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**UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION**

**2011**

**SAMPLE COSTS TO PRODUCE  
STRAWBERRIES**



**Machine Aided Harvest**

**SOUTH COAST REGION– Ventura County  
Oxnard Plain**

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# UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

## SAMPLE COSTS TO PRODUCE STRAWBERRIES South Coast – Ventura County, Oxnard Plain 2011

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### INTRODUCTION

The sample costs to produce winter season strawberries in the South Coast Region – Ventura County are presented in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. The practices described are based on production procedures considered typical for this crop and area, and will not apply to every situation. Sample costs for labor, materials, equipment and custom services are based on current figures. A blank column, “*Your Costs*”, is provided to enter your actual costs on Tables 1 and 2.

The hypothetical farm operation, production practices, overhead, and calculations are described under assumptions. For additional information or explanation of the calculations, call the Department of Agricultural and Resource Economics, University of California, Davis, (530) 752-3589 or the UC Cooperative Extension office in your county.

Current and archived Sample Cost of Production Studies for many commodities can be downloaded at <http://coststudies.ucdavis.edu>, requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-6887 or obtained from the local county UC Cooperative Extension office.

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## ASSUMPTIONS

The following assumptions refer to tables 1 to 7 and pertain to sample costs to produce winter season strawberries in the South Coast Region – Ventura County, Oxnard Plain. The cultural practices described and materials used are considered typical for a well-managed strawberry field in the region. The costs, materials and practices will not apply to all situations every production year. Cultural practices for the production of strawberries vary by grower and region, which can result in significant cost differences. **The use of trade names and cultural practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.**

**Farm.** The farm consists of 70 contiguous acres – 65 rented acres and five acres owned by the grower. Strawberries are planted on 60 acres, and roads and irrigation system are on five acres. The grower owned five acres includes a shop and homestead.

### Cultural Practices and Material Inputs

**Land Preparation and Bed-Up.** Disking, plowing, subsoiling and land leveling are done by a custom operator. The beds are listed, shaped, rolled, pre-plant fertilizer incorporated, irrigation lines buried and plastic mulch laid. The operations are done on the entire length of the field. After laying the mulch, roads are cut using a tracklayer tractor with blade to divide the field into smaller blocks, 280 to 400 feet long. Then irrigation lines are connected to the water source, lines tested for leaks, and the field is custom fumigated.

**Plant Establishment.** Several strawberry varieties are available for planting in the area, but no specific variety is assumed in this study. Plants in the region are planted on beds with 64 to 68 inch spacing between bed centers. In this study, the grower plants on 64-inch beds at 4-rows per bed with a 14-inch plant spacing for a total of 29,495 plants per acre. Five percent of the plants will be replanted and are included in the plant population and planting costs. Planting holes are punched in the plastic mulch on the bed using a mechanical punch machine. Plants are delivered to the edge of the blocks where planting labor gathers the plants in a bucket or sack and places the strawberry plants in the punched holes.

**Fertilization.** A slow release fertilizer, 18-6-8, at 500 pounds per acre is drilled preplant in the bed using a fertilizer drill with bed shaper. Growers apply various fertilizers and amounts during the growing season through the drip system or as a foliar spray. Some fertilizers applied are CAN 17 (17-0-0-8Ca), which is used in this study, and CN9 for nitrogen and calcium, Thiocal for calcium and sulfur, 0-10-10 for phosphorous and potassium, 0-54-0 (phosphoric acid) also used in this study, an NPK fertilizer (16-20-0, 15-15-15, 20-10-15) and minor nutrient fertilizers, such as zinc and iron.

**Irrigation.** The grower rents sprinkler pipe for the preplant and establishment sprinkler irrigations. Prior to listing, the field is sprinkler irrigated for 12 hours. Two men plus the tractor driver lay and pickup the pipe. A tape-layer machine is used to bury two drip-lines per bed. After the field is divided into blocks, lateral lines are laid out at the edge of the field, then connected to the drip lines and tested for leaks. The field is preirrigated using the drip system. Following planting, sprinkler pipe is laid out and the field is sprinkled daily as needed for about four weeks. Two irrigators manage the sprinkler and drip irrigation. From December through June, the field is drip irrigated as necessary--during the harvest portion of the season, every three to four days. Effective rainfall is not taken into account, therefore, a total of 28 acre-inches including the preplant irrigations are applied.

*Water.* The cost of the irrigation water is \$16.78 per acre inch (\$201.36 per acre-foot). The cost is a typical water cost paid by the growers and can be either district water charges and/or pumping costs. Water costs varied within the region, depending upon district water charges and/or assessments, pumping depth and horsepower.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in the *UC IPM Pest Management Guidelines, Strawberries*. For more information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). Pesticide applications, timing, and materials vary according to pest pressure. The pesticide program shown in Table A represents a typical program for the region. Inputs cited in this report are based on programs used by PCAs in the area, but will vary by season. Written recommendations are required for many commercially applied pesticides and are made by licensed pest control advisers. For information and pesticide use permits, contact the local county Agricultural Commissioner's office. Adjuvants are recommended for many pesticides for effective control and are an added cost. The adjuvants in this study are not included as a cost in the applications. Pesticide costs may vary by location and grower volume. **Pesticide costs** in this study are taken from a single dealer and **shown as full retail**.

*Fumigation.* Arthropods, soilborne fungi/disease causing organisms, nematodes, and weeds are controlled with preplant fumigation. Currently bed fumigation by a custom operator is the most likely method in this area. The custom operator furnishes the fumigant (chloropicrin). The grower can incur additional costs, which are not included in this study of \$10 to \$25 per acre to obtain the fumigation permit. These costs include field measuring, field maps and fumigation layout, obtaining permission from nearby residents, and meeting with county representatives. Grower costs for the drip method using Inline (1,3D plus chloropicrin) including material costs are \$1,100 to \$1,400 per acre. The fumigation effects on yield, weed, and pest control are variable and these variables may add to the production costs and/or reduce yield.

*Weeds.* In addition to preplant fumigation, weeds are controlled by hand weeding from January through June. Although weeding times vary by grower and month, the study assumes that weeding will take 54 hours per acre over the 7 months. Weeding costs from grower surveys ranged from \$300 to \$700 per acre and include payroll overhead. Goal Tender is applied to the beds prior to laying the mulch and to the furrows after laying the mulch and prior to planting to control most weeds except nutsedge.

TABLE A. DISEASE and INSECT APPLICATIONS

MONTH	DISEASE			INSECTS				
	Mildew	Botrytis	Anthracnose	Mites	Worms	Whitefly	Lygus	Fruit Fly
Oct			Abound: dip					
Nov	Rally			Oberon	Lorsban	Admire		
Dec	Microthiol	Captan + Thiram						
	Pristine			Savey + Acramite				
			Ridomil: drip					
Jan	Microthiol Switch	Elevate, Captan Procure		Persimilis				
Feb	Microthiol				Xentari			
Mar	Pristine	Switch						
	Elevate	Captan		Acramite	Radiant			
	Quintec	Switch						
Apr	Pristine			Agrimek				
	Quintec	Captan		Agriemek			Rimon	
	Microthiol	Elevate						
May	Microthiol	Switch					Rimon	Brigade
	Quintec	Procure				Malathion		
		Elevate					Rimon	
Jun					Xentari			

*Diseases.* Powdery mildew, Botrytis fruit rot, and Anthracnose are the diseases treated in this study. Treatments are combined with the insect control. Fungicide treatments are made every 12 to 16 days through May/mid-June (see Table A). Treatments in this study are applied by the grower. However, an overall estimate is that about one-half of the treatments or growers use custom applicators.

*Insects.* Two-spotted spider mite and Lewis mite, beet armyworm, cutworm, spotted wing drosophila, tarnished plant bug and whiteflies are the insects controlled. The insecticide treatments are shown in Table A.

**Harvest.** The crop is picked using machine aided harvest (a self propelled harvest tray collecting system) from late December/January through June/early-July with peak harvest in April and May. The early harvested strawberries go to fresh market

Table B. Percent Crop Harvested by Month based on pounds

	Jan	Feb	Mar	Apr	May	June	July
Fresh % (68%)	3	6	15	24	20		
Freezer % (32%)					12	17	3

Source: Processing Strawberry Advisory Board Crop Trend Report 2001-2003

and as other growing areas begin production, the growers shift to the freezer market. In this study the percent by weight of the crop harvested each month is shown in Table B. During harvest, the grower runs two harvesters or more as needed, each with a 15 man crew for picking, one stacker/driver to record the trays picked and move the machine, and a general foreman on the ground for crew supervision, For fresh market the picker pushes a picking cart that holds a fiberboard tray and eight one-pound containers. The picker picks the ripe strawberries by hand and places them in the container/trays and when full places them on the harvester. Picking rate per picker ranges from 3 trays per hour early and late in the season and 6 to 9 trays per hour during the peak harvest. No data is available to determine if picking rate increases with the machine aided harvest over standard ground picking. For this study, it is assumed there is a 10% picking increase. For the freezer market, the picker places an 18-pound plastic tray on the picking cart. The grower purchases the fresh market trays and the processor furnishes the freezer trays. (See Labor for picking costs). The grower uses one or two two-ton flatbed trucks that hold 16 pallets at 108 trays per pallet. One truck driver delivers the strawberries to the cooler or freezer; one fork lift driver unloads the harvester and stacks the pallets with trays on the truck. The truck driver takes about an hour per load to deliver the filled trays, and for the freezer, the driver will pick up the empty freezer trays. In addition, the grower will have at least one tractor, trailer, and toilet in the field.

*Yields.* Strawberry yields are measured in trays per acre for fresh and freezer market. Various tray weights are used to convert the yields to weight per acre. The standard consumer tray holds 8 x 1-pound containers (clamshells) and ranges from 9.5 to 10.5 pounds per tray. There are other tray arrangements with different size containers as well as the former standard tray containing 12 1-pint containers, which ranged from 10.5 to 12 pounds per tray. The weight used in this study is 10 pounds per tray for fresh market and 18 pounds per tray for freezer strawberries. Freezer trays delivered to the cooler usually weigh 18 to 20 pounds. Total per acre yield in this study is 57,000 pounds with 68% or 38,760 pounds (4,080 trays) delivered to fresh market and 32% or 18,240 pounds (1,013 trays) delivered to the freezer. The yield in this study is based on grower information and Ventura County crop reports.

*Returns.* Based on current returns, the gross returns are \$10.00 per 10-pound tray for fresh market and \$6.30 (\$0.35 per pound) per 18-pound tray for freezer market. Fresh market returns less selling commission, assessments, and cooler costs equals a payment to the grower of \$8.68 per tray. Strawberry prices are based on trays and not weight, therefore the \$10.00 tray price is used in this study to provide a basis for a range of yields and prices shown in Table 4. Fresh market prices vary during the harvest season. Typically prices are the highest in the Ventura area at the beginning of the season and decline as other areas come into production.

*Cooler.* Cooling costs for fresh market strawberries varies by cooler and grower volume. Also, the grower may have the option to negotiate the price with the cooler. The cost used in this study is \$0.50 per tray.

*Sales/Marketing.* Selling costs are calculated as 8% of selling price or \$0.80 per tray (\$10.00 x 8%). Selling costs are shown in the tables under Other Costs.

*Assessments.* Current assessment for an 8 x 1 pound tray (9.5 – 10.5 pounds) is \$0.035 per tray split equally between grower and shipper. The grower pays \$0.0175 per tray to the Strawberry Commission for research and marketing. Fresh market assessment is per 6 – 12 pound tray and the freezer assessment is per 14-pound tray. Costs are deducted from the grower's gross returns.

**Year-end Cleanup.** After the last day of harvest, the plants are mowed, then the plastic mulch and drip tape are pulled and rolled by hand and hauled to the dump or picked up by a recycling company at the field. The field is then disked one time in preparation for the next crop. Except for the mowing, the cleanup operations are done by a custom operator.

### **Labor, Equipment, and Interest**

**Labor.** Labor rates of \$15.84 per hour for machine operators and \$10.56 for general labor includes payroll overhead of 32%. The basic hourly wages are \$12.00 for machine operators and \$8.00 for general labor. Pickers are often paid a base pay plus piecework, or straight piecework depending on the time of harvest and if machine or non-machine harvest. For machine harvest, piece rate pay is \$1.40 per tray or \$1.85 including payroll overhead. In this study, picker pay is calculated using the field labor rate. The overhead includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for strawberry crops (code 0079), and a percentage for other possible benefits. Workers' compensation costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 5, 2011 (California Department of Insurance). Labor for operations involving machinery are 20% higher than the operation time given in Table 1 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

**Equipment Operating Costs.** Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum power takeoff (PTO) horsepower, and fuel type. Prices for on-farm delivery of red dye diesel and gasoline are \$3.44 (excludes excise taxes) and \$3.85 per gallon, respectively. The cost includes a 2.5% local sales tax on diesel fuel, but does not include excise taxes. Gasoline costs include a 7.5% sales tax plus federal and state excise tax. Some federal excise tax can be refunded for on-farm use when filing your income tax. The costs are based on January thru June 2011, Department of Energy (DOE) monthly data. The fuel, lube, and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost in Table 6 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

**Interest on Operating Capital.** Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 5.75% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge.

**Risk.** While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks that affect the profitability and economic viability of strawberry production. The risks associated with producing and marketing strawberries should not be minimized.

## Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, sanitation services, and equipment repairs. Employee benefits, insurance, and payroll taxes are included in labor costs and not in overhead (see Labor).

**Property Taxes.** Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

**Insurance.** Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.775% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$587 for the entire farm.

**Office Expense.** Office and related business expenses taken from grower budgets/actuals are approximated at \$550 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, utilities except pumping costs, and miscellaneous expenses.

**Sprinkler Pipe.** Sprinklers are rented for approximately three months during land preparation through plant establishment. The majority of growers supplying information showed a rental cost of \$400 per acre.

**Land Rent.** The 65 acres are rented for cash at \$3,500 per acre or \$3,792 per producing acre. The rented land includes the irrigation system. The landlord maintains the irrigation system.

**Sanitation Services.** Sanitation services provide portable toilets with washing equipment and cost the farm \$10,500 annually or \$175 per producing acre. The cost is derived from grower budgets/actuals.

**Supervisor/Management Salaries.** Grower input cost for ranch supervision averaged \$1,050 per acre. Wages for management are not included as a cash cost. Returns above total costs are considered a return to management and risk.

**Investment Repairs.** Annual maintenance is calculated as two percent of the purchase price.

## Non-Cash Overhead

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

*Capital Recovery Costs.* Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is  $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$ .

*Salvage Value.* Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value is the purchase price, because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in the tables.

*Capital Recovery Factor.* Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

*Interest Rate.* The interest rate of 4.75% used to calculate capital recovery cost is the long term interest rate effective January 1, 2011. The interest rate is provided by a local farm lending agency and will vary according to risk and amount of loan.

**Land.** Open irrigated and row-crop/strawberry land values in the region range from \$50,000 per acre to \$75,000. Land suitable for berries appears to be on the higher price land. Being the land is rented, ownership costs are not shown.

**Irrigation System.** Water is pumped through a filtration station into main lines. Reusable lateral lines owned by the grower are buried each year at the edge of the strawberry field and are connected to the main and drip lines. Two drip lines are buried in each bed prior to planting. The lateral lines have a 3-year life and the drip lines are an annual expense. The system is based on one 75 horsepower electric pump lifting 30 acre-inches from a water level depth of 120 feet. The pump and 300-foot deep well already existed on the site and the irrigation system costs are charged to the landowner.

**Equipment.** Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. Strawberry production requires much specialized equipment including modifications to commercial tractors. Many of these modifications are made in machine shops and are not necessarily included in the equipment costs shown in the tables. Some of the other specialized equipment is also built in machine or farmer shops and retail prices are not readily available. The new purchase price is adjusted to 40% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in the Whole Farm Annual Equipment, Investment, and Business Overhead Costs table. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

**Table Values.** Due to rounding, the totals may be slightly different from the sum of the components.



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**Table 1. COSTS PER ACRE TO PRODUCE STRAWBERRIES**

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre						Total Cost	Your Cost
		Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent			
Cultural:									
Land Prep: Disc, Plow, Subsoil	0.00	0	0	0	0	550	550		
Irrigate: Sprinkle/Layout/Pickup pipe	2.00	207	16	3	84	0	310		
Land Prep: List Beds	0.16	3	3	1	0	0	6		
Land Prep: Shape Beds 2X	0.26	5	4	1	0	0	10		
Fertilize: preplant (18-6-8)	0.54	24	7	2	375	0	409		
Irrigate: Install Drip Tape 2 line/bed	1.25	55	13	4	327	0	399		
Weed: Spray Bed (Goal Tender)	0.18	3	3	1	26	0	33		
Land Prep: Lay Mulch	1.89	84	15	4	572	0	675		
Weed: Cultivate	0.69	13	10	3	0	0	25		
Weed: Spray Furrow (Goal Tender)	0.18	3	3	1	9	0	16		
Land Prep: Cut/Grade Roads/Maintain Roads	2.00	38	32	6	0	0	76		
Irrigate: Lay Laterals/Connect Drip	0.08	192	1	0	0	0	193		
Irrigate: Test System	4.00	42	0	0	17	0	59		
Fumigate (Custom)	0.00	0	0	0	0	1,350	1,350		
Plant: Punch Holes	0.69	13	5	1	0	0	20		
Plant: Plant/Replant (includes dipping plants)	60.00	634	0	0	3,503	0	4,137		
Irrigate: Sprinkle	8.00	84	0	0	67	0	152		
Disease: Mildew. Insect: Worm	0.20	4	3	1	138	0	146		
Insect: Whitefly (Admire) through Drip	0.00	0	0	0	137	0	137		
Irrigate: Drip	11.00	116	0	0	302	0	418		
Fertilize: Drip (CAN17)	0.00	0	0	0	51	0	51		
Fertilize-Drip (0-54-0)	0.00	0	0	0	200	0	200		
Disease: Mildew, Botrytis	0.29	6	5	1	383	0	394		
Insects: Persimilis	1.20	13	0	0	120	0	133		
Disease: Bot	0.10	2	2	0	32	0	36		
Weed: Hand	54.00	570	0	0	0	0	570		
Disease: Mildew, Botrytis. Insect: Mite Worm	0.10	2	2	0	226	0	230		
Disease: Mildew, Botrytis.	0.20	4	3	1	210	0	217		
Disease: Mildew, Insect: Mites	0.10	2	2	0	212	0	215		
Disease: Mildew, Botrytis. Insect: Mite, Lygus	0.10	2	2	0	205	0	209		
Disease: Mildew, Botrytis. Insect: Lygus, FF	0.10	2	2	0	178	0	182		
Disease: Mildew, Botrytis. Insect: WF	0.10	2	2	0	133	0	136		
Disease: Botrytis, Lygus	0.10	2	2	0	101	0	105		
Insect: Worms	0.10	2	2	0	21	0	25		
Cut Mulch Prior to Harvest	0.28	164	3	1	0	0	167		
Year End Cleanup/Crop Removal	0.00	0	0	0	0	500	500		
<b>TOTAL Cultural COSTS</b>	<b>149.85</b>	<b>2,291</b>	<b>139</b>	<b>35</b>	<b>7,627</b>	<b>2,400</b>	<b>12,491</b>		
Harvest:									
Harvest/Record Fresh	19.30	7,701	341	216	6,589	0	14,847		
Haul/Load Fresh	2.83	137	17	8	0	0	163		
Harvest Freezer/Haul/Record	11.11	3,770	176	110	0	0	4,056		
<b>TOTAL Harvest COSTS</b>	<b>33.24</b>	<b>11,609</b>	<b>534</b>	<b>334</b>	<b>6,589</b>	<b>0</b>	<b>19,066</b>		
Other:*									
Cooler Fresh	0.00	0	0	0	0	1,938	1,938		
Strawberry Commission	0.00	0	0	0	91	0	91		
Sales Fresh 8% Gross	0.00	0	0	0	0	3,101	3,101		
<b>TOTAL Other COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>91</b>	<b>5,039</b>	<b>5,129</b>		
Interest on Operating Capital @ 5.75%							923		
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>183.09</b>	<b>13,900</b>	<b>673</b>	<b>369</b>	<b>14,306</b>	<b>7,439</b>	<b>37,609</b>		

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**Table 1. CONTINUED**

Operation	Operation	Cash and Labor Costs per Acre							Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/Rent				
<b>CASH OVERHEAD:</b>										
Land Rent										3,792
Liability Insurance										10
Office Expense										550
Pipe Rent 60ac										400
Ranch Supervisor										1,050
Sanitation Fee										175
Property Taxes										20
Property Insurance										16
Investment Repairs										28
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>										<b>6,040</b>
<b>TOTAL CASH COSTS/ACRE</b>										<b>43,649</b>
<b>NON-CASH OVERHEAD:</b>										
		Per producing		Annual Cost						
		Acres		Capital Recovery						
Buildings		819		64						64
Fuel Tanks/Above Ground		58		4						4
Hand Tools		83		8						8
Harvest Carts (90)		35		8						8
Lateral Lines		141		32						32
Shop Tools		250		24						24
Equipment		1,942		379						379
<b>TOTAL NON-CASH OVERHEAD COSTS</b>										<b>519</b>
<b>TOTAL COSTS/ACRE</b>										<b>44,168</b>

\*These costs are usually deducted from gross income and grower receives the net income.

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**Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE STRAWBERRIES**

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Fresh (10 lb trays)	3,876.00	tray	10.00	38,760	
Process (18 lb trays)	1,013.00	tray	6.30	6,382	
<b>TOTAL GROSS RETURNS</b>	<b>4,889.00</b>	<b>tray</b>		<b>45,142</b>	
<b>OPERATING COSTS</b>					
<b>Insecticide:</b>					<b>821</b>
Lorsban 4E	1.00	pint	8.64	9	
Oberon 2SC	16.00	floz	4.78	76	
Admire 2 Pro	12.00	floz	11.40	137	
Xentaria	2.00	lb	21.22	42	
Acramite 50WS	1.00	lb	71.25	71	
Radiant	6.00	floz	7.59	46	
Agri-Mek 0.15 EC	32.00	floz	7.80	250	
Rimon	30.00	floz	2.06	62	
Brigade WSB	40.00	oz	2.95	118	
Malathion 5EC	2.00	pint	5.32	11	
<b>Fungicide:</b>					<b>1,205</b>
Abound	14.00	floz	3.72	52	
Rally 40W	4.00	oz	5.50	22	
Microthiol Disperss	20.00	lb	1.90	38	
Elevate 50WDG	6.00	lb	53.70	322	
Switch 62.5 WG	56.00	oz	6.33	354	
Captan 50W	9.00	lb	9.54	86	
Procure	16.00	oz	4.00	64	
Pristine	46.00	oz	3.77	173	
Quintec	18.00	floz	5.15	93	
<b>Predatory Mites:</b>					<b>120</b>
Persimilis	20.00	thou	6.00	120	
<b>Herbicide:</b>					<b>35</b>
Goal Tender	1.00	pint	34.50	35	
<b>Fertilizer:</b>					<b>626</b>
18-6-8	500.00	lb	0.75	375	
CAN 17 17-0-0	49.00	lb N	1.05	51	
0-54-0 (Phosphoric Acid)	10.00	gal	20.00	200	
<b>Custom:</b>					<b>7,439</b>
Land Prep Disc & Rip	1.00	acre	550.00	550	
Fumigate - Bed: Chloropicrin	1.00	acre	1350.00	1,350	
Cooler Fresh Strawberries	3,876.00	tray	0.50	1,938	
Sales Commission 8%	3,876.00	tray	0.80	3,101	
Crop Removal	1.00	acre	500.00	500	
<b>Materials:</b>					<b>7,488</b>
T-Tape	16,345.00	foot	0.02	327	
Mulch 1.5 mil	8,173.00	foot	0.07	572	
Crate/Basket/Wire	3,876.00	each	1.70	6,589	
<b>Water:</b>					<b>470</b>
Water	28.00	acin	16.78	470	
<b>Plants:</b>					<b>3,451</b>
Strawberry Plants	29.50	thou	117.00	3,451	
<b>Assessment:</b>					<b>91</b>
Strawberry Commission (Fresh) (\$0.0175 tray)	3,876.00	tray	0.02	68	
Strawberry Commission (Freezer) (\$0.0175 14# tray)	1,302.00	tray	0.02	23	
<b>Labor:</b>					<b>13,900</b>
Equipment Operator Labor	53.90	hrs	15.84	854	
Non-Machine Labor	1,235.46	hrs	10.56	13,046	

## UC COOPERATIVE EXTENSION

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**Table 2. CONTINUED**

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>Machinery:</b>				<b>1,042</b>	
Fuel-Gas	7.34	gal	3.85	28	
Fuel-Diesel	187.39	gal	3.44	645	
Lube				101	
Machinery Repair				268	
Interest on Operating Capital @ 5.75%				923	
<b>TOTAL OPERATING COSTS/ACRE</b>				<b>37,609</b>	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				<b>7,532</b>	
<b>CASH OVERHEAD COSTS</b>					
Land Rent				3,792	
Liability Insurance				10	
Office Expense				550	
Pipe Rent 60ac				400	
Ranch Supervisor				1,050	
Sanitation Fee				175	
Property Taxes				20	
Property Insurance				16	
Investment Repairs				28	
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>				<b>6,040</b>	
<b>TOTAL CASH COSTS/ACRE</b>				<b>43,650</b>	
<b>NON-CASH OVERHEAD COSTS (Capital Recovery)</b>					
Buildings				64	
Fuel Tanks/Above Ground				4	
Hand Tools				8	
Harvest Carts (90)				8	
Lateral Lines				32	
Shop Tools				24	
Equipment				379	
<b>TOTAL NON-CASH OVERHEAD COSTS</b>				<b>519</b>	
<b>TOTAL COST/ACRE</b>				<b>44,169</b>	
<b>NET RETURNS ABOVE TOTAL COST</b>				<b>972</b>	

UC COOPERATIVE EXTENSION

Ventura County 2011

Table 3. MONTHLY CASH COSTS PER ACRE TO PRODUCE STRAWBERRIES

Beginning 08-10 Ending 07-11	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	TOTAL
Cultural:													
Land Prep: Disc, Plow, Subsoil	550												550
Irrigate: Sprinkle/Layout/Pickup		163		147									310
Land Prep: List Beds		6											6
Land Prep: Shape Beds 2X		10											10
Fertilize: preplant (18-6-8)		409											409
Irrigate: Install Drip Tape 2 line/bed		399											399
Weed: Spray Bed (Goal Tender)		33											33
Plant: Lay Mulch		675											675
Weed: Cultivate		25											25
Weed: Spray Furrow (Goal Tender)		16											16
Irrigate: Cut/Grade Roads/Maintain Roads		76											76
Irrigate: Lay Laterals/Connect Drip		193											193
Irrigate: Test System		59											59
Fumigate (Custom)		1,350											1,350
Plant: Punch Holes			20										20
Plant: Plant/Replant (dip plants)			4,137										4,137
Irrigate: Sprinkle				152									152
Disease: Mildew. Insect: Worm				111			35						146
Insect: Whitefly Admire Drip				137									137
Irrigate: Drip					61	27	27	55	71	88	88		418
Fertilize: Drip (CAN17)					7	7	7	7	7	7	7		51
Fertilize: Drip (0-54-0)						40	40	40	40	40			200
Disease: Mildew, Bot						215	179						394
Insect: Persimilis						133							133
Disease: Bot						36							36
Weed: Hand						95	106	106	106	95	63		570
Disease: Mildew, Bot. Insect: Mite, Worm								230					230
Disease: Mildew, Bot.								123	94				217
Disease: Mildew Insect: Mites								215					215
Disease: Mildew, Bot. Insect: Mite, Lygus									209				209
Disease: Mildew, Bot. Insect: Lygus, FF										182			182
Disease: Mildew, Bot. Insect: WF										136			136
Disease: Bot, Lygus										105			105
Insect: Worms											25		25
Cut Mulch Prior to Harvest												167	167
Year End Cleanup/Crop Removal												500	500
<b>TOTAL Cultural COSTS</b>	<b>550</b>	<b>3,414</b>	<b>4,157</b>	<b>546</b>	<b>68</b>	<b>553</b>	<b>394</b>	<b>776</b>	<b>527</b>	<b>654</b>	<b>184</b>	<b>667</b>	<b>12,491</b>
Harvest:													
Harvest/Record Fresh						1,104	1,802	3,196	4,729	4,016			14,847
Haul/Load Fresh						6	9	53	75	21			163
Harvest Freezer/Haul/Record										1,238	1,998	820	4,056
<b>TOTAL Harvest COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,110</b>	<b>1,811</b>	<b>3,249</b>	<b>4,803</b>	<b>5,275</b>	<b>1,998</b>	<b>820</b>	<b>19,066</b>

## UC COOPERATIVE EXTENSION

Ventura County 2011

Table 3 CONTINUED

Beginning 08-10 Ending 07-11	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	TOTAL
Other:													
Cooler, Fresh						86	171	428	684	570			1,938
Strawberry Commission												91	91
Sales Fresh 8% Gross												3,101	3,101
<b>TOTAL OTHER COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>86</b>	<b>171</b>	<b>428</b>	<b>684</b>	<b>570</b>	<b>0</b>	<b>3,191</b>	<b>5,129</b>
Interest on Operating Capital @ 5.75%	3	19	39	42	42	50	62	83	112	143	153	176	923
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>553</b>	<b>3,433</b>	<b>4,195</b>	<b>587</b>	<b>110</b>	<b>1,799</b>	<b>2,437</b>	<b>4,536</b>	<b>6,126</b>	<b>6,642</b>	<b>2,336</b>	<b>4,854</b>	<b>37,609</b>
<b>CASH OVERHEAD</b>													
Land Rent	316	316	316	316	316	316	316	316	316	316	316	316	3,792
Liability Insurance			10										10
Office Expense	46	46	46	46	46	46	46	46	46	46	46	46	550
Pipe Rent 60ac			400										400
Ranch Supervisor	88	88	88	88	88	88	88	88	88	88	88	88	1,050
Sanitation Fee	15	15	15	15	15	15	15	15	15	15	15	15	175
Property Taxes					10				10				20
Property Insurance						16							16
Investment Repairs	2	2	2	2	2	2	2	2	2	2	2	2	28
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>466</b>	<b>466</b>	<b>876</b>	<b>466</b>	<b>476</b>	<b>482</b>	<b>466</b>	<b>466</b>	<b>476</b>	<b>466</b>	<b>466</b>	<b>466</b>	<b>6,040</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>1,019</b>	<b>3,899</b>	<b>5,071</b>	<b>1,054</b>	<b>586</b>	<b>2,281</b>	<b>2,903</b>	<b>5,002</b>	<b>6,603</b>	<b>7,108</b>	<b>2,802</b>	<b>5,321</b>	<b>43,649</b>

UC COOPERATIVE EXTENSION  
Ventura County 2011  
**Table 4. RANGING ANALYSIS**

COST PER ACRE AT VARYING YIELDS TO PRODUCE STRAWBERRIES

	YIELD (trays/acre)						
	3,422	3,911	4,400	4,889	5,378	5,867	6,356
<b>OPERATING COSTS:</b>							
Cultural	12,491	12,491	12,491	12,491	12,491	12,491	12,491
Harvest (Pick, Haul)	14,571	15,987	17,402	19,066	20,234	21,649	23,065
Other (Cooler, Assessment, Sell)	5,102	5,111	5,120	5,129	5,138	5,148	5,157
Interest on operating capital @ 5.75%	834	864	893	923	952	981	1,011
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>32,998</b>	<b>34,453</b>	<b>35,907</b>	<b>37,609</b>	<b>38,815</b>	<b>40,269</b>	<b>41,724</b>
Total Operating Costs/tray	9.64	8.81	8.16	7.69	7.22	6.86	6.56
<b>CASH OVERHEAD COSTS/ACRE</b>	<b>6,040</b>	<b>6,040</b>	<b>6,040</b>	<b>6,040</b>	<b>6,040</b>	<b>6,040</b>	<b>6,040</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>39,038</b>	<b>40,493</b>	<b>41,947</b>	<b>43,649</b>	<b>44,855</b>	<b>46,309</b>	<b>47,764</b>
Total Cash Costs/tray	11.41	10.35	9.53	8.93	8.34	7.89	7.51
<b>NON-CASH OVERHEAD COSTS/ACRE</b>	<b>519</b>	<b>519</b>	<b>519</b>	<b>519</b>	<b>519</b>	<b>519</b>	<b>519</b>
<b>TOTAL COSTS/ACRE</b>	<b>39,557</b>	<b>41,012</b>	<b>42,466</b>	<b>44,168</b>	<b>45,374</b>	<b>46,829</b>	<b>48,283</b>
Total Costs/tray	11.56	10.49	9.65	9.03	8.44	7.98	7.00

NET RETURNS PER ACRE ABOVE OPERATING COSTS

PRICE(\$/tray)		YIELD (tray/acre)						
Fresh		2,712	3,100	3,488	3,876	4,264	4,652	5,040
	Process	710	811	912	1,013	1,114	1,215	1,316
7.00	6.30	-9,541	-7,643	-5,745	-4,095	-1,949	-51	1,847
8.00	6.30	-6,829	-4,543	-2,257	-219	2,315	4,601	6,887
9.00	6.30	-4,117	-1,443	1,231	3,657	6,579	9,253	11,927
10.00	6.30	-1,405	1,657	4,719	7,533	10,843	13,905	16,967
11.00	6.30	1,307	4,757	8,207	11,409	15,107	18,557	22,007
12.00	6.30	4,019	7,857	11,695	15,285	19,371	23,209	27,047
13.00	6.30	6,731	10,957	15,183	19,161	23,635	27,861	32,087

NET RETURNS PER ACRE ABOVE CASH COSTS

PRICE(\$/tray)		YIELD (tray/acre)						
Fresh		2,712	3,100	3,488	3,876	4,264	4,652	5,040
	Process	710	811	912	1,013	1,114	1,215	1,316
7.00	6.30	-15,581	-13,684	-11,785	-10,136	-7,989	-6,091	-4,193
8.00	6.30	-12,869	-10,584	-8,297	-6,260	-3,725	-1,439	847
9.00	6.30	-10,157	-7,484	-4,809	-2,384	539	3,213	5,887
10.00	6.30	-7,445	-4,384	-1,321	1,492	4,803	7,865	10,927
11.00	6.30	-4,733	-1,284	2,167	5,368	9,067	12,517	15,967
12.00	6.30	-2,021	1,816	5,655	9,244	13,331	17,169	21,007
13.00	6.30	691	4,916	9,143	13,120	17,595	21,821	26,047

NET RETURNS PER ACRE ABOVE TOTAL COSTS

PRICE(\$/tray)		YIELD (tray/acre)						
Fresh		2,712	3,100	3,488	3,876	4,264	4,652	5,040
	Process	710	811	912	1,013	1,114	1,215	1,316
7.00	6.30	-16,100	-14,203	-12,304	-10,655	-8,508	-6,610	-4,712
8.00	6.30	-13,388	-11,103	-8,816	-6,779	-4,244	-1,958	328
9.00	6.30	-10,676	-8,003	-5,328	-2,903	20	2,694	5,368
10.00	6.30	-7,964	-4,903	-1,840	973	4,284	7,346	10,408
11.00	6.30	-5,252	-1,803	1,648	4,849	8,548	11,998	15,448
12.00	6.30	-2,540	1,297	5,136	8,725	12,812	16,650	20,488
13.00	6.30	172	4,397	8,624	12,601	17,076	21,302	25,528



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**Table 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS**

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insur- ance	Taxes	
11	42HP 4WD Tractor	27,830	15	5,418	2,380	129	166	2,675
11	55HP 2WD Tractor	32,269	15	6,282	2,760	149	193	3,102
11	75HP 4WD Tractor	45,000	15	8,761	3,849	208	269	4,326
11	85HP Crawler	45,000	15	8,761	3,849	208	269	4,326
11	90HP 4WD Tractor	46,750	10	13,809	4,870	235	303	5,408
11	Bed Shaper 2 64"R	8,460	15	812	763	36	46	845
11	Blade Rear 3 pt	1,012	12	140	104	4	6	114
11	Drip Machine 1-64"R	3,500	15	336	316	15	19	350
11	Fertilizer Drill 1-64"R 5'	5,000	15	480	451	21	27	500
11	Knife-Sickle 64"	1,250	15	120	113	5	7	125
11	Lister 16'	1,977	15	190	178	8	11	198
11	Mulch Machine 1-64"R	6,500	15	624	586	28	36	649
11	Punch Much 1-64"	5,000	15	480	451	21	27	500
11	Sprayer 20' boom	3,630	15	349	327	15	20	363
11	Trailer-Pipe	2,150	20	112	165	9	11	185
11	Weed Sprayer 100 G	3,947	10	698	449	18	23	490
11	Tool Bar w/tools5'	1,500	10	265	171	7	9	186
11	Strawberry Harvester #1	110,000	3	45,748	25,656	604	779	27,039
11	Truck - 2 Ton	27,380	7	10,386	3,404	146	189	3,739
11	Field Forklift	50,000	12	12,501	4,765	242	313	5,320
11	Strawberry Harvester #2	110,000	3	45,748	25,656	604	779	27,039
TOTAL		538,155		162,020	81,263	2,713	3,501	87,477
40% of new cost*		215,262		64,808	32,505	1,085	1,400	34,991

\*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes	Repairs	
INVESTMENT								
Buildings	49,162	20	0	3,862	191	246	983	5,281
Fuel Tanks (Above Ground)	3,500	20	651	255	14	21	70	359
Hand Tools	5,000	15	500	450	19	28	100	596
Harvest Carts (90)	2,115	5	0	485	7	11	42	545
Lateral Lines	8,468	5	0	1,942	54	42	169	2,208
Shop Tools	15,000	15	0	1,421	51	75	300	1,847
TOTAL INVESTMENT	83,245		1,151	8,415	335	422	1,665	10,836

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Land Rent	65	acre	3,500.00	227,500
Liability Insurance	70	acre	8.39	587
Office Expense	60	acre	550.00	33,000
Pipe Rent 60ac	60	acre	400.00	24,000
Ranch Supervisor	60	acre	1,050.00	63,000
Sanitation Fee	60	acre	175.00	10,500

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**Table 6. HOURLY EQUIPMENT COSTS**

Yr	Description	COSTS PER HOUR								
		Strawberry Hours Used	Total Hours Used	Cash Overhead			Operating		Total Oper.	Total Costs/Hr.
				Capital Recovery	Insur- ance	Taxes	Lube & Repairs	Fuel		
11	42HP 4WD Tractor	302.00	1,066.00	0.89	0.05	0.06	1.54	7.10	8.63	9.64
11	55HP 2WD Tractor	101.00	800.00	1.38	0.07	0.10	2.35	9.29	11.64	13.20
11	75HP 4WD Tractor	86.00	800.00	1.92	0.10	0.13	3.24	12.67	15.91	18.07
11	85HP Crawler	132.00	1,066.00	1.44	0.08	0.10	2.92	14.36	17.28	18.90
11	90HP 4WD Tractor	147.00	1,600.00	1.22	0.06	0.08	3.11	15.20	18.31	19.67
11	Bed Shaper 2 64"R	16.00	133.00	2.29	0.11	0.14	1.15	0.00	1.15	3.69
11	Blade Rear 3 pt	138.00	166.00	0.25	0.01	0.01	0.00	0.00	0.00	0.27
11	Drip Machine 1-64"R	75.00	100.00	1.26	0.06	0.08	0.61	0.00	0.61	2.01
11	Fertilizer Drill 1-64"R 5'	32.00	100.00	1.80	0.08	0.11	0.88	0.00	0.88	2.88
11	Knife-Sickle 64"	17.00	133.00	0.34	0.02	0.02	0.17	0.00	0.17	0.54
11	Lister 16'	9.00	133.00	0.54	0.03	0.03	0.27	0.00	0.27	0.86
11	Mulch Machine 1-64"R	113.00	133.00	1.76	0.08	0.11	0.49	0.00	0.49	2.44
11	Punch Machine 1-64"	41.00	133.00	1.36	0.06	0.08	0.38	0.00	0.38	1.88
11	Sprayer 20' boom	88.00	100.00	1.31	0.06	0.08	0.64	0.00	0.64	2.09
11	Trailer-Pipe	132.00	200.00	0.33	0.02	0.02	0.00	0.00	0.00	0.37
11	Weed Sprayer 100 G	21.00	150.00	1.20	0.05	0.06	0.71	0.00	0.71	2.02
11	Tool Bar w/tools5'	41.00	200.00	0.34	0.01	0.02	0.21	0.00	0.21	0.59
11	Strawberry Harvest #1	946.00	1,000.00	10.26	0.24	0.31	10.16	16.05	26.21	37.03
11	Truck - 2 Ton	220.00	285.00	4.78	0.21	0.27	2.94	7.70	10.64	15.89
11	Field Forklift	55.00	166.00	11.48	0.58	0.75	3.22	0.17	3.39	16.21
11	Strawberry Harvester #2	946.00	1,000.00	10.26	0.24	0.31	10.17	16.05	26.21	37.03

UC COOPERATIVE EXTENSION

Ventura County 2011

**Table 7. OPERATIONS WITH EQUIPMENT**

Operation	Operation Month	Tractor	Implement	Labor Type	Labor Hours	Material	Rate/acre	Unit
Land Prep Disc, Plow, Subsoil	Aug			Custom		Land Prep Disc & Rip	1.00	acre
Irrigate Sprinkle/Layout/Pickup	Sept	42HP 4WD Tractor	Trailer-Pipe	Non-Machine Labor	8.00	Water	3.00	acin
	Nov	42HP 4WD Tractor	Trailer-Pipe	Non-Machine Labor	8.00	Water	2.00	acin
List Beds	Sept	90HP 4WD Tractor	Lister 16'	Equipment Operator Labor	0.19			
Shape Beds 2X	Sept	90HP 4WD Tractor	Bed Shaper 2 64"R	Equipment Operator Labor	0.31			
Fertilize-18-6-8	Sept	75HP 4WD Tractor	Fertilizer Drill 1-64"R 5'	Non-Machine Labor	1.28	18-6-8	500.00	lb
Install Drip Tape 2 line/bed	Sept	55HP 2WD Tractor	Drip Machine 1-64"R	Non-Machine Labor	3.00	T-Tape	16345.00	foot
Weed: Spray Bed (Goal Tender)	Sept	90HP 4WD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.21	Goal Tender	0.75	pint
							12.00	
Lay Mulch	Sept	42HP 4WD Tractor	Mulch Machine 1-64"R	Non-Machine Labor	4.52	Mulch 1.5 mil	8173.00	foot
Weed: Cultivate	Sept	75HP 4WD Tractor	Tool Bar w/tools5'	Equipment Operator Labor	0.83			
Weed: Spray Furrow (Goal Tender)	Sept	90HP 4WD Tractor	Weed Sprayer 100 G	Equipment Operator Labor	0.21	Goal Tender	0.25	pint
Cut/Grade Roads/Maintain Roads	Sept	85HP Crawler	Blade Rear 3 pt	Equipment Operator Labor	2.40			
Lay Laterals/Connect Drip	Sept	75HP 4WD Tractor	Blade Rear 3 pt	Non-Machine Labor	18.00			
Irrigate: Test System	Sept			Non-Machine Labor	4.00	Water	1.00	acin
Fumigate (Custom)	Sept			Custom		Fumigate - Bed: Chloropicrin	1.00	Acre
Punch Holes	Oct	42HP 4WD Tractor	Punch Machine 1-64"	Equipment Operator Labor	0.83			
Plant/Replant (dip plants)	Oct			Non-Machine Labor	60.00	Strawberry Plants	29.50	thou
						Abound	14.00	floz
Irrigate Sprinkle	Nov			Non-Machine Labor	8.00	Water	4.00	acin
Disease: Mildew. Insect: Worm	Nov	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Rally 40W	4.00	oz
						Lorsban 4E	1.00	pint
						Oberon 2SC	16.00	floz
	Feb	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Microthiol Disperss	5.00	lb
						Xentaria	1.00	lb
Insect: Whitefly Admire Drip	Nov			Equipment Operator Labor	0.00	Admire 2 Pro	12.00	floz
Irrigate-Drip	Dec			Non-Machine Labor	1.00	Water	3.00	acin
	Jan			Non-Machine Labor	1.00	Water	1.00	acin
	Feb			Non-Machine Labor	1.00	Water	1.00	acin
	Mar			Non-Machine Labor	2.00	Water	2.00	acin
	Apr			Non-Machine Labor	2.00	Water	3.00	acin
	May			Non-Machine Labor	2.00	Water	4.00	acin
	June			Non-Machine Labor	2.00	Water	4.00	acin
Fertilize-Drip (CAN17)	Dec					CAN 17 17-0-0	7.00	lb N
	Jan					CAN 17 17-0-0	7.00	lb N
	Feb					CAN 17 17-0-0	7.00	lb N
	Mar					CAN 17 17-0-0	7.00	lb N
	Apr					CAN 17 17-0-0	7.00	lb N
	May					CAN 17 17-0-0	7.00	lb N
	June					CAN 17 17-0-0	7.00	lb N

## UC COOPERATIVE EXTENSION

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Table 7. CONTINUED pg. 2

Operation	Operation Month	Tractor	Implement	Labor Type	Labor Hours	Material	Rate/acre	Unit
Fertilize-Drip (0-54-0)	Jan					0-54-0 (Phosphoric Acid)	2.00	gal
	Feb					0-54-0 (Phosphoric Acid)	2.00	gal
	Mar					0-54-0 (Phosphoric Acid)	2.00	gal
	Apr					0-54-0 (Phosphoric Acid)	2.00	gal
	May					0-54-0 (Phosphoric Acid)	2.00	gal
Disease: Mildew Bot	Jan	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Microthiol Disperss	5.00	lb
						Elevate 50WDG	1.50	lb
	Jan	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Switch 62.5 WG	14.00	oz
						Captan 50W	3.00	lb
	Feb	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Switch 62.5 WG	14.00	oz
						Pristine	23.00	oz
Insects; Persimilis	Jan			Non-Machine Labor	1.20	Persimilis	20.00	thou
Disease: Bot	Jan	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Procure	8.00	oz
Weed: Hand	Jan			Non-Machine Labor	9.00			
	Feb			Non-Machine Labor	10.00			
	Mar			Non-Machine Labor	10.00			
	Apr			Non-Machine Labor	10.00			
	May			Non-Machine Labor	9.00			
	June			Non-Machine Labor	6.00			
Disease: Mildew Bot. Ins:MiteWrm	Mar	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Elevate 50WDG	1.50	lb
						Captan 50W	3.00	lb
						Acramite 50WS	1.00	lb
						Radiant	6.00	floz
Disease: Mildew Bot.	Mar	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Quintec	6.00	floz
						Switch 62.5 WG	14.00	oz
	Apr	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Microthiol Disperss	5.00	lb
						Elevate 50WDG	1.50	lb
Disease: Mildew Insects: Mites	Mar	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Pristine	23.00	oz
						Agri-Mek 0.15 EC	16.00	floz
Disease: Mild Bot. Ins: Mite Lyg	Apr	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Quintec	6.00	floz
						Captan 50W	3.00	lb
						Agri-Mek 0.15 EC	16.00	floz
						Rimon	10.00	floz
Disease: Mildew Bot. Ins: Lyg FF	May	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Microthiol Disperss	5.00	lb
						Switch 62.5 WG	14.00	oz
						Rimon	10.00	floz
						Brigade WSB	20.00	oz
Disease: Mildew Bot. Ins: WF	May	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Quintec	6.00	floz
						Procure	8.00	oz
						Malathion 5EC	2.00	pint
						Brigade WSB	20.00	oz

UC COOPERATIVE EXTENSION

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Table 7. CONTINUED pg. 3

Operation	Operation Month	Tractor	Implement	Labor Type	Labor Hours	Material	Rate/acre	Unit	
Disease: Bot, Lygus	May	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Elevate 50WDG	1.50	lb	
						Rimon	10.00	floz	
Insect: Worms	June	90HP 4WD Tractor	Sprayer 20' boom	Equipment Operator Labor	0.12	Xentaria	1.00	lb	
Cut Mulch Prior to Harvest	July	55HP 2WD Tractor	Knife-Sickle 64"	Non-Machine Labor	15.00				
Year End Cleanup/Crop Removal	July			Equipment Operator Labor	0.00	Crop Removal	1.00	acre	
Harvest/Record Fresh	Jan		Strawberry Harvest #1	Non-Machine Labor	34.20	Crate/Basket/Wire	85.00	Jan	
	Jan		Strawberry Harvester #2	Non-Machine Labor	34.20	Crate/Basket/Wire	86.00	Jan	
	Feb		Strawberry Harvest #1	Non-Machine Labor	51.30	Crate/Basket/Wire	171.00	Feb	
	Feb		Strawberry Harvester #2	Non-Machine Labor	51.30	Crate/Basket/Wire	171.00	Feb	
	Mar		Strawberry Harvest #1	Non-Machine Labor	73.28	Crate/Basket/Wire	427.00	Mar	
	Mar		Strawberry Harvester #2	Non-Machine Labor	73.28	Crate/Basket/Wire	428.00	Mar	
	Apr		Strawberry Harvester #2	Non-Machine Labor	103.00	Crate/Basket/Wire	684.00	Apr	
	Apr		Strawberry Harvest #1	Non-Machine Labor	103.00	Crate/Basket/Wire	684.00	Apr	
	May		Strawberry Harvest #1	Non-Machine Labor	85.50	Crate/Basket/Wire	570.00	May	
	May		Strawberry Harvester #2	Non-Machine Labor	85.50	Crate/Basket/Wire	570.00	May	
	Haul/Load Fresh	Jan		Truck - 2 Ton	Equipment Operator Labor	0.12			Jan
		Jan		Field Forklift	Equipment Operator Labor	0.16			Jan
		Feb		Truck - 2 Ton	Equipment Operator Labor	0.24			Feb
		Feb		Field Forklift	Equipment Operator Labor	0.16			Feb
Mar			Truck - 2 Ton	Non-Machine Labor	3.33			Mar	
Mar			Field Forklift	Equipment Operator Labor	0.16			Mar	
Apr			Truck - 2 Ton	Non-Machine Labor	4.57			Apr	
Apr			Field Forklift	Equipment Operator Labor	0.16			Apr	
May			Truck - 2 Ton	Equipment Operator Labor	0.79			May	
May			Field Forklift	Equipment Operator Labor	0.08			May	
Harvest Freezer/Haul/Record		May		Strawberry Harvest #1	Non-Machine Labor	51.30			May
		May		Strawberry Harvester #2	Non-Machine Labor	51.30			May
		May		Truck - 2 Ton	Equipment Operator Labor	0.65			May
		May		Field Forklift	Equipment Operator Labor	0.07			May
	June		Strawberry Harvest #1	Non-Machine Labor	83.00			June	
	June		Strawberry Harvester #2	Non-Machine Labor	83.00			June	
	June		Truck - 2 Ton	Equipment Operator Labor	0.91			June	
	June		Field Forklift	Equipment Operator Labor	0.16			June	
	July		Strawberry Harvest #1	Non-Machine Labor	34.20			July	
	July		Strawberry Harvester #2	Non-Machine Labor	34.20			July	
	July		Truck - 2 Ton	Equipment Operator Labor	0.16			July	
	July		Field Forklift	Equipment Operator Labor	0.16			July	
	Cooler Fresh	Jan					Cool Fresh Strawberries	171.00	tray
		Feb					Cool Fresh Strawberries	342.00	tray
Mar						Cool Fresh Strawberries	855.00	tray	
Apr						Cool Fresh Strawberries	1368.00	tray	
May						Cool Fresh Strawberries	1140.00	tray	

UC COOPERATIVE EXTENSION

Ventura County 2011

**Table 7. CONTINUED pg. 4**

Operation	Operation Month	Tractor	Implement	Labor Type	Labor Hours	Material	Rate/ acre	Unit
Strawberry Commission	July					Strawberry Fresh	3876.00	tray
						Strawberry Freezer	1013.00	tray
Sales Fresh 8% Gross	July					Sales Commission 8%	3876.00	tray