

SAMPLE COSTS OF TOMATO PRODUCTION
in
Contra Costa, San Joaquin, and Stanislaus Counties
December 1976



University of California Agricultural Extension

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INTRODUCTION

Processing tomatoes constitute a large percentage of the vegetable production in the three-county area. Many questions have been asked about the economics of producing this crop.

This study was initiated in order to answer the questions received and to pinpoint the inputs required to produce a crop of tomatoes.

Costs vary from farm to farm because of individual differences in soil, rotations, equipment, size of units and management. This study represents estimated costs and yields for the area. Equipment costs are computed using new (1976) prices. While this may not be representative of the typical tomato operation in the area, it does provide a detailed breakdown of the investment required for a new grower. Certain cultural operations included in this study may not be universal in their application. Growers are invited to use the "your costs" column of the study in order to develop the true costs of their operation for management decisions.

For specific assumptions (as marked by an asterisk *), please refer to the notes on pages 6 and 7.

The authors are indebted to and wish to thank a group of growers from the area for their help in developing this study. These growers provided the basic information on machinery, operations, and size of operation. Their comments and guidance are greatly appreciated.

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SAMPLE COSTS OF TOMATO PRODUCTION
RENTED LAND BASIS

Contra Costa, San Joaquin, Stanislaus Counties - 1976
Based on 350 acres of tomatoes on a 1000 acre farm. Yield 25 tons per acre.

OPERATION	HOURS PER ACRE	LABOR	FUEL & REPAIRS	MATERIALS			PER ACRE TOTAL	YOUR COST
				KIND	QUANTITY	COST		
<u>Seedbed Preparation</u>								
<u>Fall</u>								
*Disc, plow & subsoil (150 acres) 3/7 of 1.60	.69	\$ 2.48	\$11.91				\$14.39	
*Disc 2x, subsoil 2x (200 acres) 4/7 of .90 x 2	1.03	3.71	12.72				16.43	
Landplane 2x (350 acres)	.75	2.70	5.61				8.31	
<u>Spring</u>								
Disc 2x	.60	2.16	5.22				7.38	
Springtooth	.12	.43	.81				1.24	
Harrow & roll	.17	.61	.90				1.51	
List or ridge & fumigate	.25	.90	1.57	Fumigant		\$20.00	22.47	
Move equipment, set-up, and service at 7% of oper. time	.25	.90					.90	
TOTAL	3.86	\$13.89	\$38.74			\$20.00	\$72.63	
<u>Planting</u>								
Sled, shape, incorporate herbicide	.40	\$ 1.44	\$ 3.45	Herbicide @ 6#		\$33.00	\$37.89	
Plant (2 men), starter fertilizer	.33	2.38	2.39	Seed 1# @ 18.00/lb		18.00	22.77	
Move equipment, set-up, and service at 10% of oper. time	.04	.14		Starter Fertilizer		24.00	24.00	
							.14	
TOTAL	.77	\$ 3.96	\$ 5.84			\$75.00	\$84.80	

OPERATION	HOURS PER ACRE	LABOR	FUEL & REPAIRS	MATERIALS		PER ACRE TOTAL	YOUR COST
				KIND	QUANTITY		
<u>Growing</u>							
Roll, cultivate-sled & implements	1.00	\$ 3.60	\$ 7.39			\$ 10.99	
Thin-machine blocker	.30	1.08	1.33			2.41	
Tiller & lay-by herbicide	.50	1.80	8.95	Lay-by herbicide	\$ 9.00	19.75	
Cultivate & furrow 1x -	.25	-.90	1.81			2.71	
Hoe (trim & hoe)	15.25	45.76				45.76	
Ditch - open & close 3x	.12	.43	.84			1.27	
Irrigate 10x	15.00	49.50		5 ac. ft. @ \$8.00 Siphon, dams, shovels	40.00 1.50	89.50 1.50	
Fertilize-tractor & sled (side-dress)	.25	.90	2.12	100 lbs. N @ .17	17.00	20.02	
Insect control, seedling stage				Ground rig appl. Materials	4.00 7.00	4.00 7.00	
Insect control (worm control)				Air appl. 2x	8.00	8.00	
Fungicide (applied with worm control)				Insecticide Mtl. Fungicide Material	14.00 9.70	14.00 9.70	
*Ethephon (87.5 acres) 1/4 acreage				Air appl. Materials	1.00 8.00	1.00 8.00	
*Vine train (150 acres) 1/3 acreage	.33	.39	.25			.64	
*Whitener (87.5 acres) 1/4 acreage				Contract at \$30.00/acre	7.50	7.50	
TOTAL	33.00	\$104.36 94.26	\$22.69		\$126.70	\$253.75	
<u>Misc. operating and growing costs</u>							
Labor transportation, supervision, records, office, pick-up truck, interest on operating capital & roadways.				20% of above	(411.18)	\$ 82.24	
Soc. Sec., Workmen's Compensation, transportation, bonuses, unemployment, housing, medical.				30% of cash wages	(122.21)	36.66	
TOTAL						\$118.90	
Total cultural costs						\$530.08	
*Rent						200.00	
TOTAL PREHARVEST COSTS						\$730.08	

OPERATION	HOURS PER ACRE	LABOR	FUEL & REPAIRS	MATERIALS		PER ACRE TOTAL	FOUR COST
				KIND	QUANTITY COST		
*Harvest (Bins)							
Machine (Harvester)	2.2		\$30.47 (13.85/hr.)			\$ 30.47	
Driver @ \$4.25	2.7	\$ 11.48				11.48	
Sorters - 10 @ \$3.00	2.2	66.00				66.00	
Sorters - Supervisor @ \$3.60	2.2	7.92				7.92	
Trailer (2-1/2)	2.2		7.77			7.77	
Tractor (2-1/2)	2.2		15.86			15.86	
Driver (2-1/2) @ \$3.60	2.4	21.60				21.60	
Forklift	2.5		7.20			7.20	
Driver @ \$3.60	2.5	9.00				9.00	
Swamper @ \$3.00	2.2	6.60				6.60	
Mechanic & Supervisor @ \$6.00	2.7	16.20				16.20	
Misc., equip., disc, scraper, water trailer, pick-up truck @ \$22.00/10 hrs. day	2.2		4.84			4.84	
Misc. supplies, ice, goggles, etc., @ \$6.60/day	2.2				\$1.47	1.47	
	<u>30.4</u>	<u>\$129.80</u>					
Inspection @ 16¢/ton						3.84	
Unemployment, Social Security, Workmen's Compensation, bonus, transportation, etc., @ 30% of cash wages of steady employees (\$66.20)						19.86	
Unemployment, Social Security, Workmen's Compensation insurance on sorters and swamper (16% of \$72.60)						11.61	
Addit. charges for seasonal labor, bookkeeping, etc., \$3.00/day/man; 11 men x \$3.00=\$33÷4.5 ac/day						7.33	
Toilets						1.00	
TOTAL BIN HARVEST COSTS						\$ 237.21	
Taxes on equipment (bin harvest)- \$795 x .65 = \$517 x 25% = \$129.20 assessed value x .1200 (San Joaquin County tax rate)*						\$ 15.50	
*Assessments						4.30	
TOTAL CASH COSTS						\$ 987.09	
Management - 5% of 25 tons @ \$55.00						\$ 68.75	
INVESTMENT							
	<u>PER ACRE</u>	<u>ANNUAL COST</u>					
		<u>Depreciation</u>	<u>Interest</u>				
Buildings	\$ 46.00	\$ 1.53	\$ 1.84				
Equipment (bin harvest)	794.45	109.61	31.81				
TOTAL	\$840.45	\$111.14	\$33.65			\$ 144.79	
TOTAL COST PER ACRE - BIN HARVEST						\$1200.63	
COST PER TON @ 25 TONS/ACRE YIELD - BIN HARVEST						\$ 48.02	

OPERATION	HOURS PER ACRE	LABOR	MATERIALS		PER ACRE TOTAL YOUR COST
			KIND	QUANTITY COST	
*Harvest (Bulk)					
Machine (harvester)	2.2			\$30.47 (\$13.85/hr.)	\$ 30.47
Driver @ \$4.25	2.7	\$ 11.48			11.48
Sorters - 10 @ \$3.00	2.2	66.00			66.00
Sorter, Supervisor @ \$3.60	2.2	7.92			7.92
Driver - 1-1/2 @ \$3.60	2.4	12.96			12.96
5th wheel dolly 1-1/2	2.2		2.95		2.95
*Tractor - 1-1/2 @ \$6.02	2.2		13.24		13.24
Mechanic & Supervisor @ \$6.00	2.7	16.20			16.20
Misc. equip., disc, scraper, water trailer, pick-up truck @ \$22.00/10 hr. day	2.2		4.84		4.84
Misc. supplies, drinks, goggles, etc., @ \$6.60/day	2.1			\$1.47	1.47
		\$114.56			
Inspection @ 16¢/ton					3.84
Unemployment, Social Security, Workmen's Compensation, bonus, transportation, etc., @ 30% of cash wages of steady employees (\$48.56)					14.57
Unemployment, Social Security, Workmen's Compensation insurance on sorters (16% of \$66.00)					10.56
Addit. charges for seasonal labor, bookkeeping, etc., \$3/day/man; 10 men x \$3.00=\$30÷4.5 ac/day					6.67
Toilets					1.00
TOTAL BULK HARVEST COSTS					\$ 204.17
Taxes on bulk harvest equipment \$789 x .65 = \$513 x 25% = \$128.16 assessed value x .1200 (eliminate tractors, trailers & forklift; adds tractor & 5th wheels) (San Joaquin Co. tax rate)*					\$ 15.38
*Assessments					4.30
TOTAL CASH COSTS					\$ 953.93
Management - 5% of 25 tons at \$55.00					\$ 68.75
INVESTMENT	PER ACRE	ANNUAL COST			
Buildings	\$ 46.00	<u>Depreciation</u>	<u>Interest</u>		
Equipment (Bulk harvest)	788.67	\$ 1.53	\$ 1.84		
	<u>\$834.67</u>	106.38	31.58		
		<u>\$107.91</u>	<u>\$33.42</u>		\$ 141.33
TOTAL COST PER ACRE BULK HARVEST					\$1164.01
COST PER TON AT 25 TONS/ACRE YIELD - BULK HARVEST					\$ 46.56

INVESTMENT FOR TOMATOES (1976 cost)

BASED ON 350 ACRES OF TOMATOES ON 1000 ACRE FARM

ITEM	Cost	Ann. Use (acres)	Invest- ment per Acre	Life (yrs.)	Deprec.	8% Interest	Cash Costs per Hour		
	Incl. 6% Tax						Fuel	Repairs	Total
Tractor 120 C.D. H.P. (500 A)	\$ 62,800	800	\$ 78.50	10	\$ 7.85	\$ 3.14	\$1.70	\$4.45	\$ 6.15
Tractor 94 W.D. H.P.	17,000	800	21.25	10	2.13	.85	1.97	2.00	3.97
Tractor 120 W.D. H.P.	32,000	800	40.00	10	4.00	1.60	2.50	2.38	4.88
Tractor - used 3	6,000	800	7.50	4	1.88	.30	.67	1.49	2.16
Landplane 12 x 60	12,000	1,000	12.00	20	.60	.48		2.60	2.60
Plow 4 - 16's 2-way	4,725	600	7.88	8	.99	.32		4.91	4.91
Disc 18' 24" Blade	10,590	1,000	10.95	10	1.10	.44		3.82	3.82
Spike Harrow 20' light	650	1,000	.65	10	.06	.03		.25	.25
Spike Harrow 20' heavy	700	1,000	.70	12	.06	.03		.40	.40
Smizer Roller 18' (2)	7,000	1,000	7.00	12	.58	.28		.94	.94
Roller	1,500	500	3.00	10	.30	.12		.15	.15
Sled (plant) incorporator	8,950	350	25.57	10	2.56	1.02		3.74	3.74
Sled (cultivating) complete	4,200	350	12.00	10	1.20	.48		3.27	3.27
Planters (Flex)	2,100	350	6.00	10	.60	.24		1.31	1.31
Ditcher 54"	1,600	800	2.00	20	.20	.08		.31	.31
Bedding Tool Bar	1,200	350	3.43	10	.34	.14		.15	.15
Saddle Tanks for Fert. & Herbicide	1,000	600	1.67	10	.17	.07		1.24	1.24
Harvester - new -	125,000	350	357.14	7	51.02	14.29	1.63	12.22	13.85
Harvester - used -	30,000	350	85.71	5	17.14	3.43	1.63	12.22	13.85
Trailers (5)	8,000	350	22.85	6	3.81	.91		1.41	1.41
Forklift	16,000	1,000	16.00	10	1.60	.64	1.05	1.83	2.88
Pick-up 3/4 Ton (4 x 4)	7,000	1,000	7.00	3	2.33	.28			
Pick-up 1/2 Ton (used)	1,200	350	3.42	2	1.71	.14			
Springtooth 30'	2,700	1,000	2.70	10	.27	.11		2.82	2.82
Siphons 1-1/2" (300)	540	350	1.54	10	.15	.06			
Canvas 12 pcs.	400	350	1.14	5	.23	.05			
Tarps 100 @ \$5.00	500	1,000	.50	2	.25	.02			
Truck 1/2 share	3,700	500	7.40	8	.93	.30			
Water trailer 1/2 share	650	350	1.86	5	.37	.07			
Mechanical (blocker) thinner 6 row	2,000	350	5.71	6	.95	.23		.48	.48
Chisel 12'	2,300	700	3.28	10	.33	.13		1.19	1.19
Subsoiler 10' (ripper)	4,200	500	8.40	10	.84	.34		2.38	2.38
Ditch closer	2,200	800	2.75	15	.18	.11		1.31	1.31
Sprayer - 300 gal. tank, 10 gpm pump	2,250	1,000	2.25	10	.23	.09			
Toilets (3)	2,100	500	4.20	7	.60	.17			
Tool carrier	3,500	1,000	3.50	10	.35	.14			
Lo-Boy implement carrier	17,000	1,000	17.00	10	1.70	.68			
TOTAL	\$405,615	xxx	\$794.45	xx	\$109.61	\$31.81			

ITEM	Cost Incl. 6% Tax	Ann. Use (acres)	Cost per Acre	Life (years)	Deprec.	Interest	Cash Costs per Hour		
							Fuel	Repairs	Total
BUILDINGS									
Shop, 40' x 60'	\$30,000	1,000	\$30.00	30	\$1.00	\$1.20	\$	\$	\$
Shed, 4,000 sq. feet	16,000	1,000	16.00	30	.53	.64			
<hr/>									
TOTAL BUILDINGS	\$46,000	1,000	\$46.00		\$1.53	\$1.84			
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<u>Additional Equipment for Bulk Harvest</u>									
Tractor C.D. 60 H.P. (used)	\$10,000	350	\$28.57	10	\$2.86	\$1.14	\$.80	\$2.38	\$3.18
5th wheel convert. dollies (3)	4,200	350	12.00	10	1.20	.48		.89	.89
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ADDITIONAL BULK HARVEST EQUIPMENT	\$14,200	xxxxx	\$40.57	xx	\$4.06	\$1.62			

*NOTES

- 1) Fall operations are calculated on the basis of 350 acres total of tomatoes. (3/7 of 350 acres is 150 acres, etc.) Soil amendments (gypsum or manure applications) will add approximately \$12 per acre costs to the fall operation.
- 2) Fuel and repairs are calculated as the total of the tractor and the implement as taken from the equipment list multiplied by the hours per acre.
- 3) Labor rates - Hourly labor rates are:

Supervisor	\$6.50	Irrigator	\$3.30
Harvester operator	\$4.25	Regular	\$3.00
Skilled	\$3.60		
- 4) Irrigation water cost ranges from approximately \$2 per acre foot to \$9 per acre foot, depending on the location within the area. The figure used in this study (\$6) is within this range and represents a typical cost in the major tomato-growing areas of the three counties.
- 5) Costs for Ethephon, vine training and whitener are pro-rated over the entire 350 acres of tomatoes.
- 6) Harvest costs are calculated as either by bin or bulk handling. These costs are based on 0.6 acre per day contract delivery ($0.6 \times 350 = 210 \div 2 = 105$ tons per day per machine). Harvest costs are based on good harvest conditions; circumstances which lead to overripe and mold conditions can effectively double costs of harvest.
- 7) Cost per hour on tractors for bulk harvest was an average of three large tractors ($4.88 + 3.97 + 3.18 \div 3 = 4.01 \times 1\frac{1}{2} = 6.02$). For bulk harvest, a large wheel tractor may be rented at \$1400/month.

- 8) Approximately 1.5% of delivered loads are rejected at the inspection station, incurring losses from return freight (\$2 per ton), harvest costs and, in some instances, reconditioning of the loads.
- 9) Various rent arrangements are common in the area: cash figures are used for the study; share rents vary from 17-1/2 to 22-1/2% of the gross.
- 10) Health insurance for full-time employees will range from \$20-\$55 per month depending on family size. An average of approximately \$40 per month is assumed.
- 11) Harvest costs are based on an average of 10 sorters per machine. Electronic sorters may require as few as 6-8 sorters while conventional machines generally require 14-16.
- 12) The tax rate will vary with location; for example, Stanislaus County will average \$10/\$100 assessed value.
- 13) Assessments include:
 - Broomrape Marketing Order @ 4¢/ton
 - California Tomato Growers Association Dues @ 8¢/ton
 - Curly Top Virus Control @ 5.2¢/ton (Stanislaus County rate)

To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.