

Budget Record #189

1982

## SAMPLE PRODUCTION COSTS

Production Costs for Zutano Avocados

TULARE, FRESNO &amp; KINGS COUNTIES

by

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and

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Costs given in this sample study are for those of a typical well managed orchard and are not intended to reflect an average of all orchards in Tulare, Fresno and Kings Counties.

It is assumed this study is based upon a 10 acre block out of a 40 acre total fruit orchard. The same machinery, pump and some other costs are shared on the whole orchard.

Practices listed are based on those considered typical production procedures. Sample costs given for labor, materials, equipment and contract services are based on 1981 figures. Interest and depreciation are based upon the cost of new equipment and a recent land purchase. Not all costs or practices may be incurred in your situation but should be used as a guide only.

Additional output is available upon your request, including machine calling summary, fuel use summary and a stored data page (input informatior).

Calculations used by the computer may be further explained by calling the Budget Generator Manager, University of California, Davis, California (916) 752-6705.

**COST & RETURNS SUMMARY FOR AVOCADOS**  
**PRODUCTION COSTS FOR ZUTANO AVOCADOS**  
**TULARE AND FRESNO COUNTIES - ROLLING HILLS 1981**  
**BY J. LARUE AND F. YOSHIKAWA, FARM ADVISORS - P. THOMAS, SRA**

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST PER ACRE	YOUR COST
<b>1. RECEIPTS FROM PRODUCTION:</b>					
AVOCADOS	LBS.	0.200	9000.000	1800.00	
TOTAL RECEIPTS:				1800.00	
<b>2. VARIABLE COSTS:</b>					
<b>PREHARVEST:</b>					
PRUNE AND SUCKER	hour	5.000	10.000	50.00	
BRUSH SHREDDING	acre	12.000	1.000	12.00	
NITROGEN	LBS.	0.350	100.000	35.00	
PRE-EMERGE HERB	acre	15.000	1.000	15.00	
WEED CONTROL-RAT	acre	7.500	1.000	7.50	
ZINC SULFATE	LBS.	0.285	7.000	2.00	
ZINC-HELICOPTER	acre	25.000	1.000	25.00	
MISC. LABOR	hour	5.000	5.004	25.02	
EQUIPMENT (FUEL-LUBE-REPAIRS)	acre			102.09	
BUILDINGS (FUEL-LUBE-REPAIRS)	acre			5.10	
IRRIGATION (POWER-LUBE-REP)	acin	7.698	20.000	153.95	
MACHINERY LABOR	hour	5.650	20.726	117.10	
MACHINE CREW LABOR	hour	5.650	1.286	7.26	
IRRIGATION LABOR	hour	5.650	6.300	35.60	
INTEREST ON OPERATING CAP.	dol.	0.14000	262.441	35.73	
TOTAL PREHARVEST COSTS:				628.35	
PREHARVEST COST PER LBS.				0.0698	
<b>HARVEST:</b>					
PICKING	LBS.	0.060	9000.000	540.00	
INTEREST ON OPERATING CAP.	dol.	0.14000	22.500	3.15	
TOTAL HARVEST COSTS:				543.15	
HARVEST COST PER LBS.				0.0604	
TOTAL VARIABLE COSTS:				1171.50	
VARIABLE COST PER LBS.				0.1302	
<b>3. INCOME ABOVE VARIABLE COSTS:</b>					
INCOME PER LBS.				628.50	
<b>4. OVERHEAD:</b>					
PERSONAL PROPERTY TAXES:				8.69	
REAL PROPERTY TAXES:				70.00	
MISC. OFFICE & BOOKKEEPING ( 2.50% OF TOTAL VARIABLE COSTS)				29.28	
TOTAL OVERHEAD:				107.97	
OVERHEAD COST PER LBS.				0.0120	
TOTAL CASH COSTS:				1279.47	
TOTAL CASH COST PER LBS.				0.1422	
<b>5. INCOME ABOVE ALL CASH COSTS:</b>					
INCOME PER LBS.				520.53	
<b>6. OWNERSHIP COSTS:</b>					
<b>DEPRECIATION:</b>					
MACHINERY & EQUIPMENT	acre			39.60	
IRRIGATION SYSTEM	acre			58.37	
BUILDINGS	acre			25.90	
TREES, VINES OR STAND	acre			284.40	
TOTAL DEPRECIATION:				408.27	
<b>CAPITAL &amp; INTEREST:</b>					
MACHINERY&EQUIPMENT		0.14000	240.925	33.73	
IRRIGATION SYSTEM		0.14000	645.107	90.32	
BUILDINGS		0.10670	447.131	47.71	
TREES, VINES OR STAND		0.10670	5688.000	303.45	
LAND		0.10670	7000.000	246.90	
TOTAL INTEREST CHARGE:				1222.11	
TOTAL FIXED COSTS:				1630.37	
FIXED COST PER LBS.				0.1812	
<b>7. TOTAL OF ABOVE COSTS:</b>					
TOTAL COST PER LBS.				2909.85	
<b>8. NET RETURNS:</b>					
NET RETURNS PER LBS.				-1109.85	

10 ACRES AVOCADOS ON 40 ACRE FARM - OTHER ACREAGE USUALLY CITRUS  
 FOGGER/MISTER IRRIGATION SYSTEM - WELL WATER  
 LANDOWNER BASIS

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CASH FLOW & INVESTMENT SUMMARY FOR AVOCADOS

BUDGET RECORD NUMBER

PRODUCTION COSTS FOR ZUTANO AVOCADOS  
 TULARE AND FRESNO COUNTIES - ROLLING HILLS 1981  
 BY J. LARUE AND F. YOSHIKAWA, FARM ADVISORS - P. THOMAS, SRA

MONTHLY SUMMARY OF RECEIPTS AND EXPENSES

CATEGORY	UNIT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
TOTAL RECEIPTS	\$/AC									900.00	900.00			1800.00
OPERATING EXPENSES														
PRUNE AND SUCKER	\$/AC				50.00									50.00
BRUSH SHREDDING	\$/AC				12.00									12.00
NITROGEN	\$/AC					7.00	7.00	7.00	7.00	7.00				35.00
PRE-EMERGE HERB.	\$/AC								0.00	0.00			15.00	15.00
WEED CONTROL-RAT	\$/AC			7.50										7.50
ZINC SULFATE	\$/AC				2.00									2.00
ZINC-HELICOPTER	\$/AC				25.00									25.00
PICKING	\$/AC										270.00	270.00		540.00
MISC. LABOR	\$/AC	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	25.02
MACHINE LABOR COST	\$/AC	9.15	9.15	16.42	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	16.42	124.36
INTEREST ON OPER. CAP.	\$/AC	2.28	2.05	3.38	7.25	5.06	3.53	2.81	2.10	1.26	3.54	0.00	5.63	38.88
EQUIPMENT COST	\$/AC	8.09	8.09	10.58	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	10.58	102.09
BLDG OPER. COST	\$/AC	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	5.10
IRRIGATION COST	\$/AC				7.70	16.93	29.25	29.25	29.25	24.63	12.32	4.62		153.95
IRRIG LABOR COST	\$/AC				1.69	3.95	6.78	6.78	6.78	5.65	2.83	1.13		35.60
TOTAL EXPENSES	\$/AC	22.04	21.80	40.39	98.39	79.70	66.32	65.60	64.88	58.30	308.44	295.51	50.13	1171.50

MONTHLY IRRIGATION AND LABOR REQUIREMENTS

	HR/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
MACHINE LABOR	HR/AC	1.62	1.62	2.26	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	2.26	20.73
MACH. CREW LABOR	HR/AC			0.64									0.64	1.29
IRRIGATION LABOR	HR/AC				0.30	0.70	1.20	1.20	1.20	1.00	0.50	0.20		6.30
IRRIG. WATER APPLIED	ACIN				1.00	2.20	3.80	3.80	3.80	3.20	1.60	0.60		20.00

MACHINERY FIXED AND VARIABLE COSTS PER ACRE

MACHINE	CODE	SIZE	PURCHASE PRICE	YEARS OWNED	ANN HOURS USED	FIXED COST PER ACRE			VARIABLE COST PER ACRE				HRS PER ACRE	
						DEPR.	INTER.	TAX & INS	TOTAL	FUEL	LUBE	REPAIRS		TOTAL
PICKUP 1/2 TON	14	0.5	10000.	7.	435.	36.69	30.30	7.76	74.75	72.00	10.80	12.22	95.02	15.000
3-WHEEL HONDA	15	1.0	1200.	7.	100.	1.28	1.39	0.32	2.99	1.80	0.27	0.04	2.11	1.200
WELL PUMP 10HP*	21	0.1	2300.	20.	1540.	10.91	16.89	5.17	32.97	35.63	0.53	14.55	50.72	153.846
WEED SPRAYER	37	22.0	8000.	15.	320.	1.63	2.04	0.60	4.27	0.93	0.14	3.90	4.96	1.071
MISTER IRIG SYS*	56	0.1	10000.	20.	1540.	47.45	73.43	22.48	143.36	0.00	2.02	101.21	103.23	153.846
FARM SHOP	1		4500.	35.		11.57	26.41	4.50	42.48	4.50		0.19	4.69	
TOOLS-SHOP EQUIP	4		3071.	15.		14.33	21.30	3.07	38.70	0.00		0.41	0.41	

MACHINERY & EQUIPMENT 3907. 123.87 171.75 43.90 339.52 114.86 13.77 132.52 261.15

INVESTMENT & COSTS PER ACRE

TOTAL INVESTMENT 39071.

10 ACRES AVOCADOS ON 40 ACRE FARM - OTHER ACREAGE USUALLY CITRUS

FOGGER/MISTER IRRIGATION SYSTEM - WELL WATER

LANDOWNER BASIS

DATE PRINTED: 02/19/82

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Costs of Producing Zutano Avocados

Tulare and Fresno Counties - Rolling Hills 1981

By J. LaRue and F. Yoshikawa, Farm Advisors - P. Thomas, SRA

10 acres avocados on 40 acre farm - other acreage usually citrus  
Fogger/Mister Irrigation System - well water  
Landowner basis Yield: 9000 lbs/acre

Cost Estimate Assumptions:

1. Assuming trees were established on hillside location and not terraced.
2. Frost protection:  
Hillside ground is warmer in the winter months than the valley floor.  
No fruit is on the trees in winter months. Therefore frost protection is not cost effective since would only be protecting trees and no fruit.
3. Fertilizer:  
Nitrogen injected in the irrigation system.  
100 lbs N/acre total at cost of \$.35/lb.  
20 lbs N/acre in each month May-September.
4. Weed control:  
Materials - March spot spray (weed oil, water, dinitro) \$ 7.50/acre  
- December pre-emergence herbicide \$15.00/acre  
Weed sprayer, self propelled used for each application.  
Boom used in December.  
2 men spot spray in March (second man considered crew labor)
5. Irrigation:  
All of the water is pumped from a well with 10hp pump. Assuming 100 ft. lift is needed to bring water to the surface, 100 ft. lift to get the water up the hill to the trees and 35 ft. lift (15 PSI) additional pressure needed for the mister/fogger system for a total of 235 ft. lift.  
The irrigation system and pump is assumed to be only used for the avocado and not used for the other crops grown.  
Two 4 gallon emitters used for a total of 8 gal/hr/tree applied.  
8 gal/hr/tree x 12 hours = 96 gal/tree  
96 gal/tree x 90 trees/acre = 8640 gal/acre/irrigation.  
*minimum* ~~water~~ pump requirements:  
8 gal/hr/tree x 90 trees/acre x 5 acres ÷ 60 min/hr = 60 gal/min  
(.13 ac.in/hr)  
Assuming 1/2 of the field or 5 acres is irrigated at a time.  
The fogger/mister irrigation system includes lines, emitters, fertilizer injector system, risers, hoses, etc. \$1000/acre x 10 acres = \$10,000

Irrigation schedule:

Month	days apart	#irrig	gal/A	ac.in/A
April	10	3x	25,920	1.0
May	4	7x	60,480	2.2
June	2-3	12x	103,680	3.8
July	2-3	12x	103,680	3.8
Aug	2-3	12x	103,680	3.8
Sept	3	10x	86,400	3.2
Oct	6	5x	43,200	1.6
Nov	15	2x	17,280	.6
TOTAL		63x	544,320	20.0

Note: 1 acre inch = 27,154 gallons  
Irrigation labor .1 hr/appl/acre

6. Prune and sucker in April:  
 10 hrs/acre @ \$5.00/hr = \$50.00/acre  
 Brush shredding - contract \$12.00/acre
7. Zinc application in May:  
 Materials - zinc sulfate 7 lbs/acre (7 lbs/ 20 gal water) @ \$<sup>.32</sup>.285/lb  
 Application - by helicopter (\$250 min cost) \$25.00/acre
8. Pest control:  
 No pest control included in this study.  
 If any insecticides were applied a helicopter would be used at a charge of \$8.00/acre (\$250 min charge).  
 Cost of insecticides would depend on chemical applied.
9. Misc labor:  
 5 hrs/acre @ \$5.00/hr = \$25.00/acre  
 25 min (.417/hr) charged each month for 12 months
10. Pickup: costs based on 25 miles/acre/month
11. 3-wheel honda used to check misters, rodent control, inspect trees and general field checks. Costs based on 1 mile/acre/month.
12. Labor rates include benefits:  
 Machinery operators and crew \$5.65/hr  
 Irrigators \$5.65/hr  
 Misc. labor \$5.00/hr
13. Buildings and equipment:  
 Farm shop 1500 sq.ft. @ \$12/sq.ft. \$18,000  
 Tools and shop equipment \$12,285  
 Proportion allocated to avocados is 25% of above.
14. Land owned:  
 Land value \$7,000/acre Land tax \$70.00/acre
15. Bookkeeping and misc office: 2.5% of total variable costs
16. Machinery costs calculated by computer:  
 For self-propelled machinery and implements, the width, speed, field efficiency and number of passes in the orchard are all used in determining the number of hours necessary to complete an operation. Tractor hours are then calculated by taking into consideration all implements pulled.  
 Per hour cost of depreciation, interest, taxes, insurance, repairs, fuel, and lube are calculated by the computer using purchase price, annual hours of usage, years of life, etc. and this rate is multiplied by the total hours of usage for each machine and equipment.
17. Harvest in October and November (50% each month):  
 Full production usually begins in 6th or 7th year.  
 Yield: 100 lbs/tree x 90 trees/acre = 9000 lbs/acre  
 Net price to grower \$.20/lb.  
 Packing, selling, cooling, hauling charges have been deducted and amount to approx \$.15/lb.  
 Picking costs \$.06/lb.
18. See establishment budgets - budget record #55-58

Budget Record #181

19. Total cash costs per year:

Establishment year 1	Budget Record #55	\$ 1632	
2	56	535	
3	57	668	(incl. harvest costs)
4	58	925	(incl. harvest costs)
		<u>\$ 3760</u>	
Less gross receipts 3rd year		180	
Less gross receipts 4th year		900	
Total cash costs for establishment years		<u>\$ 2680</u>	

20. Establishment costs per acre:

20 year life assumed.

Establishment year 1	Budget Record #55	\$ 2552	
2	56	1466	
3	57	1284	(adjusted)
4	58	386	(adjusted)
		<u>\$ 5688</u>	

The establishment costs are divided by 20 years and the depreciation and interest costs are shown in each of the production years.