Summary of 2010-2011 Citrus Budget for the Central Florida (Ridge) Production Region

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Citrus budgets are tabulated annually for the Central, Southwest and Indian River citrus production regions of Florida. The attached budget costs are for the Central Florida (Ridge) citrus production region. These costs may not represent your particular grove situation. However, they represent the most current comparative cost estimates for Florida citrus. The budget costs items for the **Central Florida (Ridge)** represent a **custom managed operation.**

Budget analysis provides the basis for many grower decisions. Budgets can be used to calculate potential profits, determine cash requirements and determine break-even prices. The budget costs presented will serve as a format for growers to analyze their own individual records. The cost data were developed by surveying custom operators, suppliers, growers, colleagues with UF/IFAS and County Extension Agents in each production region.

Although there were changes in the prices of fertilizer (25% increase) and chemical (2% decrease) inputs and application costs (2% increase), there were no significant changes in total average cultural production costs per acre between 2009-2010 and 2010-2011. Growers have increased their focus on controlling the Asian citrus psyllid that transmits HLB-greening disease incorporating more aerial and low-volume ground spray applications to reduce total spray costs.

The 2010-2011 comparative budgets summary for processed oranges in Central Florida (Ridge) is shown in Table 1. The estimated costs represent a traditional citrus canker and HLB-greening management program. The budget shows the total cost per acre Without and With resetting-tree replacement.

With the introduction of citrus greening in 2005, Florida citrus growers have had to develop new management strategies such as to identify and remove infected trees along with adding new spray programs to control the insect vector, the Asian citrus psyllid. During the past couple of years, many growers have decided not to remove HLB symptomatic trees and have begun adding a foliar nutritional formulation to their air-blast ground spray applications. Likewise, with the end of the citrus canker eradication program in 2006, to reduce the impact of canker infestations on new tree flushes and reduce fruit drop, copper spray material is being added with each spray tank mix. For fruit grown for the fresh fruit market, additional costs are incurred by growers to assure that the blocks and fruit can be certified "canker free" for shipments to the U.S. domestic and European markets. The estimated additional costs required to manage citrus greening and canker, based on the cultural programs being implemented in UF/IFAS CREC research groves and information from citrus growers. These costs were incorporated into Tables 1, 2, and 3. Table 4 provides comparative costs between the traditional citrus HLB-greening management program (Table 1) and seven foliar nutrient programs added to the traditional program. All eight HLB management programs in Table 4 focus on controlling the Asian citrus psyllid.

The budgets shown in Table 1 list the costs of individual grove care practices normally performed in a citrus grove. These costs reflect current grove practices being performed by growers. The estimated costs are for a mature grove (10+ years old); the grove care costs for a specific grove site may differ depending upon the tree age, tree density and the actual grove practices performed. For example, tree losses due to blight, tristeza or citrus greening could increase the tree replacement costs by double or more. Travel and set-up costs may vary due to the size of a citrus grove and the distance from the grove equipment barn. Citrus canker and greening control costs will also vary between individual blocks due to variety and fresh or processed market destination.

The comparative budget costs are shown as an expanded **"delivered-in"** format in Table 2 and are presented **with** additional citrus greening cultural management costs as well as no resetting and resetting. The delivered-in costs include cultural/production, management, regulatory and harvesting costs. The costs are presented in per acre, per box and per pound solids cost units. The per acre yields used in Tables 2 and 3 represent above average production for Valencias in the Central Florida (Ridge) production region. The yield per acre reflects an additional 2.3% average annual HLB loss for all age trees. Table 3 shows the delivered-in costs with resetting.

In previous citrus budgets, the traditional citrus psyllid HLB-greening management has included a soil-applied Temik treatment in January along with five ground spray applications. With the use of Temik scheduled to be discontinued, the 2010-11 spray programs (refer to Table 1) include a total of eight applications; 125 GPA ground sprays and ultra low-volume ground sprays. Also, the additional spray costs ($83.48/acre) for citrus black spot (CBS) control are shown in Table 4.

Break-even prices for processed Valencia oranges are shown in Table 5 for yields ranging from 300 to 600 boxes per acre. With **no resetting**, the delivered-in break-even process ranged from $1.319 to $0.869 per pound solids and from $8.969 to $5.911 per box. With **resetting**, break-even prices ranged from $1.440 to $0.930 per pound solids and from $9.792 to $6.323 per box.

The three ADDENDA tables provide the detailed information on the herbicide, spray and fertilizer programs used in the comparative budgets.

Additional information on budgeting and cost analysis can be obtained by contacting the author, your County Extension Citrus Agent, or going to the Lake Alfred UF/IFAS CREC **Extension-Economics** website: **http://www.crec.ifas.ufl.edu/extension/economics**.

Reference-Source Information

Muraro, Ronald P. "Average Packing Charges for Florida Fresh Citrus – 2010-11 Season." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 2 pages.

Muraro, Ronald P. "Estimated Average Picking, Roadsiding and Hauling Charges for Florida Fresh Citrus – 2010-11 Season." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 2 pages.

Muraro, Ronald P. "Planting and Annual Cultural Maintenance Costs for Reset-Replacement Trees in a Florida Citrus Grove – 2011." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 3 pages.

Muraro, Ronald P. "Summary of 2011 Ridge and Indian River-South Florida Citrus Caretaker Custom Rate Charges." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 5 pages.

Muraro, Ronald P. "Summary of 2010-2011 Citrus Budgets for the Indian River Citrus Production Region." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 14 pages.

Muraro, Ronald P. "Summary of 2010-2011 Citrus Budgets for the Southwest Florida Citrus Production Region." UF/IFAS CREC Website: www.crec.ifas.ufl.edu/extension/economics September 2011. 13 pages.

Table 1. A Listing of Estimated Comparative **Central Florida (Ridge)** Production Costs Per Acre for **Processed Oranges**, 2010-2011[z]

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove.	Processed Cultural Program **With Canker-Greening**	
PRODUCTION/CULTURAL COSTS[y]		
Weed Management/Control:		
Mechanical Mow Middles (4 times per year)	$ 51.75	
Chemical Mow Middles (2 times per year)	12.06	
General Grove Work (2 labor hours per acre)	32.64	
Herbicide (1/2 tree acre treated):		
(See Supplemental Table 1 - Herbicide Programs #1, #2 & #3)	135.14	
Total Weed Management Costs		231.59
Spray/Pest Management: (See Supplemental Table 3)		
With Greening: Spray Programs #1, #2, #3, #4, #5, #6, and #7		394.36
Fertilizer (Bulk): 4 Applications		350.20
(See Supplemental Table 2 - Fert Prog #1; 16-0-16-4MgO @ 200 lbs N)		
Dolomite (one ton applied every 4 years) (Material/Application)		13.01
Pruning[x]: Topping ($26.83/A ÷ 2 yrs)	13.42	
Hedging ($25.75/A ÷ 2 yrs)	12.88	
Chop/Mow Brush after Hedging ($15.24/A ÷ 2 yrs)	7.72	
Total Pruning Cost		34.02
Irrigation: Microsprinkler System[w]		173.17
Mandatory Citrus Canker Decontamination Costs		31.77
Field Inspections for Citrus Greening (4 inspections @ $27.41)		109.64
TOTAL PROCESSED PRODUCTION COSTS WITHOUT TREE REPLACEMENT-RESET COSTS		1,337.76
Tree Replacement – 1 thru 3 years of age (**6 trees/acre with greening**)		
Remove Trees: Pull, Stack & Burn (Clip-Shear & Front End Loader)	35.34	
Prepare Site and Plant Tree (includes reset trees)	82.86	
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	116.94	
Total Tree Replacement Cost		235.14
TOTAL PROCESSED PRODUCTION COSTS WITH TREE REPLACEMENT-RESET COSTS		$1,572.90

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2011.

Footnotes Refer to Table 1.

[y]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-Orange, Osceola and Pasco counties.

Where **equipment use** or **application** is listed (discing, hedging, spray application, etc.), an **average custom charge** (cost) is used which includes a charge for equipment repairs, maintenance, labor and overhead management charges/costs. A **management charge** for equipment supervision and fruit marketing is not included. Management charges/costs could be based on a monthly charge ($3 to $6/acre) or percentage of gross sales. In addition to these charges, a harvesting supervision cost (10¢ to 20¢/box) for overseeing and coordinating harvesting may be charged. Other cost items which are not included in the budget are ad valorem taxes and interest on grove investment. In addition to these cost items, overhead and administrative costs, such as water drainage/district taxes, crop insurance, and other grower assessments, can add up to 12% to the total grove care costs. These costs vary from grove to grove depending on age, location, and time of purchase or establishment and are estimated in the expanded Table 2.

Included in the materials expense is a supervision (or handling) charge of 10% of cost/price of the materials.

The budget cost items have been revised to reflect current grove practices being used by growers–e.g., chemical mowing, different spray materials, and rates of fertilization, microsprinkler irrigation, more reset trees, hedging and topping practices, etc. Therefore, the revised costs for each grove practice shown may be higher, or lower, than previously reported.

Although the estimated annual per acre grove costs listed are representative for a mature citrus grove (10+ years old), the grove care costs for a specific grove site may differ depending upon the tree age, tree density and the grove practices performed; e.g., spot herbicide for grass/brush regrowth under trees could add an additional $19.98 per acre; extensive tree loss due to blight, tristeza, or citrus greening could substantially increase the tree replacement and care costs; travel and set-up costs may vary due to size of the citrus grove and distance from grove equipment barn and could add $40.05 per acre; etc.

[x]Per acre costs shown in parenthesis are for 2011.

[w]Irrigation Expense includes the following:

	Microsprinkler
Variable Operating Expense (Diesel)	$ 75.57
Fixed-Variable Expense (annual maintenance repairs to system)	41.04
Total Cash Expenses	$116.61
Fixed-Depreciation Expense	56.56
Total Cash and Fixed Expense	$173.17

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Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2011.

Table 2. Estimated Total Delivered-in Cost for Central Florida (Ridge) Valencia Oranges Grown for the Processed Juice Market **With** Citrus Canker and HLB-Greening, 2010-11

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program **With Canker-Greening and NO Resetting - Tree Replacement**		
	$/Acre	$/Box	$/P.S.
Total Production/Cultural Costs	$1,337.76	$3.200	$0.4706
Interest on Operating (Cultural) Costs	66.89	0.160	0.0235
Management Costs	48.00	0.115	0.0169
Taxes/Regulatory Costs:			
Property Tax/Water Management Tax	61.00	0.146	0.0215
Total Direct Grower Costs	$1,513.65	$3.621	$0.5325
Interest on Average Capital Investment Costs	321.22	0.768	0.1130
Total Grower Costs	$1,834.86	$4.390	$0.6455
Harvesting and Assessment Costs:			
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,088.05	2.603	0.3828
DOC Assessment	104.50	0.250	0.0368
Total Harvesting and Assessment Costs	1,192.55	2.853	0.4196
Total Delivered-In Cost	$3,027.42	$7.243	$1.0651
120 trees per acre	Refer to cultural program shown in Table 1.		
P.S. = Pound Solids	Yield: 418 boxes/acre; 6.8 P.S./box		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2011.

Table 3. Estimated Total Delivered-in Cost for Central Florida (Ridge) Valencia Oranges Grown for the Processed Juice Market **With** Citrus Canker and HLB-Greening, 2010-11

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program **With Canker-Greening and WITH Resetting - Tree Replacement**		
	$/Acre	$/Box	$/P.S.
Total Production/Cultural Costs	$1,572.90	$3.763	$0.5534
Other Grower Costs	508.86	1.217	0.1790
Total Grower Costs	$2,081.76	$4.980	$0.7324
Total Harvesting and Assessment Costs	1,192.55	2.853	0.4196
Total Delivered-In Cost	$3,274.31	$7.833	$1.1520

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2011.

Table 4. Comparative Costs of Alternative Citrus Psyllid-HLB Greening Management Programs for a Central Florida (Ridge) 10+ Year Processed Orange Grove – 2010-11

	Traditional HLB Management Without Additional Foliar Nutrients[a]	Alternative "1" [b] Traditional HLB Management With 4 Applications of Foliar Nutrients	Alternative "2" [c] Traditional HLB Management With 5 Applications of Foliar Nutrients	Alternative "3" [d] Traditional HLB Management With 4 Applications of Foliar Nutrients	Alternative "4" [e] Traditional HLB Management With 4 Applications of Foliar Nutrients	Alternative "5" [f] Traditional HLB Management With 5 Applications of Foliar Nutrients	Alternative "6" [g] Traditional HLB Management With 6 Applications of Foliar Nutrients	Alternative "7" [h] Aerial & LV Ground HLB Management With 3 Applications of Foliar Nutrients
	$/Acre	$/Acre	$/Acre	$/Acre	$/Acre	$/Acre	$/Acre	$/Acre
General Production Costs[i]	470.55	470.55	470.55	470.55	470.55	470.55	470.55	470.55
Spray-Pesticide & Diseases[a] (includes HLB-psyllid control)	394.36	386.93	386.93	386.93	386.93	386.93	386.93	215.15
Black Spot Spray Costs[j]	83.48	83.48	83.48	83.48	83.48	83.48	83.48	83.48
HLB Foliar Nutrient Program**	–	114.07	258.14	181.07	191.07	241.14	345.21	579.40
Fertilizer Costs[k]	363.21	356.14	340.61	354.73	334.96	344.84	315.19	333.55
Tree Removal & Site Cleanup[l]	57.12	45.28	45.28	45.28	45.28	45.28	45.28	45.28
HLB Scouting	109.64	–	–	–	–	–	–	–
Total Production Costs Without Reset Trees	1,478.36	1,456.45	1,584.99	1,522.04	1,512.27	1,572.22	1,646.64	1,727.41
Cost Difference: Traditional HLB Less Foliar Nutrient Program Without Reset Trees	0.00	21.91	(106.63)	(43.68)	(33.91)	(93.86)	(168.28)	(249.05)
Reset Trees & 3-Year Care[1]	178.02	98.92	98.92	98.92	98.92	98.92	98.92	–
Total Production Costs With Reset Trees	1,656.38	1,555.37	1,683.91	1,620.96	1,611.19	1,671.14	1,745.56	1,727.41
Cost Difference: Traditional HLB Less Foliar Nutrient Program With Reset Trees	0.00	101.01	(27.53)	35.42	45.19	(14.76)	(89.18)	(71.03)

**For a description of the foliar nutrient programs used in this table, refer to Fritz M. Roka's Southwest Florida Research and Education foliar nutritional field day handout, June 2011.
**Except for Alternative #7, assumes that 3-foliar applications are included with traditional HLB spray program; the remaining foliar nutrient applications will require additional PTO 125 GPA ground applications.

[a] TRADITIONAL HLB SPRAY PROGRAM: Material and application costs for five PTO 125 GPA ground sprays, two aerial sprays, one LV ground application and NO additional foliar nutritional sprays. Except for Alternative #7, the traditional HLB spray program was used for each alternative. Where foliar nutrient sprays were applied, the total spray costs were adjusted to account for foliar micro-nutrients applied. The spray program for Alternative #7 consisted of 5 aerial and 5 LV ground sprays.
[b] Alternative #1: a Chemical dynamics foliar nutritional program; 4 – foliar nutrients applications.
[c] Alternative #2: a Diamond R Generic foliar nutritional program; 5 – foliar nutrients applications.
[d] Alternative #3: a Florida Phosphorus Fortress foliar nutritional program; 4 – foliar nutrients applications.
[e] Alternative #4: a Griffin foliar nutritional program; 4 – foliar nutrients applications.
[f] Alternative #5: a KeyPlex foliar nutritional program; 5 – foliar nutrients applications.
[g] Alternative #6: a Plant Food Systems foliar nutritional program; 6 – foliar nutrients applications.
[h] Alternative #7: a Boyd Mix foliar nutritional program; all three foliar nutritional applications are by PTO 250 GPA ground sprayers.
[i] Weed middle management/herbicide, hedging/topping, irrigation-ditch maintenance, canker decontamination.
[j] Additional sprays for Black Spot control; one ground spray in mid-late May with copper and strobilurin and a strobilurin added to summer spray.
[k] Fertilizer materials and four applications at 55 pounds of nitrogen per acre or 220 pounds per acre annually; where foliar nutrient sprays applied, cost of fertilizer materials were adjusted to account for foliar nutrients applied. Includes prorated annual lime-calcium cost of $15.54 per acre.
[l] With HLB scouting, annual tree loss is assumed to average 4.5% (2.5% normal attrition plus 2% HLB) or 7 trees per acre; without removing HLB symptomatic trees, the annual tree loss is assumed to be 3.3% or 5 trees per acre. Included with tree removal costs are site cleanup and/or replant preparation.
Reset costs include nursery reset tree, planting costs and three-year reset maintenance costs.

Note: Refer to UF/IFAS CREC website for summary budget costs for Southwest Florida orange production; website address: www.crec.ifas.ufl.edu/extension/economics.

SOURCE: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, September 2011

Table 5. Delivered-in Break-even Price for Processed Valencia Oranges in Central Florida (Ridge), 2010-11

Box Yield Per Acre						
300	350	400	450	500	550	600
With Citrus Canker and HLB-Greening			Delivered-in Price Per Box			
NO Resetting-Tree Replacement						
$8.969	$8.095	$7.440	$6.930	$6.523	$6.189	$5.911
WITH Resetting-Tree Replacement						
$9.792	$8.801	$8.057	$7.479	$7.017	$6.638	$6.323
With Citrus Canker and HLB-Greening			Delivered-in Price Per Pound Solids[a]			
NO Resetting-Tree Replacement						
$1.319	$1.191	$1.094	$1.019	$0.959	$0.910	$0.869
WITH Resetting-Tree Replacement						
$1.440	$1.294	$1.185	$1.100	$1.032	$0.976	$0.930

[a]Assumes 6.8 pounds solids per box.

Supplemental Table 1. Herbicide programs used in the Central Florida citrus production budgets – 2010-2011

Program	Materials/Ingredients	Amount treated acre	Price/unit	Cost/acre[a]
#1	Solicam 80 DF	3 lbs	$23.63	$35.44
	Karmex WP	4 lbs	5.71	11.41
	Roundup PowerMax	4 pts	2.45	4.91
	Adjuvant-Surfactant	1 pt	2.69	1.34
	Total Material Costs			53.10
	Application Cost/Acre	1 time	$14.59	14.59
	Total Cost/Application Program #1			**$67.69**
#2	Prowl H_20	6 pts	$ 5.16	$15.48
	Direx 4L	6 pts	3.43	10.29
	Roundup PowerMax	4 pts	2.45	4.91
	Adjuvant-Surfactant	1 pt	2.69	1.34
	Total Material Costs			32.02
	Application Cost/Acre	1 time	$14.59	14.59
	Total Cost/Application Program #2			**$46.61**
#3	Roundup PowerMax	4 pts	$ 2.45	$ 4.91
	Adjuvant-Surfactant	1 pt	2.69	1.34
	Total Material Costs			6.25
	Application Cost/Acre	1 time	$14.59	14.59
	Total Cost/Application Program #3			**$20.84**
#4	Roundup PowerMax	1 pt	$2.45	$1.23
	Adjuvant-Surfactant	0.5 pt	2.69	0.67
	Total Material Costs			1.90
	Application Cost/Acre (Chemical Mow)	1 time	$4.82	4.82
	Total Cost/Application Program #4			**$6.72**

[a]Herbicide applied to 50% of grove area.

Supplemental Table 2. Fertilizer programs used in the Central Florida citrus production budgets – 2010-2011

Program	Analysis/Material Applied	Amount/ Acre	Cost/ Acre
#1 – 4 applications	16-0-16-4 MgO	1,250 lbs	$305.47
(200 lbs of nitrogen/acre)	Application Cost		44.73
	Total Fertilizer Costs for Program #1		$350.20
#2 – 4 applications	16-2-16-3 MgO	1,000 lbs	$247.95
(160 lbs of nitrogen/acre)	Application Cost		44.73
	Total Fertilizer Costs for Program #2		$292.68
#3 – 4 applications	17-4-17-2.4 MgO	1,300 lbs	$340.69
(220 lbs of nitrogen/acre)	Application Cost		44.73
	Total Fertilizer Costs for Program #3		$385.42
Dolomite/Lime	Dolomite	2,000 lbs	$42.22
(one application every 4 yrs)	Application Cost		9.82
	Total Dolomite Costs/Acre		$52.04
	Annual Dolomite Costs/Acre		$13.01

Supplemental Table 3. Spray programs used in the Central Florida citrus production budgets – 2010-2011

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#1 (at first Flush or February)	Danitol	4 pts	$21.43
	Ground Low Volume Sprayer Every Middle		12.81
	Total Spray Program #1 Cost		**$34.24**
#2 (late March or early April – Post Bloom)	Dimethoate 4EC	1 pt	$ 6.47
	Copper (Kocide 3000)	2.5 lbs	16.98
	Zn (Zinc)	3 lbs	5.94
	Mn (Manganese)	3 lbs	1.91
	B (Borates)	0.25 lb	0.32
	Adjuvant-Surfactant LI 700	1 pt	2.96
	Total Materials Cost		34.58
	PTO-Air Blast Sprayer @ 125 GPA		29.36
	Total Spray Program #2 Cost		**$63.94**
#3 (late April or early May)	Mustang	4.3 ozs	$ 4.93
	Copper (Kocide 3000)	2 lbs	13.59
	Total Materials Cost		18.52
	PTO-Air Blast Sprayer @ 125 GPA		29.36
	Total Spray Program #3 Cost		**$47.88**
#4 (early-mid June – 1st summer oil)	Movento	10 ozs	$ 46.88
	Copper (Kocide 3000)	2.5 lbs	16.98
	Spray Oil (97+%)	3 gals	17.59
	Total Materials Cost		81.45
	PTO-Air Blast Sprayer @ 125 GPA		29.36
	Total Spray Program #4 Cost		**$110.81**
#5 (late July or August – 2nd summer oil)	Provado 1.6F	10 ozs	$ 7.55
	Spray Oil (97+%)	5 gals	29.32
	Total Materials Cost		36.87
	PTO-Air Blast Sprayer @ 125 GPA		29.36
	Total Spray Program #5 Cost		**$66.23**
#6 (September – for Processed Fruit)	Delegate	4 ozs	$31.91
	Ground Low Volume Sprayer Every Middle		12.81
	Total Spray Program #6 Cost		**$44.72**
#7 (late October or November – for Processed Fruit)	Imidan 70W	1 lb	$10.79
	Adjuvant-Surfactant LI 700	1 pt	2.96
	Total Materials Cost		13.75
	Ground Low Volume Sprayer Every Middle		12.81
	Total Spray Program #7 Cost		**$26.56**

Supplemental Table 3. Spray programs used in the Central Florida citrus production budgets – 2010-2011 (cont'd.)

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#8 (February and/or November)	Danitol	1 pt	$21.43
	Ground LV Sprayer Every Other Middle		6.77
	Total Spray Program #8 Cost		**$28.20**
#9 (April and/or May)	Dimethoate 4EC	1 pt	$ 6.47
	Ground LV Sprayer Every Other Middle		6.77
	Total Spray Program #9 Cost		**$13.24**
#10 (February and/or November)	Malathion 5 EC	2 pts	$ 8.77
	Ground Low Volume Sprayer Every Middle		12.81
	Total Spray Program #10 Cost		**$21.58**
#11 (February and/or November)	Malathion 5 EC	2 pts	$ 8.77
	Aerial Low Volume Fix Wing (+/- 5 GPA)		5.39
	Total Spray Program #11 Cost		**$14.16**