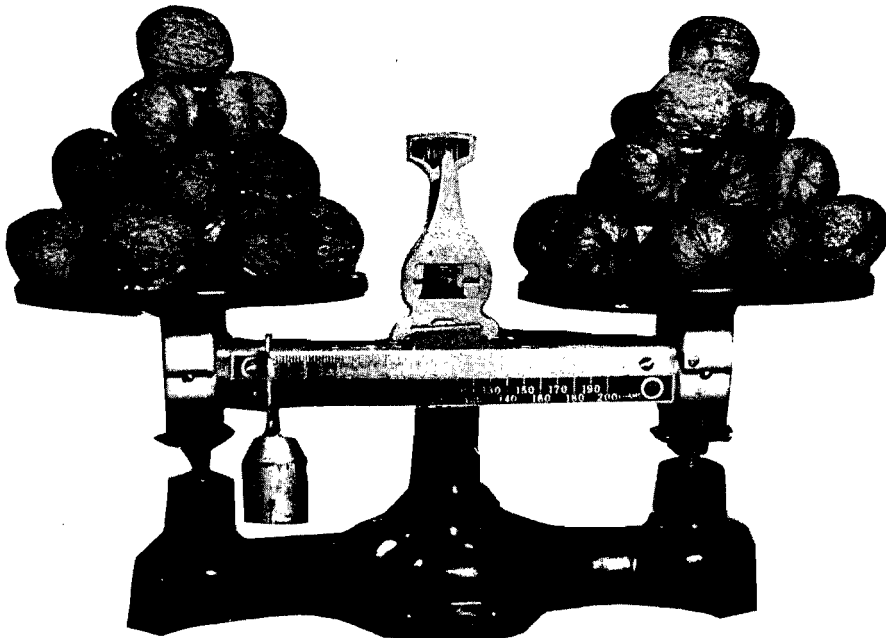


WALNUT COST STUDY



Compiled by

Agricultural Extension Service
University of California
Stanislaus County

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S T A N I S L A U S C O U N T Y

INTRODUCTION

Presented herein is a 4-year summary of the second Cost of Production Study conducted by the Agricultural Extension Service of Stanislaus County. This completes the studies for the years 1950, 1951, 1952, and 1953. A previous study was completed in 1935.

The progressive walnut growers who cooperated in the study are well above average in efficiency of production and yield per acre. Therefore, the average cost of production shown in this report is probably lower than the average for the walnut industry in the county.

The 4-year study covers an average acreage of approximately 500 acres per year with an average number of 23 in the study each year. The average yields in these records show 1846 pounds; whereas, the average county yield for these same years amounted to 1328 pounds.

Total cost of production per acre for the 4 years amounted to approximately \$216. The figure remained fairly constant for the 4 years, varying from \$207 to \$240 per acre. The average price per 100 pounds of walnuts produced for the 4-year period amounted to approximately $21\frac{1}{2}\%$ per pound, fluctuating from 20.49 to 22.93 cents per pound. The average management income for the 4 years was approximately \$179 per acre. In 1953 the growers received the lowest management income - \$95.50; whereas, in 1952 the management income was more than double that, or a total of \$236.10.

One of the main objectives of this study was to determine the various factors that influence the return of the producer so that he may change or continue his methods and thereby increase his efficiency. As farm price recedes along with other commodities, this is a very important consideration. Any improvement the farmers can make in their farm management practices, which will save him money in his yearly operations, will add further to his net income.

This report shows yield data according to the orchards in the study. Most growers have kept records on more than one variety which are planted in the same orchard. It is difficult to analyze the information and say that one variety has been more profitable than another variety.

At the present time, where growers are planting new orchards, the Payne variety is the most popular. The Hartley variety is second, and third in popularity is the Waterloo. The various strains of Franquettes are becoming less popular because as the Franquette tree gets older the production decreases and the size of the nuts usually decrease. Some of the orchards of the Treat-Franquette variety, which were planted 5 to 10 years ago, are now being top-worked either to Paynes or Hartleys.

Growers who intend to plant walnuts should take into consideration the following: variety best adapted, type and depth of soil, planting distance, and the arrangement of the irrigation system so as to minimize the effects of crown rot. Walnut trees which are planted on ridges or on mounds are less subject to crown rot.

The acreage of walnuts has rapidly been increasing in Stanislaus County while the State acreage has remained fairly constant during the last 20 years.

TABLE SHOWING A COMPARISON OF THE COUNTY AND STATE ACREAGES

	1940		1945		1950		1953	
	Bearing	Non-Bearing	Bearing	Non-Bearing	Bearing	Non-Bearing	Bearing	Non-Bearing
State	115,200	9,491	114,200	10,223	110,780	23,930	114,061	23,553
Stanislaus County	3,130	680	3,757	424	6,180	2,953	8,374	1,460

With the increased acreage, Stanislaus County is rapidly becoming one of the leading walnut producing counties in California.

The Extension Service wishes to extend its thanks to the growers who furnished the information; also to the Modesto branch of the California Walnut Growers of California who cooperated in furnishing yield and grade sheets for the individual growers in the study.

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EXPLANATION OF TERMS USED IN THIS REPORT

Labor Costs: Includes hired labor, value of operator's labor at going wage rates and use of tractors and trucks charged at an hourly rate to cover operating and overhead costs. Where contract work is reported, such as for spraying or hulling and dehydrating, overhead costs on equipment and facilities are usually covered.

Material Costs: Includes water costs (pumping power, irrigation district tax, if any, or water purchased), pest and disease control materials, fertilizer and covercrop seed.

Cash Overhead Costs: Includes all cash costs not reported under labor and material costs except interest paid on mortgaged indebtedness. Principal items covered by this classification of costs are general expense, county taxes, compensation and other insurance, and repairs on facilities and equipment other than tractors and trucks. The general expense item is calculated at 5% of total labor and material cost and covers such miscellaneous cash costs as interest on operating capital, office expenses and use of family car in conjunction with the enterprise.

Depreciation: That portion of the original cost of facilities and equipment which is chargeable to current year's operations. Depreciation on tractors and trucks is included in the hourly rate charged in the labor record for their use and, therefore, is excluded from total depreciation costs shown in the tables. Depreciation on trees of \$13.75 per acre is based upon an estimated original cost of establishing the orchard of \$550 per acre and a productive life of 40 years. Tree depreciation was figured the same for all orchards.

Interest on Investment: This cost is computed at 5% of the average value of facilities and equipment. Average values, except for land, are figured at one-half of the original cost of replacement cost as the case may be. Land values are based upon estimated long-term agricultural values. Average tree values were figured the same for all orchards at \$275 ($\frac{1}{2}$ of \$550 estimated original cost). Interest on investment in tractors and trucks is excluded from the total interest charge in the tables for the reason explained under "Depreciation."

Total Cost: Includes all of the above costs.

Total Income and Average Price All Nuts: Includes total cash returns plus deferred payments such as revolving funds and operating margins or gains.

Management Income: Total income less total cost. If total cost exceeds total income, a minus (-) management income is shown.

Table 1

The 1953 crop year was the least profitable of the four years of this study due mainly to the relatively short crop compared to the other three years. The average price received was slightly lower than in 1952, but this was largely because the size and quality of the nuts were not as good. Total cost of production per acre, as shown in Table 1, averaged a little below previous years, but this was due to the lower harvesting cost of the reduced production. Cultural labor and material costs, as shown in Table 4, were actually slightly higher than in the previous year's study.

Over the four years of this study, income above total cost of production (management income) averaged about \$179 per acre. Thus, walnut growing in Stanislaus County has been a relatively profitable enterprise compared to some crops. However, it should be borne in mind that there is a large acreage of non-bearing walnuts in the state; and unless demand can keep pace with the potential production, walnuts may not continue to show as favorable a profit relationship to other crops.

Averages shown for cooperators in this study should not be considered representative of the industry, either in the county or the state as a whole, since the orchards involved are better than average. This is evident by the fact that in all years of the study the average yields per acre for these orchards were quite a bit above the county average and considerably above the state average yield. In 1953 those in the study averaged 300 pounds per acre more than the county average and approximately 550 pounds per acre above the state average yield.

Records are arranged in Table 1, as well as in succeeding tables, in order of decreasing management income per acre, as shown in the extreme right column. It will be noted that there was considerable variation in profitableness of individual orchards in this year's study, as in previous years. Total cost of production per acre ranged from about \$128 to over \$300. Total income showed a range from approximately \$76 to nearly \$600 per acre. As a result management income ran from a loss of about \$57 to a profit of about \$373 per acre. A large proportion of these wide ranges in cost, income, and profit can be attributed to management practices. Some growers showed exceptionally high costs for certain operations, as will be seen in Table 4. Good management involves obtaining relatively high production at a minimum of cost.

Orchard No. 14 was again the most profitable one in the study in 1953. As pointed out in previous years, this was a relatively small block of Eurekas of less than five acres. The exceptionally high yield obtained in this orchard is seldom experienced in orchards large enough to be considered a minimum size walnut farm. Orchard No. 29 was the least profitable due mainly to high production costs. This orchard had a somewhat better yield than some of the other orchards but received a lower-than-average price for nuts, and certain cultural operation costs were exceptionally high, as will be seen in Table 4.

TABLE 1 - SUMMARY OF COSTS, INCOME AND EARNINGS PER ACRE - 1953

Record number	Main varieties 1/	Average age trees	Size of orchard 2/	Yield lbs. per acre	Aver. price all nuts	Total income per acre	Costs per acre					Management income per A.	
							Total labor	Total material	Cash overhead	Depreciation	Interest		Total cost
14	E	25	A	3,064	19.50	597.41	117.42	17.72	23.87	24.44	41.30	224.75	372.66
26	P,E,H,F	21	C	2,082	19.80	412.30	55.05	22.50	12.22	28.98	36.32	155.07	257.23
18	E	21	A	1,874	22.45	420.68	89.03	14.71	17.41	19.40	38.30	178.85	241.83
32	F,M,B	21	B	1,820	22.87	416.36	132.90	25.83	16.40	15.64	34.22	224.99	191.37
4	F	29	A	1,714	22.35	383.23	114.85	20.77	20.24	18.48	41.36	215.70	167.53
1	E,F	27	B	1,479	23.05	341.00	73.25	7.03	21.78	28.24	46.84	177.14	163.86
17	H,E	11	A	1,232	24.57	302.58	78.18	18.57	22.14	17.31	35.12	171.32	131.26
3	P,E,F,B	20	B	1,926	19.83	381.99	165.08	11.25	23.51	14.87	36.58	251.29	130.70
2	E,P,F	28	A	1,677	20.74	347.77	95.28	36.93	22.39	34.56	43.56	232.72	115.05
13	E,F,M	33	B	1,677	21.13	354.43	94.26	39.56	30.02	45.26	49.40	258.50	95.93
6	E,F	28	B	1,295	20.62	267.11	87.73	22.31	18.74	19.26	40.10	188.14	78.97
19	E	26	A	1,700	21.50	365.50	144.20	40.25	30.42	33.93	49.03	297.83	67.67
24	E,P	27	A	1,623	20.13	326.78	122.06	21.67	21.18	52.00	47.52	264.43	62.35
15	P,C,G	23	B	1,579	21.23	335.18	128.33	55.37	26.10	35.04	46.42	291.26	43.92
5	P,E,H,M	19	B	1,330	18.81	250.17	93.73	24.50	26.01	24.31	42.48	211.03	39.14
16	F,E,P,G,M	35	C	1,008	20.58	207.41	72.80	23.69	18.07	28.71	37.85	181.12	26.29
23	P,C,F	28	A	1,457	18.03	262.66	136.23	28.29	20.04	24.00	41.95	250.51	12.15
10	M,B,F	23	B	808	22.90	185.12	101.74	22.07	31.08	19.48	32.68	207.05	-21.93
12	F	27	A	346	22.06	76.41	55.90	13.96	11.57	14.81	31.73	127.97	-51.56
29	P,M	22	B	1,358	18.41	250.00	160.20	41.61	33.25	29.02	42.52	306.60	-56.60
Hi 10	-	24	21.4	1,834	20.89	382.98	86.22	23.05	19.38	28.58	40.30	197.53	185.45
Lo 10	-	29	27.1	1,178	20.33	239.49	96.12	28.76	21.98	28.18	40.15	215.19	24.30
1953 Av.	-	27	24.3	1,467	20.64	302.88	91.74	26.24	20.83	28.36	40.21	207.38	95.50
1952 Av.	-	25	25.2	2,119	21.32	451.83	100.88	25.02	20.60	28.87	40.36	215.73	236.10
1951 Av.	-	25	28.4	1,938	22.93	444.47	107.32	27.40	21.80	27.63	40.06	224.21	220.26
1950 Av.	-	23	28.8	1,860	20.49	381.11	102.89	25.82	20.72	27.43	40.79	217.65	163.46
4-yr. Av.	-	25	26.7	1,846	21.40	395.07	100.71	26.12	20.99	28.07	40.35	216.24	178.83

1/ F - Franquette; P - Payne; M - Mayette; E - Eureka; C - Concord; H - Hartley; G - Grove; B - Blackmer.

2/ A - under 15 acres; B - 15-40 acres; C - over 40 acres.

Table 2

Cost of production per pound or per hundredweight is influenced by yield per acre more than any other factor, as will be noted in Table 2. Since yields in 1953 were somewhat lower than in previous years of the study, total costs averaged higher than for the previous years. They were approximately 4 cents per pound higher than in 1952. The average price received for all nuts was slightly lower, mainly because of quality and size, so that management income (profit) was a little over $4\frac{1}{2}$ cents below the previous year.

Over the four years of this study, total cost of production per hundredweight averaged approximately $11\text{-}3/4$ cents per pound. Income above total costs was approximately $9\text{-}2/3$ cents per pound. It is believed that there are few districts in the state which can show as low average costs per pound and as good a profit as that shown by cooperators in this study.

The figures shown in this report for prices received by growers were not final at the time this study was completed. They are based upon the best estimates that could be made at that time by the Walnut Growers Association. Adjustments in final returns, however, are likely to be only a fraction of a cent per pound. Some of the variations in cost per hundredweight for individual cooperators in 1953 can be attributed to differences in yields, while others are due to more efficient harvesting methods. Many factors have a bearing on harvesting costs. A College of Agriculture publication has been issued on walnut harvesting which is available in the farm advisor's office.

Mechanical picking has been used to a greater extent in the last two years of this study than in the first two years which has tended to reduce harvesting costs somewhat. Overhead costs of interest and depreciation for those who own their own pickers, as well as other harvesting facilities, are not included in the total harvest costs shown in Table 2. The interest and depreciation on this equipment can be obtained from Tables 5 and 6 for individual cooperators and added to the total harvest figure to obtain the over-all harvesting cost picture for all records in the study. In 1953 the interest and depreciation on harvesting, hulling, and drying equipment averaged 63 cents per hundredweight, which would bring the average total over-all harvesting cost this year to \$4.54 per hundredweight.

TABLE 2 - SUMMARY OF COSTS, INCOME AND EARNINGS PER HUNDREDWEIGHT - 1953

Record number	Yield lbs. per acre	Costs per hundredweight									Aver. price merch.	Average price all nuts	Management income per cwt.
		Knock, pick haul out	Hull, dry, del.	Total harvest*	Cul-tural labor	Cult. material	Cash over-head	Depre-ciation	Inter-est	Total cost			
14	3,064	2.10	.89	2.99	.84	.58	.78	.80	1.35	7.34	23.29	19.50	12.16
26	2,082	.57	.89	1.46	1.18	1.08	.59	1.39	1.75	7.45	23.16	19.80	12.35
18	1,874	2.65	1.47	4.12	.63	.79	.92	1.04	2.04	9.54	24.97	22.45	12.91
32	1,820	4.41	1.58	5.99	1.31	1.42	.90	.86	1.88	12.36	25.82	22.87	10.51
4	1,714	2.87	.26	3.13	3.57	1.21	1.18	1.08	2.41	12.58	23.81	22.35	9.77
1	1,479	3.69	.45	4.14	.81	.48	1.47	1.91	3.16	11.97	25.55	23.05	11.08
17	1,232	4.19	1.12	5.31	1.03	1.51	1.80	1.41	2.85	13.91	26.46	24.57	10.66
3	1,926	3.63	.89	4.52	4.05	.59	1.22	.77	1.90	13.05	23.86	19.84	6.79
2	1,677	3.80	.24	4.04	1.64	2.20	1.34	2.06	2.60	13.88	23.80	20.74	6.86
13	1,677	3.02	.60	3.62	2.00	2.36	1.79	2.70	2.94	15.41	23.46	21.13	5.72
6	1,295	4.02	1.73	5.75	1.02	1.72	1.45	1.49	3.09	14.52	24.58	20.62	6.10
19	1,700	4.17	1.66	5.83	2.65	2.37	1.79	2.00	2.88	17.52	---	21.50	3.98
24	1,623	3.30	1.17	4.47	3.05	1.33	1.31	3.20	2.93	16.29	23.30	20.13	3.84
15	1,579	3.84	.45	4.29	3.84	3.51	1.65	2.22	2.94	18.45	24.65	21.23	2.78
5	1,330	2.93	.68	3.61	3.44	1.84	1.95	1.83	3.20	15.87	23.92	18.81	2.94
16	1,008	3.52	.87	4.39	2.84	2.35	1.79	2.85	3.75	17.97	24.38	20.58	2.61
23	1,457	6.55	1.33	7.88	1.47	1.94	1.38	1.65	2.88	17.20	---	18.03	.83
10	808	7.31	1.71	9.02	3.57	2.73	3.84	2.41	4.04	25.61	25.92	22.90	-2.71
12	346	7.78	1.75	9.53	6.61	4.03	3.34	4.27	9.16	36.94	23.67	22.06	-14.88
29	1,358	3.26	1.75	5.01	6.79	3.06	2.45	2.14	3.13	22.58	23.39	18.41	-4.17
Hi 10	1,834	2.26	.82	3.08	1.62	1.26	1.06	1.56	2.19	10.77	23.93	20.89	10.12
Lo 10	1,178	3.90	1.04	4.94	3.22	2.44	1.87	2.39	3.41	18.27	24.43	20.33	2.06
1953 Av.	1,467	2.99	.92	3.91	2.34	1.79	1.42	1.93	2.74	14.13	24.17	20.64	6.51
1952 Av.	2,119	2.40	.78	3.18	1.58	1.18	.97	1.36	1.91	10.18	24.56	21.32	11.14
1951 Av.	1,938	2.86	.77	3.63	1.91	1.41	1.12	1.43	2.07	11.57	24.31	22.93	11.36
1950 Av.	1,860	2.82	.77	3.59	1.94	1.39	1.11	1.48	2.19	11.70	22.24	20.49	8.79
4-yr. Av.	1,846	2.74	.80	3.54	1.91	1.41	1.14	1.52	2.19	11.71	23.82	21.40	9.69

*Excludes depreciation, interest and repairs on owned equipment.

Table 3

An analysis of size and grades for orchards in this study which marketed their nuts through the Walnut Growers Association is shown in Table 3. It will be seen that quality can affect returns considerably. The average price received for all nuts ranged from approximately 18 cents to $24\frac{1}{2}$ cents per pound. This is a difference of $6\frac{1}{2}$ cents, which if applied to the average yield per acre for all orchards amounts to approximately \$95 per acre.

It will be seen that size and quality of nuts in 1953 for those in the study were the poorest of the four years, despite the fact that the yield was also the lowest. These factors had an important bearing on average price received in 1953.

TABLE 3 - GRADE AND SIZE DISTRIBUTION - AVERAGE FOR ALL VARIETIES - 1953

Record number	Merchantable grades - Per cent of total yield						Per cent culls	Per cent blows	Per cent merchantable			Average price per cwt.
	Diamond		Emerald		All merch. babies	Total merch.			Large	Medium	Small	
	Large	Medium	Large	Medium								
14	--	--	26.1	34.8	18.9	79.8	16.2	4.0	32.7	43.6	23.7	19.50
26	12.1	4.7	39.4	12.9	12.4	81.5	16.2	2.3	63.2	21.6	15.2	19.80
18	30.0	35.5	--	--	22.1	87.6	10.1	2.3	34.3	40.5	25.2	22.45
32	44.8	9.0	20.9	2.6	8.6	85.9	12.1	2.0	78.8	13.9	7.3	22.87
4	10.9	38.2	.5	.1	42.7	92.4	6.2	1.4	12.4	41.4	46.2	22.35
1	39.2	25.7	6.8	3.0	13.3	88.0	10.1	1.9	52.3	32.6	15.1	23.05
17	70.6	12.0	3.0	.6	5.2	91.4	6.7	1.9	80.5	13.8	5.7	24.57
3	3.5	.5	56.5	12.8	6.0	79.3	15.7	5.0	75.6	16.8	7.6	19.84
2	4.7	11.1	23.3	22.9	22.4	84.4	11.3	4.3	33.1	40.3	26.6	20.74
13	4.8	14.5	8.3	12.9	47.4	87.9	9.0	3.1	14.9	31.1	54.0	21.13
6	16.1	9.3	32.1	13.1	10.5	81.1	12.1	6.8	59.5	27.6	12.9	20.62
19	No breakdown											21.50
24	1.2	17.5	5.7	10.1	49.5	84.0	10.1	5.9	8.2	32.9	58.9	20.13
15	5.3	2.2	57.7	10.0	8.4	83.6	11.0	5.4	77.4	15.0	7.6	21.23
5	9.0	4.5	46.7	9.1	6.2	75.5	13.2	11.3	73.7	18.1	8.2	18.81
16	16.4	14.9	30.6	4.8	14.2	80.9	14.9	4.2	58.0	24.4	17.6	20.58
23	No breakdown											18.03
10	53.3	12.0	10.3	1.5	9.0	86.1	10.2	3.7	73.8	15.7	10.5	22.90
12	11.0	34.2	.5	.1	45.7	91.5	6.9	1.6	12.6	37.5	49.9	22.06
29	14.7	.4	45.4	9.1	5.0	74.6	17.0	8.4	80.7	12.7	6.6	18.41
Hi 10	17.1	10.1	27.5	11.1	18.3	84.1	13.1	2.8	53.0	25.2	21.8	20.89
Lo 10	14.2	10.1	36.0	7.4	13.0	80.7	13.4	5.9	62.3	21.7	16.0	20.33
1953 Av.	15.9	10.1	31.1	9.6	16.0	82.7	13.3	4.0	56.8	23.8	19.4	20.64
1952 Av.	24.0	8.7	33.2	8.5	10.6	85.0	11.7	3.3	67.3	20.3	12.4	21.32
1951 Av.	55.3	16.1	7.5	1.2	11.2	91.3	7.3	1.4	68.7	19.0	12.3	22.93
1950 Av.	34.4	10.5	28.1	7.0	7.6	87.6	9.9	2.5	71.3	20.0	8.7	20.49
4-yr. Av.	32.4	11.4	25.0	6.6	11.3	86.7	10.5	2.8	66.0	20.8	13.2	21.40

Table 4

This table is presented mainly for use by cooperators in the study in comparing their operational costs with others. Such comparisons may show opportunities where changes might be made in management practices which would increase efficiency of production.

Total labor and material costs for those in the 1953 study ranged from about \$70 to over \$200 per acre. Some operators showed low costs for certain operations but on the other hand had relatively high costs for other operations. Pruning ranged from 0 to about \$40 per acre this year. This cost tends to vary considerably between orchards, depending upon practices as well as age and variety of trees. Some operators undoubtedly must spend more for pruning than others. Also some operators do not expect to do a thorough pruning job every year, and, therefore, one year's costs on an individual orchard may not be representative of the average over a period of years. The wide variation in fertilizing costs indicates that some operators are spending more than is necessary to obtain high yields. Spraying and dusting, of course, varies between orchards, depending upon individual conditions. It appears that some operators were spending more for cultivation, etc., than normally would be required for good orchard management practices. One grower, record No. 12, did not irrigate this past year. This had an important bearing on the very low yield obtained on this orchard as well as a high percentage of small nuts.

Harvesting costs make up a relatively large portion of the total cost of production, and it appears that some operators might be able to improve their net incomes by more efficient methods. The advent of the mechanical picker has done considerable in some orchards towards reducing harvesting costs. The figures shown for harvesting in this table do not include overhead costs of interest and depreciation on equipment, which will be found in Tables 5 and 6. Knocking, picking, and hauling out for orchards in this year's study showed a slight reduction from 1951 on the average, but this would be partly offset by the increase in overhead costs on harvesting equipment.

The average operational costs shown at the bottom of the table are based upon the acreage on which such operations were performed. Since all growers did not have costs for all items, the average total labor and material costs, as shown in the extreme right column, are less than the sum of the various items.

TABLE 4 - LABOR AND MATERIAL COSTS PER ACRE - INDIVIDUAL ORCHARDS - 1953

Record number	Prune & brush dispos.	Fertilizer & cover crop		Spraying & dusting		Culti- vate, hoe & weed spray	Irrigation		Misc. labor & mater- ial	Total cult'l L. & M.	Knock, pick, haul out	Hull, dry, de- liver	Total labor & mate- rial
		Labor	Mate- rial	Labor	Mate- rial		Labor	Water (power tax)					
14	1.10	.49	7.09	3.94	9.73	15.06	5.12	.90	-	43.43	64.47	27.24	135.14
26	8.02	—	—	—	—	9.25	7.25	22.50	-	47.02	11.92	18.61	77.55
18	1.39	2.83	13.60	—	—	5.95	1.67	1.11	-	26.55	49.63	27.56	103.74
32	10.22	1.57	16.47	—	—	9.64	2.67	9.08	-	49.65	80.30	28.78	158.73
4	—	6.36	19.38	—	—	47.55	7.27	1.39	-	81.95	49.14	4.53	135.62
1	2.93	—	5.65	—	—	7.12	2.02	1.38	-	19.10	54.60	6.58	80.28
17	4.88	1.71	16.87	—	—	2.54	1.36	1.70	2.27	31.33	51.60	13.82	96.75
3	40.29	—	8.25	—	—	34.11	3.60	3.00	-	89.25	69.87	17.21	176.33
2	8.39	1.01	21.42	5.19	14.32	10.48	2.37	1.19	-	64.37	63.70	4.14	132.21
13	4.85	3.13	34.60	3.20	4.51	12.09	6.20	.41	4.17	73.16	50.64	10.02	133.82
6	.32	—	21.05	—	—	7.29	4.37	1.26	1.29	35.58	52.07	22.39	110.04
19	27.00	3.20	29.65	1.20	9.50	7.65	6.00	1.10	-	85.30	70.90	28.25	184.45
24	6.25	19.68	16.45	—	—	20.70	2.12	1.16	4.81	71.17	53.51	19.05	143.73
15	14.49	4.42	35.68	8.09	16.55	24.99	4.98	3.14	3.58	115.92	60.58	7.20	183.70
5	18.87	4.70	16.63	4.62	6.15	10.16	4.50	1.48	3.15	70.26	38.96	9.01	118.23
16	7.32	—	15.11	7.45	7.04	6.87	6.96	1.54	-	52.29	35.43	8.77	96.49
23	—	1.36	22.37	2.73	3.92	15.30	2.04	2.00	-	49.72	95.37	19.43	164.52
10	2.60	1.26	10.43	.95	.31	17.70	6.36	11.33	-	50.94	59.07	13.80	123.81
12	8.40	2.00	13.30	—	—	12.50	—	.66	-	36.86	26.94	6.07	69.87
29	11.67	8.16	22.85	19.99	5.15	45.52	9.49	9.09	1.84	133.76	44.33	23.72	201.81
Hi 10	9.67	2.51	17.34	3.67	6.89	12.50	5.04	9.78	3.68	52.75	41.38	15.14	109.27
Lo 10	9.59	5.23	19.08	7.25	7.56	13.58	5.77	2.73	3.48	66.70	45.89	12.29	124.88
1953 Av.	9.63	4.14	18.89	6.60	7.44	13.10	5.45	5.84	3.56	60.54	43.90	13.54	117.98
1952 Av.	9.89	1.81	17.87	5.74	7.27	12.65	5.33	3.91	1.50	58.59	50.93	16.38	125.90
1951 Av.	6.65	2.30	17.37	5.80	10.68	14.35	6.60	3.39	6.96	64.39	55.36	14.97	134.72
1950 Av.	9.01	1.37	15.43	6.89	7.60	11.45	7.92	3.73	4.75	61.96	52.34	14.41	128.71
4-yr. Av.	8.80	2.41	17.39	6.26	8.25	12.89	6.33	4.22	4.19	61.37	50.63	14.83	126.83

Table 5

Cash overhead costs, as shown in Table 5, include all cash costs not recorded under labor and material. An explanation of the general expense item will be found on the page "Explanation of Terms." Depreciation on trees is calculated the same for all orchards in the study, as will be seen in this table. The \$13.75, which was used, was calculated on the basis of an original cost of establishing the orchard of \$550 per acre and a productive life of 40 years.

As previously mentioned, the harvesting equipment, as well as hulling and drying depreciation cost, can be added to the labor cost for these operations, along with interest on the investment shown in Table 6, in order to obtain total harvesting cost. Depreciation cost for those in the study ranged from about \$15 per acre to \$52 per acre. Averages at the bottom of the table for various items are based upon the acreages reporting costs for such items. Therefore, the total cash overhead and total depreciation costs for the averages are less than a sum of the various items.

TABLE 5 - CASH OVERHEAD AND DEPRECIATION COSTS PER ACRE - 1953

Record number	Cash overhead costs per acre					Depreciation costs per acre								
	General expense	County taxes	Repairs <u>1/</u>	Insurance & other	Total cash overh'd.	Trees	Buildings	Irrigation	Tillage equipment	Spray & dust eqt.	Harvest eqt.	Hull & dry eqt.	Misc. equipment	Total depreciation
14	6.75	11.21	1.97	3.94	23.87	13.75	.50	--	1.69	--	6.45	1.97	.08	24.44
26	3.88	6.56	.94	.84	12.22	13.75	.58	4.97	1.65	--	7.83	--	.20	28.98
18	5.19	9.78	1.11	1.33	17.41	13.75	--	1.20	.59	1.37	2.22	--	.27	19.40
32	7.94	5.00	1.00	2.46	16.40	13.75	--	--	1.22	--	.67	--	--	15.64
4	6.78	10.55	--	2.91	20.24	13.75	--	3.82	--	--	--	--	.91	18.48
1	4.01	14.13	2.12	1.52	21.78	13.75	4.33	4.17	.77	--	2.34	2.69	.19	28.24
17	4.84	12.26	3.41	1.63	22.14	13.75	--	1.08	.20	--	1.63	.65	--	17.31
3	8.82	11.91	.50	2.28	23.51	13.75	--	--	.89	--	--	--	.23	14.87
2	6.61	10.82	2.25	2.71	22.39	13.75	--	--	.41	1.00	6.00	13.15	.25	34.56
13	6.69	15.42	4.97	2.94	30.02	13.75	1.33	6.50	1.48	--	2.62	17.12	2.46	45.26
6	5.50	11.78	.86	.60	18.74	13.75	--	1.05	1.20	--	3.16	--	.10	19.26
19	9.22	18.00	1.00	2.20	30.42	13.75	3.33	6.15	3.70	--	7.00	--	--	33.93
24	7.18	9.50	2.00	2.50	21.18	13.75	4.00	--	5.08	4.91	10.78	10.90	2.58	52.00
15	9.19	14.33	.81	1.77	26.10	13.75	1.67	9.25	1.64	3.56	.81	3.74	.62	35.04
5	5.91	12.40	5.77	1.93	26.01	13.75	--	1.37	1.67	2.69	1.19	2.64	1.00	24.31
16	4.83	7.08	4.17	1.99	18.07	13.75	1.87	2.06	.80	1.46	5.98	2.29	.50	28.71
23	8.23	8.18	2.27	1.36	20.04	13.75	1.17	1.41	1.85	3.50	2.07	--	.25	24.00
10	6.19	17.35	5.03	2.51	31.08	13.75	--	--	1.17	1.96	.40	2.00	.20	19.48
12	3.49	6.00	--	2.08	11.57	13.75	--	.59	.47	--	--	--	--	14.81
29	10.09	9.56	11.67	1.93	33.25	13.75	1.25	7.26	.64	1.82	4.20	--	.10	29.02
Hi 10	5.46	10.19	1.95	1.78	19.38	13.75	1.44	4.76	1.23	1.11	4.81	9.74	.68	28.58
Lo 10	6.24	10.02	3.83	1.89	21.98	13.75	1.93	3.28	1.31	3.84	4.28	2.96	.56	28.18
1953 Av.	5.90	10.09	3.00	1.84	20.83	13.75	1.72	3.88	1.28	3.55	4.50	5.03	.61	28.36
1952 Av.	6.30	9.77	3.02	2.04	20.60	13.75	1.73	4.08	1.26	2.12	4.11	4.90	.63	28.87
1951 Av.	6.73	8.26	4.65	2.16	21.80	13.75	2.71	3.61	1.21	1.65	2.87	3.72	1.03	27.63
1950 Av.	6.44	8.34	4.12	1.82	20.72	13.75	2.36	3.58	1.08	1.49	1.85	5.02	.99	27.43
4-yr. Av.	6.34	9.12	3.70	1.97	20.99	13.75	2.13	3.79	1.21	2.20	3.33	4.67	.82	28.07

Table 6

Average investment, as shown in Table 6, for individual orchards in this year's study is based upon one-half the original cost of the facilities and equipment shown. Land values were figured at what were considered conservative values and somewhat below current selling prices. Therefore, the total investment figures per acre are not representative of the amount of capital required to go into the business of producing walnuts. These values are used merely as a basis for calculating a nominal interest on investment cost as part of the total cost of production.

The investment in tractors and trucks is not shown in this table since the overhead cost of interest and depreciation is included in the hourly rate charged for the use of this equipment in the labor record.

Average costs shown at the bottom of the table are based upon the acreage reporting the various items, and the investment cost per acre for the averages is less than a sum of the various items, since all orchards did not have investment in all items.

TABLE 6 - AVERAGE INVESTMENT PER ACRE - INDIVIDUAL ORCHARDS - 1953

Record number	Trees	Buildings	Irrigation equip.	Tillage equipment	Spray & dust equipment	Harvesting equipment	Hull & dry equipment	Misc. equipment	Land	Total except tractors & trucks
14	275.00	6.25	--	8.44	--	25.99	9.84	.39	500.00	825.91
26	275.00	8.70	51.14	5.38	--	35.17	--	1.00	350.00	726.39
18	275.00	--	18.00	3.63	6.84	11.11	--	1.37	450.00	765.95
32	275.00	--	--	6.08	--	3.33	--	--	400.00	684.41
4	275.00	--	47.73	--	--	--	--	4.54	500.00	827.27
1	275.00	86.54	83.33	5.77	--	11.15	24.04	.96	450.00	936.79
17	275.00	--	16.23	1.00	--	8.13	2.03	--	400.00	702.39
3	275.00	--	--	5.70	--	--	--	.92	450.00	731.62
2	275.00	--	--	2.03	6.67	29.00	107.20	1.25	450.00	871.15
13	275.00	20.00	65.03	6.75	--	10.02	98.95	12.29	500.00	988.04
6	275.00	--	7.89	6.10	--	12.63	--	.50	500.00	802.12
19	275.00	41.67	76.85	18.52	--	18.50	--	--	550.00	980.54
24	275.00	20.00	--	40.00	24.54	49.00	68.50	23.35	450.00	950.39
15	275.00	25.00	70.32	8.18	17.82	3.63	25.34	3.12	500.00	928.41
5	275.00	--	33.33	15.42	26.92	7.69	31.35	10.00	450.00	849.71
16	275.00	37.50	27.05	4.00	8.75	27.13	25.00	2.50	350.00	756.93
23	275.00	31.25	28.13	13.88	26.25	13.24	--	1.25	450.00	839.00
10	275.00	--	--	5.83	9.78	2.00	10.00	1.00	350.00	653.61
12	275.00	--	7.35	2.18	--	--	--	--	350.00	634.53
29	275.00	12.50	87.58	3.18	9.10	12.50	--	.50	450.00	850.36
Hi 10	275.00	25.42	55.73	5.32	6.72	21.53	62.33	3.37	416.95	805.92
Lo 10	275.00	32.30	37.43	7.97	23.92	18.73	26.83	3.74	409.06	802.97
1953 Av.	275.00	29.40	44.81	6.82	22.11	19.90	37.69	3.58	412.54	804.27
1952 Av.	275.00	29.57	46.38	7.04	13.17	18.04	37.02	3.72	409.79	807.14
1951 Av.	275.00	36.18	43.73	6.57	10.69	13.55	35.12	7.04	402.26	801.20
1950 Av.	275.00	31.61	42.90	5.84	9.56	9.56	41.99	6.50	418.85	815.84
4-yr. Av.	275.00	31.69	44.46	6.57	13.88	15.26	37.96	5.21	410.86	807.11