

FR-AVO-Econ.  
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## AVOCADO ORCHARD DEVELOPMENT COSTS

### Description

The cost figures given in this study are based on assumed conditions. Typical practices are listed, with sample costs given for labor, materials and equipment required. These are not presented as "standard" costs, but are intended as guidelines. Individual orchards may vary considerably from these figures in their cost and return experience, and whether they are operated by the grower or a farm management company.

Orchards on steep slopes with inadequate roadways and drives for fruit hauling and grove work will cost more to operate. The type of irrigation system selected may have lower initial costs, but higher labor requirements and maintenance costs result in higher irrigation costs as the orchard matures. Poor or untimely farming and management practices commonly cause costs to be higher than necessary.

Sample costs in this study are on the basis of the following: A 10-acre avocado orchard, spring planted on relatively frost-free hillsides; permanent plastic conventional sprinkler irrigation system, PVC pipe, a riser to each tree with spitter head. Varieties commonly planted are: Fuerte (20' x 20' = 108 trees/acre); Hass (15' x 20' = 145 trees/acre); Zutano (15' x 15' = 190 trees/acre); Bacon (15' x 15' = 190 trees/acre); and Reed (15' x 20' = 145 trees/acre). Study costs are for 100 trees/acre. Estimates indicate costs could increase 35% on greater than 30° slopes.

Water costs will vary depending upon the source, district assessments, etc. Range is from \$85 - \$125/acre ft., and more if pumping charge is added. Trees are not assessed for taxes until the fifth year. There will be variations in tax charges, depending on the area where an orchard is located. Fruit credit varies depending on variety planted, tree yields, and market prices. (Harvest cost is 3 1/2¢ to 6¢/lb., marketing order assessment, 4.7% of crop value at roadside.)

### Investment

Capital outlay is estimated to be \$6,710 per acre based on an assumed land cost of \$5,000 per acre and \$1,710 per acre for the irrigation system and building and equipment. Permanent plastic irrigation system with spitter heads is installed the first year. At the end of the fourth year, the spitter heads are converted to revolving sprinklers at an additional cost. To simplify calculations in the table, the initial capital outlay of \$1,710 per acre includes a charge for the complete irrigation system.

(over)

Interest on investment for the first year equals 9% of first-year total pre-harvest cash cost per acre (5), plus 9% of land value (14) and undepreciated balance of irrigation system, equipment and building (16). Interest for remaining years equals 9% of prior-year total investment costs (17). Investment in trees at end of year equals accumulated total net costs (13) of prior years. Investment costs for items are original cost of \$1,710 less annual depreciation of \$183.

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SAMPLE COSTS TO DEVELOP AN AVOCADO ORCHARD  
IN SAN DIEGO COUNTY  
1976

<u>Labor &amp; Equipment</u>	<u>DOLLARS PER ACRE</u>				
	<u>1st Yr.</u>	<u>2nd Yr.</u>	<u>3rd Yr.</u>	<u>4th Yr.</u>	<u>5th Yr.</u>
Land preparation (variable)	\$ 500	\$ -	\$ -	\$ -	\$ -
Orchard layout	75	-	-	-	-
Plant (dig, plant, mulch & wrap)	200	10	8	-	-
Irrigation (sprinkler)	150	150	150	150	150
Fertilization	35	35	35	35	35
Weed control (hoe, oil & herbicide)	180	180	120	75	50
Pest control (rodents, ants, deer squirrels, predators)	75	50	40	40	40
Tree care (pruning, topping)	30	30	50	75	75
Miscellaneous (propping, erosion control, cover crop, straw)	100	35	35	35	35
<b>(1) Total labor &amp; equipment</b>	<b>\$1,345</b>	<b>\$ 490</b>	<b>\$ 438</b>	<b>\$ 410</b>	<b>\$ 385</b>
<u>Materials</u>					
Trees (100/acre @ \$6 + tax)	\$ 600	\$ 30	\$ -	\$ -	\$ -
Mulch	50	35	20	-	-
Tree protectors and stakes	80	-	-	-	-
Water	50	85	150	200	300
Fertilizer	20	25	30	35	50
Weed oil & herbicides	85	85	60	50	40
Pest control	30	30	30	30	30
Miscellaneous (supplies)	35	35	20	20	20
<b>(2) Total materials</b>	<b>\$ 950</b>	<b>\$ 325</b>	<b>\$ 310</b>	<b>\$ 335</b>	<b>\$ 440</b>
<b>(3) Total cash cultural (#1 + #2)</b>	<b>\$2,295</b>	<b>\$ 815</b>	<b>\$ 748</b>	<b>\$ 745</b>	<b>\$ 825</b>
<u>Cash Overhead</u>					
General expense @ 7% of #3	\$ 161	\$ 57	\$ 52	\$ 52	\$ 58
Management charge, variable (\$7/acre/month)	84	84	84	84	84
Taxes	100	100	100	200	200
Maintenance & repair (road, fences)	100	100	100	100	100
<b>(4) Total cash overhead</b>	<b>\$ 445</b>	<b>\$ 341</b>	<b>\$ 336</b>	<b>\$ 436</b>	<b>\$ 442</b>
<b>(5) Total pre-harvest cash costs (#3 + #4)</b>	<b>\$2,740</b>	<b>\$1,156</b>	<b>\$1,084</b>	<b>\$1,181</b>	<b>\$1,267</b>
<b>(6) Less fruit credits</b>				<b>(\$ 500)</b>	<b>(\$ 750)</b>
<b>(7) Net cash costs</b>	<b>\$2,740</b>	<b>\$1,156</b>	<b>\$1,084</b>	<b>\$ 681</b>	<b>\$ 517</b>
<b>(8) Accumulated net cash costs</b>	<b>\$2,740</b>	<b>\$3,896</b>	<b>\$4,980</b>	<b>\$5,661</b>	<b>\$6,178</b>

<u>Investment Costs</u>	DOLLARS PER ACRE				
	<u>1st Yr.</u>	<u>2nd Yr.</u>	<u>3rd Yr.</u>	<u>4th Yr.</u>	<u>5th Yr.</u>
(9) Depreciation	\$ 183	\$ 183	\$ 183	\$ 183	\$ 183
(10) Interest on investment @ 9%	\$ 834	\$ 926	\$ 1,113	\$ 1,311	\$ 1,490
(11) Total non-cash costs	\$ 1,017	\$ 1,109	\$ 1,296	\$ 1,494	\$ 1,673
(12) Total net all costs	\$ 3,757	\$ 2,265	\$ 2,380	\$ 2,175	\$ 2,190
(13) Accumulated total net costs	\$ 3,757	\$ 6,022	\$ 8,402	\$10,577	\$12,767
(14) Land @ \$5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
(15) Tree value (from #13)	\$ 3,757	\$ 6,022	\$ 8,402	\$10,577	\$12,767
(16) Irrigation system	\$1,000				
Equipment (Pickup, mowers, tools, etc.)	650				
Buildings	60				
	<u>\$1,710</u>				
(17) Total investment costs	\$10,284	\$12,366	\$14,563	\$16,555	\$18,562

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

<u>Item</u>	<u>Expected life</u>	<u>Investment per acre</u>	<u>Depreciation per acre</u>
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	<u>500</u>	<u>50</u>
Total investment schedule		\$19,477	\$ 821

Note: We acknowledge the fine cooperation and assistance of the growers and San Diego County farm managers who participated in accumulation of cost data.