

## **COST TO DEVELOP AN AVOCADO ORCHARD IN SAN DIEGO COUNTY**

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The increased interest in the planting of new avocado orchards in San Diego County has brought a large number of requests for development costs and the procedure to follow in developing an avocado orchard. In this article the authors will present 1968 sample costs to develop a 10-acre orchard in San Diego County. The Fuerte variety, planted 20 by 20 feet, or 100 trees per acre, on a relatively frost-free hillside site, has been used. For the Bacon variety, a 15 foot by 15 foot spacing can be used, and for a Hass planting, a 15 foot by 20 foot distance could be used. With all plantings a permanent plastic irrigation system is installed with a riser to reach tree.

The study shows figures for the first, second, third, fourth, and fifth years. Included will be the labor and field power necessary, the materials, cash overhead, fruit credits, and the allocation of monies for land, trees, irrigation system, building, and equipment.

The labor and field power includes the following: land preparation, orchard layout, planting (holes and protectors), irrigation, fertilization-weed control (hoe and spray), mulching (wood chips), tree care and pruning, pest control (gophers, rabbits, squirrels, etc.), and miscellaneous (propping, erosion control). The first year's total labor and power cost is \$367. The big item in this first year was the land preparation, consisting of subsoiling to depth of two to three feet, disking, land movement where necessary, and finally, floating of the land. In the second year, land preparation and orchard layout were not needed expenditures so the total for the second year was \$98 an acre. In the third year, land preparation, orchard layout and planting of replacement trees were items eliminated, which gave a total of \$95 an acre. The fourth year, \$102 an acre was the cost, and the fifth year ended up at \$107 an acre. The total labor and power for the five years was \$769 per acre.

Total materials for the first year cost \$373, and included trees, at \$3.00 per tree, water, mulching materials, fertilizer, pest control, baits, poison and traps, tree wraps, weed oil, and miscellaneous parts and supplies. The largest item, of course, in the first year was the purchase of 100 trees.

In the second year, the materials cost \$79 an acre; and the third year, \$77 an acre; the fourth year, \$114 an acre; and the fifth year, \$152 an acre, for a total of \$795 per acre.

The total cash cultural cost, including labor, field power and materials for the first year, was \$740; for the second year, \$177; for the third year, \$172; for the fourth year, \$216;

and for the fifth year, \$259, a total of \$1564.

The cash overhead includes, general expense items (postage, telephone, insurance, magazines, etc.), management charge (a fee paid to a grove manager supervising the development of a grove for a grower), taxes, and maintenance and repair. The total overhead cash cost for the first year is \$194; second year, \$138; third, \$137; fourth, \$147; and fifth, \$171.

The total cash cost per acre the first year totaled \$934; the second year \$315; the third year \$309; the fourth year \$363; and the fifth year \$430. For the Fuerte variety, there should be some fruit credit obtained in the fourth and fifth year, and in some rare cases, the third year. For the Hass variety, fruit credits may be obtained the second and third year.

Capital outlay is estimated to be \$4,135 per acre based on an assumed land cost of \$3,000 per acre and \$1,135 per acre for the irrigation system and building and equipment. The initial cost of the permanent plastic irrigation system with spitter heads is estimated at \$550 per acre installed. At the end of the fourth year, the spitter heads are converted to revolving sprinklers at an additional cost of \$100 per acre. To simplify calculations in the table, an initial capital outlay of \$1,135 per acre for an irrigation system, building and equipment is indicated.

Interest on investment for the first year equals 6% of first-year total cash costs per acre (5) plus 6% of land value and undepreciated balance of irrigation system, equipment and building, interest for remaining years equals 6% of prior-year total investment value (10). Interest on investment the first year is \$296; second year, \$322- third year, \$360; fourth year, \$400; and fifth year, \$443. Total non-cash costs are: first year, \$432; second year, \$458; third year, \$496; fourth year, \$536; and fifth year, \$579. Total cost per acre (pre-harvest) for first year, \$1,366; second year \$773; third year \$805; the fourth year \$899; and \$1,009 for the fifth year. Depreciation is \$136. The accumulated total cost which includes labor and field power, material overhead cost, depreciation and interest on investment, comes to \$1,366 the first year; \$2,139 the second; \$2,944 for the third year; \$3,793 for the fourth year; and \$4,702 for the fifth year.

The total investment value at the end of the first year, (including labor and field power, materials, overhead cost, land at \$3000 per acre. trees, irrigation system, buildings and equipment at \$1,135) is \$5,365; for the second year, \$6,002; \$6,671 at the end of the third year; \$7,384 at the end of the fourth year, and at the end of the fifth year a total of \$8,157.

The cost study table is a breakdown of costs by item and by year:

SAMPLE COSTS OF ESTABLISHING AN AVOCADO ORCHARD  
IN SAN DIEGO COUNTY(a)

	DOLLARS PER ACRE				
	1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
<i>Labor and Field Power</i>					
Land preparation	\$ 200	-	-	-	-
Orchard layout	15	-	-	-	-
Plant(dig, plant, mulch & wrap)	55	5	3	-	-
Irrigation	50	50	50	60	60
Fertilization	2	3	5	5	5
Weed control (hoe, oil & herbicide)	25	15	12	12	12
Pest control	10	10	10	10	10
Tree care & pruning	5	5	5	5	10
Miscellaneous (propping, erosion control)	10	10	10	10	10
(1) Total Labor and Power	\$ 367	\$ 98	\$ 95	\$ 102	\$ 107
<i>Materials</i>					
Trees (100 trees/acre @ \$3.00)	300	15	-	-	-
Mulch	15	10	5	-	-
Tree protectors	3	-	-	-	-
Water(b)	25	25	40	85	120
Fertilizer	3	5	8	8	12
Weed oil & herbicides	16	13	13	10	8
Pest control	6	6	5	5	5
Miscellaneous (supplies)	5	5	6	6	7
(2) Total Materials	\$ 373	\$ 79	\$ 77	\$ 114	\$ 152
(3) Total Cash Cultural	740	177	172	216	259
<i>Cash Overhead</i>					
General expense	74	18	17	22	26
Management charge	60	60	60	60	60
Taxes (c)	45	45	45	50	70
Maintenance & repair	15	15	15	15	15
(4) Total Cash Overhead	\$ 194	\$ 138	\$ 137	\$ 147	\$ 171
(5) Total Cash Costs	934	315	309	363	430
Depreciation(d)	136	136	136	136	136
Interest on investment(e)	296	322	360	400	443
(6) Total Non-cash Costs	432	458	496	536	579
(7) Total Cost Per Acre (preharvest)	\$1,366	\$ 773	\$ 805	\$ 899	\$1,009
Less fruit credit(f)	-	-	-	50	100
(8) Net Total Cost	1,366	773	805	849	909
(9) Accumulated Total Cost	\$1,366	\$2,139	\$2,944	\$3,793	\$4,702
<b>INVESTMENT VALUE AT END OF YEAR</b>					
Land @ \$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Trees(g)	1,366	2,139	2,944	3,793	4,702
Irrigation system, equip. & bldgs. (h) Total, \$1,135	999	863	727	591	455
(10) Total Investment Value — End of Year	\$5,365	\$6,002	\$6,671	\$7,384	\$8,157

**Footnotes**

(a) Sample costs in this data sheet have been estimated on the basis of the following new ten-acre planting in San Diego County: Fuerte variety, planted 20' x 20' or 100

trees per acre; trees spring planted on relatively frost-free hillside site; permanent plastic irrigation system.

(b) Water costs will vary depending upon the source, district, assessments, etc. Range is from \$40-\$60 per acre foot.

(c) Trees are not assessed for taxes until they become productive, usually fourth or fifth year. There will be variations in tax charges, depending on the area where an orchard is located.

(d) Capital outlay is estimated to be \$4,135 per acre based on an assumed land cost of \$3,000 per acre and \$1,135 per acre for the irrigation system and building and equipment. The initial cost of the permanent plastic irrigation system with spitter heads is estimated at \$550 per acre installed. At the end of the fourth year, the spitter heads are converted to revolving sprinklers at an additional cost of \$100 per acre. To simplify calculations in the table, an initial capital outlay of \$1,135 per acre for the irrigation system, building and equipment is indicated.

(e) Interest on investment for the first year equals 6% of first-year total cash cost per acre (5) plus 6% of land value and undepreciated balance of irrigation system, equipment and building. Interest for remaining years equals 6% of prior-year total investment value (10).

(f) Fruit credit varies depending on tree yields and market prices.

(g) Investment in trees at end of year equals accumulated total net costs (9) of prior years.

(h) Investment value for items is original cost, less accumulated depreciation.