

Agricultural Extension Service
University of California
San Diego County
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Donald O. Rosedale
Farm Advisor
Bldg. 4, 5555 Overland Avenue
San Diego, California 92123

CITRUS ORCHARD DEVELOPMENT

COST ANALYSIS

DESCRIPTION

The cost figures given in this sample are based on assumed conditions. The typical practices are listed, with sample costs given for the labor, materials, and equipment required. These are not presented as "standard" costs, but are intended as guidelines based upon growers' experience. Individual orchards may vary considerably from these figures in their cost and return experience. Particular items may vary from a grower's experience due to difference in conditions. Warm locations, for example, require no frost protection. Availability of adequate well water reduces the cost of irrigation water.

Orchards on steep slopes, with inadequate roadways and drives for fruit hauling and grove work, will cost considerably more to operate. Portable or drag-line irrigation systems may have lower initial costs, but higher labor requirements. Poor or untimely farming and management practices commonly cause costs to be higher than necessary and returns to be low.

Weed control is one operation that can be very costly if treatments are delayed or poorly done. If weed control has been neglected or weed control adjacent to ~~the planted area is included, costs will be much higher.~~ Elimination of a weed problem is more costly than maintenance of a normal weed control program. Delayed weed control is probably the most frequent cause of costs being higher than expected.

This study is based on expected costs for planting citrus trees on hillside land in the north part of the county. It is a 40-acre planting, using newly cleared soil. Tree spacing is 10 x 20 feet. Production records are not available on long-term yield from this spacing compared to 20 x 20, or intermediate spacings such as 14 x 20, 16 x 20, or 18 x 20. The closer spacings provide more fruit earlier, and tree cost is greater. The wider spacings result in less crowding in early years. The 10 x 20 planting permits sprinkler spacing of 20 x 20 feet. Costs for the maximum tree density are listed, since costs over the first 5-year period will be greatest for 200 trees per acre.

Sandy loam soil over decomposed granite is typical. Water obtained through the local water district is applied with a permanent sprinkler system, using revolving sprinklers placed at 20 x 20 feet. A wind machine and heaters sufficient to protect 20 acres of low ground is included. Other equipment includes a fuel tank, tools, wheel tractor, weed sprayer, and mower.

INVESTMENT

The total investment value is given at the end of each year for the five-year period. This includes the cost of the land, water meter, and the undepreciated balance for the sprinkler system. It also includes the total cost of the trees which consists of the accumulated net annual costs of their care. The cost has been reduced by credits for fruit sold.

Thus, the final figure of \$9,539 is the net cost per acre of the total orchard investment at the end of the fifth year, under the assumed conditions.

Dollars Per Acre

	1st Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr.
<u>Cash, Labor and Power</u>					
Land preparation	\$ 150				
Layout and plant	120				
Trees, maximum 200	578				
Irrigate	68	\$ 68	\$ 56	\$ 56	\$ 50
Water	60	60	70	90	110
Wrapping (labor, materials & mulch)	90				
Fertilize (labor & materials)	7	15	26	32	43
Weed control	56	56	44	39	39
Pest & disease control	55	60	65	80	95
Frost protection	-	-	-	35	35
Misc. (tree care, suckering, cover crop)	35	25	30	35	40
County taxes	40	50	50	50	60
Maintenance & repair	15	20	20	25	25
General expense	35	30	20	20	10
Management charge	60	60	60	60	60
Total Cash Costs	\$1,369	\$ 444	\$ 441	\$ 522	\$ 567
Less Credit for Fruit Sold	-	-		(100)	(300)
NET CASH COSTS	\$1,369	\$ 444	\$ 441	\$ 422	\$ 267
<u>Investment Costs</u>					
Depreciation	97	97	97	120	120
Interest on investment	369	402	461	524	606
Total Non-Cash Costs	\$ 466	\$ 499	\$ 558	\$ 644	\$ 726
Total Net All Costs	\$1,835	\$ 943	\$ 999	\$1,066	\$ 994
Accumulated Total Costs	1,835	2,778	3,777	4,843	5,837
Accumulated Net Cash Costs	1,369	1,813	2,254	2,676	2,943
<u>INVESTMENT VALUE AT END OF YEAR</u>					
Land	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Trees	1,835	2,778	3,777	4,843	5,837
Irrigation system \$750, equipment & bldgs. \$250, frost protection (end of 3rd yr.) \$233	903	806	709	822	702
Total Investment Value	\$5,738	\$6,584	\$7,486	\$8,665	\$9,539