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Cost of Producing Peaches in Washington County and Box Elder-Weber Area, 1947

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COST OF PRODUCING PEACHES IN WASHINGTON COUNTY AND BOX ELDER-WEBER AREA, 1947

by

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INTRODUCTION

Peach production in Utah is an important enterprise. In 1946 the crop of 700,000 bushels was valued at $1,085,000, which was approximately one percent of the value of all agricultural commodities grown in the state 1/. The estimated average annual production over the ten-year period, 1936 to 1945, was 636,000 bushels. About 95 percent of the peach trees are located in Washington County and along the Wasatch Front in Utah, Salt Lake, Davis, Weber, and Box Elder counties. Small-scale family type units characterize the production of peaches in Utah. The 5,071 farmers who reported growing peach trees in 1944 had an average of 146 trees per farm 2/.

In the state, peach production is concentrated on well-drained open soils which require frequent irrigation. The usual practice is to disk several times during the growing season. Some operators leave the ground between the trees bare during the winter months, while others prefer to leave an undergrowth of clover, grass, or weeds. The enterprise is most successful if located where air currents protect the orchards from early spring frosts. In Utah the freestone varieties predominate. The Early and Late Elbertas are most common, followed by J. H. Hale, Late Crawford, Heath Cling, Rochester, Greensboro and other less popular varieties 3/. Golden Jubilee and Halbertas were also found.

1/ Crops and Markets. Bureau of Agr. Econ., U. S. D. A. Vol. 24:23. Jan. 1947.
Agricultural Prices. Bureau of Agr. Econ., U. S. D. A. p. 17. Oct. 29, 1947. The estimated 1947 production is 933,000 bushels; average price is $1.80 per bushel.

2/ Agricultural Statistics. U. S. D. A. 1935-1946

3/ Wilson, A. L. and Stark, A. L. The fruit tree situation in Utah. Utah Agr. Exp. Sta. Bul. 279. p. 11. 1938.

Canning factories provide a market for a small portion of the peach crop, but most of them must be marketed fresh by peddling and at roadside stands or shipped out of the state through marketing associations and brokers.

The competitive nature of agriculture makes it necessary for successful farmers to attempt to keep costs at a minimum. Present high production costs and the likelihood of lower prices for farm products in the future make this problem vitally important to Utah peach growers and to farmers in general.

PURPOSE OF STUDY

The purposes of this study are (1) to determine the unit cost of producing peaches in Utah and the items comprising the costs, and (2) to discover what methods of production are associated with success in the peach industry.

REVIEW OF LITERATURE

Until the present time there has not been a major peach production cost study conducted in Utah; however, there have been studies made in other areas but with various objectives. In western New York a cost study of peach production was made in 1935 with major emphasis on yields, labor requirements, and marketing practices 4/. Yields averaged 120 bushels per acre, with the Elberta variety accounting for 96 percent of the crop. The labor requirements for this area show that man labor comprised 42 percent of the total cost of production. An average of 10 hours of horse labor was used per acre. A review of marketing methods indicates that 92 percent of the harvest was graded before sale.

4/ De Graff, Herrell F. The peach enterprise in western New York. Cornell Un. Agr. Exp. Sta. Bul. 710. Jan. 1936.

A study in Arkansas made during 1925, which compared the peach enterprise between two counties, emphasized costs of production and net returns. This study shows that the per bushel costs before packing were 50 cents in the Highland area, and 59 cents in the Ozark Foothill District 5/. Net returns per acre varied from $110 in the former area to $82 in the latter.

An analysis made in California in 1926 was primarily concerned with peaches after they left the farms. It was indicated that 48.7 percent were canned, 41.2 percent were dried, and 10.1 percent shipped fresh 6/. A study of selected orchards in Stanislaus County, California on the cost of producing peaches shows that production costs were $319 per acre, with yields averaging 487 bushels 7/.

An analysis of the cost of producing peaches in South Carolina was made in 1927 8/. The average peach enterprise contained 71.5 acres of bearing orchard with county yields ranging from 140 to 155 bushels per acre. Man labor including all operations except harvesting varied from 67.9 hours to 116.8 hours per acre. Approximately 71 percent of the peach trees were Elbertas, 15 percent were Georgia Belles, and about 14 percent were other varieties. Irrigation was not necessary as a cultural practice due to sufficient quantity and favorable distribution of rainfall.

An average size of 51.8 acres of peach trees per enterprise with yields of 79.2 bushels per acre was reported by a study made in Arkansas that had the marketing aspects of the peach enterprise as its objective 9/.

5/ Brannen, C. O. Production costs and market distribution of Arkansas peaches. Ark. Exp. Sta. Bul. 207. June 1926.

6/ Wellman, H. B. Series on California crops and prices: peaches. The College of Agr., Un. of California Circular 1. April 1926.

7/ Ibid.

8/ Jensen, Ward C. Economics of producing and marketing South Carolina peaches. So. Carolina Agr. Exp. Sta. Bul. 239. June 1927.

9/ White, John W. and Osgood, Otis T. Peach marketing practice in the Nashville, Highland District of Arkansas in 1940. Ark. Exp. Sta. Bul. 452. June 1944.

It was discovered that in preparing the peaches for sale, 36 to 63 operators graded and brushed their fruit, 24 graded but did not brush, and one operator did neither. Trucks transported 72.1 percent of the shipments, 25.5 percent were shipped on railroads, and 2.4 percent were shipped other ways.

The findings from the peach production and marketing cost studies reviewed indicate that their objectives vary and that conditions found in these areas are different from conditions in Utah.

This state differs from other peach producing areas as to size of orchards, cultural practices, yields, distance from markets, and time and method of marketing. The results and recommendations from these studies are limited in their application to conditions in Utah, and should only be used to acquaint local peach producers with the nature of the enterprise and the way it is handled outside the state.

SOURCE OF DATA AND METHOD OF PROCEDURE

The data used in this study were obtained from 55 peach growers for the crop year 1947. Twenty-seven records were obtained from peach producers in the communities of Hurricane, Toequerville, Leeds, La Verkin, and Santa Clara in Washington County. The remaining twenty-eight records were obtained in the communities of North Ogden, Pleasant View, and Roy in Weber County; and from Willard, Perry, and Brigham City in Box Elder County. These localities were chosen because they represent areas of peach concentration in the state. The number of records taken in each area corresponds closely to their relative importance in peach production. Because of their proximity, the records in Box Elder and Weber counties were summarized together and the results will be presented as being from the Box Elder-Weber area. A complete analysis was made of Washington County and the Box Elder-Weber area combined.

The sample included 33,184 trees which was equal to approximately 14 percent of all peach trees reported in the 1945 Census of Agriculture for these two areas. The 55 peach producers contacted comprised approximately 5 percent of the total number in the areas under consideration. The average number of trees per farm in the sample was 603, compared with 240 for all farms growing peaches. The sample includes a large enough portion of the orchards and trees to be statistically sound; however, the number of trees per farm is considerably larger than the average reported by the 1945 Census of Agriculture. The reasons for excluding the smallest sized farms in the study are explained below. While the results of this study would be reasonably applicable to orchards of the size surveyed, the results may or may not hold for orchards of smaller size.

The information was obtained by means of a personal contact with each producer by the author and his associates. It was recorded on special survey schedules designed to assist in securing information on the size and composition of the farm, cost data, production items, receipts, cultural practices dealing with the peach enterprise, and other related data 10/. The information thus recorded was that reported by the producers. Receipts and some cost items were checked with records from the farmers marketing organizations.

Producers from whom enumerators obtained records were accepted as found in an orchard-to-orchard tour of the sample areas. The selection of orchards, however, was restricted to the producers with enterprises consisting of 85 or more bearing trees. The decision to apply this limitation was motivated by a desire to eliminate subsistence or backyard fruit lots. The job of obtaining records began about September 1, 1947 and ended November 1, 1947. A twelve-month period was covered, from the end of the marketing period in the fall of 1946 to the end of this same

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10/ Appendix I

period in 1947. After the records were taken and checked, the information on them was classified, summarized, and recorded on charts to facilitate use of the data in describing and analyzing the peach enterprise in Utah.

METHOD OF PRESENTATION

The report that follows is presented in four divisions: (1) Description of the farms and peach orchards in the sample areas, which includes a discussion of methods of culture, soil management practices, labor requirements, and other data and information concerning the peach enterprise; (2) Analysis of cost items with a breakdown and summary of costs on the farms included in the study; (3) Receipts and net returns which contain an explanation of the composition of and a summary of receipts and net returns, and the various methods by which farm operators disposed of their crop; and (4) Analysis of factors affecting production costs and returns of the peach enterprise, which consists of an analysis and an explanation of the more important relationships found after working over the data. This includes such factors as size of the farms, size of the peach enterprises, method of sale, factors associated with least cost production, and factors related to the highest profits. These are some of the most important factors with which the individual peach grower can analyze and compare his own enterprise.

DESCRIPTION OF THE FARMS AND ORCHARDS STUDIED

A total of 55 records were obtained from peach producers on the cost of producing peaches for 1947 in three counties. Of this number, 27 were obtained in Washington County and 28 in the Box Elder-Weber area (table 1). The capital investment of the farms, including the value of the farm dwelling, averaged $22,542. Total acres of farmland ranged from 2.5 to 553.5 acres with an over-all average of 41.9 acres. The acreage of all fruitland including peaches averaged 11.3 acres per farm. About half the total fruit

acreage of the farms in these areas consisted of peaches, which indicates the relative importance of the peach enterprise to all fruit.

Table 1. Physical Description of Farms Surveyed in Washington County and Box Elder-Weber Area, 1947

Items	Washington County	Box Elder-Weber Area	Total
No. farms	27	28	55
Capital value per farm	16,752	28,125	22,542
Total acres per farm	28.4	54.8	41.9
Acres fruit per farm	8.2	14.3	11.3
Acres peaches per farm	4.8	6.7	5.8

The peach orchards varied in size from 1.5 to 37 acres, with an average of 5.8 acres (table 2). Forty-two or 76 percent of the operators had less than six acres of peaches. This heavy concentration around the small units indicates the family type nature of the peach business in Utah.

The number of bearing trees per acre on all farms averaged 106 (table 3). The range in production was 42 to 512 bushels per acre with an average of 190 bushels per acre and 1.9 bushels per bearing tree.

Table 2. Description of Peach Orchards Studied in Washington County and Box Elder-Weber Area, 1947

Item	Washington County	Box Elder-Weber Area	Total
No. orchards	27	28	55
Acres peaches per farm	4.8	6.7	5.8
Capital investment in peaches per farm	3,760	5,166	4,476
Capital investment in peaches per acre	783	771	772
Bearing peach trees per acre	88	117	106
Average bushel peaches per acre	179	197	190
Average bushel peaches per bearing tree	2.4	1.7	1.9

Trees were classified by variety with Elbertas in one class, and all other varieties, including Hale, Late Crawford, Heath Cling, Rochester, Golden Jubilee, in the other. The yield per acre of the Elbertas was 197 bushels; the combined average yield of all other varieties was 159 bushels per acre. It is possible that higher yields have some influence on the popularity of the Elberta varieties. In the entire study there were 318.3 acres of peach trees; 254.5 acres or 80 percent of them were Elbertas, and 63.8 or 20 percent were other varieties (table 3).

Some of the management practices were as follows: most operators made from 12 to 18 applications of irrigation water throughout the season; one or more applications of commercial fertilizers or manure were usually applied. The majority of the operators reported they were following a program of replacing the diseased and worn-out trees with young stock; the usual practice in Washington County was to leave an undergrowth in the orchard for winter and early springprotection, but the operators in the Box Elder-Weber area disked the undergrowth in the fall.

Table 3. Variety of Peaches Grown on Farms Studied in Washington County and Box Elder-Weber Area, 1947

Variety	Total acres	Acres peaches per farm	Bearing trees per acre	Yield
	acres	acres	number	bushels
Elberta				
Washington	101.3	3.8	87	192
Box Elder-Weber	153.2	5.5	119	201
Total	254.5	4.6	107	197
Other varieties				
Washington	29.0	1.0	95	135
Box Elder-Weber	34.8	1.2	106	178
Total	63.8	1.2	103	159
All varieties				
Washington	130.3	4.8	88	179
Box Elder-Weber	188.0	6.7	117	197
TOTAL	318.3	5.8	106	190

EXPLANATION AND ANALYSIS OF COST ITEMS

Material Costs

All of the expense items included in this study were summarized under material, overhead, man labor, and power costs. Material costs included fertilizers, containers, spray, and other material items used in this year's operations. Barnyard manure was valued at $1 per ton in the corral. Fifty percent of the current year's application was charged against the 1947 crop, 30 percent of the 1946 application, and 20 percent of the 1945 application. Other methods could have been used in figuring this expense item, such as charging all of the manure applied this year as the actual expense, or using some other ratio to apply to the residual. It was arbitrarily decided to use a ratio of 50-30-20, because a part of any one

year's application is known to remain in the soil and hence, should be charged against the crop of peaches benefiting from the fertilizer. The enumerators obtained a record of the amount of manure applied in 1947 and the two years previous to assist in calculating this expense item.

There is disagreement concerning the amount of available elements in commercial fertilizer that remain in the ground for use by crops after one year. Many of the experts say little or none is left, or that the amount left depends to a great extent on the method of application. The author was not aware of a better procedure than to charge to this year's expense all the cost of commercial fertilizer applied the current year.

In some cases the cost of containers was a large item of expense. This was true where the growers sold peaches plus containers. A smaller amount of depreciation and replacement expense was incurred when the operators used their own containers to haul and sell their fruit, but retained the baskets and lugs for further use. The total cost of containers was recorded when they were sold with the peaches outright, while depreciation and replacement was recorded on the ones retained.

The actual cost of the spray materials was recorded as an expense against this year's crop. Other less commonly used materials were considered as miscellaneous items and were charged against the current year's operations.

Material expenses amounted to 23 cents per bushel. They accounted for 15 percent of all costs. The most important item of expense under this grouping was containers, which amounted to 16 cents per bushel (table 4).

Overhead Costs

Overhead charges consisted of interest on money in the crop, interest on capital invested, building and equipment repair and depreciation, depreciation on trees, tax expenses, and incidental items. Interest on money invested in this year's crop was charged against the peach enterprise at the rate of 5 percent per annum. This expense was calculated on all

Table 4. Cost of Production and Marketing of Peaches 1/ on 55 Farms in Washington County and Box Elder-Weber Area, 1947

Item	Washington County		Box Elder-Weber Area		Total Cost		Percent of total
	acre	bushel	acre	bushel	acre	bushel	
Material costs:							
Manure	2.49	.01	3.88	.02	3.31	.02	1.1
Com. fertilizer	4.60	.03	4.44	.02	4.50	.02	1.6
Containers	35.47	.20	27.23	.14	30.61	.16	10.6
Spray	5.99	.03	4.38	.02	5.04	.03	1.7
Sub-total	48.55	.27	39.93	.20	43.46	.23	15.0
Overhead costs:							
Int. on money in crop	1.56	.01	1.94	.01	1.78	.01	0.6
Int. on capital invested	38.94	.22	38.49	.20	38.67	.20	13.3
Bldg. & equip. repair & depr.	5.37	.03	6.46	.03	6.01	.03	2.1
Depr. on trees	17.28	.10	22.00	.11	20.07	.11	6.9
Taxes	7.77	.04	17.05	.09	13.25	.07	4.6
Other	2.93	.02	6.26	.03	4.90	.03	1.7
Sub-total	73.85	.42	92.20	.47	84.68	.45	29.2
Man labor costs:							
Operator & family	84.88	.47	58.08	.29	69.05	.36	23.8
Hired	46.28	.26	66.97	.34	58.50	.31	20.2
Sub-total	131.16	.73	125.05	.63	127.55	.67	44.0
Power costs:							
Horse	3.88	.02	2.54	.01	3.09	.02	1.0
Tractor	13.84	.08	21.79	.11	18.53	.10	6.4
Truck	12.95	.07	12.49	.07	12.69	.06	4.4
Sub-total	30.68	.17	36.82	.19	34.31	.18	11.8
TOTAL	284.24	1.59	294.00	1.49	290.00	1.53	100.0

1/ Marketing costs include the operations of sorting and grading, packing, storage, selling and miscellaneous operations performed by the operators themselves or their hired labor before the crop was turned over to a marketing agency.

expenditures for material items and on all labor performed during the year. The length of time interest was charged extended from the date the expenditure was made until the money for peaches was received in the fall.

Interest charged on labor expenditures was determined by grouping the various operations into maintenance and handling. Maintenance included such operations as spreading fertilizers, disking, spraying, and irrigating (table 5). Handling consisted of thinning, picking, hauling to the packing house, and similar operations. Four months was allowed for labor involved in the maintenance work, and two months for handling operations. Interest on capital investments in the peach enterprise was charged at the rate of 5 percent per year. Invested capital included the value of peach trees, land, water, machinery and equipment, and buildings used in the peach enterprise. The operators reported values for peach orchard land in terms of the land's use for orchard purposes. This figure represents the price per acre that the operator was willing to pay for comparable land in the area. Interest charged on money in the crop and on capital investments is justified on the basis that if the operator had borrowed the money representing these items, he would have paid an interest charge. Conversely, if the operator had invested otherwise, the money he had tied up in peaches, he would expect to receive interest commensurate with the risks.

Depreciation and repair expense was figured on horse-drawn equipment, ladders, picking bags, fruit graders, and buildings used on the peach enterprise. The actual expense of repairing these items was listed. A normal rate of depreciation was charged against this equipment and buildings. The portion of repairs and depreciation on such items charged against the peach enterprise was determined on the basis of the percent of time and amount of wear they had undergone while being used on the

Table 5. Labor Requirements for Peach Production on 55 Orchards in Washington County and Box Elder-Weber Area, 1947

Operation	Washington County		Box Elder-Weber Area		Total	
	hours /acre	% of total	hours /acre	% of total	hours /acre	% of total
	hours	percent	hours	percent	hours	percent
Maintenance:						
Fertilizer						
Manure	6.1	3.3	4.8	3.4	5.3	3.3
Commercial	0.8	0.4	0.9	0.6	0.9	0.6
Pruning & disp. of brush	29.8	16.4	29.9	20.8	29.9	18.7
Plowing	0.4	0.2	0.1	0.1	0.2	0.1
Mowing	1.5	0.8	0.2	0.1	0.7	0.4
Hoeing	—	—	2.9	2.0	1.7	1.1
Discing & harrowing	1.5	0.9	6.4	4.5	4.4	2.8
Irrigating	28.5	15.6	14.6	10.2	20.3	12.7
Spraying	6.4	3.5	4.5	3.1	5.3	3.3
Miscellaneous	0.5	0.3	1.7	1.2	1.2	0.8
Total Maintenance	75.5	41.4	66.0	46.0	69.9	43.8
Handling costs:						
Thinning	5.8	3.2	10.4	7.2	8.5	5.3
Propping	0.2	0.1	0.1	0.1	0.2	0.1
Scattering boxes	1.2	0.6	1.1	0.8	1.1	0.7
Picking	59.1	32.4	42.7	29.7	49.4	31.0
Hauling to packing house	6.7	3.7	9.6	6.7	8.4	5.3
Total Handling costs	73.0	40.0	63.9	44.5	67.6	42.4
Marketing costs:						
Sorting & grading	24.7	13.5	7.9	5.5	14.8	9.3
Hauling to market	8.5	4.7	4.5	3.1	6.1	3.8
Selling	0.7	0.4	1.3	0.9	1.1	0.7
Total marketing costs	33.9	18.6	13.7	9.5	22.0	13.8
TOTAL	182.4	100.0	143.6	100.0	159.5	100.0

peach enterprise. Depreciation and repairs were not reported on motorized machinery and the equipment. The common practice was to charge an hourly rate to cover such costs. This was not true when hiring teams of horses. The usual practice was for the man hiring the team to furnish the equipment pulled by the horses.

The item of orchard depreciation posed a problem that was handled in the following way. The operator estimated the value of his land per acre with the peach trees, and then estimated what the same acre of land was worth without them. The difference between the two values was then divided by the farmer's estimate of what the productive life of peach trees was in his locality. This was the expenditure recorded for peach orchard depreciation. The farmers were cautioned to figure land values on the basis of use for irrigated farming.

Orchard depreciation was charged for the same reason that machinery, equipment, and building depreciation is considered a cost item. If a peach tree is worth more at bearing age than after its productive life has been spent, it indicates that a wearing out process has gone on over the years, just as a machine deteriorates with use. The method of charging a constant rate each year, as corporations figure depreciation on buildings or equipment, was used in calculating this expense for the peach trees.

Other expenses included in overhead, chargeable to the peach enterprise, were land and water taxes, family car expense, and incidental charges such as telephone and fees. The amount of land and water tax charged against the peach enterprise was determined by the ratio of the value of land and water used in connection with the peach enterprise to the value of the farm as a whole. This percent of the total property tax bill was reported as being the amount of tax for the peach enterprise. Family car, telephone, fees and other expenses were charged against the peach enterprise in the same way. The total expense representing these

items was reported. These figures were multiplied by the percent of time the operators used the family car, telephone and other items in conjunction with the peach enterprise.

Overhead costs averaged $84.68 per acre or 44 cents on a bushel basis. This classification of expenses is commonly overlooked by most farmers when analyzing their business. In this study, overhead costs were 29 percent of the total costs of operations (table 4).

Man Labor Requirements and Costs

The various operations were grouped into maintenance and handling, which completed the productive process, and operations dealing with the marketing process. Maintenance operations included applying fertilizer, pruning, disposal of brush, mowing, hoeing in the orchard, discing and harrowing, irrigating, spraying, and miscellaneous items concerned with caring for and maintaining the orchard. Handling operations included thinning the peaches, propping branches, scattering boxes, picking, and hauling to the packing house, or assembling in central places prior to the marketing process. Sorting and grading, hauling to market, and selling operations which were performed by the operator or hired labor completed the marketing process.

All maintenance operations required an average of 69.9 hours per acre, or 43.8 percent of the total time. Pruning required more time than any items in this classification, averaging 29.9 hours per acre. Sixty-seven and six tenths hours or 42.4 percent of the average time required to grow an acre of peaches was spent on handling operations. Picking required more time per acre than any single operation. The average time spent per acre was 49.4 hours or 31 percent of all the time spent (table 5). An average of 15.6 minutes was required to pick a packed-out bushel of peaches.

Marketing operations, as defined above, made up 13.8 percent of all time spent. Some of the operators who sold their peaches orchard-run spent little or no time on the marketing process. Those who graded and

fancy-packed their fruit, or peddled it had a considerable amount of time involved in the marketing operations. The average time per bushel was approximately 7 minutes.

The cost of operator and family labor was reported as the wage the operator or members of the family would command doing equivalent work, or the rate the operator would have to pay a hired hand. In nearly all cases the operators reported an average for themselves equivalent to the rate they would have to pay the better hired men in the area. The rate reported did not include a wage for management as that remuneration is an element of profit. Operator and family labor consisted of 54 percent of the total cost of all labor, and hired labor made up the remaining 46 percent. Total labor costs averaged $128 per acre and 67 cents on a bushel basis.

Power Costs

The same method used in determining labor costs was used in determining the rate for power-operated machines. The actual cost was recorded for hired tractors and trucks. The operator determined the rate for his own power equipment on the basis of what he could obtain doing similar work elsewhere, or what he would have to pay someone else for the use of their motorized equipment. The rate for teams was determined in a similar manner. Power costs were responsible for 11.8 percent of cost of all operations. Expense for horses was 1.0 percent, tractor expense 6.4 percent, and the cost for trucks was 4.4 percent (table 4).

Material costs accounted for 15 percent of all costs or 23 cents per bushel. Overhead costs were 29.2 percent of total costs, or 44 cents per bushel. Man labor costs were responsible for 44 percent of total costs, or 67 cents per bushel. Power costs were 11.8 percent of costs or 18 cents per bushel. Man labor expense was the most costly item, followed by interest on capital invested which was 13.3 percent, and by container expense which was 10.6 percent.

RECEIPTS AND NET RETURNS

Total receipts were arrived at by multiplying the number of bushels by the price received by the operators. The quantities used in the home or given away were assigned a rate on a bushel basis, according to their grade and the market opportunities of the individual operators. In no instance did the enumerators find by-products connected with the peach enterprise. Often, however, the peaches were sold in containers, the cost of which was actually included in the receipts. In such cases the net returns were not affected as this cost was also included in the expenses. Total receipts per acre averaged $333 on all farms and were $1.76 per bushel (table 6).

A total of 60,351 bushels of peaches were disposed of by farm operators included in this study. For convenience of presentation and analysis, the methods of disposal were divided into five sections. Section one included farmer-owned marketing associations that handled 37 percent or 22,474 bushels of the peaches sold. These were graded and packed by the operators. Section two included truckers who called at the orchard and usually purchased orchard-run peaches. This method provided an outlet for 15,879 bushels, or 26 percent. The third section included the canners. They purchased 10,911 bushels or 18 percent of the total. Peaches sold this way were not graded by the farmers. The fourth section included those operators who sold direct to the consumer by going from door to door. Most of the peaches sold by this method were orchard run and constituted 8 percent of the total. A fifth category included peaches sold from roadside stands, to neighbors, or used in the home. Eleven percent of all sales or 6,243 bushels were handled in this manner.

Table 6. Disposal of Peaches on 55 Farms in Washington County and Box Elder-Weber Area, 1947

Method of disposal	Bushels sold					
	Washington		Box Elder-Weber		Total	
	total	%	total	%	total	%
Associations	9,576	41	12,898	35	22,474	37
Truckers	9,074	39	6,805	18	15,879	26
Canners	75	—	10,836	29	10,911	18
Peddled	3,349	15	1,495	4	4,844	8
At farm	1,233	5	5,010	14	6,243	11
Total	23,307	100	37,044	100	60,351	100

The net return is the difference between total receipts and expenses. The average net return received per bushel in this study was 23 cents. On the individual enterprises the returns varied from $-4.40 to $1.11 per bushel. On an acreage basis net returns ranged from $-185 to $461 and averaged $43. Net returns of the individual records on both the acre and the bushel bases were concentrated near the average (table 7).

Table 7. Total Receipts and Net Returns from Peaches Sold on 55 Farms in Washington County and Box Elder-Weber Area, 1947

Item	Washington Co.		Box Elder-Weber		Total	
	Bushel	Acre	Bushel	Acre	Bushel	Acre
	dollars	dollars	dollars	dollars	dollars	dollars
Total receipts	1.84	330	1.70	335	1.76	333
Total costs	1.59	284	1.49	294	1.53	290
Net returns	.25	46	.21	41	.23	43

ANALYSIS OF FACTORS AFFECTING PRODUCTION COSTS AND RETURNS OF THE PEACH ENTERPRISE

To assist in analyzing and interpreting the data more effectively, a system of sorts was used. This method consisted of sorting the records into various classes on the basis of a single factor. Tabulations were made of the factor the classes were based on and other factors considered to have been associated with this first factor. Size of farm, size of enterprise, yields per acre, man hours of labor, method of sale, cost of operations, and average performance and success were the single factors used to test the extent of association with other factors.

It is recognized that other factors may have some association with success of the enterprise other than those listed above. No attempt was made, however, to ascertain this association. It is further recognized that there is an inter-factor association existing and that when an attempt is made to isolate the effect of one factor, the effect of some interrelated factors may also have a bearing on the results. Wherever these seem to exist, attention is directed to the association.

Size of Farms

The records were sorted on the basis of acreage, as a measure of farm size, in an effort to determine what association size might have with man labor, yields, costs and net returns. Capital, man work units, volume of production, and other factors are measures of size, but acreage is probably the most common, and was the basis used.

The farms varied from 2.5 to 553.5 acres, and averaged 42 acres. This measure included all land operated by the various farmers in the survey. Farms of less than 20 acres numbered 22, and constituted 40 percent of all farms in the study (table 8). Nineteen, or 35 percent, were in the 20 to 39 acre group, and 14 or 25 percent contained 40 acres or more. This indicated the extent of small-scale farming as measured in

terms of acres per farm found in this study. If this sample is considered representative of the peach growers in Utah, it shows to what degree small-scale farming is associated with the peach business in the state.

When the records were sorted on the basis of size, it was found that the farms in the small acreage group had the lowest peach yields, averaging 163 bushels per acre; while those in the 20 to 39 acre class had yields of 207 bushels per acre. The largest farms reported 192 bushels per acre, and an average of all farms was 190 bushels. Though the difference in the yields of the last two groups is negligible, a significant difference is noted between these and the yields of the smallest farms.

Cost per bushel was $1.65 on the smallest farms, and net returns were 16 cents. This was the highest bushel cost and lowest net returns of the three groups, which shows that the higher cost per bushel of the smaller farm operators is not offset by higher receipts. Costs of the medium-sized group and the large group were $1.48, and $1.51 per bushel respectively, and the average for all farms was $1.53. Net returns to the farm operators in the two larger classifications did not differ significantly, being 23 cents for the medium-sized farms, and 26 cents for the farms with 40 acres and over. Average receipts for all farms were 23 cents per bushel.

When farms were sorted on the basis of total acreage, it was found that the peach enterprises on the smallest farms had the lowest yields, spent about the same number of hours per acre in the productive process as the average of the study, had the highest costs, and reported the lowest net returns. These factors on the medium and largest size farms were not significantly different, and resulted in higher net returns than were obtained on the smallest farms.

Table 8. Relationship of Size of Farm to Various Factors in Peach Production in Washington County and Box Elder-Weber Area, 1947

Interval	Average acres per farm	Number records	Bushel peaches per acre	Prod. man hours per acre	Costs per bushel	Net returns	
						acre	bushel
acres	acre	number	bushels	hours	dollars	acre	dollars
Less than 20	12	22	163	138	1.65	26	.16
20 - 39	27	19	207	148	1.48	48	.23
40 and over	109	14	192	130	1.51	50	.26
Average all farms	42	55	190	138	1.53	43	.23

Size of Enterprise

The measure of size of enterprise was acres of peach orchard per farm. Other measures could have been used, such as bushels of peaches, hours of man work expended in the peach enterprise, or number of trees. Acreage was chosen because it seems to have been the most acceptable and is the most universally used indication of size. Size of enterprise is one of the most important factors affecting costs and net returns. It can influence the efficiency with which labor and machinery are used and the interest of the operators in managing their enterprise. Later associations also show that size of enterprise influences the method of marketing peaches.

The average acreage of peaches on all farms was 5.8 with a range of from 1.5 to 37 acres. In the sort of size of enterprise, three classes were used. The group containing 19 of the smallest enterprises averaged 2.2 acres, followed by an average of 5.1 acres for 23 farms in the middle group, and 12.2 acres for the 13 largest peach enterprises (table 9).

The group in the classification of three acres or less spent an average of 161 hours per acre in the productive process and obtained yields of 187.5 bushels per acre. Their costs were $330 per acre with

receipts of $363, leaving net returns of $33 per acre. The enterprises in the 4 to 6 acre classification averaged 141 hours labor per acre with yields per acre of 222.7 bushels. Costs per acre were $275 for this group and receipts were $381. Net returns were $106 per acre. The third class of enterprises, seven acres and over, averaged 129 hours labor per acre with yields of 165.7 acres. Costs per acre were $291, receipts were $290, resulting in a net return of a minus one dollar. The average net return for all farms was $43 per acre.

On the basis of size of enterprise, man hours per acre used in the productive processes decreased as the average size of the enterprise increased. The 4 to 6 acre classification had the highest yields and the lowest costs per acre. The net returns were $106 per acre compared with $33 of the group of the smallest enterprises and a minus net returns of one dollar per acre for the group of the largest enterprises. The units which had seven acres or more lack one dollar per acre of giving the operator and his family the going wage for labor they performed on the peach enterprise, and paying interest at the rate of five percent on all capital and money invested in the crop.

There seems to be no consistent relationship between the increase in size of enterprise and success as measured in terms of net returns per acre. Out of the study of 55 records, the class which includes 4 to 6 acres of peaches per enterprise was the most profitable. Yields, as will be shown in later discussions, have an important relationship to net returns per acre, and therefore the higher yields obtained on the group of enterprises in the middle classification probably have some relation to the greater success of these enterprises. It might be concluded that the average of 2.2 acres of peaches per farm was not sufficient to challenge the best interest of the operator in all phases of production and that the

average of 12.2 acres was larger than operators under the average conditions of the survey could most profitably and economically handle.

Since the differences in the net returns per acre are statistically significant and the differences in cost per acre are not statistically significant, one must look to receipts for an explanation of the difference. The larger peach enterprises disposed of their fruit previously by out-of-state shipments through associations and these were least profitable in 1947. Of course it must be recognized that the opportunity presented the smaller growers to market their fruit locally is entirely dependent upon the fact that part of the peach crop is shipped out side of the state and is entirely eliminated from the local market.

It must be recognized that the association that seems to be apparent here is obtained from a sort of a limited number of enterprises. If the same results were obtained from sorts of a larger number of enterprises, one would be justified in concluding that a portion of the local production must be shipped out of state and to the extent that it is done a market exists locally for the remainder. To the extent that out-of-state shipments are associated with size to that extent is size associated with receipts and success of the enterprise when measured in terms of net returns per acre.

Table 9. Relationship of Size of Enterprise to Various Factors in Peach Production in Washington County and Box Elder-Weber Area, 1947

Interval	Average acres peaches per farm	Number records	Total man hours per acre	Total bu. per acre	Costs per acre	Receipts per acre	Net returns per acre
acres	acres	no.	hrs.	bu.	dol.	dol.	dol.
3 acres and less	2.2	19	161	187.5	330	363	33
4 to 6	5.1	23	141	222.7	275	381	106
7 and over	12.2	13	129	165.7	291	290	-1
Average all farms	5.8	55	138	189.6	290	333	43

Yields per Acre

Yields were measured in total bushels produced per acre. The total bushels per acre includes all the peaches grown on an acre regardless of quality or method of disposal. The average yield was 190 bushels per acre. One of the most important factors affecting costs in the peach industry is yields. Per bushel costs are higher when yields are low, because fewer bushels of peaches are available to bear the costs. In peach production, costs, except those dealing with thinning, picking, and the marketing process, are relatively the same regardless of yields.

It was found that the farmers who had the smallest yields of less than 120 bushels per acre valued their land at an average of $717 per acre, which was the second highest average value. The operators who reported the highest yields, over 300 bushels per acre, reported the highest land value of $812 per acre. There were no appreciable differences among the valuations of the three middle groups. The average land value for all peach enterprises was $694 per acre (table 10).

Ordinarily one could expect yields and land values to be closely related. The tendency is to capitalize net returns into land values and since the more productive land is usually the more profitable, one would expect such land to have the highest value. The results of this sort show a definite relation between yields per acre and net returns per bushel. The farmers were cautioned to report land values on the basis of value for uses for agricultural purposes, and hence some relationship should exist between land values and yields. The author is of the opinion that land values recorded in some cases included values representing alternative uses for building sites, and the farmer's estimates of the effect future developments near his property might have on his land. This appears to have been true on the farms with the lowest yields of peaches since the

yields and net returns would not justify the values reported. On the other hand, however, some enterprises that had the highest yields reported by the operator may have been undervalued on the basis of capitalized value. It is recognized in this connection that definite conclusions should not be drawn for land evaluation based on net returns from only one year's operations.

The peach enterprises with yields of less than 120 bushels showed 120 hours per acre in the productive process; costs per bushel were $2.27, and net returns were a minus 58 cents. The units with yields within the 120 to 139 bushels class averaged 112 hours per acre. Costs per bushel were $1.75 and net returns a minus one cent on a bushel basis. The group with yields between 140 to 189 bushels spent 129 hours per acre and costs were $1.71, with net returns of 17 cents per bushel.

The group with yields of from 190 to 299 bushels of peaches per acre averaged 149 hours per acre with costs of $1.39, and net returns of 40 cents per bushel. The enterprises with the largest yields, 300 and over, averaged 193 hours per acre. Costs were $1.07 per bushel and net returns were 59 cents. The average net returns per bushel of all enterprises was 23 cents.

The hours spent per acre steadily increased from 120 per acre on orchards that averaged 101 bushels to 193 hours required on enterprises with yields averaging 385 bushels per acre. The time spent per bushel in the productive process declined steadily from 1.9 hours on farms with the lowest production per acre to 0.5 of an hour on farms with the highest production per acre. Costs per bushel declined steadily from $2.27 on the peach enterprises with the lowest yields to $1.07 per bushel on orchards with the highest yields. Net returns showed about the same relationship to yield as did costs. As yields per acre went up, costs per bushel decreased and net returns increased. The group of operators with

the lowest average yields lost 58 cents on each bushel produced while those in the highest yield classification made net returns of 59 cents per bushel.

The enterprises with the highest yields had some factors that caused a higher per acre cost, but when reduced to a bushel basis the cost was lower then on farms with smaller yields. This demonstrates the effect of high yields in reducing per unit costs on enterprises with a high portion of fixed costs. It indicates that high yields are one of the more important factors associated with success in the peach enterprise, and low yields are most likely accompanied by low net returns or losses.

Table 10. Relationship of Yields per Acre to Various Factors in Peach Production in Washington County and Box Elder-Weber Area, 1947

Interval	Total bu. per acre	Number records	Land values per acre	Hours spent in prod. Acre	Hours spent in prod. Bushel	Costs per bushel	Net returns per bushel
bu.	bu.	no.	dol.	hrs.	hrs.	dol.	dol.
Less than 120	101	13	717	120	1.19	2.27	-.58
120 - 139	135	8	635	112	.83	1.75	-.01
140 - 189	169	13	676	129	.76	1.71	.17
190 - 299	231	12	660	149	.64	1.39	.40
300 and over	385	9	812	193	.50	1.07	.59
Average all farms	190	55	694	138	.73	1.53	.23

Man Hours of Labor

The records were sorted into three groups on the basis of man hours of labor used per acre in the productive process to determine the association this might have with production costs. The records were divided into three groups on the basis of time spent per acre by the operator, family, and hired labor performing maintenance and handling operations. The group

that spent less than 120 hours per acre on the productive process included 22 peach enterprises. The middle group within the 120 to 160 hour per acre interval included 17 peach units. The third group which spent 170 hours per acre or more included 16 units, (table 11).

An analysis of the results of this sort shows that the operators who spent less than 120 hours per acre had units that average 6.1 acres, with yields of 136 bushels. Production costs on these enterprises were $1.64 per bushel. The operators that report from 120 to 169 hours spent per acre had an average size of 7.2 acres per enterprise, with yields of 219 bushels per acre, and average costs of $1.45 per bushel. The operators who had spent 170 hours or more per acre had enterprises averaging 3.9 acres and yielding 245 bushels per acre with costs amounting to $1.55 per bushel.

The operators who spent less than 120 hours per acre in the production process had the lowest yields and the highest costs per bushel. The operators in the 120 to 169 hour group had the lowest per bushel costs with yields averaging 219 bushels per acre.

These associations show that the enterprises on which the most time was spent per acre in the production process had the lowest bushel costs. It also shows that as the hours per acre increased, the yields increased. This latter relationship might be caused from a larger hourly input resulting in a greater number of bushels produced, or that the greater yields necessitated the additional hours for thinning, picking and hauling to the packing house. Therefore, labor requirements should be considered in relation to the yields obtained per acre. There was no consistent relationship between the number of hours spent in the productive processes and costs per bushel which indicates that other factors are more important influencing costs on a bushel basis than are the number of hours spent per acre.

Table 11. Relation of Man Hours of Labor per Acre to Various Factors in Peach Production in Washington County and Box Elder-Weber Area, 1947

Interval	Ave. Prod. hours per acre	Number records	Ave. acre peaches per farm	Average bushel per acre	Prod. cost per bushel
hrs.	hrs.	no.	acres	bu.	dol.
Less than 120	97	22	6.1	136	1.64
120 - 169	143	17	7.2	219	1.45
170 and over	213	16	3.9	245	1.55
Total	138	55	5.8	190	1.53

Methods of Sale

A sort was made according to method of sale to discover the relationship this might have to net returns. It is likely that the operators obtain higher prices through some ways of disposing of their peaches than through others. Costs of production should not be influenced by method of sales, but some means of disposal require that farmers provide more marketing functions.

The peach enterprises were grouped in the following classes according to methods used: (1) marketing associations, which included those enterprises where the crop was sold through an association that was producer owned and for which the member-farmers graded, packed, and assembled their fruit; (a) local canners, which included those enterprises where the operator sold to canners who bought peaches direct from the farmers for canning purposes; (3) truckers, which included those enterprises where the operator sold to truckers who usually called at the orchard for the peaches; (4) producer-peddlers, which included those enterprises where the operator sold in small lots to the final consumer; and (5) unclassified, those enterprises where the method of sales did not fit into any of the other four classes.

Each enterprise was placed in one of the categories listed above if 50 percent or more of the peaches were sold in any one manner. The operators who sold less than 50 percent by one of these methods were placed in the unclassified grouping.

The 14 farmers who marketed most of their peaches through associations had costs averaging $1.69 per bushel, receipts of $1.75, and per bushel net returns of 6 cents. The canners provided a market outlet for peaches produced by six operators. The total costs for this group averaged $1.25 per bushel. Receipts were $1.49, and net returns were 23 cents per bushel. The 11 operators who sold to truckers had costs of $1.55 per bushel, receipts that averaged $1.62 per bushel, and net returns of 7 cents on a bushel basis.

Seventeen operators peddled more than 50 percent of their peaches. They had bushel expenses of $1.39 and receipts of $2.03, which resulted in net returns of 64 cents per bushel. The unclassified grouping, which was made up of seven enterprises, had per bushel costs of $1.52, receipts of $1.75, and a net return of 23 cents per bushel.

The higher per bushel costs of the operators who sold through the associations were partially caused by the expense of grading, packing, and providing containers. Costs of $1.25 per bushel for those sold to canners were caused to some extent by the farmers having to ship the ungraded fruit a short distance. Some grading was done, and a few containers were purchased by the operators who sold to truckers, which helps explain their higher costs. The expense of peddling, for the enterprises classified as producer-peddlers, was partially offset by selling the peaches orchard-run, and having little or no container expense.

The fact that the producers who peddled their own fruit received the highest net returns should not be interpreted to mean it is the most profitable method of selling peaches. It requires special equipment such

as trucks and a certain amount of skill as a salesman. It is quite likely that a portion of the net returns is actually a reward for superior salesmanship. The quantity of peaches this type of market can absorb is probably limited. The fact that some operators could sell peaches profitably this way was made possible because of the disposing of a portion of the peach crop through other channels.

Table 12. Relation of Method of Sales to Various Factors in Peach Production in Washington County and Box Elder-Weber Area, 1947

Method of sales	Number records	Average acres per farm	Yields per acre	Costs per bushel	Receipts per bushel	Net returns per bushel
	no.	acres	bu.	dol.	dol.	dol.
Associations	14	7.1	197	1.69	1.75	.06
Canners	6	4.9	203	1.25	1.49	.23
Truckers	11	5.0	158	1.55	1.62	.07
Producer-peddlers	17	3.2	204	1.39	2.03	.64
Unclassified	7	11.3	188	1.52	1.75	.23
Total	55	5.8	190	1.53	1.76	.23

Better Than Average Performance and Success

Sorting the records into groups on the basis of their being more or less favorable than average as based on selected measures should show the association between net returns and superior performance. Previous sorts have indicated the influence of yield and cost on net returns, and it is obvious that receipts also help determine net returns. It is worth while to know the extent to which these factors are associated with net returns, and how important it is for the individual operators to be superior in all or some of these factors to be most successful in peach production.

The records were sorted into four groups on the basis of the number of selected factors in that record that were better than average for the

study. Average yields, per bushel costs, and receipts per bushel were the items considered. Records that were above average in yields and bushel receipts, and below average in costs were considered to be better than average. The first group consisted of eight records that had none of the measures better than average. The second group consisted of 23 records that had any one factor better than average. The third group consisted of 18 records in the classification that had any two items better than average. The fourth group consisted of 6 records that had all three measures better than average.

The enterprises with no items better than average averaged 7.4 acres in size with yields of 108 bushels, had costs of $2.19 per bushel, and obtained $1.54 a bushel for marketing their fruit. The resulting net return was a minus 65 cents per bushel. Records with one measure better than average had 5.4 acres with yields of 139 bushels. Costs on these enterprises were $1.86 per bushel, and receipts averaged $1.86 also, (table 13). The enterprises with two factors better than average had 4.4 acres with yields of 287 bushels. Costs were $1.19 per bushel, receipts $1.66, and net returns were 47 cents per bushel. The operators who enterprises were better than average in all three factors averaged 9.4 acres with yields of 251 bushels. Costs per bushel on these orchards were $1.37, and receipts $1.89. Net returns averaged 52 cents per bushel.

The most profitable group, with net returns of 52 cents per bushel, was better than average in all three factors. The next most successful group included enterprises that were better than average in any two of the three items. This group realized net returns of 47 cents or five cents per bushel less than the group better than average in all factors. The group that was better than average in only one item broke even and the group which had no factors better than average lost 65 cents for every bushel produced. With peach production as with almost any farm

enterprise, the greatest success accompanies the efforts of the producer who is superior in the greatest number of measures.

Table 13. Number of Factors Better Than Average Associated with Success on 55 Peach Enterprises in Washington County and Box Elder-Weber Area, 1947

Interval	Number records	Average acres of peaches per farm	Bushels per acre	Costs per bushel	Receipts per bushel	Net returns per bushel
Items	no.	acres	bu.	dol.	dol.	dol.
None better	8	7.4	108.1	2.19	1.54	-.65
1 better	23	5.4	139.4	1.86	1.86	.00
2 better	18	4.4	286.7	1.19	1.66	.47
3 items better	6	9.4	251.0	1.37	1.89	.52
Total	55	5.8	189.6	1.53	1.76	.23

Factors Associated with Least Costs

The amount of net returns is dependent on per unit costs and receipts. The amount received is largely out of the control of the individual farmer, but he may do something about costs. It is, therefore, important to know which factors subject to the farmers control are associated with the various cost items.

The records were sorted into three groups on the basis of per bushel costs. The lowest cost group contained 19 records with per bushel costs of less than $1.25 per bushel. The middle group contained 18 records with a per bushel cost range of from $1.25 to $1.69, and the highest cost group contained 18 records with costs that averaged $1.70 per bushel and more (table 14).

The farmers with the best average of cost of $1.07 per bushel operated enterprises that averaged 4.7 acres. The average amount of time spent per acre was 144 hours, yields were 283 bushels on these farms, and net returns

amounted to 54 cents per bushel. The farmers in the middle group with costs averaging $1.56 per bushel, had enterprises averaging 7.1 acres and spent 135 hours in the productive process. Yields averaged 182 bushels and net returns averaged 27 cents per bushel. The operators with the highest costs that averaged $2.45 per bushel, had enterprises that averaged 5.7 acres. Hours spent per acre in the productive processes were 135, yields averaged 117 bushels, and net returns were a minus 53 cents per bushel.

Table 14. Association of Factors with Records Grouped According to Costs per Bushel in Washington County and Box Elder-Weber Area, 1947

Interval	Average cost per bushel	Number records	Average acres per enterprise	Ave. Prod. hours per acre	Yields per acre	Net returns per bushel
dol. per bu.	dol.	no.	acres	hrs.	bu.	dol.
Less than 1.25	1.07	19	4.7	144	283	.54
1.25 to 1.69	1.56	18	7.1	135	182	.27
1.70 and over	2.45	18	5.7	135	117	-.53
Total	1.53	55	5.8	138	190	.23

SUMMARY

A total of 55 records were summarized representing 318.3 acres of peaches. The farms had an average capital investment of $22,542 and 41.9 acres of ground. The average acreage of all fruit per farm was 11.3 acres.

The peach orchards averaged 5.8 acres, with an average capital investment of $4,476. Yields averaged 190 bushels per acre and 1.9 bushels per bearing tree. A total of 60,351 bushels was produced by farmers included in the study. Elbertas accounted for 80 percent of the acreage studied and all other varieties accounted for the remaining 20 percent.

Costs per acre averaged $290 or $1.53 per bushel basis. Material costs comprised 15 percent of the total costs. Containers were the most important item in this group and made up 71 percent of all material costs.

Overhead costs consisted of 29.2 percent of total costs. Interest on capital invested at 5 percent per annum was 46 percent of all overhead costs.

Wages for man labor amounted to 44 percent of all costs with operator and family labor comprising 54 percent of labor costs and hired labor comprising 46 percent of this subdivision.

Power costs were 11.8 percent of total costs. Horse labor accounted for 9 percent, tractor 54 percent, and trucking 37 percent.

An average of 159.5 hours of man labor was spent per acre in all operations. Of this total 43.8 percent was used for maintenance operations. Pruning was the most time consuming of this category requiring 43 percent of this total.

Handling operations required 42.4 percent of the time spent per acre with picking accounting for 73 percent of total time thus spent.

Marketing operations required 13.8 percent of all time spent, and sorting and grading were responsible for 67 percent.

Total receipts averaged $330 per acre and $1.76 per bushel, leaving average net returns of $.23 per bushel.

In a sort made of the 55 records the enterprises with an average of 5.1 acres returned a net above costs of $106 per acre to the operators. Other enterprises of fewer or larger acreages than this group did not show as favorable net returns.

Farmers with high yields are most likely to operate with low unit costs. The operators who obtained less than 120 bushels of peaches per

acre had costs that averaged $2.27 per bushel, while those with yields 300 bushels and over had unit costs of $1.07.

There was no consistent relationship between the amount of man hours spent per acre in production and the cost per bushel. The amount of man hours spent did show a positive relationship to the yields obtained per acre.

The operators who peddled their peaches received the highest net returns. The fact that some operators could effectively sell this way was probably made possible by most of the peach producers disposing of their crop through other channels.

The lowest cost producers had high yields, smaller-than-average-size enterprises, and more than the average number of man hours used in the productive process.

It was important to success in the peach industry for the operator to obtain better than average performance in as many avenues of effort as possible.

CONCLUSIONS

In the analyses presented a rather significant association seemed to be manifest between yield per acre and man hours of labor spent per acre. The extent of which the extra hours of man labor resulted in better yields per acre, or the expenditure of more labor was necessitated by extra yields is not known. The consistency of the relationship would suggest, however, that any consideration of labor requirements in peach production must be thought of in terms of a certain level of production. Hence, labor requirements of this study were 138 hours of man labor per acre when yields were 190 bushels per acre.

The level of costs will change with economic conditions but the composition of costs will remain about the same as long as methods of

production are unchanged. The total cost of producing peaches on 55 enterprises in Washington County and Box Elder-Weber area included material costs which were 15 percent of the total, overhead costs of 29 percent, power costs of 12 percent, and man labor costs of 44 percent. These ratios of cost items are likely to remain the same until different methods of production are introduced.

The average enterprise in the study of 55 farms in Washington County and the Box Elder-Weber area in 1947 made only moderate returns considering the nature of the enterprise and the circumstances under which production was carried on. The net returns of $43 per acre or 23 cents per bushel were obtained with yields of 190 bushel per acre and an average price received per bushel of $1.76. The circumstances of production were such that favorable yields were obtained but cost and price relationships would not permit a return sufficient to compensate for the risk involved under average conditions. In relation to other farm enterprises, the 1947 production of peaches in the areas studied is probably not very favorable.

The contact with the peach producers in the area studied reveals the fact that several important market channels exist for the peach crop and that they perhaps all bear a significant relationship to the industry. Operators in 1947 disposed of their crop through producers' associations, through sale to ruckers, through house-to-house peddling to the final consumer, and through sale to canners for processing purposes. The associations were primarily interested in out-of-state shipment and their efforts together with that of the processors relieves the pressure of local production on the home market and make possible the sale of peaches locally at a remunerative rate to the producer.

In some instances, both because of quality as related to ripeness and because of location, the trucker who purchases the fruit at the orchard furnishes the only outlet for the peach crop.

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APPENDIX

(Crop Year PEACH ENTERPRISE SURVEY (Record Number)

Utah Agricultural Experiment Station
Department of Agricultural Economics

Operator _____ Community _____ P. O. _____

Location _____

Acres in peaches ____ Value per acre $____ Total value $____

Other fruit ____ Value per acre $____ Total value $____

Other cultivated acres ____ Value per acre $____ Total value $____

Total cultivated land ____ acres

Acres other land ____ Value per acre $____ Total value $____

Total acres ____ Total value all land $____

Total value of capital in:

Farm buildings $ ____ Amount charged to peaches $____

Farm equipment $ ____ Amount charged to peaches $____

Livestock inc. horses $ ____

Total farm value $ ____ Total capital charged to peaches $____

(Crop Production)

Crop	Age	No. trees Bearing	No. trees Non-bearing	Acres	Yield	Total product	Value of orchard Per acre	Value of orchard Total
1.								
2.								
3.								
4.								
	XXXX	XXXXXX	XXXXX					
	XXX XXXX	XXXXXX	XXXXXX					
	XXXX	XXXXXX	XXXXX					
	XXXX	XXXXXX	XXXXXX				XXXXX	XXXXXX
	XXXX	XXXXXX	XXXXX				XXXXX	XXXXXX
	XXXX	XXXXXX	XXXXX				XXXXX	XXXXXX
	XXXX	XXXXXXX	XXXXX				XXXXX	XXXXXXX
	XXXX	XXXXXX	XXXXXX				XXXXX	XXXXXX
TOTAL	XXXX						XXXXX	

1990

LIVESTOCK

Kind	Avg. No.	Value Avg.	Value Total	Kind	Avg. No.	Value Avg.	Value Total
Horses				Hogs			
Dairy Cows				Hens			
Beef Cattle				Turkeys			
Sheep				Total	XXXX	XXXX	

MACHINERY AND BUILDINGS

Kind	Age	Beg. value	Repairs	Dep.	End. value	Avg. value	Charged to peaches percent	value	repairs	deprec
Sprayer										
Grader										
Ladders										
Picking equip.										
Spreade r										
Plow										
Harrow										
Disk										
Level										
Ditcher										
Cultivators										
Wagons										
All other *	XXX						XXXX			
Total	XXXX						XXXX			
Machine Shed										
Packing Shed										
All other Blg.**										
Total Blg.	XXX						XXX			

* Includes, tractor, truck, motors, etc.
** Includes, house, barns, coops, etc.

OPERATIONS PERFORMED BY OPERATOR AND FAMILY LABOR

Operator	No. op.	Man H	Man R	Man Amt.	Horse H	Horse R	Horse Amt.	Tractor H	Tractor R	Tractor Amt.	Truck H	Truck R	Truck Amt.	Total operator & family
Maintenance:														
Fert. Manure														
Commercial														
Pruning														
Disposal of Brush														
Plowing														
Mowing														
Hoeing														
Discing & Harrowing														
Irrigating														
Spraying														
Cover Crops														
Misc.														
Total Maintenance														
Handling Costs:														
Thinning														
Propping														
Scattering Boxes														
Picking														
Hauling to packing house														
Sorting & Grading														
Packing														
Total Handling														
Marketing Costs: Storage														
Hauling to market														
Selling														
Misc.														
Total Marketing														
Total Operator & Family														

Convert children's labor to man hours on following scale: 16 & over equals 1 man, 15-16 equals 7/8, 14-15 equals 3/4, 13-14 equals 5/8, 12-13 equals $\frac{1}{2}$, 11-12 equals $\frac{1}{4}$.

1996

OPERATIONS PERFORMED BY HIRED LABOR

Operation	No. op.	Man			Horse			Tractor			Truck			Total	Total labor & power
		H	R	Amt.	H	R	Amt	H	R	Amt.	H	R	Amt.		
Maintenance:															
Fert. Manure															
Commercial															
Pruning															
Disposal of Brush															
Plowing															
Mowing															
Hoeing															
Discing & Harrowing															
Irrigating															
Spraying															
Cover Crops															
Misc.															
Total Maintenance															
Handling Costs:															
Thinning															
Propping															
Scattering Boxes															
Picking															
Hauling to packing house															
Sorting & Grading															
Packing															
Total Handling															
Marketing Costs:															
Storage															
Hauling to market															
Selling															
Misc.															
Total Marketing															
Total Hired															
Total Operator & Family															
Grand Total															

PEACH SALES

Variety	Grade	Am't (Bu.)	Price per unit	Total received	To Whom Sold	Location
			$	$		
Total				$		

1989

PEACH SUMMARY AND EXPENSE

MATERIAL COSTS

Item	Time	Quant.	Price	Cost
			¢	¢
Fertilizers:				
Barnyard				
Commercial				
Bu. Boxes				
Baskets				
Lug Boxes				
Picking Boxes				
Spray				
Packing Material				
Total	XXX	XXX	XXX	

INTEREST ON MONEY IN CROP

Item	Am't.	Time	Int.
	¢		¢
Maintenance Costs			
Handling Costs			
Fertilizers			
Containers			
Spray			
Misc.			
Total	XXXX	XXXX	¢

FIXED OVERHEAD CHARGES

Int. on Money in crop	
Int. on Capital	
Blg. Upkeep and Dep.	
Equip. Rep. and Dep.	
Dep. on Trees	
Taxes: Land	
Water and Drainage	
Fees	
Insurance	
Family Car	
Telephone	
Total	

SUMMARY

Total Received	
Material Costs	
Overhead Costs	
Operator & Family Labor Costs	
Hired Labor, Labor Costs	
Operators' Power Costs	
Hired Power Costs	
Total Costs	
Net Returns to Enterprise	
Number of Acres	
Number of Bushels	
Total Received Per Acre	
Net Returns Per Acre	
Total Received Per Bu.	
Net Returns Per Bu.	
Total Man Hours	
Man Hours Per Acre	

1991

1. Number of years farming _____

2. Number of years experience producing peaches _____

3. Membership in farmers' organization:

Fruit marketing cooperative _____ (Name)

Farm Bureau? _____ (Yes) _____ (No) Other marketing cooperatives _____ (Number)

4. Is a system of removal and replacement of trees practiced? _____ (Yes) _____ (No)

5. In the past 6 years, how many years was the crop damaged by frost, insects, of hail an appreciable amount? (Show in percent.)

Item	1947	1946	1945	1944	1943	1942
Frost						
Insects						
Desease						
Storm						

6. What was the acreage of peaches on this farm in 1940 _____ 1935 _____

7. Future plans for enterprise are to: Increase _____ acres, Decrease _____ ac.

Remain same _____

8. What is the estimated productive life of a peach tree? _____

9. What was the market value of this orchard per acre in 1945 _____

1940 _____ 1935 _____ 1930 _____

10. Describe soil type and management practice carried on in this orchard _____

11. Amount of manure applied per acre 1946 _____ 1945 _____ 1940 _____

Amount of commercial fertilizer 1946 _____ 1945 _____ 1940 _____

12. Do you receive greater profits from the sale of graded_____ or ungraded_____fruit?

13. What percent of the customers that you sell to are steady repeat customers?

_____ %

14. What percent of the customers ask for graded fruit?_____

15. What percent of the customers ask for graded fruit of uniform size_____ %

16. Can Utah peaches successfully compete with out-of-state peaches?_____ (Yes)

_____ (No)

17. Should something be done to promote greater consumption of peaches locally?

_____ (Yes) _____ (No) _____ (What)

_____

18. What needed changes do you see in the marketing of the crop?_____

_____

_____

_____

19. Is roadside selling of peaches worthwhile?_____

_____

_____

20. Are patrons of roadside fruit stands satisfied with the product?_____

_____

_____

21. Cost of growing orchard_____

_____

_____

Value of peach orchard land minus trees _____ per acre. Cost of removing stumps _____ per acre.

_____ (Date) _____ (Enumerator) _____ (Checked by)