

Summary of 2008-2009 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.

Average cultural production costs decreased 10% between 2007-2008 and 2008-2009 seasons. This was because fuel and energy costs for equipment application decreased 18% for gasoline and 16% for diesel fuel over the 2007-2008 season; and fertilizer prices had the highest decrease of all the inputs averaging 21% less than the 2007-2008 season. However, chemical prices increased 2% above the previous season. The sluggish economies in the United States and internationally resulted in lower demand for fuel-based energy products and agricultural chemicals and fertilizers.

The 2008-2009 comparative budgets summary for a processed market cultural program are shown in Table 1. Two scenarios are presented: 1) Traditional/Historic Processed Orange Cultural Program **Without Citrus Canker and Greening** and 2) Processed Orange Cultural Program **With Citrus Canker and Greening**. Scenario one represents costs of traditional grove practices which have been performed for citrus grown for the processed juice market, but does not include citrus canker and greening management control programs. Scenario two is the same processed market cultural program for scenario one but expanded to include the additional costs for managing citrus canker and greening. Each budget scenario shows a 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 to identify and remove infected trees along with adding new spray programs to control the insect vector, the Asian citrus psyllid. 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 were incorporated into Tables 1, 2, 3 and 4.

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** and **without** the 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 Table 2 represent above average production for Valencias in the Central Florida (Ridge) production region. The decreased yield per acre for the “with greening” expanded budget reflects an additional 2.3% average annual tree loss for all age trees. Table 3 shows the delivered-in costs with resetting.

Traditional citrus psyllid-greening management includes a soil-applied Temik treatment in January. The budgeted spray costs in Table 1 includes the Temik soil treatment along with five additional ground spray applications. In Table 4, the costs of a traditional citrus psyllid management program are compared to an alternative “non-Temik” management program. The alternative citrus psyllid spray program includes seven ground spray applications with an estimated cost savings of \$30.40 per acre over the traditional Temik management program.

Break-even prices for processed Valencia oranges are shown in Table 5 for yields ranging from 300 to 600 boxes per acre. **Without** the additional cultural management costs for citrus canker and greening and **no resetting**, the delivered-in break-even price ranged from \$1.098 to \$0.741 per pound solids; **with resetting** the breakeven prices ranged from \$1.199 to \$0.791 per pound solids. **With** the additional citrus canker and greening costs and **no resetting**, the delivered-in break-even prices ranged from \$1.274 to \$0.829 per pound solids; **with resetting** these breakeven prices ranged from \$1.421 to \$0.902 per pounds solids. The break-even price range for processed Valencia oranges under the Alternative psyllid management program was \$1.300 to \$0.842 per pound solids **with no resetting** and \$1.414 to \$0.899 per pound solids **with resetting**.

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 – 2008-09 Season.” UF/IFAS CREC Website:
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- Muraro, Ronald P. “Estimated Average Picking, Roadsiding and Hauling Charges for Florida Fresh Citrus – 2008-09 Season.” UF/IFAS CREC Website:
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- Muraro, Ronald P. “Summary of 2009 Ridge and Indian River-South Florida Citrus Caretaker Custom Rate Charges.” UF/IFAS CREC Website:
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- Muraro, Ronald P. “Summary of 2008-2009 Citrus Budgets for the Indian River Citrus Production Region.” UF/IFAS CREC Website:
www.crec.ifas.ufl.edu/Extension/Economics September 2009. 15 pages.
- Muraro, Ronald P. “Summary of 2008-2009 Citrus Budgets for the Southwest Florida Citrus Production Region.” UF/IFAS CREC Website:
www.crec.ifas.ufl.edu/Extension/Economics September 2009. 14 pages.

Refer to Table 1.

^yCentral 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 percent 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 \$20.17 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.

^xPer acre costs shown in parenthesis are for 2009.

^wIrrigation Expense includes the following:

	<u>Microsprinkler</u>
Variable Operating Expense (Diesel)	\$ 78.39
Fixed-Variable Expense (annual maintenance repairs to system)	<u>59.04</u>
Total Cash Expenses	\$137.43
Fixed-Depreciation Expense	<u>56.56</u>
Total Cash and Fixed Expense	<u>\$193.99</u>

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2009.

Table 1. A Listing of Estimated Comparative **Central Florida (Ridge)** Production Costs Per Acre for **Processed Oranges**, 2008-2009^z

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove.	Processed Cultural Program	
	Without Canker-Greening	With Canker-Greening
PRODUCTION/CULTURAL COSTS^y		
<u>Weed Management/Control:</u>		
Mechanical Mow Middles (4 times per year)	\$ 49.78	\$ 49.78
Chemical Mow Middles (2 times per year)	11.94	11.94
General Grove Work (2 labor hours per acre)	31.58	31.58
Herbicide (1/2 tree acre treated): (See Supplemental Table 1 - Herbicide Programs #1, #2 & #3)	<u>129.53</u>	<u>129.53</u>
Total Weed Management Costs	222.83	222.83
<u>Spray/Pest Management:</u> (See Supplemental Table 3)	178.85	427.39
Without Greening: Spray Programs #6 and #8		
With Greening: Spray Programs #1, #2, #3, #4, #7 and #11		
Fertilizer (Bulk): 4 Applications (See Supplemental Table 2 - Fert Prog #1; 16-0-16-4MgO @ 200 lbs N)	345.03	345.03
Dolomite (one ton applied every 4 years) (Material/Application)	12.96	12.96
<u>Pruning^x:</u> Topping (\$28.00/A ÷ 2 yrs)	14.00	14.00
Hedging (\$27.03/A ÷ 2 yrs)	13.51	13.51
Chop/Mow Brush after Hedging (\$13.54/A ÷ 2 yrs)	<u>6.77</u>	<u>6.77</u>
Total Pruning Cost	34.28	34.28
<u>Irrigation:</u> Microsprinkler System ^w	193.99	193.99
Mandatory Citrus Canker Decontamination Costs	30.33	30.33
Field Inspections for Citrus Greening (4 inspections @ \$25.99)	—	<u>103.96</u>
TOTAL PROCESSED PRODUCTION COSTS WITHOUT		
TREE REPLACEMENT-RESET COSTS	<u>1,018.27</u>	<u>1,370.77</u>
Tree Replacement – 1 thru 3 years of age (3 trees/acre without greening; 6 trees/acre with greening)		
Remove Trees: Pull, Stack & Burn (Clip-Shear & Front End Loader)	20.55	34.26
Prepare Site and Plant Tree (includes reset trees)	44.43	84.90
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	<u>88.86</u>	<u>108.66</u>
Total Tree Replacement Cost	<u>153.84</u>	<u>227.82</u>
TOTAL PROCESSED PRODUCTION COSTS WITH		
TREE REPLACEMENT-RESET COSTS	<u>1,172.11</u>	<u>1,598.59</u>

^zThe listed estimated comparative costs are for the example grove situation and may not represent your particular grove situation in Central Florida.

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, September 2009.

Table 2. Estimated Total Delivered-in Cost for Central Florida (Ridge) Valencia Oranges Grown for the Processed Juice Market **Without** and **With** Canker-Greening, 2008-09

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program Without Canker-Greening and NO Resetting - Tree Replacement			Processed Cultural Program With Canker-Greening and NO Resetting - Tree Replacement		
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.
Total Production/Cultural Costs	\$1,018.27	\$2.126	\$0.3037	\$1,370.77	\$3.279	\$0.4685
Interest on Operating (Cultural) Costs	50.91	0.106	0.0152	68.54	0.164	0.0234
Management Costs	48.00	0.100	0.0143	48.00	0.115	0.0164
Taxes/Regulatory Costs:						
Property Tax/Water Management Tax	<u>61.00</u>	<u>0.127</u>	<u>0.0182</u>	<u>61.00</u>	<u>0.146</u>	<u>0.0208</u>
Total Direct Grower Costs	\$1,178.18	\$2.460	\$0.3514	\$1,548.31	\$3.704	\$0.5292
Interest on Average Capital Investment Costs	<u>321.22</u>	<u>0.671</u>	<u>0.0958</u>	<u>321.22</u>	<u>0.768</u>	<u>0.1098</u>
Total Grower Costs	\$1,499.40	\$3.130	\$0.4472	\$1,869.52	\$4.473	\$0.6389
Harvesting and Assessment Costs:						
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,172.11	2.447	0.3496	1,022.85	2.447	0.3496
DOC Assessment	<u>114.96</u>	<u>0.240</u>	<u>0.0343</u>	<u>100.32</u>	<u>0.240</u>	<u>0.0343</u>
Total Harvesting and Assessment Costs	1,287.07	2.687	0.3839	1,123.17	2.687	0.3839
Total Delivered-In Cost	<u>\$2,786.47</u>	<u>\$5.817</u>	<u>\$0.8310</u>	<u>\$2,992.69</u>	<u>\$7.160</u>	<u>\$1.0228</u>
120 trees per acre	Refer to cultural program shown in Table 1.			Refer to cultural program shown in Table 1.		
P.S. = Pound Solids	Yield: 479 boxes/acre; 7.0 P.S./box			Yield: 418 boxes/acre; 7.0 P.S./box		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2009.

Table 3. Estimated Total Delivered-in Cost for Central Florida (Ridge) Valencia Oranges Grown for the Processed Juice Market **Without** and **With** Canker-Greening, 2008-09

Represents a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program Without Canker-Greening and WITH Resetting - Tree Replacement			Processed Cultural Program With Canker-Greening and WITH Resetting - Tree Replacement		
	\$/Acre	\$/Box	\$/P.S.	\$/Acre	\$/Box	\$/P.S.
Total Production/Cultural Costs	\$1,172.11	\$2.447	\$0.3496	\$1,598.59	\$3.824	\$0.5463
Other Grower Costs	<u>539.73</u>	<u>1.127</u>	<u>0.1610</u>	<u>578.68</u>	<u>1.384</u>	<u>0.1978</u>
Total Grower Costs	\$1,711.84	\$3.574	\$0.5105	\$2,177.27	\$5.209	\$0.7441
Total Harvesting and Assessment Costs	<u>1,287.07</u>	<u>2.687</u>	<u>0.3839</u>	<u>1,123.17</u>	<u>2.687</u>	<u>0.3839</u>
Total Delivered-In Cost	<u><u>\$2,998.92</u></u>	<u><u>\$6.261</u></u>	<u><u>\$0.8944</u></u>	<u><u>\$3,300.44</u></u>	<u><u>\$7.896</u></u>	<u><u>\$1.1280</u></u>

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2009.

Table 4. **Central Florida (Ridge)** Production Costs Per Acre for **Processed Oranges** Comparing Alternative Citrus Greening Spray Programs, 2008-2009^z

Costs represent a mature (10+ years old) Central Florida (Ridge) Orange Grove	Processed Cultural Program	
	Traditional Greening Spray Program	Alternative Greening Spray Program (NO Temik)
PRODUCTION/CULTURAL COSTS: ^y		
Weed Management, Fertilizer/Dolomite, Pruning, Irrigation, Citrus Canker Decontamination, and Citrus Greening Field Inspections	1,025.74	1,025.74
<u>Spray/Pest Management: (See Supplemental Table 3)</u>		
Traditional Greening Program: Spray Programs #1, #2, #3, #4, #7 and #11	<u>427.39</u>	
Alternative Greening Program (NO Temik): Spray Programs #3, #5, #7, #9, #11, #12 and #13		<u>396.99</u>
TOTAL PROCESSED PRODUCTION COSTS WITHOUT TREE REPLACEMENT-RESET COSTS	<u>1,453.13</u>	<u>1,422.73</u>
Tree Replacement—1 thru 3 years of age (3 trees/acre without greening; 6 trees/acre with greening)	<u>227.82</u>	<u>227.82</u>
TOTAL PROCESSED PRODUCTION COSTS WITH TREE REPLACEMENT-RESET COSTS	<u>1,680.95</u>	<u>1,650.55</u>

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, September 2009.

Table 5. Break-even Price for Processed Valencia Oranges in Central Florida (Ridge), 2008-09

Boxes Per Acre						
300	350	400	450	500	550	600
Delivered-in Price Per Pound Solids ^a						
<u>Without Canker-Greening</u>						
<u>NO Resetting-Tree Replacement</u>						
\$1.098	\$0.996	\$0.919	\$0.860	\$0.812	\$0.773	\$0.741
<u>WITH Resetting-Tree Replacement</u>						
\$1.199	\$1.083	\$0.995	\$0.927	\$0.873	\$0.828	\$0.791
<u>With Canker-Greening and NO Resetting-Tree Replacement</u>						
<u>Typical Greening Spray Program</u>						
\$1.274	\$1.147	\$1.052	\$0.977	\$0.918	\$0.869	\$0.829
<u>Alternative Greening Spray Program - NO Temik</u>						
\$1.300	\$1.169	\$1.071	\$0.995	\$0.934	\$0.884	\$0.842
<u>With Canker-Greening and With Resetting-Tree Replacement</u>						
<u>Typical Greening Spray Program</u>						
\$1.421	\$1.273	\$1.161	\$1.075	\$1.006	\$0.949	\$0.902
<u>Alternative Greening Spray Program - NO Temik</u>						
\$1.414	\$1.267	\$1.156	\$1.071	\$1.002	\$0.946	\$0.899

^aAssumes 7.0 pounds solids per box.

Supplemental Table 1. Herbicide programs used in the Central Florida citrus production budgets
– 2008-2009.

Program	Materials/Ingredients	Amount treated acre	Price/unit	Cost/acre ^a
#1	Solicam 80 DF	3 lbs	\$22.50	\$33.74
	Karmex WP	4 lbs	5.80	11.59
	Glyphosate XTRA	4 pts	2.69	<u>5.38</u>
	Material Cost			\$50.72
	Application Cost/Acre	1 time	\$14.79	<u>\$14.79</u>
	Total Cost/Application Program #1			<u>\$65.51</u>
#2	Prowl H ₂ O	6 pts	\$ 4.75	\$14.26
	Direx 4L	6 pts	3.14	9.41
	Glyphosate XTRA	4 pts	2.69	<u>5.38</u>
	Material Cost			\$29.05
	Application Cost/Acre	1 time	\$14.79	<u>\$14.79</u>
	Total Cost/Application Program #2			<u>\$43.84</u>
#3	Glyphosate XTRA	4 pts	\$ 2.69	\$ 5.38
	Application Cost/Acre	1 time	\$14.79	<u>\$14.79</u>
	Total Cost/Application Program #3			<u>\$20.17</u>
#4	Glyphosate XTRA (chemical mow)	1 pt	\$2.69	\$1.35
	Application Cost/Acre	1 time	\$4.63	<u>\$4.63</u>
	Total Cost/Application Program #4			<u>\$5.97</u>

^aHerbicide applied to 50% of grove area.

Supplemental Table 2. Fertilizer programs used in the Central Florida citrus production budgets 2008-2009.

Program	Analysis/Material Applied	Amount/ Acre	Cost/ Acre
#1 – 4 applications	16-0-16-4 MgO	1,250 lbs	\$306.76
(200 lbs of nitrogen/acre)	Application Cost		<u>38.28</u>
	Total Fertilizer Costs for Program #1		<u>\$345.04</u>
#2 – 4 applications	16-2-16-3 MgO	1,000 lbs	\$240.20
(160 lbs of nitrogen/acre)	Application Cost		<u>38.28</u>
	Total Fertilizer Costs for Program #2		<u>\$278.48</u>
#3 – 4 applications	17-4-17-2.4 MgO	1,300 lbs	\$318.08
(220 lbs of nitrogen/acre)	Application Cost		<u>38.28</u>
	Total Fertilizer Costs for Program #3		<u>\$356.36</u>
Dolomite/Lime	Dolomite	2,000 lbs	\$42.18
(one application every 4 years)	Application Cost		<u>9.68</u>
	Total Dolomite Costs/Acre		<u>\$51.86</u>
	Annual Dolomite Costs/Acre		<u>\$12.97</u>

Supplemental Table 3. Spray programs used in the Central Florida citrus production budgets 2008-2009.

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#1 (January)	Temik 15G	33 lbs	\$119.06
	Custom application		<u>15.64</u>
	Total Spray Program #1 Cost		<u>\$134.70</u>
#2 (at first Flush or February and/or October)	Danitol	1 pt	\$21.40
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #2 Cost		<u>\$49.98</u>
#3 (April – Post Bloom and Nutritionals)	Mustang	4.3 ozs	\$ 6.43
	Copper (Kocide 3000)	2.5 lbs	16.53
	Zn (Zinc)	3 lbs	5.08
	Mn (Manganese)	3 lbs	2.21
	B (Borates)	0.25 lb	<u>0.24</u>
	Total materials cost		30.48
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #3 Cost		<u>\$59.07</u>
#4 (late May or early June)	Dimethoate 4EC	1 pt	\$ 5.93
	Copper (Kocide 3000)	2.5 lbs	16.53
	Spray Oil (97+%)	5 gals	<u>16.28</u>
	Total materials cost		38.74
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #4 Cost		<u>\$67.32</u>
#5 (late May or early June)	Movento	10 ozs	\$ 64.46
	Copper (Kocide 3000)	2.5 lbs	16.53
	Spray Oil (97+%)	3 gals	<u>9.77</u>
	Total materials cost		90.76
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #5 Cost		<u>\$119.34</u>
#6 (June or mid-August)	Spray Oil (97+%)	5 gals	\$16.28
	Copper (Kocide 3000)	4 lbs	26.44
	Agrimek (if no mite resistance)	5 ozs	16.86
	Zn (Zinc)	3 lbs	5.08
	Mn (Manganese)	3 lbs	2.21
	B (Borates)	0.25 lb	<u>0.24</u>
	Total materials cost		\$67.11
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #6 Cost		<u>\$95.70</u>

Supplemental Table 3. Spray programs used in the Central Florida citrus production budgets 2008-2009 (cont'd.).

Program	Analysis/Material Applied	Amount/Acre	Cost/Acre
#7 (late June or July)	Provado	16 ozs	\$15.58
	Agrimek (if no mite resistance)	5 ozs	16.86
	Copper (Kocide 3000)	2.5 lbs	16.53
	Spray Oil (97+%)	5 gals	<u>16.28</u>
	Total materials cost		65.25
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #7 Cost		<u>\$93.84</u>
#8 (late July or August)	Lorsban 4EC	5 pts	\$11.84
	Copper (Kocide 3000)	4 lbs	26.44
	Spray Oil (97+%)	5 gals	<u>16.28</u>
	Total materials cost		54.56
	PTO-Air Blast Sprayer @ 125 GPA		<u>28.59</u>
	Total Spray Program #8 Cost		<u>\$83.15</u>
#9 (February and/or November)	Danitol	1 pt	\$21.40
	Ground LV Sprayer (every middle)		<u>13.63</u>
	Total Spray Program #9 Cost		<u>\$35.03</u>
#10 (February and/or November)	Malathion 5 EC	2 pts	\$ 8.85
	Aerial LV Fix Wing @ 5 GPA		<u>5.50</u>
	Total Spray Program #10 Cost		<u>\$14.35</u>
#11 (February and/or November)	Malathion 5 EC	2 pts	\$ 8.85
	Ground LV Sprayer (every middle)		<u>13.63</u>
	Total Spray Program #11 Cost		<u>\$22.48</u>
#12 (April and/or May)	Dimethoate 4EC	1 pt	\$ 5.93
	Ground LV Sprayer (every other middle)		<u>6.82</u>
	Total Spray Program #12 Cost		<u>\$12.74</u>
#13 (February and/or November)	Sevin XLR	4 pts	\$21.60
	Ground LV Sprayer (every middle)		<u>13.63</u>
	Total Spray Program #13 Cost		<u>\$35.23</u>