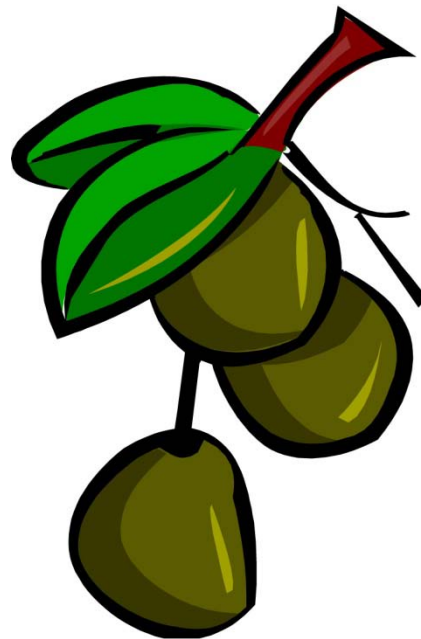


1994

**U.C. COOPERATIVE EXTENSION**  
**SAMPLE COSTS**  
**TO ESTABLISH AN OLIVE ORCHARD AND PRODUCE**  
**~OLIVES~**



***MANZANILLO VARIETY - Micro-Sprinkler Irrigated***  
**IN THE SOUTHERN SAN JOAQUIN VALLEY**

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## U.C. COOPERATIVE EXTENSION

### ESTABLISHING AN OLIVE ORCHARD AND PRODUCING OLIVES *MANZANILLO VARIETY - Micro-Sprinkler Irrigated* In The Southern San Joaquin Valley - 1994

#### INTRODUCTION

Detailed costs of establishing a Manzanillo olive orchard and production of Manzanillo olives in Southern San Joaquin Valley are presented in this study. The hypothetical farm used in this report is 40 acres, 35 of which are in olive production.

This study consists of General Assumptions for Establishing a Manzanillo Olive Orchard and Producing Manzanillo Olives and eight tables. It is intended as a guide only. It can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Sample costs given for labor, materials, equipment and contract services are based on current figures. Some costs and practices detailed in this study may not be applicable to every situation. A blank, *Your Cost*, column is provided to enter your actual costs on Table 2, Sample Costs To Produce Manzanillo Olives and Appendix 1, Costs And Returns Per Acre to Produce Manzanillo Olives.

Tables included:

- Table 1. Costs Per Acre to Establish A Manzanillo Olive Orchard**
- Table 2. Costs and Returns Per Acre to Produce Manzanillo Olives**
- Table 3. Monthly Cash Costs Per Acre to Produce Manzanillo Olives**
- Table 4. Whole Farm Annual Equipment, Investment and Business Overhead**
- Table 5. Hourly Equipment Costs**
- Table 6. Ranging Analysis**
- Table 7. Costs and Returns/Breakeven Analysis**
- Appendix 1. Costs Per Acre to Produce Manzanillo Olives**

This and other studies can be obtained through the Department of Agricultural Economics, U.C. Davis ((916) 752-2745), or from selected county Cooperative Extension offices. For an explanation of calculations or assumptions used in this study refer to the attached General Assumptions or call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or the farm advisor in the county of interest.

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## U.C. COOPERATIVE EXTENSION

### ESTABLISHING AN OLIVE ORCHARD AND PRODUCING OLIVES *MANZANILLO VARIETY - Micro-Sprinkler Irrigated* Southern San Joaquin Valley - 1994 GENERAL ASSUMPTIONS

The following is a description of some general assumptions pertaining to sample costs of establishing a Manzanillo olive orchard and produce olives in the Southern San Joaquin Valley. Practices described should not be considered recommendations by the University of California, but rather represent production procedures and materials considered typical of a well managed orchard for the Southern San Joaquin Valley. Some of these costs, practices, and materials may not be applicable to your situation nor used during every production year. Additional ones not indicated may be needed. Establishment and cultural practices for the production of olives vary by grower and region; variations can be significant. These costs are represented on an annual, per acre basis. *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.*

#### 1. LAND:

The farm consists of 40 acres of land. Thirty five acres are planted to olives and five acres include roads, irrigation systems and farmstead. The orchard is farmed by the owner; additional management costs ranging from \$60 to \$100 per acre, occur if practices are contracted. Property costs \$4,000 per acre. Because only 35 of the 40 acres is planted with olives, land is valued at \$4,571 per producing acre. Land is not depreciated.

#### 2. TREES:

The olive cultivar is Manzanillo. A few of the cultivars representing the remainder of the olive acreage in this area that might also be planted include Sevillano, Ascolano, or Mission. The trees are planted at 15' X 30' spacing, 90 trees per acre. Olive trees have a long production life if they are well maintained. The life of the orchard at the time of planting in this study is estimated to be 60 years.

#### 3. IRRIGATION:

Water cost for irrigation is a blend of district and pumped water. Price per acre foot for water will vary from grower to grower in this region depending on particular irrigation district, and/or various well characteristics, and other irrigation factors. In this study, water is calculated to cost \$35.04 per acre foot. Irrigation rates increase each year as the orchard matures. No assumption is made about effective rainfall. The amount of water applied to the orchard during the establishment period varies each year and is shown in Table A.

Year	Acre Feet/Year <sup>1</sup>	Annual Cost/Acre
1	0.3	\$10.51
2	0.7	\$24.53
3	1.5	\$52.56
4	2.5	\$87.60
5+	3.4	\$119.14

<sup>1</sup> 15% excess water is delivered but not used by the trees do to runoff, evaporation, etc.

Water is delivered to the orchard by microsprinklers in the tree row. The irrigation system is installed and completed before the trees are planted. It is considered an

improvement to the property and cost is shown in the investments section of Table 5. The pump, filter, station, and mainlines have an expected useful life of 40 years. The life of the hoses and emitter are estimated at 10 years.

#### 4. **ESTABLISHMENT CULTURAL PRACTICES:**

This orchard is established on ground that has been previously planted to other crops. The land is assumed to be well drained and either a class I or II soil

**Site Preparation:** Land preparation begins with deep ripping the soil profile to 5 to 6 feet in order to break up any underlying hardpan which would affect root and water penetration. Ripping is performed by contract operators. The ground is not leveled since microsprinklers are used for irrigation nor is it fumigated. The ground is disced several times to break up large clods of soil and smooth the soil in advance of planting the trees. All operations that prepare the orchard for planting are done in the year prior to planting. However, for this study, these costs are included with those incurred in the first year as shown in Table 1.

**Planting:** Planting the orchard starts by marking tree sites with a small stake. Then holes are dug and trees planted. Later trunks are wrapped with white, water-resistant guards so trees are protected from sunburn and herbicides. Regular pruning, other than sucker removal, begins in the fourth year and hours required to perform this task, as well as costs, increase annually. Pruning is performed in spring months. In the second year, one tree per acre will have to be replanted.

**Fertilization:** Nitrogen is the major nutrient required for proper tree growth and optimum yields. Nitrogen fertilizer is applied in a liquid form, UN 32 (32% nitrogen), at increasing rates during orchard establishment. Annual rates of actual N are shown in Table B.

Year	Applied Nitrogen During Establishment Years	
	Pounds Of N/Acre	Gallons Of UN 32/Acre
1	6	1.6
2	11	3.0
3	23	6.2
4	45	12.1
5+	90	24.2

**Pest Management:** Chemical weed control in the orchard begins in Spring and Summer with a contact herbicide (Roundup®) applied as a spot spray twice. In the third fall a residual herbicide is (Karmex® or Princep®) sprayed on the entire orchard floor.

During the developmental years, pest and disease controls are minimal in this study, and not needed until the third year. Peacock spot (*Spilocea oliaginea*) and olive knot (*Psuedomonas savastanoi*) are major diseases, causing defoliation and shoot death. These infect leaves and shoots. In this study Kocide® (copper) is used to prevent peacock spot and olive knot.

There are no insect problems that need control during the period of orchard establishment. Occasional control may be needed for black scale (*Seissetia oleae*), but is not shown for the immature orchard in this report.

**Establishment Cost:** The cost to establish the orchard is used to determine non-cash overhead expenses, depreciation, and interest on investment for production years. The establishment cost is the sum of cash costs for land preparation, planting, trees, production expenses, and cash overhead for growing olive trees from planting until the

end of the first year fruit is harvested. The *Accumulated Net Cash Cost/Acre* in the third year shown in Table 1, represents the establishment cost per acre. For this study, this cost is \$2,296 per acre or \$80,360 for the 35 acre orchard. Establishment cost is depreciated beginning in the fourth year over the remaining 57 of the 60 years that the orchard is assumed to be in production.

## **5. PRODUCTION CULTURAL PRACTICES:**

Cultural practices for the production of Manzanillo olives vary from grower to grower in this region. The practices and inputs used in this cost study serve only as a sample or guide. Variation can be significant. For additional information concerning production practices contact the Tulare County farm advisor.

**Pruning:** Pruning strategy is critical to production. It is dependent on several factors such as olive cultivar and planting density. In this study, pruning is done in the spring by hand. Prunings are placed in the row middles and shredded. Since the orchard is planted at the final spacing, tree thinning is not required.

**Fertilization:** Mature tree nutrition is determined by leaf analysis in July. Nitrogen is applied at a rate of 1 pound of N per tree annually. Fertilizer is in a liquid form (UN 32 - 32% nitrogen) and applied in January.

**Weed Control:** Weeds in mature orchards are controlled with chemicals. Annual weeds are controlled with residual herbicides (Karmex<sup>®</sup> or Princep<sup>®</sup>). These two herbicides are used alternately each year (i.e. Karmex<sup>®</sup> is applied one season and Princep<sup>®</sup> is used the second). Perennial weeds receive 2 spot sprays of a contact herbicide (Roundup<sup>®</sup>) each year.

**Insect and Disease Management:** One insect and two disease pests are treated. Black scale, an insect pest, requires occasional insecticide treatment. For trees that are pruned adequately and not allowed to become dense this cultural practice controls this pest well. Only following cool years or in those orchards that have become too dense would insecticide treatment be required to reduce the population to manageable levels. This study assumes that black scale is a problem and is treated with a mix of Sevin<sup>®</sup> and oil.

The fungal disease, peacock spot and the bacterial disease, olive knot damage leaves, shoots, and branches. Their prevention requires an annual spray of copper (in this study Kocide<sup>®</sup> is used) following harvest and prior to Fall rains.

Pesticides, rates, and cultural practices mentioned in this cost study are a few of those listed in the [UC IPM Olive Pest Management Guidelines](#). 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.

## **6. HARVEST:**

Harvest starts in the third year after the orchard is planted. Olives are hand harvested and in this study, the crop is harvested by a contracted harvesting company. All costs for contracted harvest operations are based on fresh tons. Yield maturity is reached in the eighth year.

Under a federal marketing order, mandatory assessment fees are collected by the California Olive Committee (COC). These assessments are charged to the processor to

pay for olive administration, research, and market development. Growers do not pay for the assessment.

**7. YIELDS & RETURNS:**

As noted in the previous section, Manzanillo olives begin bearing an economic crop in the third year after planting. Typical annual yields for olives are measured in tons per acre and are shown in Table C. These yields are from the third year of orchard establishment to maturity.

Year	Tons Per Acre
3	0.75
4	1.75
5	2.50
6	3.00
7	3.75
8+	4.00

An estimated price of a \$600 per ton of Manzanillo olives is used in this study so that a ranging analysis for different yields and price can be calculated. Returns, shown in Table 7, will vary and the yields and prices used in this cost study are an estimate taking into consideration current situations.

**8. RISK:**

The risks associated with producing and marketing olives should not be minimized. While this study makes every 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 olive production.

The market for olives can be unstable in both price and demand. Growers do not have control over either of these market components. Additionally, establishment of olive orchards is capital intensive. Risk is caused by uncontrollable factors such as a decrease in the demand, an oversupply or crop losses. Due to the risk involved, access to a processor is crucial. A contract with a processor should be determined before any olive orchards are planted and brought into production.

**9. LABOR:**

Hourly wages for workers are \$7.46, and \$4.85 per hour for skilled, and field workers respectively. Adding 34% for Workers Compensation, Social Security, Medicare insurance, and other possible benefits gives the labor rates shown of \$10.00 per hour for skilled labor, and \$6.50 per hour for field labor. The labor for operations involving machinery are 20% higher than the operation time given in Table 2 to account for the extra labor involved in equipment set up, moving, maintenance, and repair. Wages for managers is not included.

**10. OVERHEAD:**

County taxes are calculated as 1% of the land value plus 1% of the average value of the trees, equipment, buildings, and improvements. Insurance is charged at 0.5% of the average value of the equipment over its useful life. Liability insurance covers accidents on the farm and costs \$300 for the entire farm or \$5.00 per acre. Office expenses are estimated at \$90 per acre and include, but are not limited to: office supplies, phone, bookkeeping, accounting, and legal fees. Sanitation services provide portable toilets for work in the orchard and cost the farm \$240 annually.

**11. INTEREST:**

Interest on operating capital is based on cash costs and is calculated monthly for harvest at a nominal rate of 9.00% per year. Interest is also charged on investment at 4% per year to account for income foregone that could be received from an alternative

investment (opportunity cost) and is based on the average value of the land, orchard, buildings, and equipment over their useful life. Real interest rates are used on investments, so no long-term adjustment for future inflation have been included. Nominal interest rates would contain a factor for inflation and therefore be higher than real interest rates.

## **12. EQUIPMENT COSTS:**

In allocating the equipment costs per acre, the following calculations were made and shown in Table 5: (a) Original Cost of equipment is the cost of the new equipment plus sales tax. (b) Depreciation uses the straight line method with a 10% salvage value. (c) Interest on Investment is calculated as the average value per acre of the equipment during its useful life, multiplied by an interest rate of 4%. Average Value equals new cost plus salvage value divided by 2 on a per acre basis. (d) Total Investment costs are calculated as 60% of the depreciation and the interest reflect a mix of new and used equipment. These values are used in Tables 2 and 3. Hourly equipment costs are shown in Table 6.

## **13. FUEL & REPAIR:**

The fuel and repair cost per acre for each operation in Table 2 is determined by multiplying the total hourly operating cost for each piece of equipment in Table 6 by the number of hours per acre for that operation. Prices for on farm delivery of diesel, and gasoline are \$1.00, and \$1.05 per gallon, respectively.

## **REFERENCES**

1. University of California. 1993. Olive Pest Management Guidelines. pub.7. In M. L. Flint (ed.) UC IPM Pest Management Guidelines. Pub. 3339. Integrated Pest Management Education and Publications. University of California, Division of Agriculture and Natural Resources. Oakland, CA.

For information concerning the above mentioned references contact Tulare County or your local county Cooperative Extension office.

Table 2.

U.C. COOPERATIVE EXTENSION  
COSTS PER ACRE TO PRODUCE OLIVES  
TULARE COUNTY - 1994

Labor Rate: \$10.00/hr. machine labor      Interest Rate: 9%  
\$6.50/hr. non-machine labor              Yield per Acre: 4.0 Ton

Operation	Operation Time (Hrs/A)	Labor Cost	Fuel, Lube & Repairs	Cash and Labor Material Cost	Custom/ Rent	Total Cost	Your Cost
<b>Cultural:</b>							
Irrigate	5.00	32.50	0.00	119.72	0.00	152.22	
Pest Control - Black Scale	0.00	0.00	0.00	56.58	19.00	75.58	
Pruning & Sucker	12.75	82.87	0.00	0.00	0.00	82.87	
Weed Control - Spot Spray 2X	0.00	0.00	0.00	2.92	0.00	2.92	
Fertilizer - Nitrogen	0.00	0.00	0.00	29.70	5.00	34.70	
Weed Control - Residual	0.00	0.00	0.00	13.68	0.00	13.68	
Disease Control - Peacock Spot	0.00	0.00	0.00	20.32	19.00	39.32	
Pickup Truck Use	7.13	85.50	43.83	0.00	0.00	129.33	
<b>TOTAL CULTURAL COSTS</b>	<b>24.87</b>	<b>200.88</b>	<b>43.83</b>	<b>242.91</b>	<b>43.00</b>	<b>530.62</b>	
<b>Harvest:</b>							
Hand Pick	0.00	0.00	0.00	0.00	1000.00	1000.00	
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1000.00</b>	<b>1000.00</b>	
Interest on operating capital @ 9.00%						29.72	
<b>TOTAL OPERATING COSTS/ACRE</b>		<b>200.88</b>	<b>43.83</b>	<b>242.91</b>	<b>1043.00</b>	<b>1560.34</b>	
<b>TOTAL OPERATING COSTS/TON</b>						<b>390.09</b>	
<b>CASH OVERHEAD:</b>							
Office Expense						154.29	
Liability Insurance						9.43	
Sanitation Fees						6.86	
Property Taxes						67.99	
Property Insurance						34.00	
Investment Repairs						17.34	
<b>TOTAL CASH OVERHEAD COSTS</b>						<b>289.91</b>	
<b>TOTAL CASH COSTS/ACRE</b>						<b>1850.25</b>	
<b>TOTAL CASH COSTS/TON</b>						<b>462.56</b>	
<b>NON-CASH OVERHEAD:</b>							
Investment	Per producing Acre	Depreciation	Annual Cost	Interest @ 4.00%			
Land	4571.43			182.86	182.86		
Buildings	1057.14	42.29		21.14	63.43		
Irrigation System	457.14	11.43		9.14	20.57		
Shop Tools	285.71	8.57		6.29	14.86		
Pruning Tools	5.71	1.71		0.13	1.84		
Orchard Establishment	2296.00	40.28		45.92	86.20		
Equipment	295.54	38.00		6.50	44.50		
<b>TOTAL NON-CASH OVERHEAD COSTS</b>	<b>8968.68</b>	<b>142.28</b>		<b>271.98</b>	<b>414.25</b>		
<b>-TOTAL COSTS/ACRE</b>						<b>2264.50</b>	
<b>TOTAL COSTS/TON</b>						<b>566.13</b>	





Table 4.

U.C. COOPERATIVE EXTENSION  
MONTHLY CASH COSTS PER ACRE TO PRODUCE OLIVES  
TULARE COUNTY - 1994

Beginning Ending	JAN 94	FEB 94	MAR 94	APR 94	MAY 94	JUN 94	JUL 94	AUG 94	SEP 94	OCT 94	NOV 94	DEC 94	TOTAL
=====													
Cultural:													
Irrigate	8.04	10.43	10.43	12.83	17.62	20.01	24.80	22.41	15.22	10.43			152.22
Pest Control - Black Scale		75.58											75.58
Pruning & Sucker			82.87										82.87
Weed Control - Spot Spray						1.46			1.46				2.92
Fertilizer - Nitrogen				34.70									34.70
Weed Control - Residual										13.68			13.68
Disease Control - Peacock											39.32		39.32
Pickup Truck Use	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78	10.78		10.78	129.33
TOTAL CULTURAL COSTS	18.82	96.79	104.09	58.31	28.39	32.25	35.58	33.18	27.46	34.89	50.10	10.78	530.62
-----													
Harvest:													
Hand Pick										1000.00			1000.00
TOTAL HARVEST COSTS										1000.00			1000.00
-----													
Interest on oper. capital	0.14	0.87	1.65	2.08	2.30	2.54	2.81	3.06	3.26	11.02			29.72
TOTAL OPERATING COSTS/ACRE	18.96	97.65	105.73	60.39	30.69	34.79	38.38	36.24	30.72	1045.91	50.10	10.78	1560.34
TOTAL OPERATING COSTS/TON	4.74	24.41	26.43	15.10	7.67	8.70	9.60	9.06	7.68	261.48	12.52	2.69	390.09
-----													
OVERHEAD:													
Office Expense	12.86	12.86	12.86	12.86	12.86	12.86	12.86	12.86	12.86	12.86	12.86	12.86	154.29
Liability Insurance	9.43												9.43
Sanitation Fees	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62		6.86
Property Taxes	34.00						34.00						67.99
Property Insurance	17.00						17.00						34.00
Investment Repairs	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	17.34
TOTAL CASH OVERHEAD COSTS	75.35	14.93	14.93	14.93	14.93	14.93	65.92	14.93	14.93	14.93	14.93	14.30	289.91
-----													
TOTAL CASH COSTS/ACRE	94.31	112.58	120.66	75.32	45.62	49.71	104.31	51.16	45.64	1060.84	65.02	25.08	1850.25
TOTAL CASH COSTS/TON	23.58	28.14	30.16	18.83	11.40	12.43	26.08	12.79	11.41	265.21	16.26	6.27	462.56
=====													

Table 5.

U.C. COOPERATIVE EXTENSION  
WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS  
TULARE COUNTY - 1994

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Total
94	Pickup Truck - 1/2 Ton	17240	7	2216.57	379.28	47.41	94.82	2738.08
TOTAL		17240		2216.57	379.28	47.41	94.82	2738.08
60% of New Cost *		10344		1329.94	227.57	28.45	56.89	1642.85

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

ANNUAL INVESTMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Total
INVESTMENT									
	Buildings	37000	25	1480.00	740.00	92.50	185.00	222.00	2719.50
	Irrigation System	16000	40	400.00	320.00	40.00	80.00	235.00	1075.00
	Land	160000			6400.00	800.00	1600.00	0.00	8800.00
	Orchard Establishment	80360	57	1409.82	1607.20	200.90	401.80	0.00	3619.72
	Pruning Tools	200	3	60.00	4.40	0.55	1.10	50.00	116.05
	Shop Tools	10000	30	300.00	220.00	27.50	55.00	100.00	702.50
TOTAL INVESTMENT		303560		3649.82	9291.60	1161.45	2322.90	607.00	17032.77

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	40.00	Acre	8.25	330.00
Office Expense	40.00	Acre	135.00	5400.00
Sanitation Fees	40.00	Acre	6.00	240.00

Table 6.

U.C. COOPERATIVE EXTENSION  
HOURLY EQUIPMENT COSTS  
TULARE COUNTY - 1994

Yr Description	Actual Hours Used	COSTS PER HOUR							Total Costs/Hr.
		- Non-Cash Over. - Depre- ciation	Interest	- Cash Overhead - Insur- ance	Taxes	Repairs	Operating Fuel & Lube	Total Oper.	
94 Pickup Truck - 1/2 Ton	249.4	5.33	0.91	0.11	0.23	3.13	3.02	6.15	12.74

Table 7.

U.C. COOPERATIVE EXTENSION  
RANGING ANALYSIS  
TULARE COUNTY - 1994

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE OLIVES

	YIELD (TON/ACRE)						
	2.5	3.0	3.5	4.0	4.5	5.0	5.5
OPERATING COSTS/ACRE:							
Cultural Cost	531	531	531	531	531	531	531
Harvest Cost	625	750	875	1000	1125	1250	1375
Interest on operating capital	27	28	29	30	31	32	33
TOTAL OPERATING COSTS/ACRE	1183	1308	1434	1560	1686	1812	1938
TOTAL OPERATING COSTS/TON	473.01	436.16	409.83	390.09	374.73	362.44	352.39
CASH OVERHEAD COSTS/ACRE							
	290	290	290	290	290	290	290
TOTAL CASH COSTS/ACRE	1472	1598	1724	1850	1976	2102	2228
TOTAL CASH COSTS/TON	588.97	532.79	492.66	462.56	439.15	420.42	405.10
NON-CASH OVERHEAD COSTS/ACRE							
	414	414	414	414	414	414	414
TOTAL COSTS/ACRE	1887	2013	2139	2265	2390	2516	2642
TOTAL COSTS/TON	754.68	670.88	611.02	566.13	531.21	503.28	480.42

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR OLIVES

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	2.5	3.0	3.5	4.0	4.5	5.0	5.5
450.00	-58	42	141	240	339	438	537
500.00	67	192	316	440	564	688	812
550.00	192	342	491	640	789	938	1087
600.00	317	492	666	840	1014	1188	1362
650.00	442	642	841	1040	1239	1438	1637
700.00	567	792	1016	1240	1464	1688	1912
750.00	692	942	1191	1440	1689	1938	2187

NET RETURNS PER ACRE ABOVE CASH COSTS FOR OLIVES

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	2.5	3.0	3.5	4.0	4.5	5.0	5.5
450.00	-347	-248	-149	-50	49	148	247
500.00	-222	-98	26	150	274	398	522
550.00	-97	52	201	350	499	648	797
600.00	28	202	376	550	724	898	1072
650.00	153	352	551	750	949	1148	1347
700.00	278	502	726	950	1174	1398	1622
750.00	403	652	901	1150	1399	1648	1897

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR OLIVES

PRICE (DOLLARS PER TON)	YIELD (TON/ACRE)						
	2.5	3.0	3.5	4.0	4.5	5.0	5.5
450.00	-762	-663	-564	-465	-365	-266	-167
500.00	-637	-513	-389	-265	-140	-16	108
550.00	-512	-363	-214	-65	85	234	383
600.00	-387	-213	-39	135	310	484	658
650.00	-262	-63	136	335	535	734	933
700.00	-137	87	311	535	760	984	1208
750.00	-12	237	486	735	985	1234	1483

U.C. COOPERATIVE EXTENSION  
 COSTS AND RETURNS / BREAKEVEN ANALYSIS  
 TULARE COUNTY - 1994

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)
Olives	2400	1560	840	1850	550	2265	135

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)
Olives	84000	54612	29388	64759	19241	79258	4742

BREAKEVEN PRICES PER YIELD UNIT

CROP	Base Yield (Units/Acre)	Yield Units	Breakeven Price To Cover		
			Operating Costs	Cash Costs	Total Costs
Olives	4.0	Ton	390.09	462.56	566.13

BREAKEVEN YIELDS PER ACRE

CROP	Yield Units	Base Price (\$/Unit)	Breakeven Yield To Cover		
			Operating Costs	Cash Costs	Total Costs
Olives	Ton	600.00	2.6	3.1	3.8