31</u>	<u>15.31</u>
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	—	<u>60.42</u>	<u>60.83</u>
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	<u>69.30^x</u>	<u>29.42^w</u>	<u>65.92</u>
Total Summer Oil #2 Cost	92.25	52.37	95.59
Supplemental Fall Miticide:			
Application (PTO – 150 GPA)	—	—	22.95
Material	—	—	<u>9.60</u>
Total Supplemental Fall Miticide Cost	—	—	32.55
Fertilizer (Bulk): 3 Applications			
Material (16-0-16-4 MgO @ 180 lbs N and 204 lbs N per acre)	26.04	26.04	26.04
Total Fertilizer Cost	<u>123.75</u>	<u>140.25</u>	<u>140.25</u>
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			
Hedging (\$33.88/A ÷ 2 yrs) ^v	14.47	14.47	14.47
Chop/Mow Brush after Hedging (\$8.92/A ÷ 2 yrs) ^v	16.94	16.94	16.94
Total Pruning Cost	<u>4.46</u>	<u>4.46</u>	<u>4.46</u>
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)	<u>18.63</u>	<u>28.38</u>	<u>28.38</u>
Total Tree Replacement Cost	32.85	69.42	69.42
Irrigation: Microsprinkler System ^u	<u>152.07</u>	<u>152.07</u>	152.07
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS	<u>\$692.43</u>	<u>\$774.18</u>	
Fall Miticide: Application (125 GPA)			
Material		22.95	26.83
Total Fall Miticide Cost		<u>31.36</u>	<u>32.72</u>
IRRIGATED FRESH FRUIT PRODUCTION COSTS		<u>\$828.49</u>	<u>\$909.91</u>

^zEstimated 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.

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 -----				
<u>Year #1:</u>	\$	\$	\$	\$	\$
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	<u>2.84</u>	<u>2.46</u>	<u>2.08</u>	<u>1.93</u>	<u>1.51</u>
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	<u>0.27</u>	<u>0.25</u>	<u>0.24</u>	<u>0.23</u>	<u>0.21</u>
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
<u>Year #2:</u>					
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	<u>0.24</u>	<u>0.20</u>	<u>0.19</u>	<u>0.17</u>	<u>0.15</u>
Total Cost Year #2	3.45	3.12	2.73	2.39	2.18
<u>Year #3:</u>					
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	<u>0.20</u>	<u>0.17</u>	<u>0.15</u>	<u>0.13</u>	<u>0.11</u>
Total Cost Year #3 ^b	2.80	2.49	2.14	1.83	1.55
Total Three-Year Cumulative Costs	<u>28.67</u>	<u>25.88</u>	<u>22.70</u>	<u>20.60</u>	<u>18.05</u>

^aSite preparation for bedded citrus grove; cost of root removal, rotovating/leveling tree planting site. Fumigate planting site would cost approximately \$2.50 per tree.

^bAdditional 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
<u>Picking Charges:</u>				
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
<u>Roadsiding Charges:</u>				
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	
<u>Hauling Charges:</u>				
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

^aTotal 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.

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

Crop year	Variety						Seedless Grapefruit ^c	
	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	

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

^bNavel and Hamlin ^cParson Brown and Pineapple ^dValencia ^eMarsh (white) or pink ^fPreliminary

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	8,688	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

^aExample. 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).