

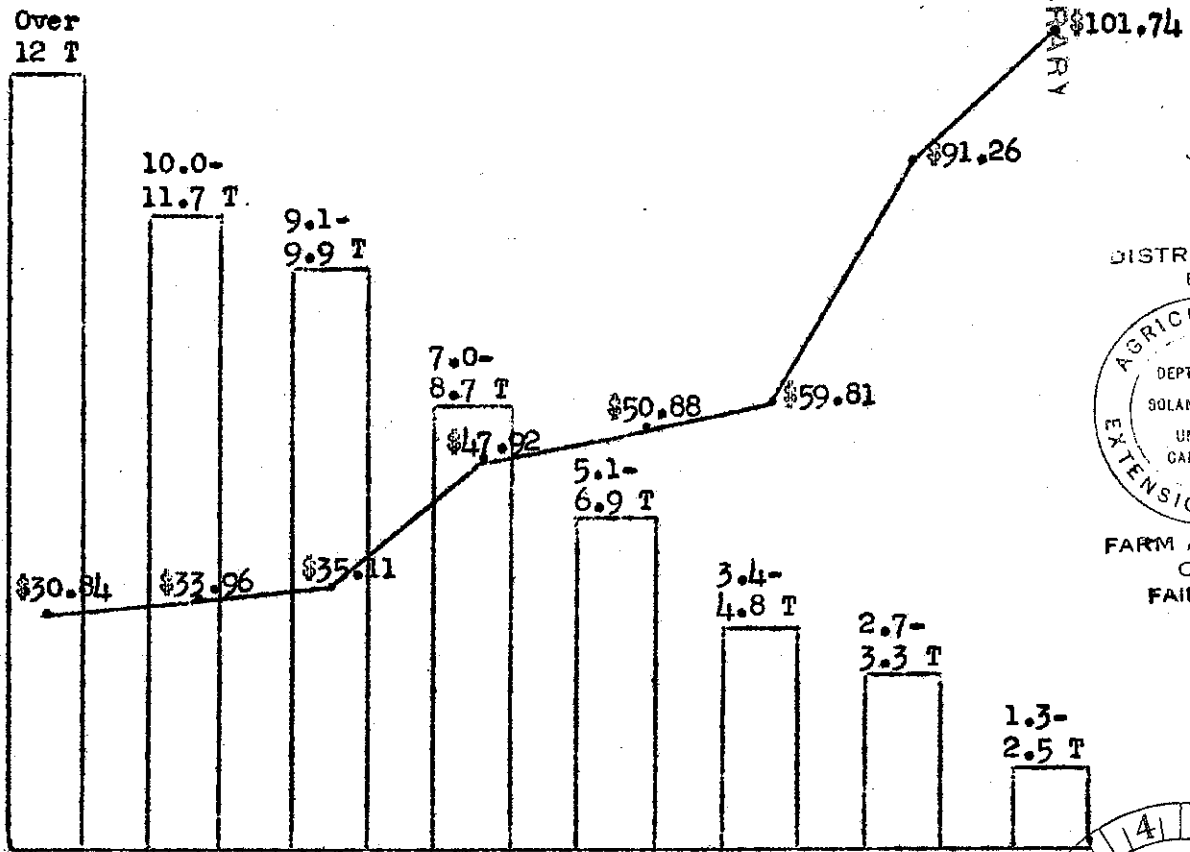
# SOLANO COUNTY BARTLETT PEAR MANAGEMENT STUDY

FIFTH ANNUAL REPORT

CROP YEAR

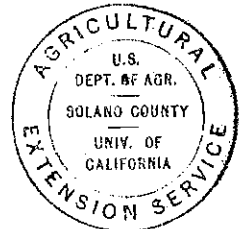
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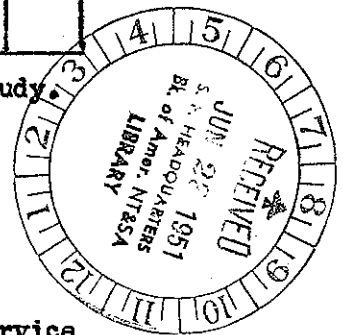


Bars = Tons per acre produced in orchards included in this study  
 Line = Cost per ton in these orchards

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Study Conducted by  
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## INTRODUCTION

The purpose of the Solano County Bartlett Pear Management Study has been to learn the management practices which will enable Solano County Bartlett pear growers to reduce their costs and improve their management income. In addition, the study should furnish the local industry with current information regarding production costs.

This report presents the results of the fifth and final year of this study. Yields, costs and income of sixteen individual orchards are compared in detail, as well as averages for all orchards for each of the five years of the study.

The study is based on monthly reports of labor costs made by cooperators. These, combined with a record of expenses and income, and a final inventory, furnish the material from which each individual record is computed. These individual records are then averaged, and this average serves as a standard with which the individual grower may compare his yields, costs and returns. This furnishes a good opportunity to learn which management practices are most efficient.

The 1950 season was a very profitable year for most of the Bartlett pear growers who took part in this study. The management income earned by the different orchards varied, however, from \$-40.93 per acre to \$732.96 per acre. During the 1949 season, also, eight of the twelve orchards included in the study showed a loss; and in each of the other three years of the study at least one orchard has shown a loss.

These facts emphasize the importance of better management practices. It is difficult for the pear grower to control the price which he may receive for his product. A reduction in the cost of production, however, will be just as effective as a higher price in increasing the management income of a pear grower.

The Farm Advisor has found this study a very effective means of determining changes in management practices which will enable the individual cooperators to reduce their costs, and improve their management incomes. It has been more difficult to learn from the study, management practices which, if generally adopted by Solano County Bartlett pear growers, would improve their efficiency. However, the following conclusions have been drawn.

High production per acre usually results in low cost per ton. During these five years, sixty grower accounts have been included in this study. Ten of these accounts show a production of over 12 tons per acre; six are between 10 and 11.69 tons per acre; seven are between 9.1 and 9.99 per acre; nine are between 7.0 and 8.77 tons per acre; eight are between 5.14 and 6.91 tons per acre; nine are between 3.40 and 4.88 tons per acre; seven are between 2.70 and 3.30 tons per acre; and four are between 1.30 and 2.50 tons per acre. The bar graph found on the front cover of this report shows a bar for each of these groups of accounts, representing the average tons produced per acre; and a line indicating the cost of production per ton for each group. Without exception, this bar graph shows that when production

increases, cost per ton is lower. Most growers will find it profitable, therefore, to carry on those cultural operations which will result in a higher yield per acre.

Drying low grade pears was, in most years, more profitable than selling them to cannery or dry yard. In three of the five years of this study, drying pears at home brought a higher grower price per fresh ton to the grower than selling them to the cannery. The two remaining years were years when the crop was below normal and there was a heavy demand for cannery pears. In all five years, the returns were higher per fresh ton when pears were dried at home than when sold to a dryer. It appears, therefore, that in years of normal production, growers who have the necessary equipment, will find it more profitable to dry their No. 2, No. 3 and cull pears, rather than to sell them to the cannery or to driers.

Most growers will find it worthwhile to study the cost of each of their cultural operations to learn whether they can be reduced without reducing yields. Throughout the five years of this study, there has been a wide variation between orchards in the cost of such cultural practices as pruning, brush removal, spray program, and irrigation. Harvesting costs have varied also. Certain growers in this study have reduced these costs by using improved methods. Two growers disc under most of their pear brush. Several use brush rakes to reduce the cost of handling brush. Several growers have reduced their spraying costs by using spray booms. Two growers reduced their pruning and picking costs by using a self propelled pruning and picking platform. If a grower's costs are very much above the average shown on this report, he should study ways and means of reducing them. It is true, however, that the most profitable orchards are those where all necessary cultural operations are performed, even though these operations may be expensive.

The cooperation of progressive pear growers in Solano County made it possible to conduct this study. We appreciate their efforts for the good of the industry in the county. Average yields, costs and return figures, presented in this report, are not intended to be representative of county averages, since those who participated were better than average producers.

DEFINITION OF TERMS  
Pear Management Study

COSTS

CULTURAL LABOR COST is composed of the cost of hired labor, the value of the operator's actual labor at the going wage rates, and the value or cost of horse, tractor, and truck work for all orchard operations prior to harvesting. Horse, tractor, and truck work, termed field power, are charged at hourly rates figured to cover the overhead, maintenance, and operating costs.

CULTURAL MATERIAL COST is for pumping power, fertilizer, spray material, and other materials used in producing the crop.

TOTAL CULTURAL COST is a sum of the above cultural labor and material costs.

HARVESTING includes picking and hauling labor. This also includes field power equipment costs of horses, tractors, and trucks.

CASH OVERHEAD COST is composed of general expense (computed at 5 per cent of the above labor and material costs to cover miscellaneous unreported costs, such as interest on operating capital, use of family car in conjunction with the enterprise, and telephone), taxes, insurance, and other cash costs not included under labor and material.

TOTAL CASH AND LABOR COSTS are a sum of all labor, material, and cash overhead costs as indicated above.

DEPRECIATION is that part of the original cost of trees, improvements, and equipment which should be charged to each year of operation in order to absorb the cost of such facilities during their period of usefulness.

INTEREST on investment is computed at 5 per cent of the average values of trees, improvements, equipment, and land. It is included as a valid part of the total cost of production from an economic standpoint as either the cost of invested capital or the returns necessary to induce investment of capital in the enterprise.

TOTAL COST includes all of the above costs.

INCOME

TOTAL INCOME PER ACRE OR AVERAGE NET RETURNS PER TON reflects the returns for maked fruit at the first delivery point after the deduction of marketing expenditures. Costs of drying were deducted from returns for dried fruit produced in order to show a comparable net income to most of the fruit which was sold fresh.

MANAGEMENT INCOME is the amount by which total income exceeds the total of all costs as explained above. It represents the operator's income for management after he has already paid himself wages for his work and interest at 5 per cent on invested capital. When total income fails to cover total costs, a loss occurs which is indicated by a minus sign.

Table 1.

The 1950 crop year was the most profitable of the five years for orchards in this study even though the price received for all fruit on the average was not as high as in 1948 and 1946. The relatively good yield coupled with the favorable price and lower costs of production than in earlier years of the study resulted in the high management income in 1950. This was quite a contrast to the 1949 crop year in which all orchards in the study showed an average management loss of \$75.00 per acre. Over the five-year period average management income per acre for those in this study was a little over \$140. This may seem relatively high to some people and it may be higher than pear growers should expect in the next five years, but it should be pointed out that this income would only reflect a moderate farm income for a family-sized orchard of 20 acres. In fact, it is less than many common unionized laborers have received during the same period.

Individual records are arranged in tables 1 through 5 in order of decreasing management income per acre as shown in the extreme right column in table 1. It will be noted that management income in 1950 for those in the study ranged from over \$700 per acre for No. 3 down to a management loss of about \$40 per acre for No. 22. Yield per acre stands out as one of the most important factors affecting profits. The six most profitable orchards in the study this year all averaged more than 10 tons per acre, whereas the three least profitable orchards in the study averaged less than 4 tons per acre.

Table 1. General Summary of Costs, Income, and Earnings per Acre in Individual Orchards - 1950  
and Averages for 5 years 1946 - 1950

Serial number	Average age of trees	Yield tons per acre	Average net return per ton	Cultural labor cost per acre	Harvest labor cost per A.	Material cost per A.	Cash overhead per A.	Total cash & labor costs	Depreciation cost per A.	Interest on investment	Total cost per acre	Total income per acre	Management income per A.
3	72	19.43	66.47	171.35	213.11	60.41	40.61	485.48	36.59	36.76	558.83	1291.79	732.96
21	36	12.90	72.99	88.57	121.95	27.38	25.19	263.09	22.01	28.39	313.49	941.63	628.14
26	30	13.35	75.25	116.50	131.94	39.50	28.70	316.64	26.74	34.21	377.59	1004.57	626.98
8	39	12.82	69.72	87.24	167.71	45.95	29.14	330.04	37.42	36.14	403.60	893.83	490.23
9	27	11.48	65.08	77.85	125.93	28.95	29.07	261.80	23.72	32.70	318.22	747.31	429.09
15	33	10.24	71.44	83.75	107.30	29.57	24.30	244.92	34.06	36.52	315.50	731.22	415.72
5	34	9.36	71.03	77.47	82.09	18.68	21.06	199.30	22.48	27.32	249.10	664.52	415.42
27	25	8.64	73.78	74.99	52.26	25.73	19.80	172.78	22.93	32.97	228.68	637.42	408.74
28	30	9.56	69.22	78.70	99.40	33.89	21.69	233.68	24.72	32.61	291.01	661.55	370.54
12	54	8.77	67.67	86.92	87.23	28.18	22.98	225.31	25.83	31.25	282.38	593.77	311.39
24	16	6.91	69.84	46.86	57.01	31.47	18.02	153.36	29.83	35.65	218.84	482.29	263.45
4	39	9.99	67.15	119.32	140.65	63.84	30.48	354.29	29.47	33.58	417.34	671.07	253.73
23	41	7.59	61.84	133.22	101.33	64.67	27.35	326.57	11.44	16.31	354.32	469.33	115.01
20	75	2.85	63.45	30.54	37.89	5.99	13.54	87.96	15.07	21.08	124.11	181.08	56.97
10	23	3.88	58.57	47.39	53.38	14.38	17.94	133.09	21.59	40.97	195.65	227.27	31.62
22	31	3.48	62.01	107.30	39.16	37.63	21.84	205.93	24.33	26.23	256.49	215.56	-40.93
1950 Av.	35	7.41	67.47	65.90	79.53	23.03	21.23	189.69	23.11	33.10	245.90	500.08	254.18
1949 Av.	31	6.08	28.47	76.19	71.58	24.71	20.79	193.27	22.34	32.85	248.46	172.99	-75.47
1948 Av.	35	3.70	111.46	87.77	52.84	25.73	19.91	186.25	23.56	32.04	241.85	412.78	170.93
1947 Av.	35	8.20	64.91	114.90	122.56	48.86	26.32	312.64	24.03	33.94	370.61	529.52	158.91
1946 Av.	37	6.10	86.17	119.50	93.22	41.82	22.94	277.48	19.66	27.16	324.30	527.45	203.15
5 yr. Av.	35	6.30	68.00	92.85	83.95	32.83	22.24	231.87	22.54	31.82	286.23	428.57	142.34

Table 2.

In addition to costs and returns per ton, table 2 shows the proportion of the fruit which was sold to canneries as compared to that which was shipped and dried and culls. Average net returns for these three classifications are also given. During the five years of the study, the proportion sold to canneries ranged from 32 per cent in 1946 to about 82 per cent in 1948. Over the five years canners received about 63 per cent of the total fruit as compared to about 27 per cent which was shipped. Culls and dried accounted for slightly under 10 per cent. In comparing returns it will be seen that cannery fruit brought a little more than shipping fruit in three of the five years. In the short-crop 1948 year shipping fruit brought about \$20 per ton more than the cannery fruit, and this past year averaged about \$4 a ton more than cannery fruit. However, it should be pointed out that the average price received for cannery fruit in 1950 included No. 3 grade as well as No. 1's. Orchards 4, 23, 22 which shipped most of their fruit sold only the No. 3 grade to canneries which accounts for the lower average price received by these three orchards for their cannery fruit. Over the five years of the study cannery fruit averaged a net return of about \$7 per ton more than fruit that was shipped. The wide range in net returns for culls and dried in 1950 for co-operators in the study was due to the fact that some operators sold their culls for drying and received a low return as compared to those who dried their own. Table 8 gives an analysis of drying costs and net returns for those who dried their own fruit. In this table it will be noted that the average net returns for fruit which was dried was about \$60 per fresh ton, based upon estimated final net returns for the dried fruit.

Costs of production per ton in 1950 for those in the study were the lowest for the five years even though the yields per acre were not as high as in 1947. This can be attributed in a large way to reduced cultural costs per acre as shown in table 3. Over the five years the average total cost of production per ton for those in the study was approximately \$45.00.



Table 2. Costs, Returns, and Earnings per Fresh Ton in Individual Orchards - 1950  
and Averages for 5 years 1946 - 1950

Serial number	Total yield tons per A.	Per cent of fruit			Average net returns				Picking costs per ton	Hauling costs per ton	Total cash & labor costs	Deprec. and Int. costs	Total cost per ton	Management income per ton
		Sold to cannery	Shipped	Culls and dried	Cannery fruit	Shipped fruit	Culls and dried	All fruit						
3	19.43	89.7	10.2	.1	65.77	73.08	24.00	66.47	8.76	2.20	24.98	3.77	28.75	37.72
21	12.90	73.5	24.6	1.9	69.43	87.40	22.43	72.99	7.53	1.92	20.39	3.91	24.30	48.69
26	13.35	70.0	30.0	-	73.58	79.15	-	75.25	7.49	2.39	23.72	4.56	28.28	46.97
8	12.82	84.8	12.1	3.1	69.88	74.66	45.62	69.72	11.18	1.90	25.74	5.74	31.48	38.24
9	11.48	88.8	-	11.2	71.42	-	15.00	65.08	8.93	2.04	22.80	4.91	27.71	37.37
15	10.24	84.8	11.8	3.4	71.19	73.03	72.10	71.43	8.08	2.40	23.92	6.90	30.82	40.61
5	9.36	83.7	12.3	4.0	70.77	73.77	68.15	71.03	7.20	1.57	21.30	5.32	26.62	44.41
27	8.64	89.4	-	10.6	74.90	-	64.29	73.78	5.43	.62	20.00	6.47	26.47	47.31
28	9.56	76.5	23.5	-	68.98	70.00	-	69.22	8.67	1.73	24.45	6.00	30.45	38.77
12	8.77	84.8	10.8	4.4	68.46	73.03	39.46	67.67	8.83	1.11	25.68	6.50	32.18	35.49
24	6.91	88.1	11.6	.3	69.55	73.05	22.16	69.84	5.89	2.36	22.21	9.48	31.69	38.15
4	9.99	15.2	84.8	-	40.14	72.00	-	67.15	12.13	1.94	35.45	6.31	41.76	25.39
23	7.59	12.9	87.1	-	41.17	64.90	-	61.84	11.24	2.11	43.03	3.66	46.69	15.15
20	2.85	82.0	8.6	9.4	63.57	73.00	53.76	63.45	11.49	1.79	30.82	12.67	43.49	19.96
10	3.88	78.9	-	21.1	69.54	-	15.75	58.57	11.77	1.99	34.30	16.12	50.42	8.15
22	3.48	18.9	81.1	-	41.07	66.89	-	62.01	6.83	4.43	59.24	14.55	73.79	11.78
1950 Av.	7.41	80.2	12.0	7.8	70.21	74.18	28.89	67.47	8.88	1.85	25.59	7.59	33.18	34.29
1949 Av.	6.08	60.0	31.3	8.7	32.75	20.40	28.80	28.47	9.35	2.43	31.81	9.08	40.89	12.42
1948 Av.	3.70	81.8	9.1	9.1	18.33	139.21	21.13	11.46	11.32	2.93	59.30	15.01	65.31	46.15
1947 Av.	8.20	66.2	27.3	6.5	70.98	57.49	32.52	64.91	12.68	2.34	38.33	7.10	45.43	19.48
1946 Av.	6.10	32.0	51.5	16.5	04.82	92.34	24.94	86.17	12.80	2.43	45.33	7.65	52.98	33.19
5 yr. Av.	6.30	63.4	26.9	9.7	74.57	67.33	26.74	68.00	11.01	2.33	36.82	8.63	45.45	22.60

Table 3.

As in past years, cultural operational costs in 1950 varied considerably between growers in the study. Some of these variations can be explained by differences in orchard conditions. However, it is probable that in some cases adjustments in practices could result in lower production costs. Although net returns in 1950 were relatively good, growers should keep in mind that future pear prices on the average are not likely to be as favorable as this year. Therefore, the wise grower will continue to look for ways and means of increasing his efficiency of production so that he will be in a better position to weather any adverse conditions which may arise in the future.

During the five years of this study there has been a very significant decrease in pruning costs and in spraying costs for those in the study. Total cultural labor and material cost in 1950 was only about 55 per cent of what they averaged for the 1946 and 1947 crop years. It should be pointed out, however, that costs in 1950 may have been below what normally would have been incurred for good orchard management practices because of the tendency for growers to neglect certain operations in years following exceedingly low prices, such as occurred in 1949. Over the five years of the study total average cultural labor and material costs were approximately \$125 per acre or about 44 per cent of the total cost of production.

Averages at the bottom of the table for the various items are based upon the acreage reporting such costs. Since all orchards did not report costs for all items, the average total cultural labor and material cost is less than a sum of the various items.

Table 3. Cultural Costs per Acre on Individual Pear Orchards - 1950  
and Averages for 5 Years 1946 - 1950

Serial number	Pruning	Brush disposal	Cover crop labor & seed	Fertilizing labor & material	Blight control labor	Dormant Spray		Other Spray		Cultivation, furrow, etc.	Irrigation		Other Cultural costs	Total cultural costs
						Labor	Material	Labor	Material		Labor	Power		
3	76.37	1.06	1.97	15.25	-	4.55	9.07	17.65	20.43	26.33	25.78	15.36	17.94	231.76
21	41.92	2.73	-	-	-	4.31	11.06	12.01	10.67	12.95	9.13	5.65	5.52	115.95
26	65.70	2.50	-	-	.38	3.60	4.64	17.22	22.66	20.26	3.26	12.20	3.58	156.00
8	28.07	-	-	-	-	4.42	4.42	14.67	10.95	14.07	26.01	30.58	-	133.19
9	43.31	-	-	-	-	2.99	9.20	10.66	16.49	13.94	3.82	3.26	3.13	106.80
15	37.34	5.31	-	2.77	-	1.88	5.47	9.98	14.31	20.43	8.41	7.42	-	113.32
5	34.91	3.05	-	-	5.92	1.80	3.58	7.43	11.03	9.78	9.55	4.05	5.05	96.15
27	35.20	-	-	-	1.64	2.24	2.47	10.84	15.60	17.33	7.22	7.66	.52	100.72
28	35.44	1.45	-	1.48	-	3.76	8.11	12.60	15.78	11.47	12.43	8.57	1.50	112.59
12	47.51	5.53	-	-	-	4.30	6.45	12.89	10.85	11.10	5.59	10.88	-	115.10
24	17.74	2.91	-	-	-	1.80	3.80	5.87	7.96	12.37	6.17	19.71	-	78.33
4	58.67	2.88	-	-	-	2.18	15.39	12.87	35.18	18.93	23.79	13.27	-	183.16
23	68.33	8.33	-	25.52	-	8.33	6.20	29.17	34.44	13.36	-	-	4.21	197.89
20	17.85	2.02	-	1.66	-	.50	1.03	.74	2.34	5.22	1.95	1.18	2.04	36.53
10	19.29	1.98	-	-	-	1.92	2.31	9.55	9.26	7.62	5.15	2.81	1.88	61.77
22	55.00	10.00	-	-	-	5.18	19.06	23.32	18.57	13.80	-	-	-	144.93
1950 Av.	31.66	2.67	1.97	2.46	3.20	2.28	4.74	9.27	11.94	11.30	6.66	5.88	2.56	88.93
1949 Av.	33.91	3.09	1.57	4.66	.63	2.34	4.06	8.54	12.76	16.83	10.26	5.38	3.22	100.90
1948 Av.	36.97	4.76	1.68	5.34	1.13	2.98	3.69	13.50	14.95	18.51	7.76	4.25	4.50	113.50
1947 Av.	44.33	6.93	1.77	4.96	.65	3.99	3.85	25.25	36.48	16.78	13.34	5.67	5.28	163.76
1946 Av.	49.25	6.04	1.49	9.59	5.56	3.66	3.39	32.45	30.10	14.07	7.32	3.24	5.14	161.32
5 yr. Av.	39.22	4.70	1.70	5.40	2.23	3.05	3.95	17.80	21.25	15.50	9.07	4.88	4.14	125.68

Table 4c

All cash costs not classified under labor and material costs are included under cash overhead as shown in table 4. Interest paid on mortgaged indebtedness is not included as a cash cost since an interest on investment charge as shown in table 5 is included for all orchards in the study, and would normally cover any interest paid on indebtedness. The general expense item is explained on the page, "Definition of Terms" at the forepart of this report. Total cash overhead costs did not change a great deal during the five years of the study. However, the general expense item was lower in the more recent years but this was offset by higher county taxes. Total cash overhead cost per acre over the five-year period averaged \$22.24.

Total depreciation costs did not change much during the five years of the study. However, this is not exactly a true picture of the orchards which have been in the study continuously since its start. Most of these orchards show an increasing depreciation cost due to the higher cost of equipment which has been replaced during the course of the study. The reason for the average of all orchards not showing an increase is because new orchards have been taken into the study which had lower total depreciation costs. Depreciation on trees was figured the same for all orchards at \$10 per acre. This is based upon an original cost to bring trees to bearing age of \$400 per acre and a productive life thereafter of 40 years. Depreciation on field power equipment is not included in the total depreciation cost in this table since it is included in the hourly rate charged for the use of such equipment in the labor record.

Averages at the bottom of the table for the various items are based upon the acreage reporting such costs. Since all orchards did not report costs for all items in most of the years of the study, the average total cash overhead and total depreciation costs are less than a sum of the various items.

Table 4. Cash Overhead and Depreciation Costs per Acre on Individual Orchards - 1950  
and Averages for 5 years 1946 - 1950

Serial number	Cash overhead costs per acre					Depreciation per acre							
	General Expense	County taxes	Repairs except field pr.	Comp. insurance	Total	Trees	Buildings	Irrigation system	Tillage equipment	Spray equipment	Other equipment	Total	Field power equip.
3	22.25	10.07	1.11	7.18	40.61	10.00	2.90	6.86	.97	2.85	13.01	36.59	15.38
21	11.89	8.93	.75	3.62	25.19	10.00	2.41	3.90	.94	2.55	2.21	22.01	10.03
26	14.40	10.00	.50	3.80	28.70	10.00	1.49	4.36	.58	1.30	9.01	26.74	4.89
8	15.05	9.06	.75	4.28	29.14	10.00	5.74	13.83	3.16	2.64	2.05	37.42	4.44
9	11.64	9.01	2.48	5.94	29.07	10.00	1.76	1.75	1.39	3.64	5.18	23.72	11.02
15	11.03	10.27	.65	2.35	24.30	10.00	1.11	11.19	2.49	3.78	5.49	34.06	8.33
5	8.91	7.57	2.03	2.55	21.06	10.00	2.21	5.53	2.43	.93	1.38	22.48	3.63
27	7.65	9.56	.60	1.99	19.80	10.00	4.32	4.64	.21	.35	3.41	22.93	1.62
28	10.60	8.74	.35	2.00	21.69	10.00	6.11	2.43	1.67	.89	3.62	24.72	4.63
12	10.12	9.26	.65	2.95	22.98	10.00	3.13	4.83	.96	2.06	4.84	25.82	4.62
24	6.76	9.48	.65	1.13	18.02	10.00	.51	11.60	1.44	4.76	1.52	29.83	7.22
4	16.19	9.92	.75	3.62	30.48	10.00	5.38	6.75	1.79	2.61	2.94	29.47	5.56
23	14.97	9.43	.50	2.45	27.35	10.00	.83	-	-	-	.61	11.44	1.17
20	3.72	7.96	.78	1.08	13.54	10.00	.59	.84	1.09	1.61	.94	15.07	4.07
10	5.75	9.83	.50	1.86	17.94	10.00	1.25	4.93	1.02	1.44	2.95	21.59	5.22
22	9.20	9.75	.65	2.24	21.84	10.00	1.25	9.99	1.41	-	1.68	24.33	5.11
1950 Av.	8.42	9.16	.98	2.67	21.23	10.00	2.05	4.57	1.29	1.98	3.27	23.11	5.79
1949 Av.	8.62	8.20	3.19	2.28	20.79	10.00	1.75	4.28	1.39	2.08	2.88	22.34	6.09
1948 Av.	8.32	7.84	1.13	2.36	19.91	10.00	1.72	5.09	1.25	1.93	3.56	23.56	6.15
1947 Av.	14.32	6.94	1.46	4.74	26.32	10.00	2.09	5.86	1.05	1.42	3.60	24.03	5.41
1946 Av.	12.73	5.79	2.49	3.42	22.94	10.00	1.66	3.93	.79	1.35	2.20	19.66	3.62
5 year Av.	10.48	7.59	1.85	3.09	22.24	10.00	1.85	4.75	1.15	1.75	3.10	22.54	5.41

Table 5.

The investment figures shown in this table are calculated at one half of the original cost except for land values. Such values are maintained throughout the life of facilities and equipment as a basis for calculating an equitable interest on investment charge against each year's crop.

Tree values were considered the same for all orchards. Normal total cost of bringing an orchard to bearing age was set at \$400 per acre, one half of which or \$200 per acre, is shown in the table as the average value. The land values used in this study are based upon estimated normal agricultural values for the purpose of calculating a fair interest on investment charge. As with depreciation, total investment per acre has tended to increase in recent years for orchards which have been in the study from the start. Land values have been held constant but the higher cost of equipment which has been replaced has tended to increase the investment values. The changes in total investment per acre from year to year, as shown in the above table, are not significant due to the fact that cooperators in the study for all years were not the same. It should be pointed out that the values shown in the above table, should not be considered representative of the amount of capital required to go into the pear producing business at the present time. Current values are considerably higher than those shown. Interest on investment in field power is excluded from the total investment figures since a charge for interest on investment in this equipment is included in the labor record.

Averages at the bottom of the table for the various items are based upon acreage reporting such costs.

Table 5. Investment per Acre and Interest Charge on Individual Pear Orchards - 1950  
and Averages for 5 Years 1946 - 1950

Serial number	Trees	Buildings	Irrigation system	Tillage equipment	Spray equipment	Other equipment	Land	Total ex. field power	Field power equip.	Total investment	Interest at 5% excluding field power
3	200.00	28.97	70.78	6.50	21.39	107.45	300.00	735.09	60.11	795.20	36.76
21	200.00	22.34	22.51	4.68	12.77	5.49	300.00	567.79	48.14	615.93	28.39
26	200.00	26.00	47.60	6.30	13.00	91.28	300.00	684.18	48.00	732.18	34.21
8	200.00	53.70	20.28	19.19	18.74	10.82	300.00	722.73	44.44	767.17	36.14
9	200.00	39.77	28.56	11.86	27.33	46.36	300.00	653.88	49.08	702.96	32.70
15	200.00	22.22	92.33	19.17	37.84	58.87	300.00	730.43	50.00	780.43	36.52
5	200.00	33.09	33.98	13.05	5.22	11.08	250.00	546.12	34.44	580.86	27.32
27	200.00	62.07	58.10	2.36	3.45	33.39	300.00	659.37	16.21	675.58	32.97
28	200.00	74.07	30.36	20.97	8.93	17.94	300.00	652.27	46.30	698.57	32.61
12	200.00	25.61	48.25	8.08	15.43	27.66	300.00	625.03	29.76	654.79	31.25
24	200.00	10.19	98.15	10.37	33.33	10.92	350.00	712.96	49.07	762.03	35.65
4	200.00	52.00	76.45	8.93	19.59	14.72	300.00	671.69	30.56	702.25	33.58
23	200.00	16.67	-	-	-	9.53	100.00	326.20	5.82	332.02	16.31
20	200.00	2.94	2.71	4.05	8.04	3.97	200.00	421.71	21.69	443.40	21.08
10	200.00	16.44	49.68	10.70	10.78	31.72	500.00	819.32	40.34	859.66	40.97
22	200.00	12.50	49.95	7.18	-	5.03	250.00	524.66	25.57	550.23	26.23
1950 Av.	200.00	27.83	43.75	10.01	14.55	28.66	337.43	661.90	37.43	699.33	33.10
1949 Av.	200.00	23.57	39.98	10.23	15.19	24.81	343.68	657.10	37.33	694.43	32.85
1948 Av.	200.00	23.07	41.74	9.56	14.19	31.26	318.13	640.94	36.57	677.51	32.04
1947 Av.	200.00	28.39	52.80	8.60	10.45	38.37	347.15	678.85	35.22	714.07	33.94
1946 Av.	200.00	20.07	36.31	5.31	8.80	14.59	250.57	543.15	22.20	565.35	27.16
5 yr. Av.	200.00	24.59	43.52	8.74	12.64	27.54	321.39	636.39	33.75	670.14	31.82

Table 6.

Seven Solano County pear growers cooperated in this study continuously for the entire five-year period. Averages for these five years are shown in table 6 for each of the orchards as well as averages for all seven orchards. Records are arranged from left to right in order of decreasing management income per acre as shown on the bottom line. No. 4 was the most profitable orchard, averaging an annual management income per acre of about \$320 as compared to about \$86 per acre for No. 12, the least profitable orchard of this group. All seven orchards averaged nearly \$190 management income per acre over the five years as compared to only \$142 for all orchards in the study as seen in table 1. The better orchards included in this group showed an average annual yield of almost 9 tons per acre as compared to an average annual yield for all records in this study of 6.3 tons per acre as shown in table 1. Average price received, however, for cannery fruit and shipped fruit for this group was less than for all orchards in the study. The spread in the average price received between canning and shipping fruit was somewhat greater than for all orchards in the study and the average price received for all fruit by this group was somewhat less than for all orchards. The management income per ton was nearly the same as for all orchards because of the lower costs of production per ton due to the higher average yield per acre.



**Table 6. Five Year Averages of Yields, Income, Costs and Earnings  
for Orchards in Study Continuously 1946, - 1950, inclusive.**

Orchard Number	4	9	8	3	5	15	12	Average all
Average age of trees	37	26	37	70	32	31	52	41
Average yield, tons per acre	10.24	10.18	9.85	13.98	5.87	6.74	5.96	8.97
Average per cent sold to cannery	11.1	68.8	75.7	70.2	69.2	72.2	71.3	62.6
Average per cent shipped	88.1	23.8	18.9	17.1	17.9	19.9	15.9	28.8
Average per cent culls and dried	.8	7.4	5.4	12.7	12.9	7.9	12.8	8.6
Av. net returns per ton cannery fruit	56.89	73.54	63.26	62.79	78.31	67.59	70.25	67.52
Av. net returns per ton shipped fruit	76.25	54.62	49.72	44.97	57.96	42.40	49.88	53.69
Av. net returns per ton culls & dried	16.13	16.57	20.11	22.00	46.26	40.64	23.62	26.48
Av. net returns per ton all fruit	73.62	64.79	58.38	54.58	70.52	60.46	61.06	62.67
Picking cost per ton	11.17	10.45	9.82	11.07	8.80	10.70	10.38	10.47
Hauling cost per ton	1.71	2.34	2.92	2.22	1.54	2.18	1.47	2.13
Total harvesting cost per ton	12.88	12.79	12.74	13.29	10.34	12.88	11.85	12.60
Pre-Harvest labor & material per ton	20.61	13.71	17.18	21.31	21.25	19.96	21.81	19.22
Cash overhead cost per ton	2.98	2.89	2.64	2.96	3.37	3.32	3.43	3.02
Depreciation cost per ton	2.75	2.14	3.35	2.35	4.02	4.48	4.26	3.10
Interest cost per ton	3.19	3.12	3.52	2.51	4.65	5.17	5.21	3.62
Total all costs per ton	42.41	34.65	39.43	42.42	43.63	45.81	46.56	41.56
Management income per ton	31.21	30.14	18.95	12.16	26.89	14.65	14.50	21.11
<b>Av. Annual Costs per Acre:</b>								
Pre-harvest labor	135.56	107.22	119.01	224.02	91.34	102.35	100.05	125.65
Picking and hauling	131.92	130.16	125.52	185.75	60.74	86.79	70.64	113.07
Total material	75.47	32.40	50.22	74.00	33.38	32.21	29.94	46.80
Cash overhead	30.50	29.41	25.94	41.38	19.78	22.35	20.45	27.12
Depreciation	28.14	21.72	33.06	32.80	23.57	30.19	25.37	27.84
Interest	32.67	31.79	34.66	35.14	27.30	34.84	31.05	32.49
Total all costs per acre	434.26	352.70	388.41	593.09	256.11	308.73	277.50	372.97
Total income per acre	753.90	659.53	575.03	763.03	413.96	407.50	363.91	562.41
Management income per acre	319.64	306.83	186.62	169.94	157.85	98.77	86.41	189.44

Table 7.

Average annual cultural costs per acre are compared in table 7 for orchards which were in the study continuously for the entire five years. Records are arranged in the same order as in table 6. Cash overhead costs are also shown in this table for these records. This table is designed primarily for use by the individual cooperators involved. A comparison of average annual costs tends to give a better picture than the comparisons of single year's costs since individual practices may change from year to year. Costs for each year of the study for the seven records in this group may be obtained by referring to previous annual reports of this study and the forepart of this report for the 1950 crop year.

Table 7. Five Year Averages of Cultural Costs and Cash Overhead Costs per Acre for Orchards in Study Continuously 1946 - 1950, inclusive.

Orchard Number	4	9	8	3	5	15	12	Average all
<u>Average Annual Costs:</u>								
Pruning	58.81	53.53	35.75	75.87	38.92	42.65	55.14	51.52
Brush disposal	5.25	3.35		12.25	6.45	6.34	6.30	5.71
Cover crop labor and seed	-	.27	-	1.24	1.08	-	.36	.42
Fertilizing labor & material	-	1.19	7.34	13.98	5.26	5.19	2.39	5.05
Blight control hand work	2.18	1.01	-	.14	1.41	1.50	-	.89
Dormant spray labor	4.01	3.79	4.79	6.39	2.44	2.25	3.29	3.85
Dormant spray material	13.02	4.43	3.53	7.10	4.25	3.32	4.95	5.80
Other spray labor	28.25	17.85	27.28	44.95	16.20	13.09	18.70	23.76
Other Spray material	54.32	21.88	22.35	39.85	20.68	17.58	16.43	27.58
Cultivation, furrow, etc.	16.54	20.09	20.78	23.34	10.93	25.02	13.42	18.59
Irrigation labor	15.72	5.43	29.24	41.41	10.95	10.50	2.99	16.61
Irrigation power	8.13	3.77	18.17	13.43	2.97	7.12	6.00	8.51
Other cultural labor & material	4.80	3.03	-	18.07	3.18	-	.02	4.16
<b>Total Cultural Labor &amp; Material Cost</b>	<b>211.03</b>	<b>139.62</b>	<b>169.23</b>	<b>298.02</b>	<b>124.72</b>	<b>134.56</b>	<b>129.99</b>	<b>172.45</b>
General expense	17.15	13.49	14.74	24.19	9.27	11.07	10.03	14.28
County taxes	8.43	7.46	7.38	8.43	6.35	8.52	7.82	7.77
Repairs, except tractors & trucks	.34	2.75	.36	.71	.75	.36	.48	.82
Insurance and miscellaneous	4.50	5.71	3.16	8.05	3.41	2.40	2.12	4.25
<b>Total Cash Overhead Cost</b>	<b>30.50</b>	<b>29.41</b>	<b>25.94</b>	<b>41.38</b>	<b>19.78</b>	<b>22.35</b>	<b>20.45</b>	<b>27.12</b>

Table 8.

Six growers reported drying a portion of their fruit in 1950. Drying costs and returns for these records are shown in table 8 along with averages for all six records and averages for the drying records in 1949. Records in the table are arranged from left to right in order of increasing total drying cost per fresh ton. This ranged from \$18.26 for No. 12 up to \$26.32 for No. 20. Average total drying costs this year were about \$2.70 per fresh ton higher than in 1949. This was due mainly to higher dry-yard labor costs other than cutting.

Net returns above drying costs in 1950 were considerably higher than in 1949 due to the higher average price received. In fact, net returns for dried fruit showed an average price for the fresh fruit almost as high as returns for canning and shipping fruit. Record No. 15 actually showed a net return of approximately the same as for the fruit which he shipped and sold to canneries. Prices received for the dried fruit were estimated in cases where the cooperator belonged to the California Prune and Apricot Growers Association in which final payments had not been made at the time of this report.

Table 8. Pear Drying Costs and Returns from Dried Pears for Orchards where Operators Dried Some Fruit - 1950; with Averages for 1949 and 1950

Orchard Number	12	5	27	15	8	20	Average 1950	Average 1949
Total Fresh tons dried	4.35	8.25	19.69	4.41	2.05	11.24	49.98	94.11
Drying ratio - to 1	6.21	4.50	4.60	4.41	5.00	4.50	4.66	5.15
<u>Costs per Fresh Ton:</u>								
Cutting	5.79	7.25	7.06	6.71	8.27	7.47	7.09	7.27
Other dry yard labor	7.53	7.78	10.94	9.69	11.10	14.60	10.84	8.33
Total labor cost	13.32	15.03	18.00	16.40	19.37	22.07	17.93	15.60
Total material	1.73	1.56	.81	1.07	1.46	1.11	1.13	1.07
Other cash costs	1.04	1.46	1.30	1.62	1.41	1.60	1.41	1.15
Sub-total cash & labor cost	16.09	18.05	20.11	19.09	22.24	24.78	20.47	17.82
Depreciation	1.63	.95	1.07	2.32	1.25	1.23	1.25	1.22
Interest	.54	.38	.72	1.73	.60	.31	.64	.60
Total drying cost	18.26	19.38	21.90	23.14	24.09	26.32	22.36	19.64
<u>Per Dried Hundredweight:</u>								
Average price received	18.00	20.00	19.84	21.00	18.00	18.00	19.36	13.60
Total drying cost	5.67	4.36	5.04	5.10	6.03	5.92	5.21	5.06
Returns above drying cost	12.33	15.64	14.80	15.90	11.97	12.08	14.15	8.54
Average net returns per fresh ton above drying cost	39.67	69.49	64.29	72.10	47.74	53.76	60.66	33.17