

SAMPLE COSTS TO PRODUCE WALNUTS

IN SAN BENITO COUNTY - 1978

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These studies provide a sample set of costs for walnuts and apricots in San Benito County. They offer a way to analyze orchard costs, budget and determine profit or loss of an operation. With rapid increases in production costs and land values, the studies may also help the grower assess alternatives in agricultural land use.

Costs are based upon 1977 conditions in San Benito County and were determined by local inquiry and various cost standards. They are representative of costs in a well-managed orchard and do not reflect an average. Differences in management, cultural practices and orchard situations result in considerable variation between orchards. A column is therefore provided for the grower to calculate his own costs.

Certain assumptions were made in the selection of size of operation and yield. The yields shown are above average but are being obtained in well-managed orchards. The average yield in the county is about 2,000 pounds per acre for walnuts and 5 tons per acre for apricots. Costs and net income for varying yields and prices are shown on the back of the studies. The inherent instability of farm prices should be carefully considered when attempting to apply the shown net ranch income figures to future years.

Two sizes of operations are presented. Thirty acres represents a typical family farm in San Benito County. Costs assume the grower uses mostly used equipment, performs most of his own labor and does not include family labor as a cost. Eighty acres represents an economic unit that could provide the sole support for a family and secure an adequate return on investment. Replacement of worn equipment with new and the use of hired labor for most operations are assumed.

TYPES OF COSTS

Cash costs are those annual expenses involving a cash outflow. Cash labor costs are for necessary hired labor. Social Security, Workers' Compensation and Unemployment Insurance are included. Grower labor is included in the net ranch income. Management is shown as a separate cost only on the fixed interest on investment cost study.

Depreciation costs are considered as it is essential for the grower to budget for replacement of worn equipment. Failure to replace equipment as needed will result in an overall decline in the operation.

The value of trees is included with land and is not depreciated. Sales for all except the better orchards have shown little premium over comparable row crop acreage. For property tax purposes, the value of trees, except in the very best orchards, is nil.

Taxes are figured at \$8.50 per \$100 assessed value. The assessed value is 25% of the appraised value which is assumed to be the market value of land and trees and one-half the cost of equipment, irrigation system and buildings. The valuation of land shown assumes no Land Conservation Act agreement is in effect. LCA agreements would lower taxes 25-30% on the land only. Insurance is based on a rate of 1.5% on equipment and buildings.

Interest on borrowed money is calculated at 9% of one-half of the total cash costs for six months. This assumes the grower will have the rest of the operating capital available from other sources.

Interest received on investment is included as a cost of production on the fixed 8% interest on investment cost study. On all others, this cost must come out of net ranch income. Interest on investment represents a return on investment possible if the capital is invested elsewhere and is figured at 8% of one-half the cost of depreciable items and full value on land and trees.

Equipment costs are shown on the back of each cost study. Costs may be low or high for an individual operation but the total for equipment is typical. Variability is especially true with used equipment. Depreciation is calculated as an annual cost based on the expected use in years.

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SAMPLE COSTS TO PRODUCE WALNUTS
OWNER-OPERATED 30 ACRE ORCHARD
SAN BENITO COUNTY - 1978

Based on a 30 acre, grower-owned orchard with a yield of 3000 lbs. per acre, trees 30' x 30' - 48 trees per acre. Assumes all labor except pruning and harvesting is done by grower. Hired labor at \$3.25 per hour including Social Security, Workers' Compensation and Unemployment Insurance. Assumes land is not under a Land Conservation Act agreement. LCA agreements would lower taxes 25-30%. A tax rate of \$8.50 per \$100 assessed value was used.

INVESTMENT & DEPRECIATION	TYPICAL COST	YOUR COST
Land and trees	\$150,000	
Equipment	31,000	
Buildings	5,000	
Irrigation system	20,000	
TOTAL INVESTMENT	\$206,000	
Equipment	3,533	
Buildings	250	
Irrigation system	1,000	
TOTAL DEPRECIATION	\$ 4,783	

CASH COSTS		
<u>Cash labor costs</u>		
Prune: 8 hrs./acre @ \$3.25/hr.	780	
Shake: custom - 2 hrs./ac. @ \$22/hr.	1,320	
Sweep & pick: custom - \$55/ton	2,475	
Hull & dehydrate: custom - \$60/ton	2,700	
Other cult. practices: 465 hrs. of grower labor	---	
Total	\$ 7,275	
<u>Cash cultural costs</u>		
Fuel and repairs	1,326	
Irrig. power costs: 24" water @ \$35/ac./ft.	2,100	
Spray materials	1,950	
Fertilizer materials: 200 lbs. N/ac. @ 28¢/lb.	1,680	
Misc. materials: replants, graft, tie	285	
Total	\$ 7,341	
<u>Cash overhead</u>		
Misc., office: (6% of labor & cult. costs)	877	
Taxes and insurance	4,323	
Interest on borrowed money (9% of ½ above cash costs for 6 months)	446	
Total	\$ 5,641	
TOTAL CASH COSTS	\$ 20,257	

GROSS RANCH INCOME @ 44¢/lb.	\$ 39,600	
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TOTAL CASH & DEPRECIATION COSTS	\$ 25,040	
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NET RANCH INCOME	\$ 14,560	
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EQUIPMENT	Cost	Life	Depreciation	Cash cost
				per hour
42 HP Diesel crawler tractor (used)	\$ 4,500	10	\$ 450	\$2.27
Orchard land plane	3,500	10	350	1.00
8' disk	3,500	10	350	.96
Buckrake	1,000	10	100	.18
300 gal. sprayer (used)	5,000	15	333	6.94
Forklift, tractor-mounted (used)	3,500	10	350	1.95
Pickup truck	6,000	5	1,200	8.2¢/mi.
Flatbed truck, 2 ton (used)	4,000	10	400	14.9¢/mi.
TOTAL	\$31,000		\$3,533	

(A) GROSS RANCH INCOME

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price per pound	30¢	\$ 9,000	18,000	27,000	36,000	45,000
	37¢	11,100	22,200	33,300	44,400	55,500
	44¢	13,200	26,400	39,600	52,800	66,000

(B) CASH & DEPRECIATION COSTS*

Pounds per acre					
	1,000	2,000	3,000	4,000	5,000
	\$21,306	23,175	25,040	26,914	28,784

(C) NET RANCH INCOME (A - B = C)**

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price per pound	30¢	-\$12,306	-5,175	1,960	9,086	16,216
	37¢	- 10,206	- 975	8,260	17,486	26,716
	44¢	- 8,106	3,225	14,560	25,886	37,216

* Cash costs may be calculated by deducting \$4,783 (depreciation) from figures in table B.

**Ranch income based only on cash costs may be calculated by adding \$4,783 (depreciation) to figures in table C.

ACTUAL PRICES RECEIVED BY GROWERS (per pound)	1974	1975	1976	1977
	21¢	25¢	37¢	44¢

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

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UC Cooperative Extension

SAMPLE COSTS TO PRODUCE WALNUTS
TENANT-OPERATED 30 ACRE ORCHARD
SAN BENITO COUNTY - 1978

Based on a 30 acre, rented orchard with a yield of ^{3000 lbs} 8 tons per acre, trees 30' x 30' - 48 per acre. Assumes all labor except pruning and harvesting is done by grower. Hired labor at \$3.25 per hour including Social Security, Workers' Compensation and Unemployment Insurance. Rent figured as 25% of gross income. Assumes land is not under a Land Conservation Act agreement. LCA agreements would lower taxes 25-30%. A tax rate of \$8.50 per \$100 assessed value was used.

INVESTMENT & DEPRECIATION	OWNER	TENANT	YOURS
Land and trees	\$150,000		
Irrigation system	20,000		
Buildings	5,000		
Equipment		\$31,000	
TOTAL INVESTMENT	\$175,000	\$31,000	
Irrigation system	1,000		
Buildings	250		
Equipment		3,533	
TOTAL DEPRECIATION	\$ 1,250	\$ 3,533	

CASH COSTS			
<u>Cash labor costs</u>			
Prune: 8 hrs./ac. @ \$3.25/hr.		780	
Shake: 2 hrs./ac. @ \$22/hr. ✓		1,320	
Sweep and pick: custom - \$55/ton ✓		2,475	
Hull and dehydrate: custom - \$60/ton ✓		2,700	
Other cult. practices: 465 hrs. of grower labor		---	
Total		\$ 7,275	
<u>Cash cultural costs</u>			
Fuel and repairs		1,326	
Irrig. power costs: 24" water @ \$35/ac./ft.		2,100	
Spray materials		1,950	
Fert. materials: 200 lbs. N/ac. @ 28¢/lb.		1,680	
Misc. materials: replants, graft, tie	285		
Total	\$ 285	\$ 7,056	
<u>Cash overhead</u>			
Misc., office: (6% of labor and cultural costs)	17	860	
Taxes and insurance	3,528	794	
Interest on borrowed money (9% of ½ above cash costs for 6 months)		360	
Total	\$ 3,545	\$ 2,014	
TOTAL CASH COSTS	\$ 3,830	\$16,345	

GROSS RANCH INCOME @ 44¢/lb.	\$ 9,900	\$29,700	
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TOTAL CASH & DEPRECIATION COSTS	\$ 5,080	\$19,878	
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NET RANCH INCOME	\$ 4,820	\$ 9,822	
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EQUIPMENT	Cost	Life	Depreciation	Cash cost per hour
42 HP Diesel crawler tractor (used)	\$ 4,500	10	\$ 450	\$2.27
Orchard landplane	3,500	10	350	1.00
8' disk	3,500	10	350	.96
Buckrake	1,000	10	100	.18
300 gal. sprayer (used)	5,000	15	333	6.94
Forklift, tractor-mounted (used)	3,500	10	350	1.95
Pickup truck	6,000	5	1,200	8.2¢/mi.
Flatbed truck, 2 ton (used)	4,000	10	400	14.9¢/mi.
TOTAL	\$31,000		\$3,533	

(A) GROSS RANCH INCOME - TENANT (LANDLORD IN PARENTHESIS)

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price	30¢	\$6,750	13,500	20,250	27,000	33,750
		(2,250)	(4,500)	(6,750)	(9,000)	(11,250)
per	37¢	8,325	16,650	24,975	33,300	41,625
		(2,775)	(5,550)	(8,325)	(11,100)	(13,875)
Pound	44¢	9,900	19,800	29,700	39,600	49,500
		(3,300)	(6,600)	(9,900)	(13,200)	(16,500)

(B) CASH & DEPRECIATION COSTS - TENANT*

Pounds per acre				
1,000	2,000	3,000	4,000	5,000
\$16,138	18,008	19,878	21,747	23,618

Landlord cash and depreciation costs are a constant \$5,080.

(C) NET RANCH INCOME - TENANT (LANDLORD IN PARENTHESIS)**

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price	30¢	-\$9,388	-4,508	372	5,253	10,132
		(-2,830)	(-580)	(1,670)	(3,920)	(6,170)
per	37¢	-7,813	-1,358	5,097	11,553	18,007
		(-2,305)	(470)	(3,245)	(6,020)	(8,795)
pound	44¢	-6,238	1,792	9,822	17,853	25,882
		(-1,780)	(1,520)	(4,820)	(8,120)	(11,420)

* Cash costs may be calculated by deducting \$3,533 (depreciation) from figures in table B. (Depreciation for landlord is \$1,250.)

** Ranch income based only on cash costs may be calculated by adding \$3,533 (depreciation) to figures in table C. (For landlord income add \$1,250 to figures in parenthesis in table C.)

ACTUAL PRICES RECEIVED BY GROWERS (per pound)	1974	1975	1976	1977
	21¢	25¢	37¢	44¢

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SAMPLE COSTS TO PRODUCE WALNUTS
OWNER-OPERATED 80-ACRE ORCHARD
SAN BENITO COUNTY - 1978

Based on an 80 acre, grower-owned orchard with a yield of 3,000 lbs. per acre, trees 30' x 30' - 48 per acre. Assumes hired labor at \$3.25 per hour unskilled and \$3.55 per hour skilled. Labor costs include Social Security, Workers' Compensation and Unemployment Insurance. Assumes land is not under a Land Conservation Act agreement. LCA agreements would lower taxes 25-30%. A tax rate of \$8.50 per \$100 assessed value was used.

INVESTMENT & DEPRECIATION	TYPICAL COST	YOUR COST
Land and trees	\$320,000	
Equipment	52,000	
Buildings	8,000	
Irrigation system	22,000	
TOTAL INVESTMENT	\$402,000	
Equipment	4,834	
Buildings	400	
Irrigation system	1,100	
TOTAL DEPRECIATION	\$ 6,334	

CASH COSTS		
<u>Cash labor costs</u>		
Prune: 8 hrs./acre @ \$3.25/hr.	2,080	
Brush disposal: 1 hr./acre @ \$3.55/hr.	284	
Spray: 2 hrs./acre @ \$3.55/hr.	568	
Cultivate: 4 hrs./acre @ \$3.55/hr.	1,136	
Fertilize: ½ hr./acre @ \$3.55/hr.	142	
Irrigate: 4 hrs./acre @ \$3.25/hr.	1,040	
Landplane, pre-harvest: 1 hr./ac. @ \$3.55/hr.	284	
Shake: 2 hrs./acre @ \$22/hr.	3,520	
Sweep and pick: custom - \$55/ton	6,600	
Hull and dehydrate: custom - \$60/ton	7,200	
Misc. (replants, etc.): 4 hrs./ac. @ \$3.25	1,040	
Total	\$ 23,894	
<u>Cash cultural costs</u>		
Fuel and repairs	3,988	
Irrig. power costs: 24" water @ \$35/ac./ft.	5,600	
Spray materials	5,200	
Fert. materials: 200 lbs. N/ac. @ 28¢/lb.	4,480	
Misc. materials: replants, graft, tie	760	
Total	\$ 20,028	
<u>Cash overhead</u>		
Misc., office, etc. (6% of labor and cultural costs)	2,635	
Taxes and insurance	8,571	
Interest on borrowed money (9% of ½ above cash costs for 6 months)	1,240	
Total	\$ 12,446	
TOTAL CASH COSTS	\$ 56,368	

GROSS RANCH INCOME @ 44¢/lb.	\$105,600	
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TOTAL CASH & DEPRECIATION COSTS	\$ 62,702	
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NET RANCH INCOME	\$ 42,898	
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EQUIPMENT	Cost	Life (yrs.)	Depreciation	Cash cost per hour
65 HP Diesel wheel tractor	\$13,000	15	\$ 867	\$2.42
10' disk	4,000	10	400	1.08
Orchard landplane	3,500	10	350	1.00
Buckrake	1,000	10	100	.18
Fertilizer spreader	1,000	10	100	.72
500 gal. sprayer	16,000	15	1,067	8.71
Forklift, tractor-mounted (used)	3,500	10	350	1.95
Pickup truck	6,000	5	1,200	8.2¢/mi.
Flatbed truck, 2 ton (used)	4,000	10	400	14.9¢/mi.
TOTAL	\$52,000		\$4,834	

(A) GROSS RANCH INCOME

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price per pound	30¢	\$24,000	48,000	72,000	96,000	120,000
	37¢	29,600	59,200	88,800	118,400	148,000
	44¢	35,200	70,400	105,600	140,800	176,000

(B) CASH & DEPRECIATION COSTS*

Pounds per acre						
		1,000	2,000	3,000	4,000	5,000
		\$52,731	57,716	62,702	67,688	72,673

(C) NET RANCH INCOME (A - B = C)**

		Pounds per acre				
		1,000	2,000	3,000	4,000	5,000
Price per pound	30¢	-\$28,731	-9,716	9,298	28,312	47,327
	37¢	- 23,131	1,484	26,098	50,712	75,327
	44¢	- 17,531	12,684	42,898	73,112	103,327

* Cash costs may be calculated by deducting \$6,334 (depreciation) from figures in table B.

** Ranch income based only on cash costs may be calculated by adding \$6,334 (depreciation) to figures in table C.

ACTUAL PRICES RECEIVED BY GROWERS (per pound)	1974	1975	1976	1977
	21¢	25¢	37¢	44¢

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SAMPLE COSTS TO PRODUCE WALNUTS
 BASED ON FIXED 8% INTEREST ON INVESTMENT
 SAN BENITO COUNTY - 1978-

Based on an 80 acre orchard with a yield of 3,000 lbs. per acre, trees 30' x 30' - 48 per acre. Labor at \$3.25/hr. unskilled and \$3.55/hr. skilled including Social Security, Workers' Compensation and Unemployment Insurance. Assumes land is not under a Land Conservation Act agreement. LCA agreements would lower taxes 25-30%. A tax rate of \$8.50 per \$100 assessed value was used.

Operation	Hours per acre	Cash and labor costs per acre			Typical Cost
		Labor	Fuel and repairs	Materials Kind and Quantity Cost	
Cultural costs					
Prune	8.0	\$26.00	\$.60		\$ 26.60
Brush disposal	1.0	3.55	2.60		6.15
Cultivate	4.0	14.20	14.00		28.20
Fertilize	0.5	1.78	1.57	200 lbs. N @ 28¢=\$56.00	59.35
Irrigate (4x)	4.0	13.00	2.40	24" water (power)=70.00	85.40
Spray (4x)	2.0	7.10	22.26	Materials= 65.00	94.36
Misc. (replants, graft, tie)	4.0	13.00	3.00	9.50	25.50
TOTAL CULT. COSTS	23.5	\$78.63	\$46.43	\$200.50	\$325.56
Harvest costs					
Landplane	1.0	3.55	3.42		6.97
Shake	2.0	Custom @ \$22/hr.		44.00	44.00
Sweep & pick		Custom @ \$55/ton		82.50	82.50
Hull & dehydrate		Custom @ \$60/ton		90.00	90.00
TOTAL HARVEST COSTS		\$3.55	\$3.42	\$216.50	\$223.47
Cash overhead					
Misc., office, etc. (6% of total cultural and harvest costs)					32.94
Taxes and insurance					107.14
Interest on borrowed money (9% of ½ above cash costs for 6 months)					15.50
TOTAL CASH OVERHEAD					\$155.58
TOTAL CASH COST					\$704.61
Management: 5% of 3,000 lbs. @ 44¢/lb.					66.00
INVESTMENT	Per acre	Depreciation	Interest		
Land and trees	\$4,000.00		\$320.00		\$320.00
Irrigation system	275.00	\$13.75	11.00		24.75
Buildings	100.00	5.00	4.00		9.00
Equipment	650.00	60.42	26.00		86.42
Total	\$5,025.00	\$79.17	\$361.00		\$440.17
TOTAL COST PER ACRE					\$1,210.78

COST OF PRODUCTION AT VARYING YIELDS

Yield in pounds	1,000	2,000	3,000	4,000	5,000
Cash cost/acre	\$579.97	642.29	704.61	766.94	829.26
Cash cost & depreciation/acre	659.14	721.46	783.78	846.11	908.43
Total cost/acre	1,042.14	1,126.46	1,210.78	1,295.11	1,379.43
Cash cost/lb.	58.0¢	32.1	23.5	19.2	16.6
Cash cost & depreciation/lb.	65.9	36.1	26.1	21.2	18.2
Total cost/lb.	104.2	56.3	40.4	32.4	27.6

EQUIPMENT	Cost	Life (yrs.)	Depreciation per acre	Cash cost per hour
65 HP Diesel wheel tractor	\$13,000	15	\$10.83	\$2.42
10' disk	4,000	10	5.00	1.08
Orchard landplane	3,500	10	4.38	1.00
Forklift tractor-mounted (used)	3,500	10	4.38	1.95
Buckrake	1,000	10	1.25	.18
500 gallon sprayer	16,000	15	13.33	8.71
Fertilizer spreader	1,000	10	1.25	.72
Pickup truck	6,000	5	15.00	8.2¢/mi.
Flatbed truck, 2 ton (used)	4,000	10	5.00	14.9¢/mi.
TOTAL	<u>\$52,000</u>		<u>\$60.42</u>	

Total Investment	\$52,000.00
Per acre on 80 acres	650.00
Depreciation	60.42
Interest per acre	26.00 @ 8% of half purchase price

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