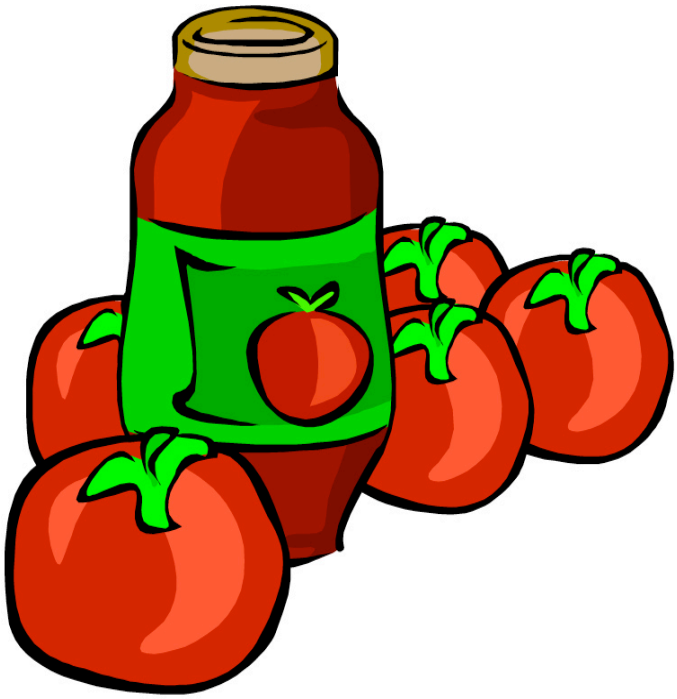
UNIVERSITY OF CALIFORNIA – COOPERATIVE EXTENSION

2007

SAMPLE COSTS TO PRODUCE

PROCESSING TOMATOES



DIRECT SEEDED
IN THE
SACRAMENTO VALLEY

Prepared by:

Gene Miyao	UC Cooperative Extension Farm Advisor, Yolo, Solano, & Sacramento Counties
Karen M. Klonsky	UC Cooperative Extension Specialist, Department of Agricultural and Resource Economics, UC Davis
Pete Livingston	UC Cooperative Extension Staff Research Associate, Department of Agricultural and Resource Economics, UC Davis

UC COOPERATIVE EXTENSION

SAMPLE COSTS TO PRODUCE PROCESSING TOMATOES
DIRECT SEEDED
In the Sacramento Valley – 2007

CONTENTS

INTRODUCTION

The sample costs to produce direct seeded processing tomatoes in the Sacramento Valley are presented in this study. This study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on production practices considered typical for the crop and area, but will not apply to every situation. Sample costs for labor, materials, equipment, and custom services are based on current figures. Blank columns, "*Your Costs*", in Tables 1 and 2 are provided to enter actual costs of an individual farm operation.

The hypothetical farm operations, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of the calculations used in the study, call the Department of Agricultural and Resource Economics, University of California, Davis, (530) 752-2414 or the local UC Cooperative Extension office. An additional cost of production study for transplanted processing tomatoes grown in this region is also available: "*Sample Costs to Produce Processing Tomatoes, Transplanted, in the Sacramento Valley - 2007*".

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural Economics, UC Davis, (530) 752-1517. Current studies can be downloaded from the department website http://coststudies.ucdavis.edu or obtained from selected county UC Cooperative Extension offices.

ASSUMPTIONS

The following assumptions refer to tables 1 to 8 and pertain to sample costs and returns to produce direct seeded processing tomatoes in the Sacramento Valley. Practices described are not recommendations by the University of California, but represent production practices considered typical of a well-managed farm for this crop and area. Some of the costs and practices listed will not be applicable to all situations nor used during every production year and/or additional ones not indicated may be needed. Processing tomato cultural practices and material input costs vary by grower and region, and can be significant. The practices and inputs used in the cost study serve as a guide only. The costs are shown on an annual, per acre basis unless noted otherwise. **The use of trade names 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**.

Farm. The hypothetical field and row-crop farm consists of 2,900 non-contiguous acres of rented land. Tomatoes are direct seeded on 270 acres (30% of the tomato acreage) and transplanted on 630 acres (70% of the tomato acreage) for a total of 900 acres. Two thousand acres are planted to other rotational crops including alfalfa hay, field corn, safflower, sunflower, dry beans and/or wheat. For transplanted tomato operations, please refer to the study titled, "*Sample Costs to Produce Processing Tomatoes, Transplanted, in the Sacramento Valley - 2007*". The grower also owns various investments such as a shop and an equipment yard. In this report, practices completed on less than 100% of the acres are denoted as a percentage of the total tomato crop acreage.

CULTURAL PRACTICES AND MATERIAL INPUTS

Land Preparation. Primary tillage which includes laser leveling, discing, rolling, subsoiling, land planing, and listing beds is done from August through early November in the year preceding planting. To maintain surface grade, 4% of the acres are laser leveled each year. Fields are stubble-disced and rolled (using a rice roller). Fields are subsoiled in two passes to a 30-inch depth and rolled. A medium-duty disk with a flat roller following is used. Ground is smoothed in two passes with a triplane. Beds on five-foot centers are made with a six-bed lister, and then formed with a bed-shaper.

Planting. Planting is spread over a two-month period (February through March) to meet contracted weekly delivery schedules at harvest. The hybrid seed and the transplants are both planted in a single line per bed. Direct seed is for the early season and precedes transplanting. Of the direct seeded tomatoes 10% of the acreage or 27 acres will be reseeded due to stand problems. To aid stand establishment in the direct seeded acres, mechanical crust breaking using a spike roller is done on 30% or 81 of the acres.

Fertilization. In the fall, ahead of listing beds, soil amendment as gypsum at 3.0 tons per acre is custom broadcast spread on 20% of the acres. After listing, as part of the bed shaping operation, 11-52-0 is shanked into the beds at 100 pounds per acre. At planting, a starter fertilizer, 8-24-6 plus zinc, is banded below the seed line at 15 gallons of material per acre. Nitrogen fertilizer, UN-32 at 150 pounds of N per acre is sidedress-banded at layby. Additional N is applied under special needs on 20% of acres as CAN 17 at 100 pounds of product per acre as a sidedress.

Irrigation. In this study, water is calculated to cost $30.61 per acre-foot or $2.55 per acre-inch and is a combination of 1/2 well water ($45.71 per acre-foot) and 1/2 canal delivered surface water ($15.50 per acre-foot). The irrigation costs shown in Tables 1 and 3 include water, pumping, and labor charges. To establish the direct seeded crop, the field is sprinkler irrigated twice over 100% of the acreage (270), using mainlines, hand moved sprinklers, and portable booster pumps. After layby, fields are sprinkler

irrigated 1 time more. Fields are all chiseled to 12 inches deep in the furrow. Eight furrow irrigations are applied during the season. In this study 3.5 acre-feet (42 acre-inches) is applied to the crop – 3 acre-inches by sprinkler and 39 acre-inches by furrow. Although sub-surface drip irrigation is gaining in popularity, it is not used in this study.

Pest Management. The pesticides and rates mentioned in this cost study are listed in *Integrated Pest Management for Tomatoes* and *UC Pest Management Guidelines, Tomato*. For more information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at www.ipm.ucdavis.edu. Written recommendations are required for many pesticides and are made by licensed pest control advisors. For information and pesticide use permits, contact the local county agricultural commissioner's office.

Weeds. Beginning in January, Roundup plus Goal is sprayed on the fallow beds to control emerged weeds and repeated later with Roundup only. Before planting, the beds are cultivated twice to control weeds and to prepare the seedbed.

Power-driven mulcher is used to condition beds. On 30% of the acres (81 acres), ahead of planting, Vapam is subsurface bladed in a 10-inch band on the direct seeded acres and capped with soil. Later, a sled-mounted scraper decaps the soil mound. On another 60% (162 acres) of the acreage, a pre-emergent herbicide, Devrinol is sprayed in a 20-inch band in front of a rotary tiller/incorporator. Matrix is sprayed twice on 16-inch bands. At layby, trifluralin is applied at 1 pint per acre as a broadcast and power tilled. To control nutsedge, Dual Magnum at 1.5 pints of product per acre is added to trifluralin as a tank-mix and applied to 30% or 81 acres.

A combination of hand weeding and mechanical cultivation is also used for weed control. The crop is mechanically cultivated with sled-mounted cultivators five times during the season. A contract labor crew hand thins and weeds the seedling tomatoes. A second hand weeding is done on all of the acres.

Insects and Diseases. The primary insect pests of seedlings included in this study are flea beetle, darkling ground beetle, and cutworm. Foliage and fruit feeders included are tomato fruitworm, various armyworm species, russet mite, stinkbug, and potato aphid. Diseases are primarily bacterial speck, late blight, and blackmold fruit rot.

After seedling emergence, Sevin 80 spray for flea beetle control is applied to 10% or 27 acres. Sevin 5 pellets for darkling ground beetle and/or cutworm control is applied to 50% of the acres. A Kocide and Dithane tank mix for bacterial speck is applied to 30% of the acres. All of the above applications are made by ground. The following applications are made by aircraft. Sulfur dust for russet mite control is applied to 70% of the acres. Asana for general insect control is applied to 40% of the acres. Confirm for worm control is applied to 100% of the acres. Bravo is applied in June to 5% of the acres for late blight control and again in September as a fruit protectant fungicide on 15% of the acres.

Fruit Ripener. Ethrel, a fruit ripening agent, is applied by ground before harvest to 5% of the acres.

Harvest. The fruit is mechanically harvested using one primary harvester for 90% of the acres and one older harvester for special harvest situations and as a backup to the primary harvester. Typically growers with this acreage of processing tomatoes will also own tractors, trailer dollies, generator-light machines, and harvest support equipment. Four manual sorters, a harvester driver, and two bulk-trailer tractor operators are used per harvester. A seasonal average of 1.5 loads per hour at 25 tons per load are harvested with two (one day and one night) shifts of 10 hours each. Harvest efficiency includes down

time, scheduled daily breaks, and transportation between fields. The processor pays the transportation cost of the tomatoes from the field to the processing plant.

Costs for harvest operations are shown in Tables 1, 3 and 8; the equipment used and costs are listed in Tables 4 and 5. If tomatoes are custom harvested, harvest expenses are subtracted from harvest costs in Tables 1 and 3, and 8 with custom harvest charges added. The equipment for harvest operations is then subtracted from investment costs in Table 4. Growers may choose to own harvesting equipment, purchased either new or used, or hire a custom harvester. Many factors are important in deciding which harvesting option a grower uses. The options are discussed in *"Acquiring Alfalfa Hay Harvest Equipment: A Financial Analysis of Alternatives"*.

Yields. Average annual tomato crop yields in the Sacramento Valley over the past ten years ranged from 26.34 to 43.00 tons per acre; weighted county average yields from 1996 to 2005 are shown in Table A. In this study, a yield of 35 tons per acre is used.

Table A. Weighted Average Yield and Price †

Year	Tons per acre	$ per ton
2005	34.30	49.81
2004	40.51	48.06
2003	33.74	48.82
2002	37.64	48.37
2001	35.23	48.49
2000	34.44	49.54
1999	34.58	58.68
1998	29.90	53.68
1997	33.24	50.85
1996	33.41	52.75
Annualized	**34.70**	**50.90**

† Source: California Agricultural Commissioner Crop Reports.

Returns. Customarily, growers produce tomatoes under contract with various food processing companies. Average prices in the Sacramento Valley ranged from $45.66 to $62.00 per ton over the last 10 years and are shown in Table A. This study uses a price of $63.00.

Assessments. Under a state marketing order a mandatory assessment fee is collected and administered by the Processing Tomato Advisory Board (PTAB). The assessment pays for inspecting and grading fruit, and varies between inspection stations. In Yolo County, inspection fees range from $6.36 to $8.90 per load with an average of $6.75. Growers and processors share equally in the fee; growers pay $3.38 per load in this study. A truckload is assumed to be 25 tons. Tomato growers are also assessed a fee for the Curly Top Virus Control Program (CTVCP) administered by the California Department of Food and Agriculture (CDFA). Growers in Yolo County (District 111) are charged $0.019 per ton. Additionally, several voluntary organizations assess member growers. California Tomato Growers Association (CTGA) represents growers' interest in negotiating contract prices with processors. CTGA membership charges are $0.17 per ton. The California Tomato Research Institute funds projects for crop improvement. CTRI membership charges are $0.07 per ton.

Labor. Basic hourly wages for workers are $10.07 and $8.00 per hour for machine operators and non-machine (irrigators and manual laborers) workers, respectively. Adding 48% for the employer's share of federal and state payroll taxes, insurance and other benefits raises the total labor costs to $14.90 per hour for machine operators and $11.84 per hour for non-machine labor. The labor for operations involving machinery is 20% higher than the field operation time, to account for equipment set up, moving, maintenance, and repair. The current minimum wage is $7.50 per hour. On January 1, 2008 it will increase to $8.00 per hour and this cost study uses it to account for a known change.

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, share rent, supervisors' salaries, field sanitation, crop

insurance, and investment repairs. Employee benefits, insurance, and payroll taxes are included in labor costs and not in overhead. Cash overhead costs are shown in Tables 1, 2, 3 and 4.

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.

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 10.00% per year. A nominal interest rate is the typical market cost of borrowed funds.

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 0.714% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $1,363 for the entire farm or $0.47 per acre.

Office Expense. Office and business expenses are estimated at $17.24 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, office and shop utilities, and miscellaneous administrative expenses.

Share Rent. Rent arrangements will vary. The tomato land in this study is leased on a share-rent basis with the landowner receiving 12% of the gross returns. The land rented includes developed wells and irrigation system.

Field Supervisors' Salary. Supervisor salaries for tomatoes, including insurance, payroll taxes, and benefits, and are $94,500 per year for two supervisors. Two thirds of the supervisors' time is allocated to tomatoes. The costs are $70.00 per acre. Any returns above total costs are considered returns on risk and investment to management (or owners).

Field Sanitation. Sanitation services provide portable toilet and washing facilities for the ranch during the crop season. The cost includes delivery and weekly service. Costs will vary depending upon the crops and number of portable units required.

Crop Insurance. The insurance protects the grower from crop losses due to adverse weather conditions, fire, unusual diseases and/or insects, wildlife, earthquake, volcanic eruption, and failure of the irrigation system. The grower can choose the protection level at 50% to 75% of production history or county yields. In this study, no level is chosen. The cost shown in the study is the average of the costs paid by the growers who reviewed this study.

NON-CASH OVERHEAD

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Although farm equipment used for processing tomatoes may be purchased new or used, this study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to reflect a mix of new and used equipment. Annual ownership costs (equipment and investments) are shown in Tables 1, 2, 3, and 5. They represent the capital recovery cost for investments on an annual per acre basis.

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;

$$\left[\left(\underset{\text{Price}}{Purchase} - \underset{Value}{Salvage}\right) \times \left(\underset{Factor}{\overset{Capital}{\text{Recovery}}}\right)\right] + \left[\underset{Value}{Salvage} \times \underset{Rate}{Interest}\right]$$

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery 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 for land is equal to the purchase price because land does not depreciate. The purchase price and salvage value for certain equipment and investments are shown in Table 5.

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 and the life of the equipment.

Interest Rate. The interest rate of 7.25% used to calculate capital recovery cost is the effective long term interest rate in January 2007. The interest rate is provided by a local farm lending agency and will vary according to risk and amount of loan.

Equipment Costs. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Some of the cost factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication. 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 5 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.

Repairs, Fuel and Lube. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum Power-Take-Off horsepower, and fuel type. Prices for on-farm delivery of diesel and unleaded gasoline are $2.30 and $2.80 per gallon, respectively.

Irrigation System. Irrigation equipment owned by the grower consists of main lines, hand moved sprinklers, portable pumps, V-ditchers, and siphon tubes.

Risk. Risks associated with processing tomato production are not assigned a production cost. All acres are contracted prior to harvest and all tonnage-time delivery contracts are assumed to have been met. No excess acres are grown to fulfill contracts. While this study makes an effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks which affect the profitability and economic viability of processing tomato production.

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

REFERENCES

American Society of Agricultural Engineers. 2003. *American Society of Agricultural Engineers Standards Yearbook*. Russell H. Hahn and Evelyn E. Rosentreter (ed.) St. Joseph, Missouri. 41st edition.

Barker, Doug. *California Workers' Compensation Rating Data for Selected Agricultural Classifications as of January 2007.* California Department of Insurance, Rate Regulation Branch.

Boehlje, Michael D., and Vernon R. Eidman. 1984. *Farm Management*. John Wiley and Sons. New York, NY.

Blank, Steve, Karen Klonsky, Kim Norris, and Steve Orloff. 1992. *Acquiring Alfalfa Hay Harvest Equipment: A Financial Analysis of Alternatives*. University of California. Oakland, CA. Giannini Information Series No. 92-1. Internet accessed June, 2006. http://giannini.ucop.edu/InfoSeries/921-HayEquip.pdf

CDFA-California County Agricultural Commissioners, *California Annual Agricultural Crop Reports.* 1997 – 2006. California Department of Food and Agricultural, Sacramento, CA. Internet accessed September, 2006, http://www.nass.usda.gov/ca/bul/agcom/indexcac.htm

Integrated Pest Management Education and Publications. 2005. "UC Pest Management Guidelines, Tomatoes." In M. L. Flint (ed.) *UC IPM Pest Management Guidelines*. University of California. Division of Agriculture and Natural Resources. Oakland, CA. Publication 3339. Internet accessed April, 2006. http://www.ipm.ucdavis.edu/PMG/selectnewpest.tomatoes.html

Miyao, Gene, Karen M. Klonsky, and Richard L. De Moura. 2001. *Sample Costs to Produce Processing Tomatoes in Yolo County – 2001.* University of California, Cooperative Extension. Department of Agricultural and Resource Economics. Davis, CA. Internet accessed April, 2006. http://www.agecon.ucdavis.edu/uploads/cost_return_articles/tomssv2001.pdf

Miyao, Gene, Karen M. Klonsky, and Pete Livingston. 2007. *Sample Costs to Produce Processing Tomatoes, Transplanted, in the Sacramento Valley – 2007.* University of California, Cooperative Extension. Department of Agricultural and Resource Economics. Davis, CA. Internet accessed, 2007. http://coststudies.ucdavis.edu

Statewide Integrated Pest Management Project. 1998. *Integrated Pest Management for Tomatoes*. Fourth Edition. University of California. Division of Agriculture and Natural Resources. Oakland, CA. Publication 3274. Internet accessed April, 2006. http://www.ipm.ucdavis.edu/PMG/selectnewpest.tomatoes.html

USDA-ERS. 2007. *Farm Sector: Farm Financial Ratios*. Agriculture and Rural Economics Division, ERS. USDA. Washington, DC. http://usda.mannlib.cornell.edu/reports/nassr/price/zap-bb/agpran04.txt; Internet accessed January. 2007.

For information concerning the above or other University of California publications, contact UC DANR Communications Services at 800-994-8849, online at http://anrcatalog.ucdavis.edu/InOrder/Shop/Shop.asp, or your local county UC Cooperative Extension office.

Table 1.

UC COOPERATIVE EXTENSION
COSTS PER ACRE TO PRODUCE TOMATOES
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

Labor Rate: $14.90/hr. machine labor
$11.84/hr. non-machine labor

Interest Rate:10.00%
Yield per Acre: 35.0 Ton

Operation	Operation Time (Hrs/A)	Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
		---------- Cash and Labor Costs per Acre ----------					
Preplant							
Laser Level - 4% of Acreage	0.00	0	0	0	7	7	
Land Preparation - Stubble Disc & Roll	0.14	3	7	0	0	9	
Land Preparation - Subsoil & Roll 2X	0.42	7	37	0	0	44	
Land Preparation - Disc & Roll	0.15	3	13	0	0	16	
Land Preparation - Triplane 2X	0.36	6	15	0	0	22	
Land Preparation - Apply Gypsum on 20% of Acreage	0.00	0	0	25	1	26	
Land Preparation - List Beds	0.10	2	4	0	0	6	
Land Preparation - Shape & Fertilize	0.25	4	9	17	0	30	
Weed Control - Roundup & Goal	0.08	1	2	8	0	12	
Weed Control - Roundup	0.08	1	2	9	0	12	
Weed Control - Cultivate 2X	0.26	9	13	0	0	22	
TOTAL PREPLANT COSTS	1.83	37	102	59	8	206	
Cultural:							
Power Mulch Beds	0.20	4	7	0	0	10	
Apply Fumigant - Vapam on 30% of Acreage	0.07	1	2	19	0	22	
Weed Control - Apply Devrinol on 60% of Acreage	0.20	4	6	12	0	22	
Decap Vapam Beds	0.06	1	2	0	0	3	
Plant Seed & Fertilize	0.40	7	11	201	0	220	
Break Bed Crust on 30% of Acreage	0.10	2	3	0	0	4	
Weed Control - Apply Matrix 2X	0.40	7	9	15	0	32	
Replant 10% Of Acreage - No Additional Fertilizer	0.04	1	1	17	0	19	
Insect Control - Sevin Bait on 50% of Acreage	0.06	1	1	2	0	5	
Fertilize - Sidedress 20% of Acreage	0.06	1	2	2	0	5	
Weed Control - Cultivate 5X	1.25	22	33	0	0	55	
Weed Control - Thin & Hand Hoe	0.00	0	0	0	150	150	
Insect Control - Sevin Spray on 10% of Acreage	0.01	0	0	1	0	1	
Disease Control - Bacterial Speck on 30% of Acreage	0.03	0	1	4	0	5	
Fertilize - Layby UN-32	0.33	6	11	65	0	82	
Chisel Furrow	0.25	4	8	0	0	12	
Weed Control - Treflan (& Dual on 30% of Acreage)	0.33	6	11	12	0	29	
Irrigate - Sprinklers 3X	6.60	78	0	36	0	114	
Open Ditches	0.04	1	2	0	0	2	
Irrigate - Furrow 8X	10.00	118	0	99	0	218	
Disease Control - Late Blight on 5% of Acreage	0.00	0	0	1	0	2	
Close Ditches	0.04	1	2	0	0	2	
Mite Control - Sulfur on 70% of Acreage	0.00	0	0	5	5	10	
Weed Control - Hand Hoe	0.00	0	0	0	50	50	
Train Vines	0.50	9	12	0	0	21	
Insect Control - Aphids on 40% of Acreage	0.00	0	0	4	3	7	
Disease Control - Fruit Rot on 15% of Acreage	0.00	0	0	3	1	4	
Insect Control - Worms	0.00	0	0	20	5	26	
Fruit Ripener - Ethrel on 5% of Acreage	0.08	1	2	2	0	5	
Pickup Truck Use (2 pickups)	0.32	11	7	0	0	18	
ATV Use	0.32	6	0	0	0	6	
TOTAL CULTURAL COSTS	21.67	293	132	522	213	1,160	
Harvest:							
Open Harvest Lane on 8% of Acreage	0.10	2	3	0	0	5	
Harvest	0.93	61	155	0	0	216	
In Field Hauling	0.93	33	26	0	0	58	
TOTAL HARVEST COSTS	1.96	95	184	0	0	279	
Assessment:							
Assessments/Fees	0.00	0	0	14	0	14	
TOTAL ASSESSMENT COSTS	0.00	0	0	14	0	14	
Interest on Operating Capital @ 10.00%						78	
TOTAL OPERATING COSTS/ACRE		425	417	595	221	1,737	

CASH OVERHEAD:			
Liability Insurance			0
Office Expense			17
Field Sanitation			0
Crop Insurance			25
Field Supervisor Salaries (2)			70
Land Rent @ 12% Of Gross Returns			265
Property Taxes			6
Property Insurance			5
Investment Repairs			5
TOTAL CASH OVERHEAD COSTS			393
TOTAL CASH COSTS/ACRE			2,131
NON-CASH OVERHEAD:			
	Per producing	-- Annual Cost --	
Investment	Acre	Capital Recovery	
Shop Building	25	2	2
Storage Building	10	1	1
Fuel Tanks & Pumps	8	1	1
Shop Tools	5	0	0
Booster Pumps	21	3	3
Sprinkler Pipe	39	5	5
Main Line Pipe - 10"	19	3	3
Semi Truck & Lowbed Trailer	12	1	1
Implement Carrier	6	1	1
Truck-Service - 2 Ton	13	3	3
Pipe Trailers	12	2	2
Fuel Wagons	1	0	0
Closed Mix System	2	0	0
Siphon Tubes	4	0	0
Generators & Light	3	1	1
Equipment	900	130	130
TOTAL NON-CASH OVERHEAD COSTS	1,078	153	153
TOTAL COSTS/ACRE			2,283

Table 2.

UC COOPERATIVE EXTENSION
COSTS and RETURNS PER ACRE to PRODUCE TOMATOES
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

Labor Rate: $14.90/hr. machine labor
$11.84/hr. non-machine labor

Interest Rate: 10.00%
Yield per Acre: 35.0 Ton

	Quantity/Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Processing Tomatoes	35.0	Ton	63.00	2,205	
TOTAL GROSS RETURNS FOR PROCESSING TOMATOES				2,205	
OPERATING COSTS					
Custom:					
Laser Level	0.04	Acre	165.00	7	
Gypsum Application	0.20	Ton	6.00	1	
Air Application Spray	1.70	Acre	5.75	9	
Air Application Dust	0.70	Acre	6.50	5	
Fertilizer:					
Gypsum	0.60	Ton	42.00	25	
11-52-0	100.00	Lb	0.171	17	
8-24-6	15.00	Gal	1.73	26	
Zinc Chelate 6%	2.00	Pint	1.15	2	
CAN 17	20.00	Lb	0.11	2	
UN-32	150.00	Lb N	0.43	65	
Herbicide:					
Roundup Ultra	2.50	Pint	5.97	15	
Goal 1.6E	3.00	FlOz	0.74	2	
Devrinol 2E	0.20	Gal	61.16	12	
Matrix DF	1.07	Oz	14.23	15	
Treflan HP	1.00	Pint	3.48	3	
Dual Magnum	0.45	Pint	19.37	9	
Fumigant:					
Vapam	3.75	Gal	4.98	19	
Seed:					
Tomato Seed - Thousand	57.20	Thou	3.33	190	
Insecticide:					
Sevin 5 Pellets	3.00	Lb	0.77	2	
Sevin 80 S	0.13	Lb	6.56	1	
Bravo Weatherstik	0.49	Pint	9.17	4	
Warrior T	1.54	FlOz	2.79	4	
Confirm	12.00	FlOz	1.70	20	
Contract:					
Contract Labor	20.00	Hour	9.99	200	
Fungicide:					
Kocide 101	0.60	Lb	2.55	2	
Dithane DF	0.60	Lb	3.49	2	
Sulfur, Dust 98%	28.00	Lb	0.18	5	
Irrigation:					
Water	42.00	AcIn	2.55	107	
Pump - Fuel, Lube & Repairs	3.00	Acre	9.52	29	
Growth Regulator:					
Ethrel	0.03	Gal	56.38	2	
Assessment:					
CDFA-CTVP	35.00	Ton	0.019	1	
CTGA	35.00	Ton	0.17	6	
CTRI	35.00	Ton	0.07	2	
PTAB	35.00	Ton	0.135	5	
Labor (machine)	11.33	Hrs	14.90	169	
Labor (non-machine)	21.68	Hrs	11.84	257	
Fuel - Gas	1.85	Gal	2.80	5	
Fuel - Diesel	91.68	Gal	2.30	211	
Lube				32	
Machinery repair				169	
Interest on Operating Capital @ 10.00%				78	
TOTAL OPERATING COSTS/ACRE				1,737	
NET RETURNS ABOVE OPERATING COSTS				468	

CASH OVERHEAD COSTS:	
Liability Insurance	0
Office Expense	17
Field Sanitation	0
Crop Insurance	25
Field Supervisor Salaries (2)	70
Land Rent @ 12% Of Gross Returns	265
Property Taxes	6
Property Insurance	5
Investment Repairs	5
TOTAL CASH OVERHEAD COSTS/ACRE	393
TOTAL CASH COSTS/ACRE	2,131
NON-CASH OVERHEAD COSTS (CAPITAL RECOVERY):	
Shop Building	2
Storage Building	1
Fuel Tanks & Pumps	1
Shop Tools	0
Booster Pumps	3
Sprinkler Pipe	5
Main Line Pipe - 10"	3
Semi Truck & Lowbed Trailer	1
Implement Carrier	1
Truck-Service - 2 Ton	3
Pipe Trailers	2
Fuel Wagons	0
Closed Mix System	0
Siphon Tubes	0
Generators & Light	1
Equipment	130
TOTAL NON-CASH OVERHEAD COSTS/ACRE	153
TOTAL COSTS/ACRE	2,283
NET RETURNS ABOVE TOTAL COSTS	-78

Table 3.

UC COOPERATIVE EXTENSION
MONTHLY CASH COST PER ACRE TO PRODUCE TOMATOES
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

Beginning SEP 06 Ending SEP 07	SEP 06	OCT 06	NOV 06	DEC 06	JAN 07	FEB 07	MAR 07	APR 07	MAY 07	JUN 07	JUL 07	AUG 07	SEP 07	TOTAL
Preplant:														
Land Prep - Laser Level - 4% of Acreage	7													7
Land Prep - Stubble Disc & Roll	9													9
Land Prep - Subsoil & Roll 2X	44													44
Land Prep - Disc & Roll X	16													16
Land Prep - Triplane 2X	22													22
Land Prep - Apply Gypsum on 20% of Acreage	26													26
Land Prep - List Beds		6												6
Land Prep - Shape & Fertilize		30												30
Weed Control - Roundup & Goal					12									12
Weed Control - Roundup					12									12
Weed Control - Cultivate 2X					22									22
TOTAL PREPLANT COSTS	123	36			47									206
Cultural:														
Power Mulch Beds							10							10
Apply Fumigant - Vapam on 30% of Acreage							22							22
Weed Control - Apply Devrinol on 30% of Acreage							22							22
Decap Vapam Beds							3							3
Plant Seed & Fertilize								220						220
Break Bed Crust								4						4
Weed Control - Apply Matrix 2X								32						32
Replant 10% of Acreage - No Additional Fertilizer								19						19
Insect Control - Sevin Bait on 50% of Acreage								5						5
Fertilize - Sidedress 20% of Acreage								5						5
Weed Control - Cultivate 5X								44			11			55
Weed Control - Thin & Hand Hoe								150						150
Insect Control - Sevin Spray on 10% of Acreage								1						1
Disease Control – Bacterial Speck on 30% of Acreage								5						5
Fertilize - Layby UN-32								82						82
Chisel Furrow								12						12
Weed Control – Treflan (& Dual on 30% of Acreage)								29						29
Irrigate - Sprinklers 3X								114						114
Open Ditches								1			1			2
Irrigate - Furrow 8X								55	55	55	53			218
Disease Control - Late Blight on 5% of Acreage										2				2
Close Ditches											2			2
Mite Control - Sulfur on 70% of Acreage											10			10
Weed Control - Hand Hoe											50			50
Train Vines											21			21
Insect Control - Aphids on 40% of Acreage											7			7
Disease Control - Late Blight on 15% of Acreage													4	4
Insect Control - Worms													26	26
Fruit Ripener - Ethrel on 5% of Acreage													5	5
Pickup Truck Use (2 pickups)	1	1	1	1	1	1	1	1	1	1	1	1	1	18
ATV Use	0	0	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL CULTURAL COSTS	2	2	2	2	2	2	58	781	57	59	156	2	36	1,160
Harvest:														
Open Harvest Lane on 8% of Acreage											2	2	2	5
Harvest											103	103	10	216
In Field Hauling											27	26	6	58
TOTAL HARVEST COSTS											131	130	18	279
Assessment:														
Assessments/Fees													14	14
TOTAL ASSESSMENT COSTS													14	14
Interest on Operating Capital @ 10.00%	1	1	1	1	2	2	2	9	9	10	12	13	14	78
TOTAL OPERATING COSTS/ACRE	126	39	3	3	50	4	60	790	66	68	299	145	82	1,737
OVERHEAD:														
Liability Insurance					0									0
Office Expense	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crop Insurance					25									25
Field Supervisor Salaries (2)	5	5	5	5	5	5	5	5	5	5	5	5	5	70
Land Rent @ 12% Of Gross Returns													265	265
Property Taxes						3					3			6
Property Insurance						2					2			5
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0		5
TOTAL CASH OVERHEAD COSTS	7	7	7	7	33	13	7	7	7	7	13	7	271	393
TOTAL CASH COSTS/ACRE	134	47	10	10	83	16	67	797	73	76	312	152	353	2,131

UC COOPERATIVE EXTENSION

Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, and BUSINESS OVERHEAD COSTS
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

ANNUAL EQUIPMENT COSTS

						- Cash Overhead -		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
06	110 HP 2WD Tractor	66,445	10	19,627	8,166	307	430	8,904
06	130 HP 2WD Tractor	69,163	10	20,430	8,500	320	448	9,268
06	155 HP 2WD Tractor	99,594	10	29,418	12,240	461	645	13,346
06	200 HP Crawler	172,650	10	50,998	21,218	798	1,118	23,135
06	425 HP Crawler	221,197	10	65,338	27,185	1,023	1,433	29,641
06	92 HP 2WD Tractor	44,015	10	13,001	5,409	204	285	5,898
06	ATV	4,017	10	710	528	17	24	568
06	Bait Applicator	2,473	20	129	235	9	13	257
06	Bed Shaper - 3 Row	13,292	10	2,351	1,746	56	78	1,880
06	Cultivator - Alloway 3 Row	10,236	10	1,810	1,345	43	60	1,448
06	Cultivator - 3 Row	11,868	5	3,866	2,245	56	79	2,380
06	Cultivator - Sled 3 Row	4,980	10	881	654	21	29	704
06	Decapper - 15'	7,952	10	1,406	1,045	33	47	1,125
06	Disc - Stubble 18'	49,847	5	16,237	9,429	236	330	9,996
06	Disc - Finish 25'	44,743	10	7,912	5,878	188	263	6,330
06	Ditcher - V	8,631	12	1,195	1,035	35	49	1,120
06	Harvester - Tomato - Used	46,108	8	10,411	6,791	202	283	7,275
06	Harvester - Tomato	331,980	8	10,000	55,170	1,221	1,710	58,101
06	Incorporator - 15'	24,345	10	4,305	3,198	102	143	3,444
06	Lister - 6 Row	20,176	5	6,572	3,817	95	134	4,046
06	Mulcher - 15'	20,507	9	4,098	2,843	88	123	3,053
06	Pickup Truck - 1/2 Ton	17,655	7	1,766	3,102	69	97	3,268
06	Pickup Truck - 3/4 Ton	17,655	7	1,766	3,102	69	97	3,268
06	Planter - 3 Row	21,025	7	5,364	3,320	94	132	3,546
06	Rear Blade - 8'	2,269	15	218	245	9	12	266
06	Rice Roller - 18'	14,139	10	2,500	1,858	59	83	2,000
06	Ringroller - 30'	7,952	10	1,406	1,045	33	47	1,125
06	Saddle Tank - 300 Gallon	2,374	10	420	312	10	14	336
06	Saddle Tank - 300 Gallon	2,374	10	420	312	10	14	336
06	Saddle Tank - 300 Gallon	2,374	10	420	312	10	14	336
06	Spray Boom - 25'	1,781	5	580	337	8	12	357
06	Subsoiler - 16' - 9 Shank	35,605	5	11,598	6,735	169	236	7,140
06	Trailer Dolly	1,451	15	139	156	6	8	170
06	Trailer Dolly	1,451	15	139	156	6	8	170
06	Trailer Dolly	1,451	15	139	156	6	8	170
06	Trailer Dolly	1,451	15	139	156	6	8	170
06	Triplane - 16'	22,253	10	3,935	2,924	93	131	3,148
06	Vine Diverter	16,046	10	2,838	2,108	67	94	2,270
06	Vine Trainer	4,800	10	480	657	19	26	702
06	TOTAL	1,448,325		304,962	205,671	6,259	8,766	220,697
	60% of New Cost *	868,995		182,977	123,403	3,756	5,260	132,418

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

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	------ Cash Overhead ------ Insur-ance	Taxes	Repairs	Total
INVESTMENT								
Booster Pumps	59,757	10	5,976	8,179	235	329	1,643	10,386
Closed Mix System	4,412	10	441	604	17	24	221	867
Fuel Tanks & Pumps	21,949	20	2,195	2,060	86	121	439	2,706
Fuel Wagons	2,186	10	219	299	9	12	44	364
Generators & Light	7,620	5	762	1,739	30	42	210	2,021
Main Line Pipe - 10"	53,784	10	5,378	7,362	211	296	1,479	9,348
Pipe Trailers	35,000	10	700	4,991	127	178	700	5,997
Semi Truck & Lowbed Trailer	36,170	15	3,617	3,893	142	199	531	4,765
Shop Building	72,168	25	7,217	6,223	283	397	722	7,625
Shop Tools	14,465	20	1,447	1,358	57	80	145	1,639
Siphon Tubes	11,066	15	1,107	1,191	43	61	313	1,608
Sprinkler Pipe	113,235	10	11,324	15,499	445	623	1,716	18,282
Storage Building	29,112	20	2,911	2,732	114	160	586	3,593
Implement Carrier	16,730	15	1,673	1,801	66	92	837	2,795
Truck-Service - 2 Ton	38,600	5	3,860	8,809	152	212	3,860	13,033
TOTAL INVESTMENT	516,254		48,827	66,740	2,017	2,825	13,446	85,029

ANNUAL BUSINESS OVERHEAD

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Crop Insurance	900	Acre	25.00	22,500
Field Sanitation	2,900	Acre	0.48	1,392
Field Supervisor Salaries (2)	900	Acre	70.00	63,000
Land Rent @ 12% Of Gross Returns	900	Acre	264.60	238,140
Liability Insurance	2,900	Acre	0.47	1,363
Office Expense	2,900	Acre	17.24	49,996

Table 5.

UC COOPERATIVE EXTENSION
HOURLY EQUIPMENT COSTS
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

			---------- COSTS PER HOUR ----------					
		Actual	- Cash Overhead -			-------- Operating --------		
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
06	110 HP 2WD Tractor	1,199.2	4.09	0.15	0.22	2.96	16.89	19.85	24.31
06	130 HP 2WD Tractor	1,110.0	4.59	0.17	0.24	3.08	19.96	23.04	28.05
06	155 HP 2WD Tractor	1,199.9	6.12	0.23	0.32	4.45	23.79	28.24	34.91
06	200 HP Crawler	1,600.0	7.96	0.30	0.42	4.40	30.70	35.10	43.78
06	425 HP Crawler	1,599.4	10.20	0.38	0.54	5.64	65.24	70.88	82.00
06	92 HP 2WD Tractor	1,199.6	2.71	0.10	0.14	1.96	19.96	21.92	24.87
06	ATV	284.5	1.11	0.04	0.05	1.06	0.00	1.06	2.26
06	Bait Applicator	99.2	1.42	0.06	0.08	0.49	0.00	0.49	2.04
06	Bed Shaper - 3 Row	199.5	5.25	0.17	0.24	2.72	0.00	2.72	8.37
06	Cultivator - Alloway 3 Row	199.7	4.04	0.13	0.18	2.09	0.00	2.09	6.44
06	Cultivator - 3 Row	399.8	3.37	0.08	0.12	2.60	0.00	2.60	6.18
06	Cultivator - Sled 3 Row	307.1	1.28	0.04	0.06	1.02	0.00	1.02	2.40
06	Decapper - 15'	199.2	3.15	0.10	0.14	1.36	0.00	1.36	4.75
06	Disc - Stubble 18'	389.8	14.51	0.36	0.51	8.36	0.00	8.36	23.75
06	Disc - Finish 25'	199.5	17.68	0.57	0.79	7.15	0.00	7.15	26.18
06	Ditcher - V	165.8	3.75	0.13	0.18	2.30	0.00	2.30	6.35
06	Harvester - Tomato - Used	199.6	20.41	0.61	0.85	2.08	39.67	41.75	63.61
06	Harvester - Tomato	699.6	47.32	1.05	1.47	124.44	39.67	164.11	213.94
06	Incorporator - 15'	200.0	9.60	0.31	0.43	2.75	0.00	2.75	13.08
06	Lister - 6 Row	400.0	5.72	0.14	0.20	4.19	0.00	4.19	10.26
06	Mulcher - 15'	221.0	7.72	0.24	0.33	2.32	0.00	2.32	10.61
06	Pickup Truck - 1/2 Ton	266.5	6.98	0.16	0.22	1.25	9.39	10.64	18.00
06	Pickup Truck - 3/4 Ton	266.5	6.98	0.16	0.22	1.25	9.39	10.64	18.00
06	Planter - 3 Row	209.8	9.50	0.27	0.38	5.65	0.00	5.65	15.79
06	Rear Blade - 8'	132.8	1.10	0.04	0.06	0.29	0.00	0.29	1.50
06	Rice Roller - 18'	199.4	5.59	0.18	0.25	1.60	0.00	1.60	7.61
06	Ringroller - 30'	199.5	3.14	0.10	0.14	0.89	0.00	0.89	4.28
06	Saddle Tank - 300 Gallon	266.8	0.70	0.02	0.03	0.63	0.00	0.63	1.39
06	Saddle Tank - 300 Gallon	154.7	1.21	0.04	0.05	0.63	0.00	0.63	1.93
06	Saddle Tank - 300 Gallon	201.5	0.93	0.03	0.04	0.63	0.00	0.63	1.63
06	Spray Boom - 25'	299.2	0.68	0.02	0.02	0.49	0.00	0.49	1.20
06	Subsoiler - 16' - 9 Shank	399.6	10.11	0.25	0.35	8.22	0.00	8.22	18.94
06	Trailer Dolly	500.0	0.19	0.01	0.01	0.11	0.00	0.11	0.32
06	Trailer Dolly	499.4	0.19	0.01	0.01	0.11	0.00	0.11	0.32
06	Trailer Dolly	500.0	0.19	0.01	0.01	0.11	0.00	0.11	0.32
06	Trailer Dolly	499.4	0.19	0.01	0.01	0.11	0.00	0.11	0.32
06	Triplane - 16'	331.2	5.30	0.17	0.24	3.37	0.00	3.37	9.07
06	Vine Diverter	217.9	5.80	0.19	0.26	2.68	0.00	2.68	8.93
06	Vine Trainer	135.0	2.92	0.08	0.12	2.88	0.00	2.88	6.00

Table 6.

UC COOPERATIVE EXTENSION
RANGING ANALYSIS
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE TOMATOES

	YIELD (TONS/ACRE)						
	26.0	29.0	32.0	35.0	38.0	41.0	44.0
OPERATING COSTS/ACRE:							
Preplant Cost	206	206	206	206	206	206	206
Cultural Cost	1,160	1,160	1,160	1,160	1,160	1,160	1,160
Harvest Cost	207	231	255	279	303	327	351
Assessment Cost	14	14	14	14	14	14	14
Interest on Operating Capital	77	77	78	78	79	79	80
TOTAL OPERATING COSTS/ACRE	1,664	1,689	1,713	1,737	1,762	1,786	1,810
TOTAL OPERATING COSTS/TON	64	58	54	50	46	44	41
CASH OVERHEAD COSTS/ACRE	393	393	393	393	393	394	394
TOTAL CASH COSTS/ACRE	2,057	2,081	2,106	2,131	2,155	2,180	2,204
TOTAL CASH COSTS/TON	79	72	66	61	57	53	50
NON-CASH OVERHEAD COSTS/ACRE	144	147	150	153	155	158	160
TOTAL COSTS/ACRE	2,200	2,228	2,256	2,283	2,311	2,338	2,365
TOTAL COSTS/TON	85	77	70	65	61	57	54

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR TOMATOES

PRICE (DOLLARS/TON)	YIELD (TONS/ACRE)						
Processing Tomatoes	26.0	29.0	32.0	35.0	38.0	41.0	44.0
45.00	-494	-384	-273	-162	-52	59	170
50.00	-364	-239	-113	13	138	264	390
55.00	-234	-94	47	188	328	469	610
63.00	-26	138	303	468	632	797	962
60.00	26	196	367	538	708	879	1,050
65.00	156	341	527	713	898	1,084	1,270
70.00	286	486	687	888	1,088	1,289	1,490

NET RETURNS PER ACRE ABOVE CASH COSTS FOR PROCESSING TOMATOES

PRICE (DOLLARS/TON)	YIELD (TONS/ACRE)						
Processing Tomatoes	26.0	29.0	32.0	35.0	38.0	41.0	44.0
45.00	-887	-776	-666	-556	-445	-335	-224
50.00	-757	-631	-506	-381	-255	-130	-4
55.00	-627	-486	-346	-206	-65	75	216
63.00	-419	-254	-90	74	239	403	568
60.00	-367	-196	-26	144	315	485	656
65.00	-237	-51	134	319	505	690	876
70.00	-107	94	294	494	695	895	1,096

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR PROCESSING TOMATOES

PRICE (DOLLARS/TON)	YIELD (TONS/ACRE)						
Processing Tomatoes	26.0	29.0	32.0	35.0	38.0	41.0	44.0
45.00	-1,030	-923	-816	-708	-601	-493	-385
50.00	-900	-778	-656	-533	-411	-288	-165
55.00	-770	-633	-496	-358	-221	-83	55
63.00	-562	-401	-240	-78	83	245	407
60.00	-510	-343	-176	-8	159	327	495
65.00	-380	-198	-16	167	349	532	715
70.00	-250	-53	144	342	539	737	935

Table 7.

UC COOPERATIVE EXTENSION
COSTS AND RETURNS/ BREAKEVEN ANALYSIS
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Processing Tomatoes	2,205	1,737	468	2,131	74	2,283	-78

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Processing Tomatoes	595,350	469,065	126,285	575,256	20,094	616,472	-21,122

BREAKEVEN PRICES PER YIELD UNIT

			-------- Breakeven Price To Cover -------		
CROP	Base Yield (Units/Acre)	Yield Units	Operating Costs	Cash Costs	Total Costs
			---------- $ per Yield Unit ----------		
Processing Tomatoes	35.0	Ton	49.64	60.87	65.24

BREAKEVEN YIELDS PER ACRE

			-------- Breakeven Yield To Cover -------		
CROP	Yield Units	Base Price ($/Unit)	Operating Costs	Cash Costs	Total Costs
			---------- Yield Units / Acre ----------		
Processing Tomatoes	Ton	63.00	27.6	33.8	36.2

Table 8.

UC COOPERATIVE EXTENSION
DETAILS OF OPERATIONS
SACRAMENTO VALLEY – 2007
DIRECT SEEDED

Operation	Operation Month	Tractor/ Power Unit	Implement	Material	Broadcast Rate/Acre	Material Unit
Laser Level - 4% of Acreage	September	Contract		Laser Level	0.04	Acre
Land Prep - Stubble Disc & Roll	September	425 HP Crawler	Disc - Stubble 18'			
			Rice Roller - 18'			
Land Prep - Subsoil & Roll 2X	September	425 HP Crawler	Subsoiler - 16' - 9 Shank			
Land Prep - Disc & Roll	September	200 HP Crawler	Disc - Finish 25'			
			Rice Roller - 18'			
	September	200 HP Crawler	Disc - Finish 25'			
			Ringroller - 30'			
Land Prep - Triplane 2X	September	200 HP Crawler	Triplane - 16'			
Land Prep - Apply Gypsum on 20% of Acreage	September	Gypsum Application		Gypsum	0.60	Ton
Land Prep - List Beds	October	200 HP Crawler	Lister - 9 Row			
Land Prep - Shape Beds & Fertilize	October	155 HP 2WD Tractor	Bed Shaper - 3 Row	11-52-0	100.00	Lb
			Saddle Tank - 300 Gallon			
Weed Control - Roundup & Goal	January	130 HP 2WD Tractor	Saddle Tank - 300 Gallon	Roundup Ultra	1.00	Pint
			Spray Boom - 25'	Goal 1.6E	3.00	FlOz
Weed Control - Roundup	January	130 HP 2WD Tractor	Saddle Tank - 300 Gallon	Roundup Ultra	1.50	Pint
			Spray Boom - 25'			
Weed Control - Cultivate 2X	January	110 HP 2WD Tractor	Cultivator - Alloway 3 Row			
	January	92 HP 2WD Tractor	Cultivator - 3 Row			
Power Mulch Beds	March	155 HP 2WD Tractor	Mulcher - 15'			
Apply Fumigant - Vapam on 30% of Acreage	March	130 HP 2WD Tractor	Cultivator - Sled 3 Row	Vapam	3.75	Gal
			Saddle Tank - 300 Gallon			
Weed Control - Devrinol on 60% of Acreage	April	130 HP 2WD Tractor	Saddle Tank - 300 Gallon	Devrinol 2E	0.40	Gal
			Incorporator - 15'			
Decap Vapam Beds	March	92 HP 2WD Tractor	Decapper - 15'			
Plant Seed & Fertilize	Feb/Mar	110 HP 2WD Tractor	Planter - 3 Row 15'	Tomato Seed	52.00	Thou
			Saddle Tank - 300 Gallon	8-24-6	15.00	Lb
				Zinc Chelate 6%	0.75	Lb
Break Bed Crust - 30% of Acreage	April	92 HP 2WD Tractor	Ringroller - 30'			
Weed Control - Apply Matrix 2X	April	110 HP 2WD Tractor	Saddle Tank - 300 Gallon	Matrix DF	1.07	Oz
			Cultivator - Sled 3 Row			
Replant 10% of Acreage - No Fertilizer	April	110 HP 2WD Tractor	Planter - 3 Row 15'	Tomato Seed	5.20	Thou
Insect Control - Sevin Bait on 50% of Acreage	April	92 HP 2WD Tractor	Bait Applicator	Sevin 5 Pellets	3.00	Lb
Fertilize - Sidedress 20% of Acreage	April	155 HP 2WD Tractor	Cultivator - Sled 3 Row	CAN 17	20.00	Lb
			Saddle Tank - 300 Gallon			
Weed Control - Cultivate 5X	April	130 HP 2WD Tractor	Cultivator - 3 Row			
		130 HP 2WD Tractor	Cultivator - Alloway 3 Row			
		110 HP 2WD Tractor	Cultivator - Sled 3 Row			
	May	110 HP 2WD Tractor	Cultivator - Sled 3 Row			
	July	110 HP 2WD Tractor	Cultivator - 3 Row			
Weed Control - Thin & Hand Weed	April	Contract Labor		Labor	15.00	Hour
Insect Control - Sevin Spray on 10% of Acreage	April	110 HP 2WD Tractor	Saddle Tank - 300 Gallon	Sevin 80 S	0.13	Lb
			Spray Boom - 25'			
Disease Control - Bacterial Speck	April	110 HP 2WD Tractor	Saddle Tank - 300 Gallon	Kocide 101	0.60	Lb
- on 30% of Acreage			Spray Boom - 25'	Dithane DF	0.60	Lb
Fertilize - Layby UN-32 @150 Lbs N	April	155 HP 2WD Tractor	Cultivator - 3 Row	UN-32	150.00	Lb N
			Saddle Tank - 300 Gallon			
Chisel Furrow	April	155 HP 2WD Tractor	Cultivator - Sled 3 Row			
Weed Control - Treflan (& Dual on 30% of Acreage)	April	110 HP 2WD Tractor	Mulcher - 15'	Treflan HP	1.00	Pint
			Saddle Tank - 300 Gallon	Dual Magnum	0.45	Pint
Irrigate - Sprinklers 3X	April	Labor		Water	3.00	AcIn
Open Ditches	April	200 HP Crawler	Ditcher - V			
	August	200 HP Crawler	Ditcher - V			
Irrigate - Furrow 8X	April	Labor		Water	10.00	AcIn
	May	Labor		Water	10.00	AcIn
	June	Labor		Water	10.00	AcIn
	July	Labor		Water	9.00	AcIn
Disease Control - Late Blight on 5% of Acreage	June	Air Application Spray		Bravo Weatherstik	0.15	Pint
Close Ditches	June	200 HP Crawler	Rear Blade - 8'			
	July	200 HP Crawler	Rear Blade - 8'			

Table 8 continued

Mite Control – Sulfur on 70% of Acreage	July	Air Application Dust		Sulfur, Dust 98%	28.00	Lb
Weed Control - Hand Hoe	July	Contract Labor		Labor	5.00	Hour
Train Vines	July	155 HP 2WD Tractor	Vine Trainer			
Insect Control - Aphids on 40% of Acreage	July	Air Application Spray		Warrior T	1.54	FlOz
Disease Control - Fruit Rot on 15% of Acreage	September	Air Application Spray		Bravo Weatherstik	0.34	Pint
Insect Control - Worms	September	Air Application Spray		Confirm	12.00	FlOz
Fruit Ripener - Ethrel on 5% of Acreage	September	Air Application Spray		Ethrel	0.03	Gal
Open Harvest Lane on 8% of Acreage	July	130 HP 2WD Tractor	Vine Diverter			
	August	130 HP 2WD Tractor	Vine Diverter			
	September	130 HP 2WD Tractor	Vine Diverter			
Harvest	July	Harvester -Tomato		Labor	1.70	Hour
	August	Harvester -Tomato		Labor	1.70	Hour
	September	Harvester Tomato - Used		Labor	0.38	Hour
In Field Hauling	July	155 HP 2WD Tractor	Trailer Dolly			
		130 HP 2WD Tractor	Trailer Dolly			
	August	155 HP 2WD Tractor	Trailer Dolly			
		110 HP 2WD Tractor	Trailer Dolly			
	September	155 HP 2WD Tractor	Trailer Dolly			
		130 HP 2WD Tractor	Trailer Dolly			
Pickup Truck Use (2 pickups)	All	Pickup Truck - 1/2 Ton				
	All	Pickup Truck - 3/4 Ton				
ATV Use	All	ATV				
Assessments/Fees	September	CDFA-CTVP		Fee	0.019	Ton
		CTGA		Fee	0.17	Ton
		CTRI		Fee	0.07	Ton
		PTAB		Fee	0.135	Ton