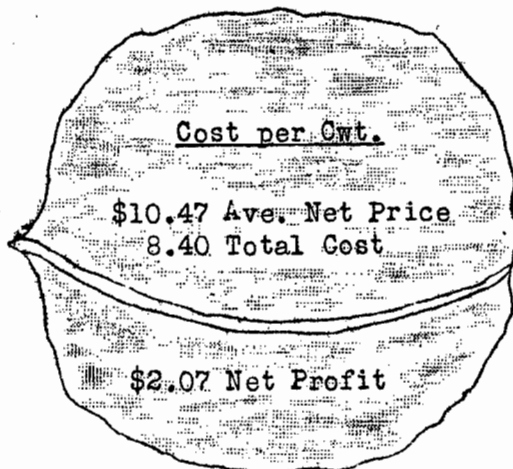


Third Annual Summary
of
COST AND EFFICIENCY ANALYSIS ON WALNUT PRODUCTION
Stanislaus County - 1933

With Three-Year Summary



Compiled by
THE AGRICULTURAL EXTENSION SERVICE
University of California
United States Department of Agriculture

INTRODUCTION

The third annual summary and analysis of costs involved in producing walnuts is presented in this study. It includes fifteen bearing orchards representative of this county, comprising six different commercial varieties for comparative study. The fifteen growers submitted complete records of yields, itemized costs and returns for the 1933 crop year on 310.85 acres.

The purpose of the study is to furnish Stanislaus County walnut growers with an economic cost study of walnut production under local conditions, with a view of increasing profits to growers and to assist individual growers whose records are summarized in analyzing their own walnut enterprise in order that they might make adjustments where possible to improve their net income.

The 1933 year records show that the yields were lighter than in the year previous. The average production in 1932 was 1107 pounds per acre against 935 pounds for 1933. The cost per pound in 1933 was 8.40 cents against 7.21 cents in 1932. This increase is due to a lighter yield per acre. Yet the net profit in 1933 was 2.07 cents per pound as compared to 2.04 in 1932, due to receiving an average net price of 10.47 cents in 1933 as against 9.25 cents in 1932.

As to quality, the per cent of merchantable nuts was 88.2 in 1933 as compared with 87.7% in 1932, and 85.9% in 1931 or a slight improvement in quality in 1933 over the previous two years, in spite of the very prolonged hot summer of 1933.

The variety question is still an interesting one. The Mayette consistently produces a high quality nut, but it is the lowest yielder in net return for the third successive year. The Franquette on the other hand is one of the best varieties in producing net returns per acre, having both quality and quantity production. Present price levels make it important to have varieties that bring the best returns per acre.

Labor costs have not varied materially over the three-year period. The average labor cost per acre in 1933 was \$21.52 compared with \$21.09 in 1932.

The 1933 study shows that the average investment per acre was \$662.73 per acre. The total income per acre was \$97.89 while the total costs were \$78.58, leaving a net profit above all costs of \$19.31 per acre. The income above cash costs per acre was \$69.64. The per cent earned on the investment of \$662.73 per acre was 8.91% in 1933.

It is hoped to continue this study for at least two more years. Perhaps by that time some very definite conclusions may be drawn with respect to cultural practices and varieties best adapted for net income for this district.

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GENERAL SUMMARY

The general summary of the 1933 cost of production study for walnuts is shown in Table 1 with a comparison of the averages for 1932 and 1931 studies. Averages are shown in Table 1 where a high profit group of 9 records, and a low profit group of 6 records, together with the average of all records for the 1933 study. These records were divided according to the net profit received per acre.

The average price received in 1933 was \$1.22 per cwt. higher than the average for 1932, but cost of production per cwt. likewise was higher. This resulted in a net profit of \$2.07 per cwt. for 1933, compared with \$2.04 in 1932 and \$5.09 per cwt. in 1931. Total costs per acre in 1933, however, were very little higher than in 1932 but the yield in 1933 was lower, which accounted for the increase in cost of production per cwt.

On an acreage basis, 1933 was not so profitable as 1932, due largely to the lower yields, the net profit in 1933 being \$19.31 per acre as compared with \$22.58 per acre in 1932, and \$51.19 in 1931.

Table 1.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
Number of records	9	6	15		14	14
Number acres reporting	108.45	202.4	310.85		333.85	415.85
Average age of trees	13.7	13.4	13.5		14	11.7
Average number trees per acre	21.9	17.8	19.2		18	17.9
Yield - lbs. merchantable nuts per acre	1123.05	663.88	824.08		971.0	864.8
Total yield - lbs. per acre	1224.01	779.85	934.81		1107.0	1006.5
Per cent of nuts merchantable	91.8	85.1	88.2		87.7	85.9
Av. net price per cwt. all nuts	\$ 11.11	\$ 9.94	\$ 10.47		\$ 9.25	\$ 13.58
Total cost of prod. per cwt.	6.38	10.12	8.40		7.21	8.49
Net profit per cwt.	4.73	-.18	2.07		2.04	5.09
Cultural labor cost per acre	5.93	6.68	6.42		8.32	11.49
Harvesting labor cost per a.	14.99	15.16	15.10		12.77	15.52
Total labor cost per acre	20.92	21.84	21.52		21.09	27.01
Cost of materials per acre	3.38	2.04	2.51		3.33	2.90
Cash overhead cost per acre	4.45	4.10	4.22		5.33	5.75
Total cash & labor cost per a.	28.75	27.98	28.25		29.75	35.66
Depreciation charge per acre	9.67	11.06	10.57		10.66	8.99
Interest charge per acre	39.61	39.85	39.76		39.38	40.81
Total all costs per acre	78.03	78.89	78.58		79.79	85.46
Total income per acre	135.93	77.51	97.89		102.37	136.65
Income above cash costs per a.	107.17	49.53	69.64		72.62	100.99
Capital and mgt. income per a.	97.50	38.47	59.07		61.96	92.00
Net profit above all costs per a.	57.90	-1.38	19.31		22.58	51.19
Investment per acre	660.11	664.13	662.73		656.34	680.31
Per cent earned on investment	14.77%	5.79%	8.91%		9.4%	13.5%

GRADES AND INCOME PER HUNDREDWEIGHT

The grades and average prices received per cwt. are shown in Table 2 for the past three-year period. The quality as shown by the percentages in the different grades was better in 1933 than in either of the preceding years. Average prices received likewise were better in 1933 than in 1932, but considerably under the prices for 1931. An average of \$11.55 per cwt. was received for all merchantable nuts for 1933, compared with \$10.21 in 1932, and \$15.35 in 1931.

Table 2.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
% of nuts Diamond grade	55.5	34.9	44.3		33.4	43.1
% of nuts Emerald grade	22.8	32.0	27.8		34.9	13.3
% of nuts California or Suntand	13.5	18.2	16.1		19.4	29.5
Total per cent merchantable	91.8	85.1	88.2		87.7	85.9
Per cent culls	6.2	11.9	9.3		10.4	9.9
Per cent blows	2.0	3.0	2.5		1.9	4.2
Total per cent	100.0	100.0	100.0		100.0	100.0
Av. price all Diamonds per cwt.	\$13.17	\$13.11	\$13.14		\$12.39	\$18.42
Av. price all Emeralds per cwt.	9.76	9.84	9.81		9.50	14.30
Av. price all California or Suntand per cwt.	10.21	10.11	10.15		7.74	11.35
Av. price all merchantable	11.89	11.24	11.55		10.21	15.35
Average price culls	3.00	3.00	3.00		2.93	3.70
Average price blows	5.00	5.00	5.00		-.59	-
	.50	.50	.50			

COST PER HUNDREDWEIGHT OF NUTS PRODUCED

Itemized cost of production per cwt. of nuts produced is shown in Table 3. Cultural labor costs were lower in 1933 than either of the preceding years, but harvesting costs per cwt. were considerably higher. Total labor costs in 1933 averaged \$2.30 per cwt., the 1932 average was \$1.91 per cwt. whereas the 1931 cost was \$2.68 per cwt. Total all costs per cwt. including labor, materials, other cash costs, charges for depreciation and interest averaged \$8.40 in 1933, \$7.21 per cwt. in 1932, and \$8.49 in 1931.

Table 3.

	1933	1932	1931		1932	1931
Av. yield - lbs. per acre	1224.01	779.85	934.81		1107.0	1006.5
Cultural labor costs	\$.48	\$.85	\$.69		\$.75	\$ 1.14
Picking	.91	1.30	1.24		.89) 1.38
Hauling out of orchard	.08	.25	.18		.14	
Hulling and drying	.23	.29	.27		.24	
Delivery to market	.09	.10	.10		.09	
Total all harvesting per cwt.	1.23	1.95	1.61		1.16	1.38
Total labor cost per cwt.	1.71	2.80	2.30		1.91	2.68
Cost of materials	.28	.26	.27		.30	.29
Cash overhead cost	.36	.53	.45		.48	.57
Total cash and labor costs	2.35	3.59	3.02		2.69	3.54
Depreciation	.79	1.42	1.13		.96	.89
Total cash and depreciation	3.14	5.01	4.15		3.65	4.43
Interest on investment	3.24	5.11	4.25		3.56	4.06
Total all costs per cwt.	6.38	10.12	8.40		7.21	8.49
Income or average price per cwt.	11.11	9.94	10.47		9.25	13.58
Income above cash & labor costs	8.76	6.35	7.45		6.56	10.04
Income above cash, labor & dep.	7.97	4.93	6.32		5.60	4.95
Net profit per cwt.	4.73	-.18	2.07		2.04	5.09

LABOR COSTS PER ACRE

Labor costs per acre are itemized in Table 4 for the 1933 study and for the studies for the previous years. The averages shown for each operation represent the costs on the number of acres only on which these operations were performed. The numbers of acres representing these operations in 1933 are shown in Column 1 of this table. The average total cultural costs therefore shown in this table is not the sum of the items for the individual costs, but represents the total costs on the entire acreage divided by the total number of acres.

In 1933 the cultural cost per acre averaged \$5.93 for the high profit group, \$6.68 for the low, and \$6.42 per acre for all records. This should be compared with the average of \$8.32 per acre in 1932 and \$11.49 in 1931.

Harvesting costs per acre are higher in 1933 than either of the preceding years. This made the total costs higher in 1933 than in 1932 in spite of the lower cultural labor costs.

Table 4.

	Acres Performing Operation	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
Pruning	283.8	\$ 1.34	\$.99	\$ 1.10		\$ 1.24	\$ 2.12
Brush disposal	168.8	.16	.30	.29		.73	.74
Cover crop planting	- -	- -	- -	- -		.38	.73
Applying fertilizers	92.0	1.58	2.09	2.02		.63	2.72
Pest control	169.4	1.74	.52	.59		.26	.15
Disease control	18.7	.68	- -	.68		.39	.83
Cultivation	303.8	4.04	2.12	2.76		4.38	4.76
Irrigation	189.6	.69	3.97	2.72		1.86	2.82
Miscellaneous	- -	.19	.71	.68		.62	.11
Av. total cultural costs	All	5.93	6.68	6.42		8.32	11.49
Your comparative total							
Harvesting, hulling, drying	All	14.86	14.37	14.54		11.99	13.89
Delivering to market	303.8	1.09	.79	.89		.94	1.63
Av. total labor costs	All	20.92	21.84	21.52		21.09	27.01
Your comparative total							

COST OF MATERIALS PER ACRE

The itemized cost of materials per acre is shown in Table 5.

Charge for irrigation water is the largest single item. This charge is made up either of irrigation taxes or of pump charges for different orchards. Charges for fertilizer and all of the other items are reported only for the acres on which these operations were performed. Therefore the charge per acre for fertilizers appears to be out of line with the average but as only a few cooperators reported this cost it is relatively small for the total of the group.

Total cost of materials in 1933 was lower than for either 1932 or 1931.

Table 5.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
Irrigation taxes or water cost	\$2.64	\$1.41	\$2.08		\$2.12	\$2.08
Fertilizer	1.85	.93	1.16		.04	- -
Cover crop seed	- -	- -	- -		.50	.81
Pest control	- -	.67	.67		2.04	.43
Disease control	.79	- -	.79		.12	.49
Harvesting	.16	- -	.16		1.09	.77
Miscellaneous	1.21	.40	2.17		.23	.65
Av. total cost of materials	3.38	2.04	2.51		3.33	2.90
Your comparative total						

CASH OVERHEAD COSTS PER ACRE

Cash overhead costs are shown in Table 6 for the three-year period.

General expense is a charge calculated at 5% of the total cost of labor and materials. This item is included to cover small cash costs which would not be reported upon the record cards. County taxes is the largest item in this group, with general expense next and insurance third. Cash overhead cost in 1933 was lower than for either of the preceding years.

Table 6.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
General expense	\$1.21	\$1.19	\$1.20		\$1.22	\$1.50
County taxes	2.97	2.54	2.69		3.60	3.53
Machinery repairs	.17	- -	.16		1.00	.71
Compensation and other ins.	.50	.21	.47		.42	.63
Other cash costs	- -	- -	- -		.30	- -
Av. total cash overhead costs	4.45	4.10	4.22		5.33	5.75

INVESTMENT PER ACRE

The average investment per acre in trees, improvements, equipment and land is shown in Table 7.

The values here shown represent original cost less charge for depreciation. The depreciation of trees does not begin until after they have reached full bearing, while the depreciation charge for improvements and equipment is deducted as an equal charge over the entire estimated length of life of these items. Total investment per acre averages \$662.73 for the 1933 study. This item was slightly lower in 1932 and slightly higher in 1931.

Table 7.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
Investment in trees	\$386.25	\$401.22	\$396.00		\$394.02	\$402.86
Investment in improvements	9.64	19.14	15.83		15.97	21.09
Investment in equipment	14.22	29.79	24.35		24.48	33.28
Investment in land	250.00	213.98	226.55		221.87	223.08
Total investment per acre	660.11	664.13	662.73		656.34	680.31

INVESTMENT OVERHEAD PER ACRE

Investment overhead consists of interest and depreciation charges on the average value of the investment in the enterprise. Interest is charged at 6 per cent while depreciation is based upon the cost and expected length of life of each item in the inventory.

Depreciation on trees is based on an estimated net cost of \$440 per acre to bring the trees to full bearing by the twelfth year, and a total length of life of 55 years. As some orchards in this study were under 12 years of age no depreciation for them is charged but the average shown below is for the entire acreage.

Table 8.

	High Profit Group	Low Profit Group	Av. All Records 1933	Your Record 1933	Av. All Records 1932	Av. All Records 1931
Int. on investment in trees	\$23.18	\$24.07	\$23.76		\$23.64	\$24.17
Int. on inv. in improvements	.58	1.15	.95		.96	1.26
Int. on inv. in equipment	.85	1.79	1.46		1.47	2.00
Int. on inv. in land	15.00	12.84	13.59		13.31	13.38
Total interest per acre	39.61	39.85	39.76		39.38	40.81
Depreciation on trees	6.41	6.15	6.23		6.76	4.65
Depreciation on improvements	.78	.76	.77		.67	.79
Depreciation on equipment	2.48	4.15	3.57		3.23	3.55
Total depreciation per acre	9.67	11.06	10.57		10.66	8.99
Total investment overhead cost	49.28	50.91	50.33		50.04	49.80

INDIVIDUAL COSTS AND RETURNS PER ACRE, 1933

In Tables 9, 10 and 11 individual records in this study are shown in order of decreasing net profit per acre. The averages of the high and low groups of all records are shown for purpose of comparison.

In Table 9 a summary of the individual costs and returns are shown for each individual orchard. Note the variation in almost every cost from the averages at the bottom of the table. The fact that there is this variation indicates that some orchards at least have opportunity for reduction in these items.

Table 9.

Serial No.	No. of Acres	Principal Varieties	Average of Trees	Total Cash and Labor	Depreciation Charge	Interest Charge	Total All Costs	Total Income	Net Profit	Income Above Cash Costs	Income Above Cash & Deprec.	Labor Income	Farm Income
6	26.45	C-F-E*	17	\$26.26	\$10.33	\$38.33	\$74.92	\$175.88	\$100.96	\$149.62	\$139.29	\$107.54	\$145.87
13	14	(Pl-F-C E-M)	18	47.99	17.71	40.63	106.33	198.21	91.88	150.22	132.51	91.88	132.51
2	7	M	18	17.18	11.82	39.30	68.30	149.13	80.83	131.95	120.13	81.17	120.47
1B	2	F	18	24.80	11.34	38.71	74.85	128.16	53.31	103.36	92.02	56.46	95.17
4	10	M-F	17	33.21	15.71	40.44	89.36	134.09	44.73	100.88	85.17	46.33	86.77
7	10	F-M	12	37.47	10.84	41.37	89.68	124.98	35.30	87.51	76.67	45.40	86.77
17	10	P-E	6	23.97	4.11	35.33	63.41	88.41	25.00	64.44	60.33	26.96	62.29
15	20	E	11	18.88	2.87	43.00	64.75	86.87	22.12	67.99	65.12	28.40	71.40
16	9	P	6	28.68	6.48	36.53	71.69	89.11	17.42	60.43	53.95	19.61	56.14
14	70	All	9.2	23.99	5.01	39.90	68.90	72.60	3.70	48.61	43.60	3.70	43.60
12	35.6	All	13	35.05	16.87	46.94	98.86	99.06	.20	64.01	47.14	7.37	54.31
5	30	F	19	26.40	13.36	35.44	75.20	75.39	.19	48.99	35.63	2.90	38.34
3	8	E-M-F	8	25.10	1.36	39.30	65.76	60.85	-4.91	35.75	34.39	-2.29	37.01
10	45.8	All	16	32.28	15.89	37.57	85.74	79.45	-6.29	47.17	31.28	-4.59	32.98
1A	13	M	18	20.30	11.34	38.71	70.35	53.31	-17.04	33.01	21.67	-15.40	23.31
Av. High	108.45	All	13.7	28.75	9.67	39.61	78.03	135.93	57.90	107.17	97.50	62.18	101.79
Av. Low	202.4	All	13.4	27.98	11.06	39.85	78.89	77.51	-1.38	49.53	38.47	.88	40.73
Av. All	310.85	All	13.5	28.25	10.57	39.76	78.58	97.89	19.31	69.64	59.07	22.27	62.03

*C = Concord; F = Franquette; E = Eureka; M = Mayette; P = Payne; Pl = Placentia.

IMPORTANT INDIVIDUAL CASH AND LABOR COSTS PER ACRE, 1933

Some of the individual costs are shown in Table 10 for each orchard in this study. It will be seen that some orchards did not show costs for many of the cultural operations; in other words, in 1933 there was a reduction and elimination of many operations previously thought indispensable. No orchard showed charge for cover crop; the majority showed no charge either for fertilizing or for spraying, and one orchard showed no cultivation operation.

From a study of this table and a comparison with the net profit received as shown in Table 9, growers may determine what operations are most necessary and where they may effect economies in their operation costs.

Table 10.

Serial No.	Pruning and Brush Disposal	Cover* Crop Cost	Fertilizer* Cost	Spray* or Dust	Cultivation Cost	Irrigation Labor	Irrigation Water Cost	Total Cultural Labor Cost	Harvesting Labor	Total All Labor	Total All Materials	Cash Over-head Cost	Total Cash and Labor
6	\$1.48				\$2.59	\$.15	\$2.24	\$ 4.22	\$16.03	\$20.25	\$2.24	\$3.77	\$26.26
13	1.37		4.26	.70	1.61	.49	3.77	5.83	27.00	32.83	7.72	7.44	47.99
2					- -	.34	2.34	.34	10.82	11.16	2.34	3.68	17.18
1B					1.95	2.70	2.32	4.65	12.95	17.60	2.32	4.88	24.80
4					6.91	1.09	2.75	8.00	18.02	26.02	2.75	4.44	33.21
7	2.73		2.44		6.34	.56	3.31	11.37	16.72	28.09	4.01	5.37	37.47
17	.48			3.74	3.90	- -	2.18	4.82	11.81	16.63	3.51	3.83	23.97
15	1.25				3.47	.74	2.40	5.46	7.51	12.97	2.61	3.30	18.88
16	.64				8.17	.89	2.60	9.70	11.74	21.44	2.60	4.64	28.68
14	1.00		3.03	1.21	1.49	2.14	1.12	7.30	10.21	17.51	3.12	3.36	23.99
12	2.66			1.18	3.33	6.43	- -	13.35	14.27	27.62	.68	6.75	35.05
5	.39				2.71	- -	- -	3.36	19.72	23.08	.02	3.30	26.40
3			1.99	1.77	3.15	.88	2.50	6.84	10.64	17.48	3.57	4.05	25.10
10	.85			1.04	1.76	- -	- -	3.30	23.02	26.32	2.44	3.52	32.28
1A	1.82				1.51	1.25	2.30	4.58	8.76	13.34	2.30	4.66	20.30
Av. High	1.50	- -	2.43	3.21	4.04	.69	2.64	5.93	14.99	20.92	3.38	4.45	28.75
Av. Low	1.29		3.02	1.19	2.12	3.97	1.41	6.68	15.16	21.84	2.04	4.10	27.98
Av. All	1.39		3.18	2.73	2.76	2.72	2.08	6.42	15.10	21.52	2.51	4.22	28.25

*These figures include both labor and material costs.

INDIVIDUAL COSTS AND RETURNS PER HUNDREDWEIGHT, 1933

Costs and returns per cwt. are shown for the individual orchards in Table 11. Note the wide variation in yield between the low return of 425.5 pounds to the highest with 1916.1 pounds per acre. The high group of 9 records showed an average yield of 1224 pounds as compared with 780 pounds for the low group, and an average of 935 pounds for all 15 records. Yield per acre as has been pointed out previously, is an important item in determining the costs per cwt. Therefore, those orchards showing a heavy yield ordinarily will have lower total costs per cwt. than those with full yields.

An indication of the cost of the nuts likewise is given in column 3 which shows percentage of Diamonds and Emeralds produced. These two factors, yield and cost, should be considered when comparing the costs and income shown in the balance of the table for the individual orchards.

Table 11.

Serial No.	Total Yield Lbs. per Acre	% Diamond and Emerald	% Merchantable	Pick- ing Labor	Hulling and Drying Labor	Haul- ing to Market	Total* Harvest- ing	Total Cash and Labor	Invest- ment Over- head	Total All Costs	Av. Price All Nuts	Net Profit	Income Over Cash & Labor
6	1442.6	94.0	94.0	\$.79	\$ - -	\$.16	\$ 1.11	\$ 1.82	\$ 3.37	\$ 5.19	\$12.19	\$ 7.00	\$10.37
13	1916.1	71.3	90.0	1.10	.28	.02	1.40	2.50	3.04	5.54	10.34	4.80	7.84
2	1153.4	94.3	94.3	.94	- -	- -	.94	1.49	4.43	5.92	12.93	7.01	11.44
1B	1215.5	90.9	90.9	.86	.04	.10	1.06	2.03	4.12	6.15	10.54	4.39	8.51
4	1210.0	91.4	91.4	1.11	.19	.10	1.49	2.75	4.64	7.39	11.08	3.69	8.33
7	1228.5	61.0	87.4	1.23	.05	.08	1.36	3.05	4.25	7.30	10.17	2.87	7.12
17	831.3	86.0	89.5	.53	.73	.06	1.42	2.88	4.74	7.62	10.63	3.01	7.75
15	853.3	38.6	93.1	.71	.02	.04	.87	2.19	5.35	7.54	10.12	2.58	7.93
16	821.0	91.4	91.4	.93	.36	.10	1.43	3.49	5.24	8.73	10.85	2.12	7.36
14	647.3	80.1	90.8	1.17	.22	.06	1.57	3.70	6.94	10.64	11.22	.58	7.52
12	1039.1	69.1	86.6	1.10	.12	.11	1.38	3.37	6.14	9.51	9.53	.02	6.16
5	854.3	84.3	85.1	1.42	.20	.14	2.31	3.09	5.71	8.80	8.82	.02	5.73
3	552.9	90.3	90.3	1.06	.76	.08	1.92	4.54	7.36	11.90	11.00	-.90	6.46
10	872.3	70.6	76.1	1.50	.56	.12	2.64	3.70	6.13	9.83	9.11	-.72	5.41
1A	425.5	90.1	90.1	1.89	.05	.09	2.06	4.77	11.77	16.53	12.53	-4.00	7.76
Av. High	1224.01	78.3	91.8	.91	.23	.09	1.23	2.35	4.03	6.38	11.11	4.73	8.76
Av. Low	779.85	66.9	85.1	1.30	.29	.10	1.95	3.59	6.53	10.12	9.94	-.18	6.35
Av. All	934.81	72.1	88.2	1.24	.27	.10	1.61	3.02	5.38	8.40	10.47	2.07	7.45

*Total harvesting includes both labor and material costs.

GENERAL SUMMARY COMPARING VARIETIES

A general summary comparing results for six principal varieties of walnuts in this study is presented in Table 12. The varieties are listed from left to right in order of decreasing net profit per acre.

The results of the comparison for the 1933 study are so much different from the 1932 study that no general conclusions are warranted. In 1932 Concords were fifth, while Paynes were first. The El Monte variety was second in 1932, and last in 1933. With more data, however, in succeeding years this analysis may yield worthwhile conclusions as to the general relationship between the varieties. The Mayette, however, for the third successive year has been a light bearer.

Table 12.

	Concord	Franquette	Eureka	Payne	Mayette	El Monte
Number of records	2	7	8	4	6	2
Acres reporting	3.9	52.8	95.08	78.15	37.4	11.7
Av. age of trees	17.2	17.7	12.2	9.8	13.5	15.4
Number of trees per acre	20.3	22.8	17.5	20.6	17.9	9.2
Total yield - lbs. per acre	1842.8	1156.7	1018.6	754.5	660.3	661.4
Av. net price rec'd per cwt.	\$ 9.36	\$10.33	\$ 9.93	\$10.97	\$12.34	\$ 7.69
Total all costs per cwt.	5.80	7.02	7.84	9.61	11.56	12.10
Net profit per cwt.	3.56	3.31	2.09	1.36	.78	-4.41
Cultural labor cost per acre	4.80	4.37	6.92	7.10	5.58	5.02
Harvesting labor cost per acre	33.89	21.06	15.36	12.67	9.89	13.96
Total labor cost per acre	38.69	25.43	22.28	19.77	15.47	18.98
Cost of materials per acre	5.55	1.21	2.43	3.11	2.78	2.14
Cash overhead cost per acre	6.25	4.01	4.44	3.61	4.85	3.69
Total cash and labor per a.	50.49	30.65	29.15	26.49	23.10	24.81
Depreciation cost per acre	16.96	13.25	10.24	6.10	12.78	16.06
Interest charge per acre	39.38	37.32	40.50	39.93	40.48	39.17
Total all costs per acre	106.83	81.22	79.89	72.52	76.36	80.04
Total income per acre	172.47	119.50	101.20	82.77	81.47	50.89
Net profit per acre	65.64	38.28	21.31	10.25	5.11	-29.15
Income above cash costs per a.	121.98	88.85	72.05	56.28	58.37	26.08

PER CENT OF NUTS IN EACH SIZE AND QUALITY GRADE BY VARIETIES

The following table gives a comparison of the quality of nuts by varieties produced by orchards in the 1933 study.

In spite of their poor quality, the Concords because of exceptionally heavy yields were first in net profit. In general, however, good quality and resulting better price results in better profit. The yield factor, however, is very important in determining net profit per acre.

Table 13.

	Concord	Franquette	Eureka	Payne	Mayette	El Monte
Diamond Large		31.7	10.9	.5* 52.5	.2** 74.0	
Diamond Fancy		18.5	4.7	20.1	9.3	
Total per cent Diamond		50.2	15.6	73.1	85.5	
Emerald Large		8.8	30.9	1.7		
Emerald Fancy		10.4	12.1	.6		
Emerald Babies		14.5	3.0	11.8	4.7	
Total per cent Emerald		33.7	46.0	14.1	4.7	
Suntand Large	72.5	3.0	20.1		.3	60.3
Suntand Fancy	13.0	1.6	5.8		.6	3.9
Suntand Babies	4.0	.4	.9		.9	2.0
Total per cent Suntand	89.5	5.0	26.8		1.8	66.2
Total per cent merchantable	89.5	88.9	88.4	87.2	91.9	66.2
Culls	6.9	8.3	9.5	9.4	7.2	27.2
Blows	3.6	2.8	2.1	3.4	.9	6.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Stolen **Ranch Sale

NET PRICES RECEIVED PER HUNDREDWEIGHT FOR EACH GRADE BY VARIETIES

Net prices per hundredweight are compared by varieties in Table 14. Deductions are made for local packing-house charges and an estimated charge of 25% for operation of the central association in order to arrive at the prices listed below. For the third successive year the Mayette variety received the greatest average price per pound.

Table 14.

	Concord	Franquette	Eureka	Payne	Mayette	El Monte
Diamond Large		\$13.88	\$13.88	\$13.88	\$13.88	
Diamond Fancy		11.25	11.25	11.25	11.25	
Average all Diamonds		12.91	13.08	9.54	13.59	
Emerald Large		11.25	11.25	11.25		
Emerald Fancy		9.75	9.75	9.75		
Emerald Babies		7.50	7.50	7.50	7.50	
Average all Emeralds		9.17	10.61	8.05	7.50	
Suntand Large	10.50	10.50	10.50		10.50	10.50
Suntand Fancy	9.38	9.38	9.38		9.38	9.38
Suntand Babies	7.50	7.50	7.50		7.50	7.50
Average all Suntand	10.20	9.93	10.16		8.59	10.34
Av. price all merchantable	10.20	11.32	10.91	12.24	13.18	10.34
Culls (estimate)	3.00	3.00	3.00	3.00	3.00	3.00
Blows (estimate)	5.00	5.00	5.00	5.00	5.00	5.00
Av. price all nuts	9.36	10.33	9.93	10.97	12.34	7.69

1933 COST AND INCOME FACTORS IN THREE CLIMATIC ZONES

Orange, San Bernardino and Stanislaus Counties Compared

Through the courtesy of the Agricultural Extension Service in San Bernardino and Orange Counties, comparative data has been made available for the three climatic zones found in the three counties named. Table 15 sets up the cost and income factors reported by the growers cooperating in each of the three counties, Orange County representing the southern coastal area, San Bernardino County the southern interior area, and Stanislaus County the north central valley area where walnut plantings are coming into bearing.

Table 15.

	<u>Coastal</u> Orange County Buds & Seeds	<u>Interior</u> San Bernardino Buds & Seeds	<u>Northern</u> Stanislaus County Buds
Number of orchards	21	9	15
Average age of trees	30	16	13
Total yield per acre - pounds	1220	936	935
Per cent merchantable	86	75	88
Labor cost per acre	\$ 35.67	\$ 25.70	\$ 21.52
Material cost per acre	16.20	9.66	2.51
Cash overhead per acre	19.50	12.01	4.22
Interest and depreciation per acre	112.44	65.82	50.33
Investment in trees per acre	385.29	468.60	396.00
Investment in improvements per acre	25.98	38.90	15.83
Investment in equipment per acre	25.48	28.41	24.35
Investment in land per acre	1156.87	400.00	226.55
Total investment per acre	1593.62	935.91	662.73
Total cost per acre	183.81	113.19	78.58
Gross returns per acre	103.18	85.85	97.89
Income above cash costs	31.82	38.48	69.64
Income above cash, labor & depreciation	14.99	28.81	59.07
Net profit or loss per acre	-80.63	-27.34	19.31
Per pound costs:			
Labor	2.92¢	2.74¢	2.30¢
Material	1.33	1.04	.27
Cash overhead	1.60	1.28	.45
Interest and depreciation	9.21	7.03	5.38
Total costs	15.06	12.09	8.40
Gross returns	8.45	9.17	10.47
Income above cash costs	2.61	4.11	7.45
Income above cash, labor and deprec.	1.23	3.08	6.32
Net profit or loss per pound	-6.61	-2.92	2.07
Acre inches of water used	24.5	- -	32.+
Rainfall	12.1	16.3	10.3