

Table 17. A Standard of Inputs and Costs for Navel and Valencia Orange Orchards of about 20 years of age, with a yield of 240 packed boxes, or 360 field boxes per acre.*

	Man labor	10 h.p. tractor	1½-ton truck	Cost per acre	Cost per box	
					Packed	Field
Hours per acre				Dollars		
Pruning, 90 trees at 8 per hour	12			3.60		
Brush disposal	1		1	1.40		
Planting covercrop	1			.30		
Applying manure, 6 tons @ 50¢	contract			3.00		
Applying com'l. fertilizer once	2		1	1.70		
Pest control, fumig., spray, etc.	contract			15.00		
Disease control, handwork	12			3.60		
Frost protection, heat 4 times	16		3	8.10		
Cultivation 5 times, furrow 3	6	6		9.60		
Irrigation, 6 times	20			6.00		
Miscellaneous other work	6	1	1	4.20		
Total cultural labor	76	7	6	56.50	.23	.15
Picking, 360 field boxes	contract			21.60	.09	.06
Hauling, 360 field boxes	9		6	9.30	.04	.03
Total labor	85	7	12	87.40	.36	.24
Irrigation water, 20 inches @ \$1.00				20.00		
Covercrop seed, cost varies with kind, 50¢ to \$1.50 per a.				1.00		
Dairy manure, 6 tons @ \$2.50 per ton				15.00		
Com'l. fertilizer, 600 lbs. (20.5% nitrogen) @ \$2.00 cwt.				12.00		
Pest control, spray, fumig., dusting material; contract				15.00		
Frost protection, 200 gal. oil @ 3½¢ per gallon				7.00		
Miscellaneous material, new trees, etc.				4.00		
Total material cost				74.00	.31	.21
General overhead expense, estimated at 5% of above costs				8.10		
County taxes, assessed value \$450				18.00		
Repairs to facilities & equipment, except tractor & truck				1.00		
Compensation insurance, \$15 minimum for 20 acres				.75		
Total overhead cost				27.85	.12	.08
Subtotal, current cash costs				189.25	.79	.53
	Original cost	Average investment	5% interest	Av. an. depreciation		
	Dollars per acre					
Trees	1000.00	1000.00	50.00			
Service building	10.00	5.00	.25	.25		
Irrigation pipe, etc.	60.00	30.00	1.50	1.50		
Tillage equipment	20.00	10.00	.50	1.00		
Heating equipment	180.00	90.00	4.50	12.00		
Small tools and misc.	4.00	2.00	.10	.50		
Land	1000.00	1000.00	50.00			
Total investment	2274.00	2137.00				
Total depreciation				15.25	15.25	.06
Subtotal, cash and depreciation costs				204.50	.85	.57
Total interest on investment			106.85	106.85	.45	.29
Total cost of production				311.35	1.30	.86

*This table is a computed standard of costs for a well-managed, owner-operated orange orchard. Investment, depreciation, and rates for tractor and truck are based on a 20-acre orchard unit.

†Labor costs per acre are computed at the following rates per hour: man labor, \$0.30; 10-drawbar horsepower tractor, \$1.30; 1½-ton truck, \$1.10.

Costs per box are based on a yield per acre of 240 packed-boxes of 72 lbs. or 360 field-boxes of 48 lbs. (four per tree), which is 9 tons of fruit per acre.

Table 18. A Standard of Costs for Mature Orange Orchards in Southern California
Having Different Average Annual Yields

	Average annual yield, packed boxes per acre							
	80	120	160	200	240	280	320	360
	Dollars per acre							
Cultural labor cost per acre	45.00	48.00	51.00	54.00	56.50	58.00	60.00	62.00
Harvesting cost at 13¢ per packed box	10.40	15.60	20.80	26.00	30.90	36.40	41.60	46.80
Total labor cost	55.40	63.60	71.80	80.00	87.40	94.40	101.60	108.80
Total material cost, water, fertilizers, etc.	65.00	67.00	69.00	71.00	74.00	77.00	80.00	83.00
Total cash-overhead costs	21.00	23.00	25.00	26.50	27.85	28.00	28.75	29.25
Total current cash costs	141.40	153.60	165.80	177.50	189.25	199.40	210.35	221.05
Depreciation on improvements and equipment	13.00	13.50	14.00	14.60	15.25	15.25	15.25	15.25
Total cash and depreciation costs	154.40	167.10	179.80	192.10	204.50	214.65	225.60	236.30
Interest on investment, trees, equipment, land	70.00	78.75	87.50	96.50	106.85	115.00	125.00	130.00
Total, all costs per acre	224.40	245.85	267.30	288.60	311.35	329.65	350.60	366.30
	Dollars per packed box							
Cultural labor cost per packed box	.56	.40	.32	.27	.23	.21	.19	.17
Harvesting, picking, and hauling	.13	.13	.13	.13	.13	.13	.13	.13
Total labor cost	.69	.53	.45	.40	.36	.34	.32	.30
Total material cost	.82	.56	.43	.35	.31	.27	.25	.23
Total cash-overhead cost	.26	.19	.16	.14	.12	.10	.09	.08
Total cash costs	1.77	1.28	1.04	.89	.79	.71	.66	.61
Depreciation	.16	.11	.09	.07	.06	.05	.05	.05
Total cash and depreciation costs	1.93	1.39	1.13	.96	.85	.76	.71	.66
Interest on investment	.87	.66	.54	.48	.45	.42	.39	.36
Total, all costs per packed box	2.80	2.05	1.67	1.44	1.30	1.18	1.10	1.02

The above costs are based on costs and prices shown in detail in table 17 for an orchard with an average annual yield of 240 boxes. Costs for other yields have been adjusted for differences which would probably occur in orchards of different yielding ability. In lower yielding orchards trees are smaller and involve lower costs for fumigation and spraying. Less fertilization is usually found in lower yielding orchards and hence lower total expenditures for cultural care. Such orchards are usually found on poorer soils of lower value and consequently have lower taxes and interest on investment. On the other hand, very heavy producing orchards are found on better and more valuable land and usually receive more cultural care so have much higher costs per acre. Costs per box of the product, however, decline as yields increase despite the higher per-acre costs in heavier producing orchards. The above costs for varying yields do not apply to a given orchard for heavy or light yields as they may occur from time to time.

Table 19. A Standard of Costs per Acre for Young Orange Orchards in Southern California. *

Age of Trees Begin. Year	Yield Packed Boxes per A.	Cultural Labor Cost	Harvesting at 13¢ per Box	Total Material Cost	Cash Over-head Cost	Depreciation	Subtotal Cash & Deprec. Costs	Int. at 5% Land & Eqt.	Int. on Net Cost Trees	Total Cost for Year	Income at \$1.30 per Box	Management Income	Accumulative Cost of Trees	Net Cash & Deprec. Cost of Trees
Years	Boxes	Dollars per Acre												
0	0	40.00		105.00	17.50	3.00	165.50	52.00	- -	217.50	R 35.00	-182.50	182.50	130.50
1	0	20.00		30.00	13.00	3.00	66.00	52.00	9.13	127.13	R 30.00	- 97.13	279.63	166.50
2	12	25.00	1.56	35.00	14.00	3.00	78.56	52.00	13.98	144.54	R 40.60	-103.94	383.57	204.46
3	55	35.00	7.15	40.00	15.00	H 2.25	109.40	55.00	19.18	183.58	71.50	-112.08	495.65	242.36
4	100	40.00	13.00	50.00	18.00	15.25	136.25	56.85	24.78	217.88	130.00	- 87.88	583.53	248.61
5	125	45.00	16.25	52.50	20.00	15.25	149.00	56.85	29.18	235.03	162.50	- 72.53	656.06	235.11
6	145	46.00	18.85	55.00	21.00	15.25	156.10	56.85	32.80	245.75	188.50	- 57.25	713.31	
7	158	47.00	20.54	57.50	22.00	15.25	162.29	56.85	35.67	254.81	205.40	- 49.41	762.72	
8	170	48.00	22.10	60.00	23.00	15.25	168.35	56.85	38.14	263.34	221.00	- 42.34	805.06	
9	180	49.00	23.40	62.50	24.00	15.25	174.15	56.85	40.25	271.25	234.00	- 37.25	842.31	
10	189	50.00	24.57	65.00	24.50	15.25	179.32	56.85	42.12	278.29	245.70	- 32.59	874.90	
11	197	51.00	25.61	66.00	25.00	15.25	182.86	56.85	43.75	283.46	256.10	- 27.36	902.26	
12	205	52.00	26.65	67.00	25.40	15.25	186.30	56.85	45.11	288.26	266.50	- 21.76	924.02	
13	211	52.75	27.43	68.00	25.80	15.25	189.23	56.85	46.20	292.28	274.30	- 17.98	942.00	
14	216	53.50	28.08	69.00	26.10	15.25	191.93	56.85	47.10	295.88	280.80	- 15.08	957.08	
15	220	54.00	28.60	70.00	26.50	15.25	194.35	56.85	47.85	299.05	286.00	- 13.05	970.13	
16	224	54.50	29.12	71.00	26.90	15.25	196.77	56.85	48.51	302.13	291.20	- 10.93	981.06	
17	228	55.00	29.64	72.00	27.20	15.25	199.09	56.85	49.05	304.99	296.40	- 8.59	989.65	
18	232	55.50	30.16	73.00	27.50	15.25	201.41	56.85	49.48	307.74	301.60	- 6.14	995.79	
19	236	56.00	30.68	73.50	27.75	15.25	203.18	56.85	49.79	309.82	306.80	- 3.02	998.81	
20	240	56.50	30.90	74.00	27.85	15.25	204.50	56.85	50.00	311.35	312.00	.65	- -	

R - Income includes rent for an intercrop, \$35 first year, \$30 second year, and \$25 third year.

H - Increase in depreciation due to addition of heating equipment.

* - The above computation is based upon standard costs shown in table 10 with adjustments to make them apply to the age and size of trees. Income is computed at the assumed price of \$1.30 a box, which is the lowest price at which it would pay to plant oranges on land worth \$1,000 an acre, the value used above. The above calculation shows that income would not exceed costs including 5% interest on investment until the trees are 20 years old, by which time the net cost of trees would be about \$1,000 an acre in losses accumulated since planting. Without considering interest as a cost the net cash and depreciation cost of the trees, shown in the last column above, would reach a maximum of about \$250 an acre at the end of the 5th year.