

1976 COSTS TO PRODUCE AVOCADOS IN SAN DIEGO COUNTY

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In San Diego County, the cost of producing avocados varies with the grower and the orchard. The most recent study shows that the total pre-harvest operating cost, which includes the cultural, non-cash and overhead costs, was \$3,649 per acre to produce avocados. This study was developed through the cooperative efforts of farm managers, growers, a University of California farm management specialist, and the University of California farm advisor.

The study was based on a typical commercial Fuerte avocado orchard, ten acres, 10- to 12-year old trees, 100 trees per acre, and utilizing a permanent, plastic irrigation system. The total pre-harvest cost figure includes irrigation, fertilization, weed control, pest control, pruning, orchard thinning, maintenance and operation of equipment, taxes, insurance, management fee, general expense, interest on investment, and depreciation. Investment per acre includes the sprinkler system, trees (after 5 years), pick-up truck, and equipment and building.

Irrigation constitutes the largest single expense of the agricultural operation, totaling \$688. Water use averages 3 1/2 acre feet per acre at a cost of \$125 per acre foot. Labor required to irrigate approximately 40 times during the year cost \$250. Not only is irrigation the largest single expense, but the most important operation the grower must do in the orchard.

Fertilization with nitrogen totals \$155 per acre. Approximately 150 pounds of actual nitrogen per acre is used. Labor for applying the material is \$30. The cost of leaf analysis once a year is included in the fertilizer cost.

Zinc may be needed from time to time. This is applied to the leaves by aerial spraying or ground spraying, or applied on the ground. Zinc is applied once every five years to the soil. Soil application requires a larger dosage than a foliage spray in order to supply the tree with an adequate amount of this material. A large dosage, therefore, lasts for the period up to five years. The foliage spray will probably have to be done once every year or two. Phosphate and potassium may be applied periodically but not regularly like nitrogen.

Other operational costs are: weed control at \$65, using oil and monuron or simazine on a spot-spraying basis, and the use of tractor-mower for mowing the weeds; pest control totals \$50 per acre, which is the cost of controlling ants, gophers, snails, and rodents; pruning costs, \$100 per acre, consist of removing deadwood and lifting the skirts of the

trees to permit better water distribution; orchard thinning (between the 10th and 15th year); and miscellaneous operations of repairs, supplies, erosion control, etc., totaled \$85 per acre. Breakdown of the total cultural costs are: materials and equipment \$683, labor \$460, giving a total of \$1,143 per acre.

Harvest costs were not included in this year's study. The charge for picking fruit ranges from 3 1/2 cents to 6 cents per pound and over, depending on the volume of crop, age of the trees, steepness of the orchard, and the labor used.

Overhead costs include: maintenance and repair, \$150 per acre; taxes, \$250 per acre; general expenses (insurance, office supplies, telephones), \$100; and management fee, \$84 per acre each. The management charge is placed in the study since many growers are now using grove managers marketing organizations, and grove management service to perform the management function.

The total cash overhead cost is \$584 per acre. Operating costs (cultural and overhead) add up to a total cash pre-harvest cost of \$1,727 per acre. The non-cash cost, including depreciation at \$821 an acre and interest on investment of \$1,101, adds to \$1,922, giving a total pre-harvest cost of \$3,649. Growers who do not want to consider interest on investment as a cost against the orchard may subtract the interest charge, resulting in a pre-harvest cost of \$2,548 per acre.

Significant variations that occur in yield per acre are due to different varieties, orchard location, slope steepness, cultural practices, type of tree, and climatic conditions. A good commercial yield per acre for Fuertes and Bacon over a period of years should average between 5,000 pounds to 10,000 pounds, and for Hass and Zutanos, 7,000 pounds to 12,000 pounds. A few exceptional orchards produce above these yield levels and many orchards produce less.

The accompanying table shows the breakdown of costs which should be given consideration in figuring the cost of producing an acre of avocados.

YIELDS AND RETURNS

Yield varies considerably among orchards, and from year to year. Commercial production may range from 5,000 to 15,000 pounds per acre. Excellent orchards under favorable conditions produce more. The following chart illustrates variability in gross on-tree returns due to yield and price changes for all varieties.

On-Tree Price Cents/lb.	Yield Per Acre Pounds/Acre						
	3,000	5,000	6,000	7,000	8,000	10,000	15,000
\$0.15	\$ 450	\$ 750	\$ 900	\$1,050	\$1,200	\$1,500	\$ 2,250
0.20	600	1,000	1,200	1,400	1,600	2,000	3,000
0.25	750	1,250	1,500	1,750	2,000	2,500	3,750
0.30	900	1,500	1,800	2,100	2,400	3,000	4,500
0.35	1,050	1,750	2,100	2,450	2,800	3,500	5,250
0.40	1,200	2,000	2,400	2,800	3,200	4,000	6,000
0.50	1,500	2,500	3,000	3,500	4,000	5,000	7,500
0.60	1,800	3,000	3,600	4,200	4,800	6,000	9,000
0.70	2,100	3,500	4,200	4,900	5,600	7,000	10,500

*Deduct cost of harvesting—3½ to 6¢/lb.

Depreciation and interest per acre are calculated from the following investment schedule:

<i>Item</i>	<i>Expected life</i>	<i>Investment per acre</i>	<i>Depreciation per acre</i>
Land \$5,000 (assumed value)		\$ 5,000	
Trees (100/acre)	20 years	12,767	\$638
Irrigation system	10 years	1,000	100
Pickup	5 years	150	30
Buildings	20 years	60	3
Weed sprayer, mower, hand tools	10 years	500	50
Total investment schedule		\$19,477	\$821

COST ANALYSIS

	<i>Labor cost</i>	<i>Materials and equipment cost</i>	<i>Total cost per acre</i>
<i>Cultural Operations</i>			
Fertilizer—2 times (Actual N-150 lbs/ac)	\$ 30	\$125	\$ 155
Irrigation—40 times (water— 3½ ac ft/ac @ \$125)	250	438	688
Pest control—ants, gophers, snails, rodents (baits, poisons, predators)	25	25	50
Weed control—spot spraying & mowing (oil)	30	35	65
Pruning (skirt, deadwood) and orchard thinning (tree removal 10-15th yr. @ \$15/tree) (Chain saw & brush disposal)	75	25	85
Misc.—tree care, erosion control supplies, tree stakes (supplies & tools)	50	35	85
Total cultural costs	\$460	\$683	\$1,143
<i>Overhead Costs</i>			
Taxes			\$ 250
Maintenance & repairs			150
General expenses			100
Management charge, variable (\$7/acre/month)			84
Total cash overhead costs			\$ 584
Total pre-harvest cash costs			\$1,727
<i>Investment Overhead</i>			
Depreciation			\$ 821
Total pre-harvest cash costs plus depreciation			\$2,538
Interest on investment			\$1,101
Total pre-harvest costs (inc. dep. and int. on invest.)			\$3,649