

COSTS FOR ESTABLISHING AND PRODUCING PISTACHIOS  
Southern San Joaquin Valley - 1985

Prepared by:

Karen Klonsky, Farm Management Specialist, Davis Campus; Steve Sibbett, Farm Advisor, Tulare County, Visalia; Joe Maranto, Kern County Farm Advisor, Bakersfield; Mark Freeman, Fresno County Farm Advisor, Fresno.

1. Yield:

The onset of economic bearing is the 7th year following planting. The following annual yields can be assumed until full bearing.

	<u>YEAR</u>							
<u>Yield</u> (lbs/ac)	7	8	9	10	11	12	13	Mature
	200	400	800	1200	1200	1800	1600	2000

2. Labor:

Labor rates are assumed to be \$7.50 per hour for skilled and \$5.75 per hour for unskilled labor including fringe benefits. Irrigation labor is for monitoring drippers.

3. Acreage:

Orchard size is 50 acres of which 2.5 acres are used for roads and burn areas. This leaves 47.5 producing acres.

4. Spacing:

Trees are spaced 12'x24', 151 trees per acre.

5. Varieties:

Pistachio trees are male or female. To maximize production, orchards are planted with a ratio of one male to 8 female trees (11%).

6. Irrigation:

A drip irrigation system is used in this sample study. The cost of water is assumed to be \$50 per acre foot.

<u>Year</u>	<u>Acre feet/Year</u>
1	1.0
2	1.0
3	1.5
4	1.5
5+	2.0

7. Fertilization:

Nitrogen is considered the only element requiring annual application in this study. Zinc and boron can be required in special circumstances. Nitrogen is assumed to cost 33 cents per pound. The rate of nitrogen applied is as

follows:

---

<u>Year</u>	<u>Lbs/Acre</u>
1	25
2	35
3	35
4	55
5	75
6	75
7+	151

---

8. Pesticides

Several pests infest pistachios. This study assumes one annual pesticide application will be required in a mature orchard.

9. Pruning:

Detailed pruning to renew fruit wood is done in mature pistachios. Young orchards are intensively trained.

10. Harvest Costs:

Harvest costs are calculated as \$1 per tree for shaking and catching and \$9 per ton for hauling to the processor. Hauling costs will vary depending on the location of the orchard. Hulling and drying costs are not included as a cost to the grower. They are subtracted from the price paid to the grower upon payment by the processor. The charge for custom drying is \$.27 per lb and for hulling is \$.8 per lb.

11. Interest:

An interest rate of 13% was assumed. Operating capital is assumed to be borrowed for 6 months of each establishment and producing year. Interest is also charged on accumulated cash costs in establishment years to reflect interest charged on a long-term establishment loan. Interest is also charged on investment capital to account for the income foregone by keeping money tied up in capital.

12. Overhead Costs:

County taxes represent a set fee while office and business costs are estimated at about 8% of the total cultural costs. They include such costs as preparing roadways, general weed control, office, bookkeeping, etc.

13. Fuel & Repair:

Included are the cost of fuel, maintenance, replacement parts, tires, etc.

14. Investment Costs:

In allocating the equipment cost per acre, the following calculations were made: (a) "Original Cost" of equipment is the estimated new cost and includes 6% sales tax. (b) "Cost Per Acre" is the new cost divided by the number of acres the equipment will be used on. (c) "Depreciation" is based on

the "Per Acre Cost" divided by the expected life of the equipment. (d) "Interest" on investment is figured on one-half of the new cost per acre multiplied by 13%. (e) The investment cost per acre is calculated as 60% of the cost of all new equipment to reflect a mix of new and used equipment.

Pistachio Nut Orchard Establishment Costs  
Southern San Joaquin Valley - 1985  
Cost Analysis Work Sheet

Skilled Labor \$           7.50  
Field Labor \$            5.75

YEAR	Costs Per Acre					
	1st	2nd	3rd	4th	5th	6th
YIELD: lbs./acre	---	---	---	---	---	---
<b>CULTURAL COSTS:</b>						
Land Preparation: subsoil contract	160					
Disk and Float: 4hrs. labor and tractor	76					
Trees: 151 @ \$7.00	1057	14	7	7		
Survey, Plant and Stake	76	2	1	1		
Stakes	113					
Suckering and Training	20	20	20	20	40	40
Irrigation						
Labor 2hrs.	12	12	12	12	12	12
Water \$50 ac. ft.	50	50	75	75	100	100
Nitrogen	8	12	12	18	25	25
Weed Control	69	46	46	46	46	46
Tillage 1.5 hrs.	30	30	30	30	30	30
Misc. Expenses	10	10	10	10	10	10
<b>TOTAL CULTURAL COSTS</b>	<b>1680</b>	<b>196</b>	<b>213</b>	<b>219</b>	<b>263</b>	<b>263</b>
<b>OVERHEAD COSTS:</b>						
County taxes	50	50	50	50	50	50
Management Contract	50	50	50	50	50	50
Office and Business Costs	134	16	17	18	21	21
<b>TOTAL OVERHEAD COSTS</b>	<b>234</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>121</b>	<b>121</b>
<b>TOTAL CASH COSTS</b>	<b>1915</b>	<b>311</b>	<b>330</b>	<b>337</b>	<b>384</b>	<b>384</b>
<b>ACCUMULATED CASH COSTS</b>	<b>1915</b>	<b>2226</b>	<b>2556</b>	<b>2892</b>	<b>3276</b>	<b>3660</b>
<b>DEPRECIATION:</b>						
Building, equipment, and irrigation system	125	125	125	125	125	125
<b>INTEREST ON INVESTMENT @ 13%:</b>						
Building, equipment, and irrigation system	86	86	86	86	86	86
Land \$5000	650	650	650	650	650	650
Interest in accum. cash cost	249	289	332	376	426	476
<b>TOTAL INTEREST ON INVESTMENT</b>	<b>985</b>	<b>1025</b>	<b>1068</b>	<b>1112</b>	<b>1162</b>	<b>1211</b>
<b>TOTAL COST FOR THE YEAR</b>	<b>3025</b>	<b>1462</b>	<b>1523</b>	<b>1567</b>	<b>1671</b>	<b>1721</b>
<b>ACCUMULATED COST</b>	<b>3025</b>	<b>4486</b>	<b>6009</b>	<b>7576</b>	<b>9246</b>	<b>10967</b>

SAMPLE COSTS TO PRODUCE PISTACHIOS

Southern San Joaquin Valley - 1985

Labor rate \$ 7.50 /hr. skilled labor

5.75 /hr. field labor

Yield: 1 ton per acre

Cash and Labor Costs per Acre

Operation	Labor Hours per Acre	Labor	Fuel & Repairs	Materials		Total Cost	Your Cost
				Kind and Quantity	Cost		
<b>Cultural costs:</b>							
Pruning-contract				151 Trees @ \$.35 per tree	52.85	52.85	
Shake trees (for sanitation)				.25 per tree-custom	37.75	37.75	
Disc 3X	1.5	11.25	18.50			29.75	
Fertilizer				151 lbs. @ \$.33/lb.	49.83	49.83	
Irrigation	2	11.50		2.0 ac. ft. @ \$50.00/ac.ft.	100.00	111.50	
Herbicide	1.5	11.25	2.00	Pre-emergence \$20.00	20.00		
				Spot \$15	15.00	48.25	
Insecticide-contract				400 gals. @.035/gal.	14.00	14.00	
				custom appl.	14.00	14.00	
Brush shredding	.5	3.75	2.00			5.75	
Misc. Supplies					10.00	10.00	
Interest on operating capital @ 13% for 6 months						24.29	
<b>TOTAL CULTURAL COSTS</b>	<b>5.5</b>	<b>37.75</b>	<b>22.50</b>		<b>313.43</b>	<b>397.97</b>	
<b>Harvest costs:</b>							
Shake and catch				\$1.00 per tree		151.00	
Hauling (20 Miles)				\$9.00 per ton		9.00	
<b>TOTAL HARVEST COSTS</b>						<b>160.00</b>	
<b>Cash overhead:</b>							
Office and business costs						44.64	
County Taxes						50.00	
<b>TOTAL CASH OVERHEAD COSTS</b>						<b>94.64</b>	
<b>TOTAL CASH COSTS</b>						<b>652.61</b>	
<b>TOTAL CASH COST PER TON</b>						<b>652.61</b>	
<b>Investment</b>							
				Annual Cost			
	Per Acre			Depreciation	Interest @ 13%		
Equipment & buildings	1318.18			125.21	85.68	210.89	
Trees 40 yr. depreciation	10567.00			274.18	712.86	987.03	
Land	5000.00				650.00	650.00	
<b>TOTAL INVESTMENT COSTS</b>	<b>17285.18</b>			<b>399.39</b>	<b>1448.54</b>	<b>1847.92</b>	
<b>TOTAL COSTS PER ACRE</b>						<b>2500.53</b>	
Cost per ton @	1 ton yield					<b>2500.53</b>	

PISTACHIO NUT ORCHARD  
Southern San Joaquin Valley - 1985

EQUIPMENT AND BUILDING LIST

ITEM	ORIGINAL COST	ANNUAL USE (ACRES)	COST PER ACRE	LIFE (YEARS)	OVERHEAD DEPREC-IATION	INTEREST AT 13%	COST PER HOUR
Tractors:							
65 HP wheel diesel	30000	47.5	631.58	10	63.16	41.05	9.28
Disk 12'	7000	47.5	147.37	10	14.74	9.58	3.43
Pickup	10000	47.5	210.53	5	42.11	13.68	6.90
Brush Rake	1000	47.5	21.05	15	1.40	1.37	1.00
Brush Shredder	7600	47.5	160.00	10	16.00	10.40	4.00
SP Weed Rig	9000	47.5	189.47	10	18.95	12.32	11.30
3-Wheel Motorcycle	1000	47.5	47.50	10	4.75	3.09	3.75
Irrigation System	28500	47.5	600.00	15	40.00	39.00	
Buildings	9000	47.5	189.47	25	7.58	12.32	
TOTAL COST	103100		2196.97		208.68	142.80	
60% OF NEW COSTS	61860		1318.18		125.21	85.68	

Cost of Producing Pistachios at Varying Yields

	TONS PER ACRE					
	.25	.50	.75	1.00	1.25	1.50
Cultural costs	397.97	397.97	397.97	397.97	397.97	397.97
Harvest cost	153.25	155.50	157.75	160.00	162.25	164.50
Cash overhead	94.10	94.28	94.46	94.64	94.82	95.00
Total cash cost	645.32	647.75	650.18	652.61	655.04	657.47
Investment cost	1847.92	1847.92	1847.92	1847.92	1847.92	1847.92
Total cost	2493.24	2495.67	2498.10	2500.53	2502.96	2505.39

Income Above Cash Costs at Varying Yields & Prices

DOLLARS PER TON	TONS PER ACRE					
	.25	.50	.75	1.00	1.25	1.50
2600	4.68	652.25	1299.82	1947.39	2594.96	3242.53
2800	54.68	752.25	1449.82	2147.39	2844.96	3542.53
3000	104.68	852.25	1599.82	2347.39	3094.96	3842.53
3200	154.68	952.25	1749.82	2547.39	2844.96	4142.53
3400	204.68	1052.25	1899.82	2747.39	3594.96	4442.53
3600	254.68	1152.25	2049.82	2947.39	3844.96	4742.53
3800	304.68	1252.25	2199.82	3147.39	4094.96	5042.53
4000	354.68	1352.25	2349.82	3347.39	4344.96	5342.53
4200	404.68	1452.25	2499.82	3547.39	4594.96	5642.53

Income Above Total Costs at Varying Yields & Prices

DOLLARS PER TON	TONS PER ACRE					
	.25	.50	.75	1.00	1.25	1.50
2600	-1843.24	-1195.67	-548.10	99.47	747.04	1394.61
2800	-1793.24	-1095.67	-398.10	299.47	997.04	1694.61
3000	-1743.24	-995.67	-248.10	499.47	1247.04	1994.61
3200	-1693.24	-895.67	-98.10	699.47	1497.04	2294.61
3400	-1643.24	-795.67	51.90	899.47	1747.04	2594.61
3600	-1593.24	-695.67	201.90	1099.47	1997.04	2894.61
3800	-1543.24	-595.67	351.90	1299.47	2247.04	3194.61
4000	-1493.24	-495.67	501.90	1499.47	2497.04	3494.61
4200	-1443.24	-395.67	651.90	1699.47	2747.04	3794.61