RESULTS OF COST ACCOUNTS ON

Vegetable Crops

Hay and Corn Silage

Grain Crops

Fruit Crops

Livestock

1927 --- 1930

Charts 572 -- 582

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VEGETABLE CROPS

According to the United States Census, approximately 494,000 acres of vegetable crops were harvested on New York farms in 1929. This was about 7 per cent of the total acreage of all crops. The acreage of vegetable crops on New York farms in 1909 exceeded the acreage in 1929 by nearly 200,000 acres. However, the total acreage of all crops was also much higher in 1909 so that vegetable crops accounted for about the same proportion of all crops in 1929 and in 1909. Between 1909 and 1929, the acreage of potatoes was reduced nearly one-half, field beans decreased about 8 per cent, cabbage remained about the same, and canning crops and truck crops increased slightly (table 1).

TABLE 1 - ACREAGE OF VEGETABLE CROPS ON NEW YORK FARMS
(United States Census Data)

Crop Year	1909	1919	1929
	Acres	Acres	Acres
Dry beans	115,698	45,897	100,000 *
Cabbage	35,269	30,555	34,300
Potatoes	394,319	310,403	212,400
Other vegetables	144,916	111,038	147,252
Total	690,202	497,893	493,952
Per cent of total crop acreage	7.8	5.6	7.1

*Estimated acreage reported in "Crops and Markets" - December 1929.

In general, vegetable crops have paid New York farmers fairly well for the time they have spent on them. While the yields and prices of such vegetables as potatoes and cabbage have fluctuated considerably, returns have on the average, exceeded all costs by a good margin. For the 17 years, 1914 to 1930, the average return per hour of man labor on

potatoes was 67 cents and on cabbage 46 cents.

For the years, 1927 to 1930, the average costs and returns per acre for beans, potatoes, cabbage and canning factory peas varied considerably, but the average returns per hour of man labor on each of these 4 crops was just about the same (table 2). Sweet corn and string beans for the factory were not as profitable as these other vegetable crops. A few accounts with market garden or truck crops also show good returns, but because of the limited number of accounts available, costs and returns on such crops are not included in the following tables.

TABLE 2 - AVERAGE COSTS AND RETURNS FOR VEGETABLE CROPS, 1927-1930

Crop	Cost per acre	Returns per acre	Profit or loss per acre	Man hours per acre	Return per hour of man labor
Dry beans	$49	$54	$ 5	29	$.58
Cabbage	97	112	15	87	.57
Potatoes	123	141	18	82	.62
Canning factory peas	53	55	2	20	.57
Canning factory corn	58	41	- 17	42	.01
String beans	59	60	1	58	.22

Dry Beans

For the 17 years 1914 to 1930, average yields of dry beans on farms with cost accounts varied from one bushel per acre in 1925, to 19 bushels in 1920. The average value of of a bushel of beans varied from $2.13 in 1914 to $5.67 in 1916. Net returns on the bean crop varied from an average profit of $28. an acre in 1928 to a loss of $36. an acre in 1925. For the years 1914 to 1930, the average returns from the bean crop have been less than the average costs. In nine of the seventeen years, costs other than for man labor exceeded the

total returns from the crop. There were only 4 years when beans paid more than 50 cents an hour for the time spent on the crop (table 3). In recent years returns on beans have been much higher than the average for a longer period.

With an average of 14.2 acres of beans per farm, and a yield of 14 bushels, the average cost per acre for the 4 years, 1927 to 1930, was $49.37. Growing costs were three-fourths of the total and harvesting costs were one-fifth. Charges for man labor were about one-fourth, and charges for horse labor and the use of equipment were about one-third of the total cost. Other important items were use of land, which was 11 per cent of the total, manure 11 per cent, and seed 10 per cent (table 4).

Average returns from the bean crop for the 4 years, 1927 to 1930, exceeded average costs by $4.96 an acre. After all other costs were deducted from the returns, there was left 58 cents for each hour of man labor on the bean crop.

TABLE 3 - AVERAGES FROM ACCOUNTS WITH DRY BEANS, 1914-1930

Year	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	4	10.2	14	$30	$33	$ 3	$1.93	$2.13	$ .20	33	$ .34
1915	9	13.4	15	36	49	13	2.16	3.02	.86	40	.58
1916	9	10.3	4	40	27	-13	8.62	5.67	-2.95	36	-.07
1917	10	12.0	7	45	30	-15	6.12	4.01	-2.11	36	-.07
1918	11	4.5	8	60	35	-24	6.87	3.86	-3.01	42	-.19
1919	3	3.9	15	77	69	- 8	5.04	4.50	- .54	68	.34
1920	4	4.4	19	71	45	-26	3.61	2.22	-1.39	42	-.12
1921	3	6.2	17	73	53	-20	3.99	2.82	-1.17	54	-.01
1922	4	9.4	18	51	69	18	2.64	3.66	1.02	32	.96
1923	5	15.2	10	44	33	-10	3.92	2.91	-1.01	29	-.01
1924	7	11.9	7	45	21	-23	5.86	2.66	-3.21	29	-.35
1925	6	6.4	1 *								
1926	7	13.7	10	55	32	-23	5.50	3.12	-2.38	26	-.38
1927	33	13.0	14	50	47	- 3	3.38	3.18	- .20	30	.34
1928	29	13.3	16	52	80	28	3.06	4.78	1.72	31	1.33
1929	33	15.4	15	51	61	10	3.25	3.91	.66	30	.77
1930	27	15.1	10	45	30	-15	4.13	2.68	-1.45	26	-.12
Averages:											
1914-1919	46	9.0	10	48	40	- 7	5.12	3.86	-1.26	42	.16
1920-1924	23	9.4	14	57	44	-12	4.00	2.85	-1.15	37	.09
1926-1929	102	13.8	14	52	55	3	3.80	3.75	- .05	29	.52

* The bean crop on 6 farms in 1925 was practically a complete failure.

TABLE 4 - DETAILED COSTS AND RETURNS FOR DRY BEANS, 122 ACCOUNTS, 1927-1930 *
Acres per farm 14.2; Yield per acre 13.8 bushels, .5 tons roughage

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.60	11.3
Lime and manure		5.47	11.1
Fertilizer	134 pounds	1.83	3.7
Seed	1.0 bushels	4.81	9.8
Man labor	15.5 hours	6.60	13.4
Horse labor	23.4 hours	4.70	9.5
Tractor and tools	3.8 hours	4.16	8.4
Other equipment		2.86	5.8
Other growing costs		.89	1.8
Total		$36.92	74.8
Harvesting costs:			
Man labor	13.5 hours	$ 5.97	12.1
Horse labor	7.9 hours	1.75	3.5
Tractor and tools		.02	0.1
Threshing		1.73	3.5
Other equipment		1.14	2.3
Other harvesting costs		.09	0.2
Total		$10.70	21.7
Storing and Selling costs:**			
Use of buildings:		$ 1.16	2.3
Man labor	0.3 hours	.11	0.2
Horses and equipment		.30	0.6
Other storing and selling costs		.18	0.4
Total		$1.75	3.5
Grand total cost		$49.37	100.0

Returns per acre from beans	$51.83	Net cost per bushel	$3.40
Returns per acre from roughage	2.50	Value per bushel	3.76
Total returns per acre	$54.33	Return per hour of man labor	.60

* Of the 122 accounts with beans, 79 were in Genesee, 12 in Livingston, 12 in Monroe, 6 in Onondaga, and 13 in 6 other counties.

** Does not cover the selling cost for the entire crop. Some accounts were closed before all of the crop was disposed of.

Relation of Acreage and Yield of Beans to Costs and Returns

The larger acreages of beans were probably on soils better adapted to the growing of beans as indicated by lower charges for manure and fertilizer and higher yields. Fewer man and horse hours per acre were required on the larger acreages. Doubling the acreage of beans reduced the labor and equipment cost to grow an acre about 13 per cent.

Much of the work for harvesting beans may be done nearly as rapidly on small acreages as on large acreages so that acreage did not offset savings of man and horse time in harvesting as much as it did in growing. However, the larger acreages also had the higher yields. With the larger acreages and a slightly higher yield, the cost to harvest an acre was just about the same as with small acreages and lower yields, but the cost to harvest a bushel was much lower (table 5).

The average cost to grow an acre of beans with a 19 bushel yield was only $4. or 11 per cent more than the cost to grow a 7 bushel crop. Harvesting costs, except for threshing were only 15 per cent higher with the higher yield. Threshing charges varied with yield. With only 7 bushels per acre, the cost to grow and harvest a bushel was more than twice the cost with a 19 bushel yield (table 6).

TABLE 5 - RELATION OF ACREAGE OF BEANS TO COST, 122 ACCOUNTS, 1927-1930

	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	5.5	12.0	25.2
Yield, bushels per acre	11.6	13.7	14.4
Cost of manure per acre	$7.13	$6.32	$4.67
Cost of fertilizer per acre	2.31	2.45	1.40
Cost of seed per acre	6.31	4.99	4.50
Man hours to grow an acre	20.9	16.7	13.8
Horse hours to grow an acre	30.3	25.0	20.9
Tractor hours to grow an acre	3.6	3.9	3.8
Cost of labor & equipment to grow an acre	$22.30	$19.61	$16.88
Cost to grow an acre	44.47	40.38	33.69
Man hours to harvest an acre	15.0	13.5	13.2
Horse hours to harvest an acre	7.6	8.5	7.7
Cost of labor & equipment to harvest an acre	$8.72	$8.93	$8.91
Cost to harvest an acre	$10.70	$10.64	$10.72
Cost to grow a bushel	3.83	2.95	2.33
Cost to harvest a bushel	.92	.78	.74

TABLE 6 - RELATION OF YIELD PER ACRE OF BEANS TO COST, 122 ACCOUNTS 1927-1930

	Low third in yield	Middle third in yield	High third in yield
Acres per farm	10.4	17.5	14.8
Yield, bushels per acre	7.2	13.6	18.9
Cost of manure per acre	$3.74	$5.44	$6.70
Cost of fertilizer per acre	2.63	1.47	1.66
Man hours to grow an acre	15.4	14.8	16.4
Cost of labor & equipment to grow an acre	$17.56	$17.60	$18.81
Cost to grow an acre	35.37	35.83	39.51
Man hours to harvest an acre	12.4	13.8	13.9
Horse hours to harvest an acre	7.9	7.6	8.3
Cost of labor&equipment to harvest an acre	$ 7.99	$ 8.96	$ 9.44
Cost of threshing per acre	1.30	1.61	2.18
Cost to harvest an acre	9.35	10.64	11.70
Cost to grow a bushel	4.94	2.64	2.09
Cost to harvest a bushel	1.31	0.78	0.62

With low yields of beans, increasing the acreage reduced the loss per acre but increased the total loss on the crop. For the period 1927 to 1930, a yield of about 12 bushels was necessary to pay all costs. With 12 bushels or more per acre, profits were increased as the acreage of beans increased. One-sixth of the growers with the highest yields and largest acreages were paid an average of $1.31 for each hour of man labor on the bean crop. They made a profit above all costs of $25. an acre. One-sixth of the growers with the lowest yields and smallest acreages, lost on the average, $28. an acre on the bean crop (table 7).

TABLE 7 - RELATION OF YIELD AND ACREAGE OF BEANS TO COSTS AND RETURNS, 122 Accounts 1927 - 1930

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large acreage	Small acreage	Large acreage	Small acreage	Large acreage
Acres per farm	5.3	15.3	9.7	24.9	7.5	22.8
Yield, bushels per acre	7	7	14	13	20	19
Cost per acre	$ 56	$42	$ 53	$ 47	$ 61	$ 50
Returns per acre	$ 28	$27	$ 54	$ 51	$ 75	$ 75
Profit or loss per acre	- $ 28	-$15	$ 1	$ 4	$ 14	$ 25
Profit or loss on the enterprise	- $150	-$226	$ 8	$ 95	$109	$569
Return per hour of man labor	- $.35	-$.16	$.44	$.57	$.88	$1.31

Cabbage

Cabbage requires about 100 hours of man labor an acre, about half of which is for growing, and half for harvesting and disposing of the crop. The high requirement for labor and variations in yields and prices make cabbage a very speculative crop. From 1914 to 1930, there were 3 years when cabbage growers not only had no pay for their time, but when returns from the crop were insufficient to pay the other costs incurred. There were 4 other years when the returns from cabbage paid all costs and more than $1.00 for each hour of man labor spent on the crop. The average return per hour of man labor on cabbage for the 17 years, 1914 to 1930, was 46 cents (table 8).

With an average of 8.0 acres of cabbage per farm, and a yield of 8.3 tons, the cost per acre for the 4 years 1927 to 1930 was $96.97. Of this total cost 70 per cent was for growing, 19 per cent was for harvesting, and 11 per cent was for storage and selling. Charges for man labor accounted for 39 per cent of the total cost. Other important items of cost were use of horses and equipment 26 per cent, manure 9 per cent, fertilizer 8 per cent, use of land 6 per cent, and seeds and plants 5 per cent (table 9).

Average returns for the years 1927 to 1930 exceeded costs by $14.81 an acre. After all other costs were deducted from the returns, there remained 57 cents for each hour of man labor spent on the crop.

TABLE 8 - AVERAGES FROM ACCOUNTS WITH CABBAGE, 1914-1930

Year	Number of accounts	Acres per farm	Yield, tons per acre	Cost per acre	Returns per acre	Profit or loss per acre	Cost per ton	Value per ton	Profit or loss per ton	Man hours per acre	Returns per hour of man labor
1914	6	5.2	6.5	$63	$48	-$15	$9.50	$7.13	-$2.37	93	$ .08
1915	10	7.9	7.9	51	26	- 25	6.37	3.30	- 3.07	76	- .06
1916	8	5.1	3.9	64	158	94	15.93	39.93	24.00	92	1.32
1917	7	7.2	6.4	79	115	36	11.69	17.30	5.61	99	.72
1918	8	3.7	6.8	109	92	- 16	14.76	12.35	- 2.41	106	.24
1919	7	2.7	7.2	114	205	91	14.85	27.43	12.58	110	1.24
1920	12	3.4	12.5	118	73	- 45	9.39	5.77	- 3.62	122	.05
1921	13	3.5	6.9	116	185	69	16.00	26.11	10.11	118	1.00
1922	8	5.0	6.3	75	39	- 36	11.61	5.85	- 5.76	69	- .16
1923	4	3.7	4.4	73	55	- 18	15.36	11.24	- 4.12	103	.11
1924	7	4.3	7.3	92	60	- 32	12.44	7.97	- 4.47	87	.04
1925	9	5.2	6.5	104	121	17	15.36	18.03	2.66	97	.62
1926	7	3.9	7.1	114	104	- 10	15.94	14.53	- 1.41	109	.36
1927	36	5.5	10.8	99	50	- 49	9.11	4.58	- 4.53	90	- .09
1928	27	7.3	8.4	106	217	111	12.47	25.66	13.19	99	1.54
1929	30	8.2	7.7	98	128	30	12.72	16.58	3.86	84	.81
1930	30	11.0	6.2	85	53	- 32	13.63	8.42	- 5.21	75	.01
Averages:											
1914-1919	46	5.3	6.4	80	107	28	13.18	17.91	5.72	96	.59
1920-1924	44	4.0	7.5	95	82	12	12.96	11.39	- 1.57	100	.21
1925-1929	109	6.2	8.1	104	124	20	13.12	15.88	2.75	96	.65

TABLE 9 - DETAILED COSTS AND RETURNS FOR CABBAGE, 123 ACCOUNTS, 1927-1930 *
Acres per farm 8.0; Yield per acre 8.3 tons.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 5.98	6.2
Manure and cover crops		8.74	9.0
Lime		.36	0.3
Fertilizer	492 pounds	7.86	8.1
Seed and plants		5.11	5.3
Nicotine and dust		.44	0.5
Man labor	45.4 hours	19.95	20.6
Horse labor	33.4 hours	6.75	7.0
Tractor and tools	4.2 hours	4.86	5.0
Other equipment		5.56	5.7
Other growing costs		2.13	2.2
Total		$ 67.74	69.9
Harvesting costs:			
Man labor	28.6 Hours	12.51	12.9
Horse labor	10.7 hours	2.21	2.3
Truck		1.61	1.7
Other equipment		1.66	1.7
Other harvesting costs		.15	.1
Total		$18.14	18.7
Storing and Selling costs:**			
Use of buildings		2.67	2.7
Man labor	11.3 hours	5.61	5.8
Horses and equipment		2.61	2.7
Other storing and selling costs		.20	.2
Total		$11.09	11.4
Grand total cost		$96.97	100.0

Returns per acre from cabbage	$111.01	Net cost per ton	$11.59
Returns per acre from roughage	.77	Value per ton	13.37
Total returns per acre	$111.78	Returns per hour of man labor	.62

*Of the 123 accounts, 60 were in Genesee, 18 in Monroe, 17 in Livingston, 15 in Onondaga, and 13 in 6 other counties.

**Does not cover the selling cost of the entire crop. Some accounts were closed before all of the crop was disposed of.

Relation of Acreage and Yield of Cabbage to Costs

Few cabbage growers plant large acreages. Of 30 cabbage accounts for 1930, only 4 were for more than 20 acres and the largest acreage on any farm was 28 acres. Sorting the 123 cabbage accounts for the years 1927 to 1930 into 3 groups according to acreage gives a difference of only 10 acres of cabbage per farm between the groups with lowest and highest acreages (table 10). This low range in acreage necessarily limits any study of the effect of acreage on the cost of cabbage. Also, much of the work in setting and harvesting cabbage is hand labor which is done at about the same rate on large and small fields. Variations in cost and in efficiency in growing cabbage are due in part to the acreage grown, but are much more dependent on yield.

TABLE 10 - RELATION OF ACREAGE OF CABBAGE TO COSTS, 123 ACCOUNTS, 1927-1930

	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	3.6	7.1	13.5
Yield, tons per acre	7.0	7.7	8.4
Cost of manure per acre	$10.99	$ 9.24	$7.25
Cost of fertilizer per acre	6.07	7.71	9.06
Cost of seed and plants per acre	3.68	5.42	5.63
Cost of nicotine and dust per acre	.74	.29	.99
Man hours to grow an acre	50.7	44.4	43.8
Horse hours to grow an acre	40.7	29.9	31.0
Tractor hours to grow an acre	4.4	5.0	3.9
Cost of labor and equipment to grow an acre	$39.22	$36.19	$36.31
Cost to grow an acre	68.07	66.86	67.70
Cost to grow a ton	9.78	8.73	8.06
Man hours to harvest an acre	24.9	29.3	27.9
Cost to harvest an acre	$15.07	$18.70	$17.57
Cost to harvest a ton	2.17	2.44	2.09

Cabbage growers with high yields spent more per acre for manure, fertilizer, seeds and plants, nicotine and dust, and for labor and equipment than did growers with low yields. Increasing the yield from 4.4 to 7.8 tons per acre increased the cost to grow an acre 19 per cent, but decreased the growing cost per ton 38 per cent. Increasing the yield from 7.8 to 11.7 tons per acre increased the cost to grow an acre 13 per cent, but decreased the growing cost per ton 24 per cent. With high yields, the cost to harvest an acre was also higher, but the cost to harvest a ton was lower (table 11).

TABLE 11 - RELATION OF YIELD PER ACRE OF CABBAGE TO COSTS, 123 ACCOUNTS, 1927-1930

	Low third in yield	Middle third in yield	High third in yield
Acres per farm	7.3	8.0	8.5
Yield, tons per acre	4.4	7.8	11.5
Cost of manure per acre	$7.25	$9.00	$9.09
Cost of fertilizer per acre	7.03	7.63	9.90
Cost of seed and plants per acre	4.48	4.32	7.08
Cost of nicotine and dust per acre	.46	.27	.77
Man hours to grow an acre	42.8	44.5	47.9
Horse hours to grow an acre	28.2	33.6	34.4
Tractor hours to grow an acre	5.1	4.4	3.4
Cost of labor and equipment to grow an acre	$33.52	$37.45	$39.14
Cost to grow an acre	60.20	66.75	75.62
Cost to grow a ton	13.83	8.56	6.47
Man hours to harvest an acre	20.4	28.2	35.1
Cost of labor and equipment to harvest an acre	$11.88	$18.25	$22.07
Cost to harvest an acre	11.96	18.38	22.29
Cost to harvest a ton	2.75	2.36	1.91

Potatoes

In the last 17 years 1914 to 1930, there were 3 years when potato growers not only received nothing for their labor on potatoes, but also failed to get returns enough to pay for the other costs incurred. There were 4 other years when potatoes paid more than a dollar an hour for all the time spent on the crop. The highest average return for man labor was $2.33 an hour in 1925 (table 12). The average of 67 cents an hour for all 17 years indicates that the potato enterprise has been a profitable one for New York farmers.

With 14.9 acres of potatoes per farm, and a yield of 155 bushels, the average cost per acre for the 4 years 1927 to 1930 was $122.96. Growing costs were 73 per cent of the total cost, and harvesting costs were 18 per cent. Charges for man labor accounted for 26 per cent of the total cost, horse labor and the use of equipment 21 per cent, seed 19 per cent, and fertilizer manure and cover crops 17 per cent (table 13).

The total returns from this crop for the 4 years 1927 to 1930 averaged $140.69 an acre and exceeded total costs by $17.73. After deducting from the total returns, all costs other than for man labor, there remained 62 cents for each hour of labor on the crop.

TABLE 12 - AVERAGES FROM ACCOUNTS WITH POTATOES, 1914-1930

Year	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	13	7.0	162	$75	$49	$-26	$ .46	$ .31	$-.15	98	$- .01
1915	37	6.5	77	55	64	9	.71	.83	.12	76	.38
1916	24	5.7	88	72	153	81	.82	1.74	.92	78	1.34
1917	27	4.9	92	106	91	- 16	1.16	.99	-.17	89	.18
1918	29	2.7	138	123	139	16	.89	1.01	.12	114	.54
1919	30	3.0	100	114	167	53	1.14	1.67	.53	97	.95
1920	24	2.4	209	168	169	1	.81	0.81	.01	117	.45
1921	24	4.1	132	120	144	24	.91	1.09	.18	105	.59
1922	26	4.0	122	109	76	-33	.89	.62	-.27	93	-.01
1923	18	5.4	144	100	117	17	.70	.81	.12	84	.56
1924	22	9.4	175	108	80	-28	.62	.51	-.11	89	.16
1925	20	9.3	129	106	262	156	.83	2.03	1.21	84	2.33
1926	11	10.0	159	156	241	85	.98	1.51	.53	95	1.39
1927	47	9.0	118	120	138	18	1.01	1.16	.15	77	0.63
1928	42	11.5	169	131	93	-38	.77	0.55	-.22	95	-.04
1929	43	17.1	157	118	175	57	.75	1.27	.52	86	1.33
1930	44	22.0	175	123	132	9	.70	.76	.06	71	.56
Averages:											
1914-1919	160	5.0	110	91	110	20	.86	1.09	.23	92	.56
1920-1924	114	5.1	156	121	117	- 4	.79	.77	-.01	98	.35
1925-1929	163	11.4	146	126	182	56	.87	1.30	.44	87	1.13

TABLE 13 - DETAILED COSTS AND RETURNS FOR POTATOES,176 ACCOUNTS, 1927-1930 *
Acres per farm 14.9; Yield per acre 155 bushels

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.78	4.7
Manure and cover crops		8.91	7.2
Fertilizer	747 pounds	11.87	9.7
Seed	18.6 bushels	23.77	19.3
Treating seed		.77	0.6
Spray and dust materials		5.35	4.4
Man labor	33.7 hours	14.38	11.7
Horse labor	33.1 hours	6.26	5.1
Tractor and tools	4.8 hours	5.15	4.2
Other equipment		5.19	4.2
Other growing costs		2.33	1.9
Total		$ 89.76	73.0
Harvesting costs:			
Man labor	34.4 hours	$13.86	11.2
Horse labor	17.7 hours	3.47	2.8
Tractor and tools		.70	0.6
Truck		.34	0.3
Other equipment		2.94	2.4
Other harvesting costs		.49	0.4
Total		$21.80	17.7
Storing and Selling costs:**			
Use of buildings		3.48	2.8
Certification		.86	0.7
Man labor	14.2 hours	3.85	3.2
Horses and equipment		1.98	1.6
Other storing and selling costs		1.23	1.0
Total		$11.40	9.3
Grand total cost		$122.96	100.0

Returns per acre from potatoes	$140.69	Cost per bushel	$ .79
Returns per hour of man labor	.62	Value per bushel	.91

*Of the 176 accounts, 83 were in Genesee, 20 in Onondaga, 15 in Livingston, 14 in Monroe, 12 in Washington, 8 in Steuben and 24 in 10 other counties.

**Does not cover selling costs for the entire crop. Some accounts were closed before all of the crop was disposed of.

Relation of Acreage and Yield of Potatoes to Costs

Growers with large acreages of potatoes spent more per acre for seed, fertilizer and spray materials, but less for manure than growers with small acreages. However, greater efficiency in the use of labor and equipment on the large acreages so reduced the costs of these items that the total cost to grow an acre was somewhat lower than on the small acreages (table 14).

The cost to harvest an acre was also lower on the larger acreages although the yield was higher. With small acreages and lower yields, more labor was required to harvest 100 bushels than on the large acreages. The chief factor in lower harvesting costs however, was that with large acreages the machinery costs for harvesting an acre were much lower than with small acreages.

TABLE 14 - RELATION OF ACREAGE OF POTATOES TO COST,176 ACCOUNTS, 1927-1930

	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	4.0	11.3	28.2
Yield, bushels per acre	131	159	164
Cost of manure per acre	$12.02	$9.62	$ 7.74
Cost of fertilizer per acre	8.32	12.04	13.16
Cost of seed per acre	21.76	23.33	24.39
Cost of spray or dust materials per acre	4.82	5.33	5.32
Man hours to grow an acre	41.0	33.7	31.1
Horse hours to grow an acre	43.0	31.0	27.3
Tractor hours to grow an acre	4.2	5.1	5.3
Cost of labor and equipment to grow an acre	$36.07	$32.05	$28.47
Cost to grow an acre	91.62	91.19	86.75
Cost to grow a bushel	.70	.57	.53
Man hours to harvest an acre	30.0	35.6	34.6
Cost of labor and equipment to harvest an acre	$20.83	$23.32	$20.11
Cost to harvest an acre	21.20	23.72	20.55
Cost to harvest a bushel	.16	.15	.13

Growers with high yields spent more for seed, fertilizers, and spray or dust materials than did growers with low yields. While the cost per acre increased as yield increased, both the cost to grow a bushel and the cost to harvest a bushel decreased (table 15).

TABLE 15 - RELATION OF YIELD PER ACRE OF POTATOES TO COST, 176 ACCOUNTS, 1927-1930

	Low third in yield	Middle third in yield	High third in yield
Acres per farm	12.7	15.9	16.0
Yield, bushels per acre	102	147	216
Cost of manure per acre	$8.34	$8.68	$8.67
Cost of fertilizer per acre	10.09	10.93	15.67
Cost of seed per acre	22.37	20.99	27.69
Cost of spray or dust materials per acre	3.59	4.52	7.28
Man hours to grow an acre	29.8	32.2	35.2
Horse hours to grow an acre	23.1	30.1	34.4
Tractor hours to grow an acre	5.2	4.7	5.5
Cost of labor and equipment to grow an acre	$26.81	$28.98	$33.47
Cost to grow an acre	79.75	83.07	99.59
Cost to grow a bushel	.78	.56	.46
Man hours to harvest an acre	27.3	36.2	38.5
Cost of labor and equipment to harvest an acre	$16.03	$21.29	$24.55
Cost to harvest an acre	16.32	21.69	25.10
Cost to harvest a bushel	.16	.15	.12

With small acreages, costs per acre were higher than with large acreages. With low yields, returns per acre were lower than with high yields. Increasing the acreage with low yields reduced the cost per acre and the loss per acre, but increased the total loss on the enterprise. With yields of less than 100 bushels per acre, it did not pay to increase acreage. With yields of 125 bushels or more profits increased rapidly as acreage increased (table 16).

TABLE 16 - RELATION OF YIELD PER ACRE AND ACREAGE OF POTATOES TO COSTS AND RETURNS
176 ACCOUNTS - 1927 - 1930

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large acreage	Small acreage	Large acreage	Small acreage	Large acreage
Acres per farm	3.1	17.3	5.0	27.9	8.2	25.9
Yield, bushels per acre	63	96	119	134	194	220
Cost per acre	$106	$104	$105	$108	$141	$144
Returns per acre	52	78	120	127	172	201
Profit or loss per acre	-$ 54	-$ 26	$ 15	$ 19	$ 31	$ 57
Profit or loss on enterprise	-$165	-$457	$ 72	$526	$258	$1491
Return per hour of man labor	-$.34	-$.03	$.61	$.66	$.51	$1.13

Canning Factory Peas

Yearly averages from accounts with canning factory peas for the years 1927 to 1930 show variations in yield from 1158 to 2440 pounds per acre. Total cost per acre varied from $89. to $57. In 1930, there was an average profit of $26. an acre, giving a return of $1.75 for each hour of man labor on the crop. In 1929, there was an average loss of $17. an acre. If no charge were made for man labor in 1929, the costs would have exceeded returns by about $8. an acre (table 17).

TABLE 17 - AVERAGES FROM ACCOUNTS WITH CANNING FACTORY PEAS, 1927 - 1930

	Number of accounts	Acres per farm	Yield, pounds per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per ton	Value per ton	Profit or loss per ton	Man hours per acre	Return per hour of man labor
1927	22	10.9	1771	$52	$49	-$ 3	$58	$54	-$ 4	21	$ .26
1928	19	9.1	2205	57	63	6	51	56	5	22	.69
1929	15	9.1	1158	51	34	- 17	88	57	- 31	20	- .43
1930	16	11.7	2440	49	75	26	40	61	21	19	1.75
Average: 1927-1930	72	10.2	1894	52	55	3	59	57	- 2	20	.57

With 10.2 acres of peas per farm and an average yield of 1894 pounds of shelled peas, the average cost per acre for the 4 years 1927 to 1930 was $52.57. Of this total cost, 80 per cent was for growing and 19 per cent was for harvesting the crop. Seed was the largest item, accounting for 33 per cent of the total. The charges for man labor were 19 per cent of the total, horse labor and the use of equipment were 24 per cent, use of land 12 per cent, and manure 10 per cent. Average returns for the 4 years 1927 to 1930 exceeded average costs by $2.62 (table 18).

Relation of Acreage and Yield of Peas to Cost and Returns, 176 Accounts

Growers with small acreages of peas spent more per acre for manure, fertilizer, labor and equipment and obtained higher yields than did growers with large acreages. However, the saving of time on large acreages so reduced costs that even with lower yields, profits were higher. On the farms with about 19 acres of peas, the cost of labor and equipment to grow an acre was about 33 per cent less, and the cost of labor and equipment to harvest an acre was nearly 50 per cent less than on farms with only 4 acres of peas. With the large acreages there was a profit of $4.72 an acre and with the small acreages a loss of $1.39 an acre (table 19).

TABLE 18 - DETAILED COSTS AND RETURNS FOR CANNING FACTORY PEAS, 72 ACCOUNTS, 1927-1930*

Acres per farm 10.2; Yield per acre 1894 pounds

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$6.12	11.6
Manure		5.12	9.7
Fertilizer	221 pounds	2.24	4.3
Seed	4.3 bushels	17.36	33.0
Man labor	8.1 hours	3.41	6.5
Horse labor	10.9 hours	1.96	3.7
Tractor and tools	3.2 hours	3.39	6.5
Other equipment		1.44	2.8
Other growing costs		.79	1.5
Total		$41.83	79.6
Harvesting costs:			
Man labor	12.3 hours	5.35	10.2
Horse labor	9.9 hours	1.92	3.7
Truck		1.31	2.5
Other equipment		1.51	2.9
Other harvesting costs		.05	.0
Total		$10.14	19.3
Other costs:			
Man labor		.04	.0
Equipment		.40	1.0
Other costs		.16	.1
Total		$ .60	1.1
Grand total cost		$52.57	100.0

Returns per acre from peas	$54.41
Returns per acre from vines	.78
Total returns per acre	$55.19

* Of the 72 accounts, 44 were in Genesee, 6 in Orleans, 6 in Wyoming, 5 in Livingston, 4 in Ontario, and 7 in 5 other counties.

TABLE 19 - RELATION OF ACREAGE OF PEAS TO COSTS AND RETURNS, 72 ACCOUNTS, 1927-1930

	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	3.7	7.5	19.3
Yield, pounds per acre	2147	1980	1868
Cost of manure per acre	$7.76	$4.94	$4.76
Cost of fertilizer per acre	2.40	2.09	2.28
Cost of seed per acre	$17.43	$17.71	$17.08
Man hours to grow an acre	12.0	8.4	7.2
Horse hours to grow an acre	23.2	13.9	8.1
Tractor hours to grow an acre	2.4	3.0	3.4
Cost of labor and equipment to grow an acre	$13.71	$11.02	$ 9.19
Cost to grow an acre	47.35	42.25	40.69
Man hours to harvest an acre	20.6	14.1	10.0
Horse hours to harvest an acre	17.6	12.9	7.7
Cost of labor and equipment to harvest an acre	$16.14	$11.18	$ 8.44
Cost to harvest an acre	16.21	11.25	8.50
Cost to grow a ton	44.11	42.67	43.57
Cost to harvest a ton	15.10	11.36	9.10
Profit or loss per acre	-$ 1.39	$ 2.93	$ 4.72
Return per hour of man labor	.37	.54	.71

With high yields, the cost to grow an acre of peas was slightly higher and the cost to harvest an acre was considerably higher than with low yields. However, costs did not increase in proportion to yields. With an average of about 2800 pounds per acre, the growing cost of a ton of peas was only about one-half, and the harvesting cost per ton of peas was about three-fourths as much as with an average yield of only 1300 pounds per acre. If no charge were made for man labor, the costs with low yields would exceed the returns. One-third of the accounts with highest yields show an average profit of $21.61 per acre and a net return of $1.35 for each hour of man labor on the crop (table 20).

TABLE 20 - RELATION OF YIELD OF PEAS TO COST, 72 ACCOUNTS, 1927-1930

	Low third in yield	Middle third in yield	High third in yield
Acres per farm	12.4	9.8	8.6
Yield, pounds per acre	1306	1984	2766
Cost of manure per acre	$5.13	$4.17	$6.31
Cost of fertilizer per acre	1.85	2.48	2.55
Cost of seed per acre	$17.60	$17.30	$16.80
Man hours to grow an acre	8.1	7.7	8.5
Horse hours to grow an acre	11.1	10.2	13.0
Tractor hours to grow an acre	3.3	3.0	3.1
Cost of labor and equipment to grow an acre	$ 9.71	$ 9.74	$11.37
Cost to grow an acre	41.84	40.31	43.67
Man hours to harvest an acre	9.2	13.7	15.3
Horse hours to harvest an acre	7.9	10.6	13.0
Cost of labor and equipment to harvest an acre	$ 7.77	$10.38	$12.93
Cost to harvest an acre	7.82	10.43	13.00
Cost to grow a ton	64.08	40.64	31.57
Cost to harvest a ton	11.98	10.52	9.40
Profit or loss per acre	-$10.78	$ 5.91	$21.61
Returns per hour of man labor	- .21	.70	1.35

Sweet Corn

Accounts with sweet corn for the years 1927 to 1930 were chiefly for small acreages, averaging only 4.8 acres per farm. Yearly averages of the yield per acre varied from 4421 pounds in 1927 to 1743 pounds in 1928. In each of these 4 years, the costs exceeded total returns. The average loss for the 4 years was $17. an acre and the average return per hour of man labor was only one cent (table 21).

TABLE 21 - AVERAGES FROM ACCOUNTS WITH CANNING FACTORY SWEET CORN, 1927-1930

	Number of accounts	Acres per farm	Yield, pounds per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per ton	Value per ton	Profit or loss per ton	Man hours per acre	Return per hour of man labor
1927	12	5.4	4421	$62	$44	$-18	$26	$18	$- 8	49	$ .04
1928	15	6.0	1743	49	25	-24	55	26	-29	31	-.34
1929	9	3.9	3910	57	45	-12	27	21	- 6	39	.12
1930	7	4.1	2832	62	49	-13	36	27	- 9	51	.23
Averages: 1927-1930	43	4.8	3226	$58	$41	$-17	$36	$23	$-13	42	$ .01

With 4.8 acres per farm and a yield of 1.6 tons per acre, the average cost per acre for sweet corn for the years 1927 to 1930 was $57.67. Growing costs averaged $41.45 per acre or 72 per cent of the total, harvesting costs were $14.76, or 26 per cent of the total, and selling costs were $1.46 or 2 per cent of the total. Charges for man labor accounted for about one-third of the total cost. The charge for the use of equipment was 17 per cent, for manure 14 per cent, for horse labor 14 per cent, and for the use of land 11 per cent (table 22).

TABLE 22 - DETAILED COSTS AND RETURNS FOR SWEET CORN, 43 ACCOUNTS, 1927-1930 *
Acres per farm 4.8; Yield per acre 1.2 tons

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 6.54	11.4
Lime, manure and cover crops		8.36	14.5
Fertilizer	167 pounds	2.33	4.1
Seed	9.0 quarts	2.20	3.8
Man labor	19.9 hours	8.61	14.9
Horse labor	26.1 hours	5.83	10.1
Tractor and tools	3.7 hours	3.47	6.0
Other equipment		3.25	5.6
Other growing costs		.86	1.5
Total		$ 41.45	71.9
Harvesting costs:			
Man labor	22.9 hours	10.03	17.4
Horse labor	8.2 hours	1.75	3.0
Truck		.98	1.7
Other equipment		1.66	2.9
Twine		.16	0.3
Other harvesting costs		.18	0.3
Total		$ 14.76	25.6
Storing and Selling costs:			
Use of buildings		.54	0.9
Man labor		.13	0.2
Horses and equipment		.65	1.1
Other storing and selling costs		.14	0.3
Total		$ 1.46	2.5
Grand total cost		$57.67	100.0

Return per acre from corn	$34.83	Net cost per ton	$32.20
Return per acre from stalks	6.15	Value per ton	21.80
Total returns per acre	40.98		

* Of the 43 accounts, 22 were in Genesee, 8 in Livingston, 3 in Monroe, 3 in Ontario, and 7 in 6 other counties.

String Beans

With 10.5 acres per farm and an average yield of 2882 pounds, the average cost to grow an acre of string beans for the 4 years 1927 to 1930 was $43.69 (table 23). All but 2 of the string bean accounts here included were for crops grown on contract with canning factories. The labor to pick these crops was furnished by the factories. The hauling was done by the growers. On 2 farms in 1930 the crop was picked and shipped by the growers. Average returns for the 4 years exceeded average costs by $1.20 an acre.

TABLE 23 - DETAILED COSTS AND RETURNS FOR STRING BEANS, 22 ACCOUNTS, 1927-1930 *
Acres per farm 10.5; Yield per acre 2882 pounds.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$6.17	10.4
Manure		4.86	8.2
Fertilizer	311 pounds	3.88	6.6
Seed	1.0 bushels	9.51	16.1
Man labor	16.2 hours	7.17	12.1
Horse labor	20.0 hours	4.01	6.8
Tractor and tools	3.6 hours	3.90	6.6
Other equipment		3.37	5.7
Other growing costs		.82	1.4
Total		$43.69	73.9
Other costs:**			
Man labor	41.5 hours	12.60	21.3
Other costs		2.83	4.8
Total		$15.43	26.1
Grand total cost		$59.12	100.0

* Of the 22 accounts, 14 were in Genesee, 4 in Ontario, and 4 in 3 other counties.

** Includes some farm labor for harvesting. The factory purchasing the crop usually picks it. On 2 farms the crop was picked by the growers.

Cucumbers

Averages from 19 accounts with cucumbers for the years 1929 and 1930 show the cost per acre to be $82.46, of which 58 per cent was for growing and 41 per cent was for harvesting. Charges for grading and packing were excluded from these accounts, as these jobs were not done by the growers. About 108 hours of man labor were required to grow and harvest an acre of cucumbers (table 24).

The average cost per bushel of cucumbers was 91 cents and the average value per bushel was 90 cents. After paying all other costs, the growers had 37 cents for each hour of man labor on the crop.

TABLE 24 - DETAILED COSTS AND RETURNS FOR CUCUMBERS, 19 ACCOUNTS, 1929 - 1930
Acres per farm 7.8; Yield per acre 95.6 bushels.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 5.48	6.6
Lime, manure and cover crops		8.02	9.7
Fertilizer	446 pounds	6.36	7.7
Seed		1.96	2.4
Nicotine and dust		.51	.6
Man labor	33.4 hours	13.86	16.8
Horse labor	20.4 hours	3.80	4.6
Tractor and tools	4.0 hours	3.73	4.5
Other equipment		3.04	3.7
Other growing costs		.88	1.1
Total		$ 47.64	57.7
Harvesting costs:			
Man labor	74.8 hours	$ 29.65	36.0
Horse labor	.4 hours	.07	.1
Truck		3.30	4.0
Other equipment		.54	.7
Other harvesting costs		.36	.4
Total		$33.92	41.2
Selling costs:			
Man labor	.4 hours	.16	.2
Horses and equipment		.62	.8
Other selling costs		.12	.1
Total		$ .90	1.1
Grand total cost		$82.46	100.0

Total returns per acre	$78.64	Average cost per bushel	$.91
Net return per hour of man labor	.37	Average value per bushel	.90

* Of the 19 accounts, 13 were in Genesee, 4 in Orleans, and 2 in Monroe County.

Tomatoes

With 6.2 acres per farm and a yield of 5.4 tons, the average cost per acre of tomatoes on 9 farms in 1930 was $115.68. Of this total cost, 68 per cent was for growing, and 29 per cent was for harvesting costs. Charges for labor and equipment accounted for 54 per cent of the total cost. The cost of plants was 15 per cent of the total, and fertilizer was 14 per cent (table 25). Average costs exceeded average returns by $33.23 an acre, or $6.17 a ton. The average return per hour of man labor was only 11 cents.

TABLE 25 - DETAILED COSTS AND RETURNS FOR TOMATOES, 9 ACCOUNTS, 1930 *
Acres per farm 6.2; Yield per acre 5.4 tons.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 5.93	5.1
Manure		7.93	6.9
Fertilizer	867 pounds	15.93	13.8
Plants		16.88	14.6
Man labor	37.9 hours	15.10	13.1
Horse labor	24.2 hours	5.37	4.6
Tractor and tools	4.5 hours	4.76	4.1
Other equipment		5.03	4.3
Other growing costs		1.38	1.2
Total		$78.31	67.7
Harvesting costs:			
Man labor	72.8 hours	29.57	25.6
Horse labor	0.7 hours	.02	.0
Truck and other equipment		3.08	2.7
Other harvesting costs		.38	0.3
Total		$33.05	28.6
Selling costs:			
Labor and equipment		1.91	1.7
Other costs		2.41	2.0
Total		$ 4.32	3.7
Grand total cost		$115.68	100.0
Return per acre from tomatoes	$82.45	Net cost per ton	$21.47
Return per hour of man labor	.11	Value per ton	15.30

* Of the 9 accounts, 4 were in Monroe, 2 in Orleans, 2 in Genesee, and 1 in Orange County.

NEW YORK STATE COLLEGE OF AGRICULTURE

Department of Agricultural Economics and Farm Management

Farm Cost Accounting Project

RESULTS OF COST ACCOUNTS ON HAY AND CORN SILAGE

Detailed Costs and Returns, 1927 - 1930

Yearly Averages, 1914 - 1930

Prepared by

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November - 1931 Ithaca, N. Y.

HAY

Since 1909, between 4 and 5 million acres of hay have been harvested annually on New York farms. This exceeds the combined acreage of all other crops. Between 1909 and 1929, there was a decrease of 1,909,000 acres of all crops and a decrease of nearly 700,000 acres of hay. Hay accounted for 54 per cent of the total acreage of crops in 1909, and 59 per cent in 1929 (table 1). With the continued abandonment of farms, it is to be expected that the trend in the acreage of hay, as well as in the acreage of all crops will be downward. However, in the process of farm abandonment, hay is harvested long after all other crops have disappeared. From the standpoint of acreage, hay will become relatively more important as more of the poorer farms go out of use, unless the substitution of other crops for hay on the better farms is on a scale large enough to offset this trend.

TABLE 1 - ACRES OF HAY ON NEW YORK FARMS
(United States Census Data)

Crop Year	1909	1919	1929
Acres of alfalfa	35,343	119,783	190,075
Acres of other hay	4,748,249	4,867,737	3,906,606
Total	4,783,592	4,987,520	4,096,806
Per cent of total crop land in hay	53.9	57.0	59.0

The bulk of the hay grown in New York is fed out on the farms producing it, although there are some areas where the receipts from the sale of hay make up a large share of the farm income. Whether hay is fed or sold, relative production costs, and the different values of the

various kinds of hay have a bearing on farm profits. Hay seedings may be of alfalfa alone, alfalfa with clover or timothy, clover alone, clover with timothy, timothy alone, timothy with various other grasses, or other hay. The costs of making these seedings, the life of the seedings, and the feeding values of the resulting crops vary. In making seedings, soil conditions, cropping systems, and comparative cost and returns should be considered.

Returns Per Hour of Labor on Hay

For the years 1914 to 1919, alfalfa was slightly more profitable than other hay. For that period, the average return per hour of labor on alfalfa was 95 cents, and on other hay, 91 cents. Net returns on alfalfa have continued to be favorable, but since 1920, net returns on other hay have been low. For the 3 years, 1927 to 1929, the average return per hour of labor on alfalfa was 66 cents, and on clover and timothy, 5 cents (table 2).

The outlook for timothy and other hay of low value suggests that little or nothing will be paid for the labor on these crops. Occasional years of short crops and high prices, such as 1930, should not lead to increased seedings of low value hay with the expectation of profits. There is little demand for this type of hay, due to the decreased numbers of horses on farms and in cities.

Cost to Grow and Harvest Hay

The average cost to grow an acre of hay for the years 1927 to 1930 varied from $14.07 for clover, to $10.15 for clover and timothy. This variation in growing cost is largely due to differences in the cost of seedings, and in the charges for manure. Harvesting costs varied from $6.24 an acre for timothy, with a yield of 1.4 tons, to $10.21 an acre for alfalfa, with a yield of 2.1 tons (table 3).

TABLE 2 - RETURNS PER HOUR OF MAN LABOR ON HAY*

Kind of Hay	1914 to 1919	1920 to 1926	1927 to 1929	1930
Alfalfa	$.95	$.80	$.66	$1.02
Alfalfa, clover and timothy			- .06	.45
Clover			- .12	.22
Clover and timothy	.91	.31	.05	.68
Timothy and other hay			- .20	.34

*Prior to 1927, all hay accounts were classified as either "alfalfa" or "other hay". For the years 1927 to 1930, the classification of hay accounts was as follows:

Alfalfa - seedings of clear alfalfa only.

Alfalfa, clover, timothy - seedings of alfalfa with clover or with timothy, or both, and also any of these hay crops grown separately but included in a general hay account.

Clover - seedings of clear clover only, intended as a one year crop.

Clover and timothy - seedings of clover with timothy, including only the first 3 years of such seedings.

Timothy and other hay - a few seedings of clear timothy, clover and timothy seedings after the third year, and all other mixtures seeded or coming in naturally.

TABLE 3 - COST TO GROW AND HARVEST HAY 1927 - 1930

	Alfalfa	Alfalfa Clover and Timothy	Clover	Clover and Timothy	Timothy and Other Hay
Cost of manure per acre	$ 2.48	$ 4.27	$ 3.58	$ 4.05	$ 5.43
Cost of seeding per acre	2.05	2.44	3.56	1.68	.30
Cost to grow an acre	10.24	12.65	14.07	10.15	10.75
Cost to harvest an acre	10.21	8.42	8.25	6.43	6.24
Cost to grow and harvest an acre	$20.45	$21.07	$22.32	$16.58	$16.99
Cost to grow and harvest a ton	9.74	11.71	12.28	10.36	12.14

The average cost to grow and harvest a ton of hay varied from $9.74 for alfalfa to $12.28 for clover. Clover with timothy and timothy with other grasses were produced at a lower cost per ton than was clover, but they were also of lower value. Differences in production costs of leguminous and non-leguminous hays are small. Differences in yields, feeding values, and in soil building qualities make leguminous hays preferable to other hays. If alfalfa can be grown and harvested for less than $10.00 a ton, it should displace a considerable acreage of other hay which costs $11. or $12. a ton, and might be added as a cash crop on many farms where it has not been grown to any extent.

Relation of Acreage of Hay to Costs

With large acreages of hay, both the yield and the cost per acre were lower than with small acreages. It is probable that with large acreages, seedings were left longer, either because of soil and climatic conditions, or because of the expense of seeding. Also the applications of manure on large acreages of hay were probably lighter, or were made at longer intervals. Variations in the cost of seedings and in charges for manure accounted for practically all of the differences in the growing costs with large, medium, and small acreages of hay (table 4). Increasing the acreage of hay also reduced harvesting costs. This lower harvesting cost on the larger acreages was due chiefly to a lower charge per acre for the use of equipment, and to the saving of time in doing the work.

TABLE 4 - RELATION OF THE ACREAGE OF HAY TO COST 1927-1930

	Alfalfa (111 Accounts)			Clover and Timothy (80 Accounts)		
	Low third in acreage	Middle third in acreage	High third in acreage	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	6.0	15.8	44.8	15.7	28.7	53.4
Yield per acre	2.5	2.0	2.0	1.8	1.8	1.4
Cost of manure per acre	$5.54	$2.55	$2.01	$6.98	$4.59	$2.90
Cost of seeding per acre	3.98	2.57	1.58	2.40	1.68	1.48
Cost to grow an acre	15.37	11.12	9.18	15.91	11.14	8.06
Cost to harvest an acre	12.02	11.02	9.57	7.94	6.79	5.94
Man hours to harvest an acre	13.4	12.6	11.7	9.5	8.3	7.6

Relation of Yield to Costs and Returns

As the yield increased, both the cost to grow and the cost to harvest an acre of hay increased. The higher growing costs for the higher yields were due to higher seeding costs and charges for manure. Naturally the cost to harvest large crops was more than for small crops. However, growing and harvesting costs did not increase in the same ratio as yield. The cost to grow and harvest a ton of hay decreased as the yield increased. Doubling the yield of alfalfa increased the cost to grow and harvest an acre 55 per cent, but decreased the cost per ton 27 per cent (table 5).

TABLE 5 - RELATION OF THE YIELD PER ACRE OF HAY TO COST 1927-1930

	Alfalfa (111Accounts)			Clover and Timothy (80 Accounts)		
	Low third in yield	Middle third in yield	High third in yield	Low third in yield	Middle third in yield	High third in yield
Yield per acre	1.4	2.2	2.9	1.0	1.7	2.3
Acres per farm	21.9	30.9	13.7	39.7	29.7	30.1
Cost of manure per acre	$2.53	$1.88	$3.70	$2.68	$4.57	$5.14
Cost of seeding per acre	2.01	1.53	3.24	1.46	1.66	1.98
Cost to grow an acre	9.98	9.28	12.73	7.93	10.49	12.61
Cost to grow a ton	7.13	4.22	4.39	7.93	6.17	5.48
Cost to harvest an acre	7.41	10.69	13.28	4.94	6.83	8.11
Cost to harvest a ton	5.29	4.92	4.66	5.00	4.12	3.58

Low yields of alfalfa were not profitable, moderate yields paid fairly well, and high yields resulted in returns of over $1.00 an hour for all the labor on the crop. With yields of 2 tons or more per acre, profits on alfalfa were increased as acreage increased (table 6).

TABLE 6 - RELATION OF YIELD AND ACREAGE OF ALFALFA TO COSTS AND RETURNS (111 Accounts,1927-1930)

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large creage	Small acreage	Large acreage	Small acreage	Large acreage
Yield, tons per acre	1.3	1.4	2.1	2.2	3.3	2.7
Acres per farm	8.6	34.4	14.1	48.6	4.8	24.4
Cost per acre	$23.97	$20.86	$29.19	$26.98	$36.79	$32.33
Return per acre	19.16	20.20	32.97	32.42	52.02	43.98
Profit or loss per acre	-$ 4.81	-$ .66	$ 3.78	$ 5.44	$15.23	$11.65
Profit or loss for enterprise	-$41.00	-$22.00	$53.00	$264.00	$73.00	$284.00
Return per hour of man labor	- .13	.36	.73	.80	1.36	1.02

For clover and timothy, low yields were decidedly unprofitable, moderate yields showed small losses, and high yields paid about one-half as much for labor as high yields of alfalfa. With low yields an increase in the acreage of clover and timothy reduced the cost per acre and the cost per ton, but increased the loss on the enterprise (table 7).

TABLE 7 - RELATION OF YIELD AND ACREAGE OF CLOVER AND TIMOTHY TO COSTS AND RETURNS
(80 Accounts - 1927-1930)

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large acreage	Small acreage	Large acreage	Small acreage	Large acreage
Yield, tons per acre	1.0	0.9	1.6	1.6	2.7	2.1
Acres per farm	22.8	52.5	17.0	43.5	17.9	45.4
Cost per acre	$17.72	$13.95	$22.45	$20.06	$33.70	$22.75
Return per acre	10.63	8.90	19.25	17.95	36.45	24.58
Profit or loss per acre	- $ 7.09	-$ 5.05	-$ 3.20	-$ 2.10	$ 2.75	$ 1.83
Profit or loss for enterprise	- $162.	- $265	- $ [illegible]	- $91.	$ 49.	$ 83.
Return per hour of man labor	- $ .79	- $ .43	$ .05	$.16	$ .6[illegible]	$ .57

Alfalfa

For each of the last 17 years, 1914 to 1930, the alfalfa crop has shown profits. A comparison of the results of alfalfa accounts for the period 1914 to 1919, with the period 1925 to 1929 shows that the acreage of alfalfa on cost account farms has more than doubled, that the yield has decreased slightly, that costs have been reduced, that average values have decreased, and that it requires 16 hours of labor per acre instead of 27 (table 8). Returns for this labor are somewhat lower than formerly, but with an average return per hour of labor of 79 cents for the period 1925 to 1929, and with $1.02 an hour for 1930, there is truth in the slogan that "alfalfa acres are money makers".

With an average of 22.4 acres per farm, and a yield of 2.1 tons, the average cost per acre of alfalfa for the period 1927 to 1930 was $26.91. Of this total cost, 38 per cent was for growing, 38 per cent was for harvesting, and 24 per cent was for storing and selling (table 9). On farms with cost accounts, a large part of the alfalfa crop was fed. If all of the crop were pressed and sold, costs and returns would have been higher, and selling costs would have accounted for a larger share of the total cost.

The average returns from alfalfa for the 4 years, 1927 to 1930, exceeded average costs by $4.38 an acre. If no charges were made for labor, the returns would have exceeded other costs by $10.41 an acre. This amounts to a return of 75 cents an hour for the time spent on the crop.

TABLE 8 - AVERAGE FROM ACCOUNTS WITH ALFALFA 1914 - 1930

Year	Number of accounts	Acres per farm	Tons per acre	Cost per acre	Returns per acre	Profit per acre	Cost per ton	Value per ton	Profit per ton	Man hours per acre	Return per hour of man labor
1914	6	8.8	2.8	$26	$42	$16	$9.07	$14.91	$5.84	29	$ .82
1915	14	6.7	2.8	27	42	15	9.45	14.96	5.51	27	.83
1916	13	8.5	2.7	27	36	9	10.14	13.20	3.06	29	.60
1917	17	6.8	2.2	31	43	12	13.99	19.62	5.63	22	.93
1918	9	9.7	2.3	41	53	12	17.34	22.58	5.24	24	.94
1919	8	12.9	2.8	37	72	35	13.34	25.91	12.57	32	1.59
1920	9	10.8	2.1	36	50	14	17.22	23.97	6.75	23	1.10
1921	7	15.7	1.9	32	36	4	17.15	19.42	2.27	21	.62
1922	7	15.3	2.6	30	36	6	11.39	13.48	2.09	27	.62
1923	4	27.9	2.2	30	39	9	13.23	17.29	4.06	23	.79
1924	8	9.5	2.5	39	40	1	15.61	15.87	0.26	24	.49
1925	13	16.8	2.2	30	39	9	13.62	17.62	4.00	18	.96
1926	13	23.0	2.4	33	41	8	13.84	17.39	3.54	17	1.01
1927	17	20.6	2.1	27	30	3	12.88	14.05	1.17	15	.61
1928	35	21.7	2.2	27	32	5	12.30	15.02	2.72	14	.83
1929	26	26.4	2.0	28	29	1	13.84	14.59	.75	14	.54
1930	33	20.7	2.0	26	34	8	13.14	17.07	3.93	13	1.02
Averages:											
1914-1919	67	8.9	2.6	$32	$48	$16	$12.22	$18.53	$6.31	27	$ .95
1920-1924	35	15.8	2.3	33	40	7	14.92	18.01	3.09	24	.72
1925-1929	21	21.7	2.2	29	34	5	13.30	15.73	2.49	16	.79

TABLE 9 - DETAILED COSTS AND RETURNS FOR ALFALFA, 111 Accounts, 1927-1930*
Acres per farm 22.4: Yield per acre 2.1 tons

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.42	20.3
Manure		2.48	9.2
Seeding **		2.11	7.7
Other growing costs		.23	.9
Total		$10.24	38.1
Harvesting costs:			
Man labor	12.2 hours	$5.23	19.4
Horse labor	13.0 hours	2.46	9.1
Tractor and tools		.56	2.1
Other equipment		1.78	6.6
Other harvesting costs		.18	0.7
Total		$10.21	37.9
Storing and Selling costs:***			
Use of buildings		$4.22	15.7
Labor and equipment		1.11	4.1
Baling		.93	3.5
Other storing and selling costs		.20	.7
Total		$6.46	24.0
Grand Total Cost		$26.91	100.0

Returns per acre for hay	$31.18	Net cost per ton	$12.76
Returns per acre for pasture	.11	Value per ton	14.85
Total returns per acre	$31.29	Returns per hour of man labor	.75

*Of the 111 accounts, 32 were in Genesee, 14 in Onondaga, 13 in Monroe, 9 in Livingston, 7 in Cayuga, and 36 in 16 other counties.

**This year's share of the cost of seed, lime, fertilizer and labor and equipment for making the seeding.

***Does not cover the selling costs for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

Hay Other Than Alfalfa

A comparison of the results of the accounts with hay other than alfalfa for the period 1920 to 1926, with the results for the period 1914 to 1919 shows that there was very little change in the acres grown per farm, in yield, or in man hours per acre. However, production costs increased and prices decreased. This resulted in a decrease in the average return per hour of man labor from 91 cents to 30 cents (table 10). In the more recent years, 1927 to 1930, separate accounts have been kept with the different kinds of hay crops (table 11).

TABLE 10 - AVERAGES FROM ACCOUNTS WITH HAY OTHER THAN ALFALFA 1914-1926

Year	Number of accounts	Acres per farm	Yield, tons per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per ton	Value per ton	Profit or loss per ton	Man hours per acre	Return per hour of man labor
1914	17	41.2	1.2	$14	$16	$2	$11.76	$13.30	$1.54	9	$ .45
1915	45	35.1	1.3	15	18	3	11.63	13.32	1.69	11	.46
1916	31	42.9	1.9	18	20	2	9.56	10.29	.73	12	.42
1917	31	36.1	1.7	19	27	8	11.06	15.76	4.70	10	1.17
1918	31	40.5	1.6	23	31	8	14.50	19.29	4.79	10	1.14
1919	35	42.8	1.7	24	39	15	13.94	22.90	8.96	12	1.81
1920	32	37.9	1.4	27	30	3	18.63	20.43	1.80	10	.73
1921	33	40.4	1.2	23	22	- 1	18.59	17.53	-1.06	9	.25
1922	30	41.9	1.5	24	21	- 3	15.49	13.38	-2.12	11	.08
1923	26	42.8	1.6	24	25	1	14.95	15.34	.39	11	.43
1924	34	43.4	1.7	22	21	- 2	13.28	12.37	- .91	9	.24
1925	31	44.7	1.5	21	19	- 1	13.68	12.73	- .95	8	.20
1926	30	40.9	1.4	21	19	- 2	14.31	12.91	-1.40	9	.17
Averages:											
1914-1919	190	39.8	1.6	19	25	6	12.08	15.81	3.74	11	.91
1920-1926	216	41.7	1.5	23	22	1	15.56	14.96	- .61	10	.30

TABLE 11 - AVERAGES FROM ACCOUNTS WITH HAY * 1927-1930

	Number of accounts	Acres per farm	Yield, tons per acre	Cost per acre	Returns per acre	Profit or loss per acre	Cost per ton	Value per ton	Profit or loss per ton	Man Hours per acre	Return per hour of man labor
Clover											
1927	2	8.4	1.7	$30	$18	$-12	$17.28	$10.55	$-6.73	8	$-.86
1928	3	13.0	1.8	30	26	- 4	16.51	14.11	-2.40	10	-.05
1929	4	15.2	1.9	23	24	1	11.72	12.00	.28	7	.55
1930	7	14.1	1.7	24	21	- 3	13.72	12.41	-1.31	10	.22
Average --	16	12.7	1.8	27	22	- 5	14.81	12.27	-2.54	9	-.04
Clover and Timothy											
1927	19	36.3	1.5	21	16	- 5	13.19	9.82	-3.37	9	-.17
1928	27	27.1	1.6	20	17	- 3	12.37	10.54	-1.83	8	.07
1929	19	39.6	1.6	20	19	- 1	12.22	11.35	.87	9	.25
1930	15	31.7	1.5	19	21	2	12.20	13.52	1.32	8	.68
Average --	80	33.7	1.6	20	18	- 2	12.50	11.31	-1.19	8	.21
Timothy and Other Hay											
1927	3	80.6	1.3	15	12	- 3	10.94	8.75	-2.19	7	-.04
1928	9	22.8	1.6	22	18	- 4	13.44	10.89	-2.55	8	-.09
1929	4	37.6	1.1	24	17	- 7	21.22	14.47	-6.75	8	-.47
1930	12	28.7	1.4	19	18	- 1	13.82	13.43	- .39	8	.34
Average --	28	42.4	1.4	20	16	- 4	14.86	11.88	-2.98	8	-.06
Alfalfa Clover and Timothy											
1927	8	30.1	1.8	29	20	- 9	16.02	10.77	-5.25	14	-.22
1928	22	34.9	1.9	25	20	- 5	13.00	10.44	-2.56	9	-.11
1929	29	34.3	1.8	24	22	- 2	13.19	11.75	-1.44	10	.15
1930	21	27.5	1.7	24	24	0	13.93	14.07	.14	9	.45
Average --	80	31.7	1.8	26	22	- 4	14.04	11.76	-2.28	10	.07

*The method of classifying these hay accounts is explained in the footnote for Table 2.

As was indicated in Table 3, variations in the growing costs per acre for the different kinds of hay were small, and harvesting costs depended more on yield than on kind of hay. In general, growing costs accounted for about one-half; harvesting costs about one-third; and storage and selling costs about one-sixth of the total cost of these hay crops. Charges for labor and equipment accounted for about one-third of the total cost of each kind of hay. Some of the items included in growing costs varied considerably with the different kinds of hay. For timothy, the seeding cost was only 1.6 per cent of the total cost, while for clover seeded alone, it was 13.5 per cent. Charges for manure accounted for from one-eighth to one-quarter of the total cost, and the charge for the use of land varied from one-fifth to one-quarter of the total cost. Detailed costs and some of the more important factors from these hay accounts for the four years, 1927 to 1930, are shown in tables 12, 13, 14, and 15.

TABLE 12 - DETAILED COSTS AND RETURNS FOR CLOVER HAY, 16 ACCOUNTS, 1927 - 1930 *
Acres per farm 12.7: Yield per acre 1.8 tons.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$6.59	24.7
Manure		3.58	13.4
Seeding		3.62	13.5
Other growing costs		.28	1.0
Total		$14.07	52.6
Harvesting costs:			
Man labor	8.6 hours	$3.85	14.5
Horse labor	8.6 hours	2.20	8.2
Tractor and tools		.59	2.2
Other equipment		1.48	5.5
Other harvesting costs		.13	.5
Total		$8.25	30.9
Storing costs:			
Use of buildings		4.37	16.4
Other storing costs		.03	.1
Total		$4.40	16.5
Grand Total Cost		$26.72	100.0

Returns per acre for hay	$21.92	Net cost per ton	$14.63
Returns per acre for pasture	.39	Value per ton	12.18
Total returns per acre	$22.31	Returns per hour of man labor	-.04

* Accounts with clover hay are for seedings of clear clover only, intended as a one year crop. Of the 16 accounts, 7 were in Genesee, 4 in Livingston, and 5 in 3 other counties.

TABLE 13 - DETAILED COSTS AND RETURNS FOR CLOVER AND TIMOTHY HAY, 80 ACCOUNTS,* 1927 - 1930

Acres per farm 33.7; Yield per acre 1.6 tons.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$4.09	20.5
Manure		4.05	20.1
Seeding **		1.74	8.5
Other growing costs		.27	1.3
Total		$10.15	50.4
Harvesting costs:			
Man labor	8.0 hours	3.30	16.5
Horse labor	8.8 hours	1.68	8.3
Tractor and tools		.21	1.0
Other equipment		1.11	5.5
Other harvesting costs		.12	.6
Total		$ 6.43	31.9
Storing and Selling costs:***			
Use of buildings		2.89	14.5
Labor and equipment		.29	1.4
Baling		.31	1.5
Other growing and selling costs		.07	0.3
Total		$3.56	17.7
Grand total cost		$20.14	100.0

Returns per acre for hay	$17.81	Net cost per ton	$12.33
Returns per acre for pasture	.41	Value per ton	11.13
Total returns per acre	$ 18.25	Returns per hour man labor	.21

*Of the 80 accounts, 16 were in Genesee, 10 in Washington, 7 in Steuben, 6 in Onondaga, 5 in Dutchess, 5 in Cayuga, and 31 in 15 other counties. These accounts include the first 3 crops from seedings of clover with timothy.

** This year's share of the cost of seed, lime, fertilizer, and labor and equipment for making the seeding.

*** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

TABLE 14 - DETAILED COSTS AND RETURNS FOR TIMOTHY AND OTHER HAY, 28 ACCOUNTS, 1927-1930 *
Acres per farm 42.4: Yield per acre 1.4 tons

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$4.76	23.9
Manure		5.43	27.3
Seeding **		.31	1.6
Other growing costs		.25	1.2
Total		$10.75	54.0
Harvesting costs:			
Man labor	7.2 hours	3.00	15.1
Horse labor	8.3 hours	1.99	10.0
Tractor and tools		.07	0.4
Other equipment		1.06	5.4
Other harvesting costs		.12	.4
Total		$6.24	31.3
Storing and Selling costs* **			
Use of buildings		2.28	11.5
Labor and equipment		.30	1.5
Baling		.25	1.3
Other storing and selling costs		.09	.4
Total		$2.92	14.7
Grand total cost		$19.91	100.0

Returns per acre for hay	$15.91	Net cost per ton	$14.06
Returns per acre for pasture	.23	Value per ton	11.36
Total returns per acre	$16.14	Returns per hour man labor	- .06

*Of the 28 accounts, 9 were in Genesee, 6 in Orange, 4 in Monroe, and 9 in 6 other counties. These accounts include a few fields of clear timothy, clover and timothy seedings after the third year, and other old meadows.

** This year's share of the cost of seed, lime, fertilizer, and labor and equipment for making the seeding.

***Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

TABLE 15-DETAILED COSTS AND RETURNS FOR ALFALFA WITH CLOVER AND TIMOTHY, 80 ACCOUNTS, 1927-1930*
Acres per farm 31.7: Yield per acre 1.8 tons

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 5.59	22.0
Manure		4.27	16.7
Seeding **		2.47	9.5
Other growing costs		.32	1.2
Total		$12.65	49.4
Harvesting costs:			
Man labor	9.9 hours	4.29	16.8
Horse labor	10.8 hours	2.22	8.7
Tractor and tools		.40	1.6
Other equipment		1.32	5.1
Other harvesting costs		.19	.7
Total		$8.42	32.9
Storing and Selling costs:***			
Use of buildings		3.48	13.7
Labor and equipment		.24	.9
Baling		.24	.9
Other storing and selling costs		.56	2.2
Total		$4.52	17.7
Grand total cost		$25.59	100.0

Returns per acre for hay	$21.18	Net cost per ton	$14.08
Returns per acre for pasture	.24	Value per ton	11.77
Total returns per acre	$21.42	Returns per hour of man labor	.07

*Of the 80 accounts, 37 were in Genesee, 11 in Monroe, 10 in Livingston, and 22 in 10 other counties. These accounts are for seedings of alfalfa with clover or timothy, and fields of these crops grown separately but included in a general hay account.

** This year's share of the cost of seed, lime, fertilizer, and labor and equipment for making the seeding.

*** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

Corn Silage

According to the United States Census for New York, the only crops showing any material increases in acreage in the past 20 years are corn silage and alfalfa. In 1909, the acreage of corn silage accounted for 2.9 per cent of the total acreage of all crops, and in 1929, it was 4.9 per cent (table 16). Many farmers who formerly husked corn now put the crop in the silo.

TABLE 16- ACRES OF CORN ON NEW YORK FARMS
United States Census Data

Years	Corn Silage		Corn for Grain	
	Acres	Per cent of total crop acreage	Acres	Per cent of total crop acreage
1909	259,118*	2.9	512,442	5.8
1919	329,314**	3.8	320,325	3.7
1929	340,087	4.9	110,694	1.6

* "Coarse forage" mostly corn for the silo.
** Includes all silage crops, but is largely corn.

Cost accounts with corn silage for the period 1914 to 1930 show a wide range in the cost per ton. Yearly averages varied from $5.16 a ton in 1914, to $10.31 a ton in 1918. Since 1916, there has been only one year when the average cost per ton of corn silage has been less than $6.00 and there were 8 years when the average cost per ton exceeded $8. Significant trends concerning the corn silage crop on farms with cost accounts are increases in yield, and decreases in the hours of man labor per acre, and in the cost per ton (table 17).

TABLE 17 - AVERAGES FROM ACCOUNTS WITH CORN SILAGE 1914-1930

Years	Number of accounts	Acres per farm	Yield, tons per acre	Man hours per acre	Cost per acre	Cost per ton
1914	11	13.5	7.3	41	$38	$5.16
1915	26	12.1	7.1	45	40	5.58
1916	18	14.7	4.9	29	38	7.77
1917	18	14.6	4.8	33	45	9.38
1918	20	12.9	6.2	39	65	10.31
1919	26	11.0	8.1	43	68	8.04
1920	25	12.9	6.8	35	63	8.89
1921	24	11.4	10.1	42	69	6.61
1922	22	11.9	6.8	38	60	8.30
1923	20	12.2	7.1	38	61	8.63
1924	23	11.9	6.8	32	54	7.82
1925	19	10.6	10.1	37	62	5.97
1926	16	10.3	7.3	39	60	8.20
1927	45	8.6	8.4	35	64	7.57
1928	37	10.4	7.0	30	57	8.21
1929	35	11.9	7.6	32	58	7.65
1930	33	11.9	7.2	29	51	7.04
Averages:						
1914-1919	119	13.1	6.4	38	49	7.71
1920-1924	114	12.1	7.5	37	61	8.05
1925-1929	152	10.4	8.1	35	60	7.52

With 10.7 acres per farm and a yield of 7.6 tons per acre, the average cost of producing silage during the 4 years 1927 to 1930, was $57.64 an acre, or $7.58 a ton. Growing costs accounted for 69 per cent of the total, harvesting costs for 25 per cent, and storage costs for 6 per cent. Charges for labor and equipment made up 57 per cent of the total

cost. Other important items of cost were for manure, which amounted to 22 per cent of the total and for use of land, which was 9 per cent (table 18).

TABLE 18 - DETAILED COSTS AND RETURNS FOR CORN SILAGE,150 ACCOUNTS, 1927-1930 *
Acres per farm 10.7: Yield per acre 7.6 tons

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.18	9.0
Manure		12.77	22.2
Fertilizer	105 pounds	1.29	2.2
Seed	12.0 quarts	1.26	2.2
Man labor	15.8 hours	6.58	11.4
Horse labor	23.0 hours	4.78	8.3
Tractor and tools	3.5 hours	3.68	6.4
Other equipment		2.74	4.8
Other growing costs		1.30	2.2
Total		$39.58	68.7
Harvesting costs:			
Man labor	15.7 hours	$6.67	11.6
Horse labor	13.6	2.94	5.1
Tractor and tools		1.38	2.4
Filling silo		1.17	2.0
Other equipment		1.71	3.0
Twine		.45	0.8
Other harvesting costs		.33	0.5
Total		$ 14.65	25.4
Storing costs:			
Use of silo		3.18	5.5
Other storing costs		.23	0.4
Total		$ 3.41	5.9
Grand total cost		$57.64	100.0
		Net cost per ton	$7.58

* Of the 150 accounts, 57 were in Genesee, 19 in Monroe, 11 in Livingston, 9 in Washington, 7 in Onondaga, 6 in Wyoming and 41 in 20 other counties.

Relation of Acreage of Corn Silage to Cost

The charges per acre for fertilizer, seed, twine, or other materials, and for the use of land may vary slightly with the acreage of corn silage, but are not dependent on it. Charges for labor and equipment, which make up more than half of the total cost of corn silage vary considerably with acreage. On farms with only 5.4 acres of corn silage, 25 per cent more man labor, and 30 per cent more horse labor were used per acre, and the charges for all labor and equipment were 25 per cent higher than on farms with 17.1 acres of silage (table 19).

TABLE 19 - RELATION OF ACREAGE OF CORN SILAGE TO THE LABOR AND EQUIPMENT COST OF GROWING AND HARVESTING, 150 ACCOUNTS, 1927-1930

	Low third in acreage	Middle third in acreage	High third in acreage
Acres per farm	5.4	8.7	17.1
Yield, tons per acre	7.4	7.7	7.6
Growing:			
Man hours per acre	18.0	16.9	14.6
Horse hours per acre	27.2	24.4	21.1
Tractor hours per acre	2.8	3.1	3.9
Labor and equipment cost per acre	$19.98	$18.86	$16.58
Harvesting:			
Man hours per acre	18.6	17.5	14.1
Horse hours per acre	15.7	14.6	12.6
Labor and equipment cost per acre	$15.09	$13.90	$11.45
Total labor and equipment cost for growing and harvesting an acre	$35.07	$32.76	$28.03

Relation of Yield of Corn Silage to Cost

Growers with high yields of corn silage spent more for seed, fertilizer, manure, and for labor and equipment to grow and harvest the crop. On farms with an average yield of 10.6 tons, growing and harvesting costs per acre were 30 per cent higher, but growing and harvesting costs per ton were 45 per cent lower than on farms with an average yield of only 4.5 tons per acre. The average acreage per farm in each group was practically the same (table 20).

TABLE 20 - RELATION OF YIELD PER ACRE OF CORN SILAGE TO COST, 150 ACCOUNTS, 1927-1930

	Low third in yield	Middle third in yield	High third in yield
Yield, tons per acre	4.5	7.7	10.6
Acres per farm	10.6	10.7	10.4
Growing:			
Cost of seed per acre	$1.21	$1.24	$1.35
Cost of fertilizer per acre	1.00	1.50	1.35
Cost of manure per acre	10.45	13.24	14.89
Cost of labor and equipment per acre	17.49	17.44	18.38
Cost to grow an acre	36.35	39.71	42.75
Harvesting:			
Man hours per acre	11.5	15.5	20.4
Horse hours per acre	10.7	14.1	16.3
Cost of labor and equipment per acre	$9.74	$12.80	$15.72
Cost of harvesting per acre	11.26	14.45	18.43
Cost to grow and harvest an acre	50.78	57.70	64.69
Cost to grow and harvest a ton	11.24	7.51	6.08

NEW YORK STATE COLLEGE OF AGRICULTURE

Department of Agricultural Economics and Farm Management

Farm Cost Accounting Project

RESULTS OF COST ACCOUNTS ON GRAIN CROPS

Detailed Costs and Returns, 1927-1930

Yearly Averages, 1914-1930

Prepared by

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November - 1931 Ithaca, N. Y.

10801-JFH-M-10/30/31

GRAIN CROPS

The United States Census for 1929 reported approximately 1,500,000 acres of grain crops harvested on New York farms. This was about 20 per cent of the total acreage of all crops. Gfain crops are decreasing in relative importance on New York farms as indicated by the fact that, in 1919, they accounted for 26 per cent of the acreage of all crops, and in 1909, for 29 per cent (table 1).

In 1929, the acreage of barley and wheat was less than in 1909, but each represented a slightly larger proportion of the total acreage of all crops. The largest decreases in the proportion of crop land utilized by the various grains were in corn and oats. In 1909, corn for grain represented 5.8 per cent of the total crop acreage, and in 1929, only 1.6 per cent. The acreage figures for oats are not exactly comparable because some mixed grains were included in the data for 1909 and 1919. However, the combined acreage of oats, barley, and other grain not reported separately, would represent a smaller proportion of the total crop acreage in 1929 than in 1909 or 1919.

TABLE 1 - ACREAGE OF GRAIN CROPS ON NEW YORK FARMS
(United States Census Data)

Crop Year	1909		1919		1929	
	Acres	Per cent of total crop acreage	Acres	Per cent of total crop acreage	Acres	Per cent-of totalcrop acreage
Barley	79,956	0.9	116,109	1.3	75,934	1.2
Buckwheat	286,276	3.2	217,946	2.5	171,044	2.5
Corn	512,442	5.8	320,325	3.7	110,694	1.6
Oats	1,302,508	14.6	1,066,030	12.2	635,744	9.1
Wheat(total)	289,089	3.3	463,461	5.2	238,874	3.4
Other Grain	130,598	1.5	115,661	1.3	---	*
Total	2,600,869	29.3	2,299,532	26.2	-----	*

*Mixtures of spring grains not reported separately, and other grains would probably make the total acreage of grain crops about 20 per cent of the acreage of all crops.

Returns per Hour of Man Labor

The average cost of producing grain on New York farms for the years 1914 to 1930 has been higher than the value of the grain. Even during the period of rapidly rising prices from 1914 to 1919, the returns for the time spent on grain crops were low (table 2). For the next 10 years, 1920 to 1929, all of the grain crops with the exception of wheat, failed to pay any wage for the time spent on them. Wheat was the only grain crop, which, for any length of time, had given a return per hour greater than the average wage paid for labor. From 1914 to 1919, the average return per hour of labor on wheat was 54 cents. Since 1920, wheat has been about as unprofitable as the other grain crops.

10803-JFH-M-10/30/31

TABLE 2 - AVERAGE RETURN PER HOUR OF MAN LABOR ON GRAIN CROPS

Crop	1914 to 1919	1920 to 1924	1925 to 1929	1930
Barley	$ .02	$-.20	$-.05	$-.23
Buckwheat	.13	-.07	-.35	-.67
Corn	.15	-.08	-.13	.10
Oats	.04	-.25	-.11	-.09
Oats and Barley			-.16	.16
Oats Barley and Peas			-.03	.20
Wheat	.54	-.09	.19	-.11

According to these records which farmers have been keeping, the acreage of grain crops which might be justified by actual profits would be small. However, grain is grown in New York not only as a cash crop, but also as a nurse crop for seedings, and for feed and bedding to be used on the farm.

In recent years, grain has occassionally been grown profitably by some men who have received unusually high yields, or who have been very efficient in producing and handling the crop, or who have been able to sell their grain for seed at exceptionally high prices. A very few growers who have been able to combine high yields, efficient methods, and good prices have made excellent returns on grain.

Relation of Yield to Costs and Returns

For the years 1927 to 1930, grain crops with high yields showed a fair return for the time spent on them. To give a return per hour of man labor of from 30 to 40 cents required yields of about 30 bushels of wheat, 40 bushels of barley, 50 bushels of mixed

spring grains, or 60 bushels of oats (table 3).

TABLE 3 - RELATION OF YIELD PER ACRE OF GRAIN TO RETURN PER HOUR OF MAN LABOR, 1927-1930.

	Low third in yield		Middle third in yield		High third in yield	
	Bushels per acre	Return per hour	Bushels per acre	Return per hour	Bushels per acre	Return per hour
Barley	17	$-.53	29	$-.09	42	$ .30
Oats	29	-.40	39	-.12	57	.23
Oats and barley	22	-.74	39	-.04	46	.29
Oats barley and peas	26	-.44	38	.10	49	.34
Wheat	12	-.62	20	-.21	30	.44

As the yield per acre of grain increased, the cost to harvest an acre also increased, but the harvesting cost did not increase at the same rate as the yield. Consequently, higher yields resulted in lower harvesting costs per bushel. In general, doubling the yield per acre reduced the cost to harvest a bushel of grain about one-third (table 4).

TABLE 4 - RELATION OF YIELD PER ACRE OF GRAIN TO COST OF HARVESTING 1927 - 1930

	Low third in yield			Middle third in yield			High third in yield		
	Bushels per acre	Cost of harvesting an acre	Cost of harvesting a bushel	Bushels per acre	Cost of harvesting and acre	Cost of harvesting a bushel	Bushels per acre	Cost of harvesting an acre	Cost of harvesting a bushel
Barley	17	$6.08	$ .36	29	$7.37	$ .26	42	$9.81	$ .24
Oats	29	7.63	.27	39	8.30	.21	57	10.59	.19
Oats and barley	22	6.32	.29	39	8.69	.22	46	9.73	.21
Oats, Barley & Peas	26	7.45	.28	38	9.10	.24	49	10.58	.22
Wheat	12	5.65	.45	20	6.76	.35	30	8.99	.30

Relation of Acreage to Costs and Returns

Another important factor in reducing the cost of grain is the acreage grown. Larger acreages result in lower costs per acre because the share of the overhead charges borne by each acre is less, and because a larger acreage usually means increasing the efficiency with which the work is done. In general, doubling the acreage of grain reduced the growing cost per acre about 12 per cent (table 5).

TABLE - 5 RELATION OF ACREAGE OF GRAIN TO COST PER ACRE 1927 - 1930

	Low third in acreage			Middle third in acreage			High third in acreage		
	Acres per farm	Cost to grow an acre	Cost to harvest an acre	Acres per farm	Cost to grow an acre	Cost to harvest an acre	Acres per farm	Cost to grow an acre	Cost to harvest an acre
Barley	4.1	$25.84	$9.21	9.6	$24.66	$8.42	21.4	$22.68	$7.04
Oats	4.7	31.09	9.78	10.8	25.35	9.16	24.1	20.60	8.29
Oats & barley	6.7	27.97	9.69	12.8	26.20	8.74	26.5	23.00	7.64
Oats, Barley and Peas	6.8	30.78	9.54	11.2	27.35	10.66	26.9	24.50	8.17
Wheat	7.9	31.99	8.87	16.5	28.66	7.78	36.6	22.94	6.22

Acreage is also important in reducing the cost of harvesting grain. This is due in part to the lower charge per acre for special harvesting and threshing equipment, and to the saving of time in doing the work. Doubling a small acreage reduced the cost of harvesting an acre only 5 per cent, while doubling a moderate acreage reduced the cost of harvesting an acre about 15 per cent. Combines were used on some of the larger acreages.

With large acreages of grain, the cost per acre and the loss per acre were less than with small acreages. However, when a smaller loss per acre is multiplied by a much larger number of acres, the total loss on the crop may be greater (tables 6 and 7).

With high yields, large acreages, and efficient methods, it is possible to reduce costs to a point where grain may be grown with a good profit.

TABLE - 6 RELATION OF YIELD AND ACREAGE OF WHEAT TO COSTS AND RETURNS, 153 Accounts, 1927 - 1930

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large acreage	Small acreage	Large acreage	Small acreage	Large acreage
Yield, bushels per acre	14	12	20	20	27	30
Acres per farm	10.0	30.9	9.9	29.0	8.3	31.2
Cost per acre	$37.40	$29.00	$41.57	$32.65	$49.05	$36.33
Return per acre	17.81	16.27	30.00	24.19	38.71	38.39
Profit or loss per acre	-$ 19.59	-$12.73	-$11.57	-$ 8.46	-$10.34	$ 2.06
Profit or loss for the enterprise	-$196	-$393	-$115	-$245	-$86	$64.
Return per hour of man labor	-$.77	-$.56	-$.21	-$.20	-$.04	$.61

TABLE - 7 RELATION OF YIELD AND ACREAGE OF OATS TO COSTS AND RETURNS, 106 Accounts, 1927 - 1930

	Low third in yield		Middle third in yield		High third in yield	
	Small acreage	Large acreage	Small acreage	Large acreage	Small acreage	Large acreage
Yield, bushels per acre	25	30	41	34	51	52
Acres per farm	7.1	21.2	5.9	18.0	5.4	20.8
Cost per acre	$34.48	$31.07	$41.87	$33.61	$43.04	$36.71
Return per acre	18.24	19.27	29.19	22.40	34.37	33.70
Loss per acre	-$16.24	-$11.80	-$12.68	-$11.21	-$ 8.67	-$ 3.01
Loss for the enterprise	-$116	-$250	-$74	-$202	-$47	-$63
Return per hour of man labor	-$ .63	-$ .32	-$ .14	-$ .30	$ .00	-$ .27

Grain for Feed and Bedding

Some kind of livestock is kept on most New York farms. This means that feed and bedding are necessary farm expenses, whether purchased or grown on the farms where needed. Some farmers, who have soil adapted to more profitable crops find it to their advantage to grow these other crops for sale and to purchase what grain and bedding they need. Others, who do not have soil adapted to the more profitable crops, may make more money by growing grain than by not growing it. To some farmers, a grain crop is worth the selling price, less the cost of making the sale; to others, the grain crop is worth what it would cost to buy the grain and straw and bring them to the farm. This difference in value may explain why a 35 bushel wheat yield may be profitable on a poultry farm and unprofitable on a crop farm.

There is not much difference between the cost of growing and harvesting an acre of the various grain crops, except for corn. The cost per acre for corn is about double the cost of other grains, because corn is a cultivated crop and requires considerable hand labor in harvesting. There is a considerable difference between the pounds of grain obtained ffom an acre of the different grain crops. Buckwheat furnished only 926 pounds per acre at a cost of $2.99 per 100 pounds, while oats barley and peas furnished 1668 pounds per acre at a cost of $1.84 per 100 pounds (table 8).

TABLE - 8 COST TO GROW AND HARVEST GRAINS 1927 - 1930

	Oats Barley and Peas	Oats and Barley	Barley	Oats	Wheat	Buckwheat	Corn
Cost to grow an acre	$25.78	$24.38	$23.60	$23.53	$26.14	$20.66	$43.58
Cost to harvest an acre	8.95	8.36	7.72	8.84	7.28	7.76	19.30
Total	$34.73	$32.74	$31.32	$32.37	$33.42	$28.42	$62.88
Value of straw and fodder per acre	3.96	3.62	2.26	3.14	3.06	.71	6.30
Cost of grain per acre	$30.77	$29.12	$29.06	$29.23	$30.36	$27.71	$56.58
Yield, bushels per acre	37.9	36.5	28.8	40.6	21.4	19.3	29.5
Pounds per bushel	44	40	48	32	60	48	56
Yield, pounds per acre	1668	1460	1382	1299	1284	926	1652
Cost to grow and harvest 100 pounds of grain	$1.84	$1.99	$2.10	$2.25	$2.36	$2.99	$3.42

Grain As A Nurse Crop

The growing of grain as a nurse crop for hay seedings is not absolutely necessary on many farms. Some farmers are now getting good seedings with peas, with other nurse crops, or with no nurse crop. However, grain and grass seed grow well together and offer the only opportunity on many farms of getting some crop from the land the same year that the grass seed is sown. With this combination it is much more important that a good seeding be obtained than a high yield of grain. An increase of 10 bushels an acre in the yield of barley might give an added return that year of $8. If this increased yield should result in a 10 per cent decrease in the stand of the alfalfa seeding, the loss on the seeding would be much greater than the gain in barley, because the grain is a one year crop, while the

alfalfa may be harvested for several years. The kind of grain and the amount of seed used should depend upon its effect on the hay seeding. This will vary with localities, with farms, and with different fields on the same farm.

Barley

Accounts with barley were for small acreages, averaging about 9 acres per farm. Yields varied from an average of 17 bushels in 1916, to 36 bushels in 1930, with an average of 26 bushels per acre for the entire period. The cost per acre varied from $28 to $45, with an average of about $35. The lower cost per bushel in recent years was due chiefly to higher yields, larger acreages, and fewer man hours per acre. In only 3 of the 17 years have returns from the barley crop been high enough to pay all costs including labor (table 9).

With an average of about 12 acres per farm, and a yield of 29 bushels per acre, the average cost per acre of barley, for the 4 years 1927 to 1930, was $33.82. Of this total cost, 70 per cent was for growing, 23 per cent was for harvesting, and 7 per cent was for storing and selling. About one-half of the total cost was for labor and equipment, and a little over one-third was for the use of the land and the nutrients which were applied to it in the form of lime, manure and fertilizer (table 10).

The average cost of the barley crop for the 4 years, 1927 to 1930, exceeded average returns by $7.55 an acre. If no charge were made for man labor, the costs would still exceed returns by $1.23 an acre.

TABLE - 9 AVERAGES FROM ACCOUNTS WITH BARLEY, 1914 - 1930

Year	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	2	5.4	18	$31	$18	-$13	$1.55	$ .86	-$.69	20	-$.37
1915	10	6.2	35	28	28	0	.64	.65	.01	25	.26
1916	5	8.5	17	31	18	- 13	1.74	.98	- .76	23	- .26
1917	7	6.6	26	41	43	2	1.40	1.48	.08	26	.43
1918	11	10.3	32	41	35	- 6	1.15	.97	- .18	20	.10
1919	5	12.9	23	45	37	- 8	1.78	1.43	- .35	19	- .03
1920	5	7.2	24	39	25	- 14	1.51	.90	- .61	19	.34
1921	8	5.5	19	39	17	- 22	1.84	.72	-1.12	21	- .64
1922	4	5.2	18	39	18	- 21	2.06	.84	-1.22	22	- .56
1923	6	4.9	28	29	26	- 3	.88	.76	- .12	18	.15
1924	8	9.1	31	35	36	1	.96	.98	.02	18	.40
1925	7	7.2	33	36	32	- 4	.98	.86	- .12	20	.20
1926	9	13.7	22	33	20	- 13	1.39	.80	- .58	17	- .40
1927	26	9.5	34	33	31	- 2	.91	.84	- .07	14	.23
1928	23	12.3	25	33	26	- 7	1.21	.93	- .28	15	- .07
1929	22	13.1	21	34	24	- 10	1.46	1.02	- .44	15	- .22
1930	20	12.7	36	36	25	- 11	.93	.61	- .32	17	- .23
Averages:											
1914-1919	40	8.3	25	$36	$30	-$6	$ 1.38	$1.06	-$.32	22	$ .02
1920-1924	31	6.2	24	36	24	-12	1.45	.84	- .61	20	- .20
1925-1929	87	11.2	27	34	27	- 7	1.19	.89	- .30	16	- .05

TABLE 10- DETAILED COSTS AND RETURNS FOR BARLEY, 91 Accounts, 1927 - 1930*
Acres per farm 11.8; Yield per acre 28.8 bu. grain, .5 tons straw

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.45	16.1
Lime and manure		5.14	15.2
Fertilizer	154 pounds	1.50	4.5
Seed	2.0 bushels	2.34	6.9
Man labor	6.5 hours	2.71	8.0
Horse labor	8.8 hours	1.59	4.7
Tractor and tools	2.8 hours	3.28	9.7
Other equipment		1.06	3.1
Other growing costs		.53	1.6
Total		$23.60	69.8
Harvesting costs:			
Man labor	7.9 hours	$3.26	9.6
Horse labor	5.4 hours	1.04	3.1
Tractor and tools		.46	1.4
Threshing and combining		1.91	5.6
Other equipment		.71	2.1
Twine		.31	0.9
Other harvesting costs		.03	0.1
Total		$7.72	22.8
Storing and Selling costs:**			
Use of buildings		$1.42	4.2
Certification		.25	0.7
Man labor	0.8 hours	.35	1.0
Horses and equipment		.12	0.4
Other storing and selling costs		.36	1.1
Total		$2.50	7.4
Grand total cost		$33.82	100.0

Returns per acre from grain	$24.01	Net cost per bushel	$1.10
Returns per acre from straw	2.26	Value per bushel	.83
Total returns	$26.27	Returns per hour of man labor	- .08

* Of the 91 barley accounts, 43 were in Genesee, 12 in Onondaga, 12 in Livingston, 10 in Monroe, and 14 in other counties.

** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

Buckwheat

Buckwheat was formerly grown as a cash crop in various parts of New York, but has largely been displaced on the better soils by more profitable crops. The few accounts with buckwheat in recent years are not typical for areas where this crop is included in the regular cropping system. They represent largely, an attempt to get something in return for what has been done in plowing and fitting land intended for other uses. Averages from accounts with buckwheat for 17 years, 1914 to 1930 are shown in table 11.

TABLE 11 - AVERAGES FROM ACCOUNTS WITH BUCKWHEAT, 1914 - 1930

	Number of Accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	6	6.0	19	$20	$15	-$ 5	$1.03	$ .73	-$.30	24	$.02
1915	12	8.8	17	19	15	- 4	1.04	.79	- .25	22	.05
1916	10	6.4	9	21	13	- 8	2.20	1.27	- .93	21	- .11
1917	10	3.5	17	26	33	6	1.47	1.84	.37	20	.68
1918	12	4.9	12	33	16	- 17	2.65	1.22	-1.43	22	- .42
1919	7	8.2	22	32	34	2	1.34	1.45	.11	20	.57
1920	7	6.8	14	28	16	- 12	1.82	.96	- .85	17	- .28
1921	2	3.0	27	39	27	- 12	1.17	.73	- .44	31	- .03
1922	2	13.6	19	23	16	- 7	1.10	.75	- .36	20	- .01
1923	4	11.6	14	27	14	- 13	1.76	.85	- .90	20	- .30
1924	6	9.2	21	26	24	- 2	1.10	1.02	- .07	18	.27
1925	4	9.5	18	25	16	- 9	1.19	.71	- .48	19	- .10
1926	6	10.8	14	28	13	- 14	1.81	.82	- .99	17	- .45
1927	10	7.4	20	33	15	- 18	1.61	.72	- .89	21	- .47
1928	8	4.6	19	33	16	- 17	1.74	.83	- .91	16	- .62
1929	7	5.0	17	25	18	- 7	1.41	1.02	- .39	13	- .10
1930	4	11.8	22	29	12	- 14	1.32	.64	- .68	13	- .67
Averages: 1914-19	57	6.3	16	$25	$21	-$ 4	$ 1.62	$1.22	-$.40	22	$.13
1920-1924	21	8.8	19	29	19	- 9	1.39	.86	- .52	21	- .07
1925-1929	35	7.5	18	29	16	- 13	1.55	.82	- .73	17	- .35

With an average of about 7 acres per farm, and a yield of 19 bushels, the average cost per acre for buckwheat for the years 1927 to 1930 was $29.98. Of this total cost, 69 per cent was for growing, 26 per cent was for harvesting, and 5 per cent was for storing and selling. A little over one-half of the total cost was for labor and equipment, and nearly one-third was for the use of land and the lime, manure, and fertilizers applied on it (table 12).

The average cost of the buckwheat crop for the 4 years, 1927 to 1930, exceeded average returns by $14.03 an acre. If no charge were made for man labor, the costs would still exceed returns by $7.53 an acre.

Corn

New York farmers can grow corn and get fairly good yields, but they cannot as a rule make any money on this crop. Averages for the 17 years, 1914 to 1930, show losses on this crop every year. During this period the best average wage earned on corn was 29 cents an hour in 1919 (table 13). The difference in the average cost of a bushel and the average value of a bushel of corn, for the 10 year period 1920 to 1929, was about $1.00. With corn at $1.00 a bushel, it would require about twice the yield actually obtained to make a profit on this crop.

TABLE 12 - DETAILED COSTS AND RETURNS FOR BUCKWHEAT, 29 ACCOUNTS, 1927-1930 *
Acres per farm 7.2; Yield per acre 19.3 bu. grain, .4 tons straw

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$4.45	14.9
Lime and manure		4.50	15.1
Fertilizer	48 pounds	.46	1.5
Seed	1.3 bushels	1.50	5.0
Man labor	7.6 hours	3.10	10.4
Horse labor	8.7 hours	1.42	4.7
Tractor and tools	3.6 hours	3.55	11.8
Other equipment		1.28	4.3
Other growing costs		.40	1.3
Total		$20.66	69.0
Harvesting costs:			
Man labor	7.8 hours	$3.18	10.6
Horse labor	6.0 hours	1.20	4.0
Tractor and tools		.56	1.9
Threshing and combining		1.62	5.4
Other equipment		.95	3.2
Twine		.20	0.7
Other harvesting costs		.05	
Total		$7.76	25.8
Storing and Selling costs:**			
Use of buildings		.76	2.6
Man labor	.5 hours	.22	0.7
Horses and equipment		.34	1.1
Other storing and selling costs		.24	0.8
Total		$1.56	5.2
Grand total cost		$29.98	100.0

Returns per acre from grain	$15.24	Net cost per bushel	$1.52
Returns per acre from straw	.71	Value per bushel	.79
Total returns per acre	$15.95	Returns per hour of man labor	.47

* Of the 29 buckwheat accounts, 9 were in Genesee, 5 in Steuben, 4 in Onondaga, 3 in Cayuga, and 8 in other counties.

** Does not cover the selling cost for the entire crop. Some of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

TABLE 13 - AVERAGES FROM ACCOUNTS WITH CORN FOR GRAIN, 1914 - 1930

Year	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Loss per acre	Cost per bushel	Value per bushel	Loss per bushel	Man hours per acre	Return per hour of man labor
1914	6	8.2	37	$42	$34	-$8	$.88	$.66	-$.22	70	$.14
1915	25	5.5	27	41	29	-12	1.19	.75	- .44	64	.08
1916	10	7.2	21	45	29	-16	1.77	1.01	- .76	53	.00
1917	13	6.4	23	53	47	- 6	1.79	1.51	- .28	60	.25
1918	11	5.3	31	73	53	-20	2.07	1.44	- .63	83	.16
1919	8	8.7	42	82	70	-12	1.74	1.46	- .28	76	.29
1920	15	4.7	31	67	41	-26	1.88	1.06	- .82	60	.03
1921	14	5.7	44	77	41	-36	1.53	.72	- .81	76	- .05
1922	9	7.1	33	70	38	-32	1.94	.96	- .97	63	- .09
1923	4	10.7	29	69	33	-36	2.22	.98	-1.24	54	- .25
1924	9	8.7	36	72	50	-24	1.86	1.18	- .68	59	- .02
1925	11	7.7	38	70	40	-30	1.64	.85	- .79	65	- .08
1926	7	9.1	24	54	20	-33	2.04	.66	-1.38	43	- .36
1927	15	3.3	26	71	35	-36	2.37	1.02	-1.35	61	- .16
1928	12	3.7	34	64	40	-24	1.78	1.06	- .72	56	- .03
1929	10	4.3	31	66	40	-26	1.91	1.07	- .84	59	- .03
1930	8	3.4	27	72	47	-25	2.45	1.54	- .91	72	.10
Averages:											
1914-1919	73	6.9	30	$ 56	$44	-$12	$1.57	$1.14	-$.44	68	$.15
1920-1924	51	7.4	35	71	41	- 31	1.89	.98	- .90	62	- .08
1925-1929	55	5.6	30	65	35	- 30	1.95	.93	-1.02	57	- .13

With an average of about 4 acres per farm, and a yield of 30 bushels, the average cost per acre for corn for the 4 years, 1927 to 1930, was $68.28. Of this total cost, 64 per cent was for growing, 28 per cent was for harvesting, and 8 per cent was for storing and selling. Man labor was the most important item of cost accounting for 39 per cent of the total. Charges for horse labor and use of equipment were 28 per cent of the total cost, manure 13 per cent, use of land 8 per cent, and fertilizer 3 per cent (table 14).

The average cost of the corn crop for the 4 years, 1927 to 1930, exceeded average returns by $27.78 an acre. If no charge were made for man labor, the costs would still exceed the returns by $1.49 an acre.

Oats

Averages from accounts with oats for the 17 years, 1914 to 1930, show small increases in yield and cost per acre, and small decreases in acreage per farm and man hours per acre (table 15). Net returns from this crop varied from a profit of 3 cents a bushel in 1917, to a loss of 78 cents a bushel in 1921. An average yield of 54 bushels per acre in 1930 was the highest yield during this 17 year period, but was accompanied by the lowest value of 45 cents a bushel, making a loss of 17 cents a bushel. In 10 of the 17 years, the costs other than labor have exceeded the total returns from oats. In only 2 years have returns been high enough to cover all costs.

TABLE 14 - DETAILED COSTS AND RETURNS FOR CORN FOR GRAIN, 45 Accounts, 1927-1930 *
Acres per farm 3.7; Yield per acre 29.5 bushels grain, 1.2 tons stalks.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.76	8.4
Manure		8.78	12.9
Fertilizer	144 pounds	1.95	2.9
Seed	10.4 quarts	1.13	1.6
Man labor	25.2 hours	10.91	16.0
Horse labor	35.2 hours	6.64	9.7
Tractor and tools	2.8 hours	2.80	4.1
Other equipment		4.41	6.4
Other growing costs		1.20	1.8
Total		$43.58	63.8
Harvesting costs:			
Man labor	33.4 hours	$14.18	21.0
Horse labor	12.0 hours	2.25	3.3
Tractor and tools		.25	0.3
Husker		.46	0.6
Other equipment		1.71	2.5
Twine		.21	0.3
Other harvesting costs		.24	0.3
Total		$19.30	28.3
Storing and Selling costs:**			
Use of buildings		2.43	3.6
Certification		.34	0.4
Man labor	3.6 hours	1.20	1.8
Horses and equipment		.80	1.2
Other storing and selling costs		.63	0.9
Total		$5.40	7.9
Grand total cost		$68.28	100.0

Returns per acre from grain	$34.20	Net cost per bushel	$2.10
Returns per acre from stalks	6.30	Value per bushel	1.16
Total returns	$40.50	Returns per hour of man labor - .24	

* Of the 45 accounts, 17 were in Genesee, 6 in Livingston, 5 in Monroe, 5 in Dutchess, 4 in Cayuga, 4 in Onondaga, and 4 in other counties.

** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm and some accounts were closed before all of the crop was disposed of.

TABLE 15 - AVERAGES FROM ACCOUNTS WITH OATS, 1914-1930

	Number of accounts	Acres per farm	Yield bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	13	15.0	27	$26	$17	-$ 9	$ .84	$.52	-$.32	19	-$.20
1915	41	13.8	44	28	26	- 2	.53	.48	- .05	28	.18
1916	23	14.2	24	28	18	- 10	1.03	.61	- .42	20	- .24
1917	24	15.2	35	33	34	1	.81	.84	.03	22	.40
1918	28	14.9	48	41	41	0	.74	.74	.00	26	.39
1919	30	12.1	26	41	27	- 14	1.45	.90	- .55	21	- .29
1920	29	12.5	42	42	29	- 13	.88	.57	- .31	21	- .20
1921	21	13.9	25	36	17	- 19	1.28	.51	- .78	20	- .59
1922	20	13.1	27	37	18	- 19	1.21	.51	- .70	22	- .50
1923	19	13.2	35	30	24	- 6	.72	.54	- .18	19	.02
1924	22	12.7	41	36	27	- 7	.76	.59	- .17	19	.02
1925	15	11.3	47	36	28	- 9	.69	.50	- .19	20	- .05
1926	12	11.5	41	39	29	- 10	.86	.61	- .25	19	- .12
1927	24	9.6	48	38	33	- 5	.71	.60	- .11	21	.19
1928	32	13.2	39	35	30	- 5	.80	.66	- .14	16	.10
1929	25	13.8	22	33	18	- 15	1.44	.73	- .71	14	- .68
1930	25	15.5	54	37	27	- 10	.62	.45	- .17	18	- .09
Averages:											
1914-1919	159	14.2	34	$33	$27	-$ 6	$ .90	$ .68	-$.22	23	$.04
1920-1924	111	13.1	34	36	23	- 13	.97	.54	- .43	20	- .25
1925-1929	108	11.9	39	36	28	- 9	.90	.62	- .28	18	- .11

With an average of 13 acres per farm, and a yield of 41 bushels, the average cost per acre of oats for the 4 years, 1927 to 1930, was $35.65. Of this total cost, 66 per cent was for growing, 25 per cent was for harvesting, and 9 per cent was for storing and selling. The largest item of cost was for man labor which accounted for 21 per cent of the total. Equipment charges were 15 per cent of the total, and horse labor charges were 9 per cent. The charges for the use of land and for the manure and fertilizer applied on it were 34 per cent of the total (table 16).

The average cost of the oat crop for the 4 years, 1927 to 1930, exceeded average returns by $8.81 an acre. If no charge were made for man labor, the costs would still exceed the returns by $1.32 per acre.

TABLE 16 - DETAILED COSTS AND RETURNS FOR OATS, 106 Accounts, 1927 - 1930 *
Acres per farm 13.0; Yield per acre 40.6 bushels grain, .6 tons straw

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.12	14.4
Lime and manure		5.06	14.2
Fertilizer	154 pounds	1.92	5.4
Seed	2.3 bushels	1.98	5.6
Man labor	7.2 hours	3.15	8.8
Horse labor	11.0 hours	2.02	5.7
Tractor and tools	2.3 hours	2.48	7.0
Other equipment		1.36	3.8
Other growing costs		.44	1.1
Total		$23.53	66.0
Harvesting costs:			
Man labor	8.8 hours	$3.80	10.8
Horse labor	5.8 hours	1.14	3.2
Tractor and tools		.42	1.2
Threshing and combining		2.25	6.3
Other equipment		.87	2.4
Twine		.32	0.9
Other harvesting costs		.04	—
Total		$8.84	24.8
Storing and Selling costs:**			
Use of buildings		1.63	4.5
Certification		.18	0.5
Man labor	1.0 hours	.54	1.5
Horses and equipment		.34	1.0
Other storing and selling costs		.59	1.7
Total		$3.28	9.2
Grand total cost		$35.65	100.0

Returns per acre from grain	$23.70	Net cost per bushel	$ .80
Returns per acre from straw	3.14	Value per bushel	.58
Total returns	$26.84	Returns per hour of man labor	-.08

* Of the 106 accounts, 37 were in Genesee, 11 in Monroe, 10 in Livingston, 9 in Washington, 8 in Onondaga, 7 in Steuben, and 24 in 12 other counties.

** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm, and some accounts were closed before all of the crop was disposed of.

Mixed Spring Grains

As shown in table 8, there was little difference in the cost per acre for most of the spring grains, whether grown separately or in combination. Averages for the 6 years, 1925 to 1930, show larger losses on oats and barley than on oats barley and peas, due chiefly to a lower value per bushel for the oats and barley (tables 17 and 18).

TABLE 17 - AVERAGES FROM ACCOUNTS WITH OATS AND BARLEY, 1925-1930

	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Loss per acre	Cost per bushel	Value per bushel	Loss per bushel	Man hours per acre	Return per hour of man labor
1925	8	14.9	33	$31	$26	-$ 5	$.80	$.63	-$.16	20	$.11
1926	7	13.7	33	35	23	- 12	.96	.58	- .38	17	- .35
1927	26	15.7	43	37	31	- 6	.77	.62	- .15	16	.03
1928	21	14.4	32	34	27	- 7	.96	.74	- .22	16	- .03
1929	26	16.9	24	34	21	- 13	1.29	.74	- .55	13	- .57
1930	22	13.7	47	33	30	- 3	.62	.53	- .09	15	.16
Average: 1925-1930	110	14.9	35	$34	$26	-$ 8	$.90	$.64	-$.26	16	-$.11

TABLE 18 - AVERAGES FROM ACCOUNTS WITH OATS BARLEY AND PEAS, 1925-1930

	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1925	7	19.8	39	$37	$37	$. 0	$ .77	$.78	$.01	19	$.38
1926	8	17.5	27	33	19	- .14	1.10	.58	- .51	17	- .47
1927	28	13.3	40	36	32	- . 4	.81	.69	- .12	17	.12
1928	18	14.8	39	40	36	- . 4	.92	.80	- .12	17	.16
1929	15	15.6	24	33	20	- .13	1.24	.73	- .51	16	- .36
1930	10	18.1	49	36	32	- . 4	.65	.57	- .08	16	.20
Average: 1925-1930	86	16.5	36	$36	$29	-$. 7	$ .91	$.69	-$.22	17	$.01

With an average of 15 acres per farm, and a yield of about 35 bushels, the average cost per acre for oats and barley for the 4 years 1927 to 1930 was $34.56, and for oats barley amd peas $36.42. For both of these crops, 71 per cent of the total cost was for growing, 24 per cent was for harvesting, and 5 per cent was for storing (tables 19 and 20).

The average cost of the oat and barley crop for the 4 years 1927 to 1930 exceeded average returns by $7.60 an acre. If no charge were made for man labor, the costs would still exceed the returns by $1.27 an acre.

The average cost of the oat barley and pea crop for the 4 years, 1927 to 1930 exceeded average returns by $6.45 an acre. If no charge were made for labor, the returns would have exceeded other costs by 57 cents an acre. This amounts to a return of 3 cents an hour for the time spent on the crop.

TABLE 19 - DETAILED COSTS AND RETURNS FOR OATS AND BARLEY, 95 Accounts, 1927-1930 *
Acres per farm 15.2; Yield per acre 36.5 bushels grain, .7 tons straw.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.52	16.0
Lime and manure		5.82	16.9
Fertilizer	150 pounds	1.64	4.7
Seed	2.4 bushels	2.05	5.9
Man labor	6.8 hours	2.87	8.3
Horse labor	10.3 hours	2.08	6.0
Tractor and tools	2.2	2.45	7.1
Other equipment		1.17	3.4
Other growing costs		.78	2.3
Total		$24.38	70.6
Harvesting costs:			
Man labor	8.2 hours	$3.46	10.1
Horse labor	5.6 hours	1.19	3.5
Tractor and tools		.37	1.1
Threshing and combining		2.09	6.1
Other equipment		.80	2.3
Twine		.38	1.1
Other harvesting costs		.07	---
Total		$8.36	24.2
Storing costs:			
Use of buildings		$1.45	4.2
Other storing costs		.37	1.0
Total		$1.82	5.2
Grand total cost		$34.56	100.0

Returns per acre from grain	$23.34	Net cost per bushel	$.85
Returns per acre from straw	3.62	Value per bushel	.64
Total returns	$26.96	Returns per hour of man labor	.10

*Of the 95 accounts, 45 were in Genesee, 14 in Monroe, 6 in Washington, 5 in Ulster, and 25 in 11 other counties.

TABLE 20 - DETAILED COSTS AND RETURNS FOR OATS BARLEY AND PEAS, 71 Accounts, 1927-1930*
Acres per farm 15.4; Yield per acre 37.9 bushels grain, .8 tons straw.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.48	15.1
Lime and manure		5.16	14.2
Fertilizer	165 pounds	1.97	5.4
Seed	2.6 bushels	2.98	8.2
Man labor	7.4 hours	3.15	8.6
Horse labor	12.2	2.45	6.7
Tractor and tools	2.3	2.52	6.9
Other equipment		1.54	4.2
Other growing costs		.53	1.5
Total		$25.78	70.8
Harvesting costs:			
Man labor	8.9 hours	3.87	10.6
Horse labor	6.4	1.39	3.8
Tractor and tools		.35	1.0
Threshing and combining		2.01	5.5
Other equipment		.91	2.5
Twine		.37	1.0
Other harvesting costs		.05	0.1
Total		$8.95	24.5
Storing costs:			
Use of buildings		$1.37	3.8
Other storing costs		.32	0.9
Total		$1.69	4.7
Grand total cost		$36.42	100.0

Returns per acre from grain	$26.01	Net cost per bushel	$.86
Returns per acre from straw	3.96	Value per bushel	.69
Total returns	$29.97	Returns per hour of man labor	.03

* Of the 71 accounts, 37 were in Genesee, 8 in Onondaga, 7 in Monroe, 5 in Cayuga, 4 in Livingston, and 10 in 6 other counties.

Averages from accounts with wheat for the 17 years, 1914 to 1930, show little change in the acreage per farm and in the yield per acre. Costs and values have decreased in recent years. The most significant trend is in the man hours per acre. For the period 1914 to 1919, wheat required 25 man hours an acre, and for the period 1925 to 1929, only 17 hours (table 21). With the costs that have prevailed in recent years, about 35 bushels per acre of $1.00 wheat, or 50 bushels per acre of $.75 wheat would be necessary to pay all costs on this crop.

TABLE 21 - AVERAGES FROM ACCOUNTS WITH WHEAT, 1919-1930

Years	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1914	10	12.4	22	$29	$30	$1	$1.13	$1.18	$.05	22	$.30
1915	30	14.2	29	29	35	6	.81	1.01	.20	26	.49
1916	20	11.6	24	31	42	11	1.15	1.61	.46	23	.79
1917	18	15.2	23	38	52	14	1.43	2.03	.60	26	.91
1918	16	15.6	20	46	47	1	2.08	2.14	.06	26	.42
1919	24	14.9	19	49	46	- 3	2.30	2.16	- .14	25	.30
1920	19	14.9	26	51	59	8	1.74	2.05	.31	23	.80
1921	21	13.3	21	52	30	-22	2.25	1.20	-1.04	20	- .69
1922	12	18.0	20	44	29	-15	1.98	1.21	- .77	22	- .34
1923	14	16.2	25	44	31	-13	1.53	1.01	- .52	23	- .20
1924	15	18.7	18	41	32	- 9	2.05	1.55	- .51	20	- .04
1925	15	16.8	24	40	43	3	1.53	1.67	.14	18	.59
1926	14	14.5	27	42	42	0	1.40	1.41	.01	19	.49
1927	18	12.2	26	39	37	- 2	1.42	1.30	- .12	19	.29
1928	50	19.4	16	36	24	-12	2.10	1.34	- .76	15	- .33
1929	44	24.2	18	34	26	-10	1.73	1.31	- .42	14	- .08
1930	41	19.8	26	33	26	- 7	1.14	.87	- .27	13	- .11
Averages:											
1914-1919	118	14.0	23	$37	$ 42	$ 5	$1.48	$1.69	$.20	25	$.54
1920-1924	81	16.2	22	46	36	- 10	1.91	1.40	- .51	22	- .09
1925-1929	141	17.4	22	38	34	- 4	1.64	1.41	- .23	17	.19

With an average of 19 acres per farm, and a yield of 21 bushels per acre, the average cost per acre for wheat for the 4 years, 1927 to 1930 was $35.55. Of this total cost, 74 per cent was for growing, 20 per cent was for harvesting and 6 per cent was for storing and selling (table 22). The charge for man labor was the largest item of cost, accounting for 19 per cent of the total. Charges for horse labor and the use of equipment were 24 per cent of the total, use of land 16 per cent, manure 12 per cent, seed 9 per cent, and fertilizer 8 per cent.

The increased use of combines may reduce harvesting costs on wheat but will not change the wheat enterprise from an unprofitable one to a profitable one. For the 4 years, 1927 to 1930, the average cost to grow an acre of wheat was $26.14 and the total returns were $28.17. The margin of $2.00 an acre will not go far in covering harvesting, storing and selling costs.

The average cost of the wheat crop for the 4 years, 1927 to 1930, exceeded average returns by $7.38. If no charge were made for man labor, the costs would still exceed the returns by $.56 an acre.

TABLE 22 - DETAILED COSTS AND RETURNS FOR WHEAT, 153 Accounts, 1927 - 1930 *
Acres per farm 18.9; Yields per acre 21.4 bushels grain, .6 tons straw.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$5.76	16.2
Lime and manure		4.29	12.1
Fertilizer	197 pounds	2.66	7.5
Seed	2.1 bushels	3.06	8.6
Man labor	7.4 hours	3.27	9.2
Horse labor	10.3 hours	1.92	5.4
Tractor and tools	3.0 hours	3.11	8.7
Other equipment		1.25	3.5
Other growing costs		.82	2.3
Total		$26.14	73.5
Harvesting costs:			
Man labor	7.2 hours	3.19	9.0
Horse labor	4.4 hours	.90	2.6
Tractor and tools		.41	1.2
Threshing and combining		1.72	4.8
Other equipment		.72	2.0
Twine		.29	0.8
Other harvesting costs		.05	0.1
Total		$7.28	20.5
Storing and Selling costs:**			
Use of buildings		.88	2.5
Certification		.04	0.1
Man labor	0.8 hours	.36	1.0
Horses and equipment		.28	0.8
Other storing and selling costs		.57	1.6
Total		$2.13	6.0
Grand total costs		$35.55	100.0

Returns per acre from grain	$25.11	Net cost per bushel	$1.52
Returns per acre from straw	3.06	Value per bushel	1.17
Total returns	$28.17	Return per hour man labor	- .04

* Of the 153 accounts, 58 were in Genesee, 22 in Monroe, 19 in Livingston, 18 in Onondaga, 9 in Cayuga, and 27 in 10 other counties.

** Does not cover the selling cost for the entire crop. A large share of the crop was used on the farm and some accounts were closed before all of the crop was disposed of.

TABLE 23- SUMMARY OF AVERAGES FROM ACCOUNTS WITH GRAIN CROPS FOR YEARS 1927 - 1930

	Barley	Buckwheat	Corn	Oats	Oats and barley	Oats barley and peas	Wheat
Number of accounts	91	29	45	106	95	71	153
Acres per farm	11.8	7.2	3.7	13.0	15.2	15.4	18.9
Yield, bushels per acre	28.8	19.3	29.5	40.6	36.5	37.9	21.4
Cost to grow an acre	$23.60	$20.66	$43.58	$23.53	$24.38	$ 25.78	$26.14
Cost to harvest an acre	7.72	7.76	19.30	8.84	8.36	8.95	7.28
Total cost per acre	33.82	29.98	68.28	35.65	34.56	36.42	35.55
Total returns per acre	26.27	15.95	40.50	26.84	26.96	29.97	28.17
Net cost per bushel	1.10	1.52	2.10	.80	.85	.86	1.52
Value per bushel	.83	.79	1.16	.58	.64	.69	1.17
Man hours per acre	15.2	15.9	62.2	17.0	15.0	16.3	15.4
Returns per hour of man labor	-$.08	-$.47	-$.24	-$.08	-$.10	$.03	-$.04

NEW YORK STATE COLLEGE OF AGRICULTURE

Department of Agricultural Economics and Farm Management

Farm Cost Accounting Project

RESULTS OF COST ACCOUNTS ON FRUIT CROPS

Detailed Costs and Returns for Apples - 1927 - 1930

Yearly Averages, 1920 - 1930

Detailed Costs and Returns for Cherries, Peaches, Pears, 1930-

Prepared by

J. F. Harriott and L. M. Vaughan

November - 1931

Ithaca, N. Y.

FRUIT CROPS

Apples

According to the United States Census, there were 282,542 acres of apples on New York farms in 1929. This was about 70,000 acres less than in 1909. However, the total acreage of all crops was also much higher in 1909. Apples accounted for about 4 per cent of the acreage of all crops in 1929 and in 1909.

Averages from accounts with apples indicate that in recent years they have been one of the most profitable of all farm crops in New York. Profits per acre and net returns for man labor on apples for the 11 years 1920 to 1930, have been higher than on any other crop for which cost accounting data is available. On the average, for these 11 years, apples have paid 75 cents for each of the 89 hours of man labor spent on an acre. There were two years, 1923 and again in 1926, when the returns from apples were less than total costs, but even in these two years, the average returns per hour of labor were 25 and 37 cents respectively (table 1).

With an average of 25.2 acres of apples per farm, and with a yield of 140 bushels, the average cost per acre for the 4 years 1927 to 1930 was $101.56. All costs up to picking averaged $50.12 an acre, or 49 per cent of the total cost. Harvesting costs averaged $19.11 an acre or 19 per cent of the total cost. The picked fruit was handled in various ways, so that averages on packing, storing, and selling costs have little significance. Such of these costs as were included in these accounts averaged $32.33 an acre or 32 per cent of the total cost (table 2). If all apples had been graded and packed at the growers expense, both costs and selling prices would have been higher.

TABLE 1 - AVERAGES FROM ACCOUNTS WITH APPLES, 1920-1930

Year	Number of accounts	Acres per farm	Yield, bushels per acre	Cost per acre	Return per acre	Profit or loss per acre	Cost per bushel	Value per bushel	Profit or loss per bushel	Man hours per acre	Return per hour of man labor
1920	11	16.5	278	$190	$207	$17	$ .67	$.73	$ .06	115	$ .69
1921	9	19.3	111	98	121	23	.83	1.04	.21	75	.79
1922	10	20.3	241	114	167	53	.46	.68	.22	93	1.06
1923	4	37.8	151	125	101	- 24	.80	.64	- .16	107	.25
1924	7	27.6	108	79	104	25	.71	.94	.23	71	.82
1925	5	17.4	138	85	106	21	.60	.75	.15	77	.73
1926	8	22.2	213	147	136	-11	.65	.60	- .05	119	.87
1927	13	22.0	97	81	116	35	.83	1.20	.37	70	.95
1928	11	26.0	176	117	179	62	.66	1.02	.36	96	1.09
1929	16	24.0	120	92	122	30	.76	1.02	.26	73	.88
1930	19	28.7	169	117	134	17	.69	.80	.11	82	.66
Averages:											
1920-1924	41	24.3	178	121	140	19	.69	.81	.12	92	.72
1925-1929	53	22.3	149	104	132	28	.70	.92	.22	87	.80

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TABLE 2 – DETAILED COSTS AND RETURNS FOR APPLES, 59 ACCOUNTS, 1927 – 1930 *
Acres per farm 25.2; Yield per acre 140 bushels

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$13.75	13.7
Lime, manure and cover crops		4.28	4.2
Fertilizer	48 pounds	1.36	1.3
Trees (replacements)		.22	.2
Spray and dust		8.31	8.2
Man labor	28.7 hours	13.14	12.9
Horse labor	12.7 hours	2.61	2.6
Tractor and tools	1.0 hours	.94	.9
Other equipment		2.78	2.7
Other growing costs		2.73	2.7
Total		$50.12	49.4
Harvesting costs:			
Man labor	35.9 hours	15.99	15.7
Horse labor	4.8 hours	.84	.8
Truck		.90	.9
Other equipment		1.18	1.2
Other harvesting costs		.20	.2
Total		$19.11	18.8
Storing and Selling costs:**			
Use of buildings		1.21	1.2
Labor and equipment		1.00	1.0
Packing and containers		29.00	28.5
Other storing and selling costs		1.12	1.1
Total		$32.33	31.8
Grand total cost		$101.56	100.0

Returns per acre	$138.02	Cost per bushel	$ .74
Returns per hour of man labor	.90	Value per bushel	1.01

*Of the 59 accounts, 16 were in Monroe, 7 in Orleans, 6 in Wyoming, 6 in Orange, and 24 in 10 other counties.

**Does not cover the selling costs for the entire crop. Some of the accounts were closed before all of the crop was disposed of.

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Relation of Yield and Acreage of Apples to Costs and Returns

As yield per acre of apples increased, the hours of man and horse labor and the cost to harvest an acre increased, but the cost to harvest a bushel decreased. With an average yield of 88 bushels of apples per acre, about 28 man hours were required to harvest 100 bushels, and with a yield of 210 bushels per acre, about 24 man hours were required per 100 bushels. With the low yields, the cost to harvest a bushel was 3 cents more than with the high yields,(table 3).

TABLE 3 - RELATION OF YIELD PER ACRE OF APPLES TO HARVESTING COST,59 ACCOUNTS,1927-1930

	Low third in yield	Middle third in yield	High third in yield
Acres per farm	25.5	28.4	22.3
Yield, bushels per acre	88	145	210
Man hours to harvest an acre	24.5	37.2	49.2
Horse hours to harvest an acre	2.5	5.2	6.6
Cost to harvest an acre	$12.83	$20.29	$25.50
Cost to harvest a bushel	.15	.14	.12

High yields paid better than moderate yields whether on small or large acreages (table 4). However, the largest total profits on apples were made on the large acreages with good yields. If yields as good as those obtained on most of these farms could be maintained on a larger acreage, profits in the long run, could probably be increased more by adding acreage than by further increasing yield per acre.

TABLE 4-RELATION OF YIELD PER ACRE AND ACREAGE OF APPLES TO COSTS AND RETURNS, 59 ACCOUNTS, 1927 - 1930

	Acreage less than average of all accounts			Acreage larger than average of all accounts		
	Low third in yield	Middle third in yield	High third in yield	Low third in yield	Middle third in yield	High third in yield
Acres per farm	12.2	17.1	10.7	34.6	46.2	32.9
Yield, bushels per acre	87	132	203	78	136	211
Cost per acre	$75	$92	$114	$94	$99	$130
Returns per acre	62	111	225	96	136	179
Profit or loss per acre	-$13	$19	$111	$ 2	$37	$ 49
Profit or loss for the enterprise	- $159	$333	$1183	$72	$1676	**$1589**
Man hours per acre	68	78	107	54	79	97
Returns per hour of man labor	$.27	$.73	**$1.47**	$.56	$.88	$.94

Cherries

With 4.8 acres of cherries per farm, and a yield of 6071 pounds, the average cost per acre on 5 farms in 1930 was $136.93. Of this total cost, 37 per cent was for care of the trees and growing the crop, and 61 per cent was for harvesting the crop. The cost of man labor for growing and harvesting the crop was two-thirds of the total cost. Other important items of cost were, use of land which was 8 per cent, and spray and dust materials 6 per cent. Returns of $329.12 an acre in 1930 paid all other costs and gave $1.06 for each hour of man labor on the enterprise (table 5).

TABLE 5 - DETAILED COSTS AND RETURNS FOR CHERRIES, 5 ACCOUNTS, 1930 *
Acres per farm 4.8; Yield per acre 6081 pounds

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$ 11.00	8.0
Manure		2.37	1.7
Fertilizer	195 pounds	2.74	2.0
Trees		5.52	4.0
Spray and dust		7.80	5.7
Man labor	21.9 hours	9.25	6.8
Horse labor	7.5 hours	3.07	2.3
Tractor tools	4.9 hours	3.36	2.5
Other equipment		2.78	2.0
Other growing costs		2.90	2.1
Total		$50.79	37.1
Harvesting costs:			
Man labor	243 hours	$82.45	60.2
Horse labor	7.5 hours	.21	0.2
Truck labor		.04	0.0
Other equipment		.25	0.2
Other harvesting costs		.41	0.3
Total		$83.36	60.9
Storing and Selling costs:			
Use of buildings		$ .21	0.1
Labor and equipment		1.49	1.1
Other storing and selling costs		1.08	0.8
Total		$ 2.78	2.0
Grand total cost		$136.93	100.0

Returns per acre	$329.12	Cost per hundred pounds	$2.26
Return per hour of labor	1.06	Value per hundred pounds	5.42

*Three accounts were in Monroe, one in Orleans and one in Wayne Counties.

Peaches

With an average of 10.8 acres of peaches per farm and a yield of 122 bushels, the average cost per acre on 6 farms in 1930 was $94.77. Of this total cost, 42 per cent was for care of the trees and growing the crop, 19 per cent was for harvesting the crop, and 39 per cent was for packing, storing and selling the fruit. The cost of containers plus the charges for packing averaged $34.50 an acre, or more than one-third of the total cost. Man labor for growing and harvesting the crop accounted for more than one-fourth of the total cost. Other important items of cost were use of land, which was 12 per cent of the total, fertilizer, 5 per cent, and spray and dust materials 4 per cent. Returns of $130.39 per acre in 1930 paid all other costs and gave a return of 94 cents for each hour of man labor on the enterprise (table 6).

Pears

With 3.6 acres of pears per farm and a yield of 99 bushels, the average cost per acre on 4 farms in 1930 was $61.04. Growing costs accounted for two-fifths of the total costs, harvesting costs for about one-third, and storing and selling costs about one-quarter. The cost of man labor to grow and harvest the crop accounted for 38 per cent of the total cost, and the containers plus the cost of packing were 22 per cent of the total. Other important items were use of land, 12 per cent; manure and cover crops 9 per cent; and spray or dust materials, 6 per cent. Returns of $65.07 per acre in 1930 paid all other costs and gave 42 cents for each hour of man labor on the enterprise (table 7).

TABLE 6 - DETAILED COSTS AND RETURNS FOR PEACHES, 6 ACCOUNTS - 1930 *
Acres per farm 10.8; Yield per acre 122 bushels

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$11.02	11.6
Manure		.76	0.8
Fertilizer	164 pounds	4.43	4.7
Trees (replacements)		.49	0.5
Spray and dust		4.20	4.4
Man labor	24.2 hours	10.20	10.8
Horse labor	12.3 hours	2.42	2.6
Tractor tools	2.0 hours	1.84	1.9
Other equipment		1.56	1.7
Other growing costs		2.79	2.9
Total		$39.71	41.9
Harvesting costs:			
Man labor	37.5 hours	15.60	16.5
Horse labor	4.4 hours	.74	0.8
Truck		.26	0.3
Other equipment		.70	0.7
Other harvesting costs		.28	0.3
Total		$17.58	18.6
Storing and Selling costs:			
Use of buildings		$ 1.51	1.6
Labor and equipment		.35	0.4
Packing and containers		34.50	36.4
Other storing and selling costs		1.12	1.1
Total		$37.48	39.5
Grand total cost		94.77	100.0

Returns per acre	$130.39	Cost per bushel	$ .78
Returns per hour of labor	.94	Value per bushel	1.07

*Three of these accounts were in Monroe, 2 in Orange, and 1 in Orleans County.

TABLE 7 - DETAILED COSTS AND RETURNS FOR PEARS, 4 ACCOUNTS - 1930 *
Acres per farm 3.6; Yield per acre 99 bushels.

	Quantity per acre	Value per acre	Per cent
Growing costs:			
Use of land		$7.15	11.7
Manure		5.63	9.2
Fertilizer	7 pounds	.21	0.4
Spray and dust		3.68	6.0
Man labor	10.2 hours	3.68	6.0
Horse labor	6.8 hours	1.32	2.2
Tractor and tools	0.6 hours	.49	0.8
Other equipment		1.94	3.2
Other growing costs		.69	1.1
Total		$24.79	40.6
Harvesting costs:			
Man labor	52.9 hours	19.73	32.3
Horse labor	5.3 hours	.97	1.5
Truck		.83	1.4
Other equipment		.83	1.4
Other harvesting costs		.00	0.0
Total		$22.36	36.6
Storing and Selling costs:			
Use of buildings		.07	0.1
Labor and equipment		.00	0.0
Packing and containers		13.68	22.5
Other storing and selling costs		.14	0.2
Total		$13.89	22.8
Grand total cost		61.04	100.0

Returns per acre	$65.07	Cost per bushel	$ .62
Return per hour of labor	.42	Value per bushel	.66

* Two accounts were in Monroe, one in Orleans, and one in Orange County.

NEW YORK STATE COLLEGE OF AGRICULTURE

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RESULTS OF COST ACCOUNTS ON LIVESTOCK

Detailed Costs and Returns, 1927 - 1930

Yearly Averages, 1914 - 1930

Prepared by

J. F. Harriott and L. M. Vaughan

December - 1931

Ithaca, N. Y.

10909-JFH-M-12/8/31

LIVESTOCK

With about one-third of all land in farms used for pasture, and with four-fifths of all cropland used for the production of hay and grain, it is apparent that livestock farming is an important part of New York agriculture. There has been a considerable shift during the last 90 years in the numbers of the different kinds of livestock kept. In 1840, there were about ten times as many sheep on New York farms as there were in 1930. In 1890, there were twice as many horses on farms as there were in 1930. The total number of cattle increased from slightly less than 2,000,000 in 1860 to about 2,600,000 in 1900. There has been a decrease in the number of cattle since 1900, but the number of dairy cows has remained about the same. Since 1860, the number of dairy cows has increased nearly 50 per cent (table 1).

Hogs are decreasing in numbers. In 1930, there were only one-fifth as many hogs on New York farms as there were in 1870. Each federal census from 1880 to 1930 reports an increase in the number of chickens on New York farms. In 1930 there were nearly twice as many as there were in 1880.

TABLE 1 - NUMBER OF LIVESTOCK ON NEW YORK FARMS *

Year	All cattle	Dairy cows	Sheep	Hogs	Horses & mules	Chickens
1840	1,911,244		5,118,777		474,543	
1850	1,877,639		3,453,241		447,977	
1860	1,973,174	931,324	2,617,855		505,278	
1870	2,045,324	1,123,634	2,181,578	995,000	541,268	
1880	2,339,721	1,350,661	1,715,180	936,000	615,430	6,448,886
1890	2,131,392	1,437,855	1,528,979	686,321	668,816	8,421,667
1900	2,596,389	1,501,608	1,745,746	658,142	631,751	8,964,736
1910	2,423,003	1,509,594	930,300	666,000	595,060	10,232,498
1920	2,144,244	1,481,918	578,726	601,000	543,494	10,414,600
1930	2,220,139	*1,172,546		220,526	326,309	11,953,862

*Data for 1840-1920, are from "Agricultural Statistics for New York State", Bulletin 226, State Department of Agriculture and Markets. Data for 1930 are from U. S. Census for 1930.

*Figure left out when stencil recut
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Every farmer has some choice in the kinds of livestock he keeps. Practically all farmers have some dairy cattle, horses and hens. Many farmers raise a hog or two each year. Only one farmer in seven has sheep, and only a very few have any beef cattle or raise colts. Horses are necessary on most farms as a source of power. The kinds and numbers of productive livestock kept or raised largely depends on how well they pay. Many farmers will care for livestock to earn a small wage or even no wage, provided they get paid for the use of pasture, fences and buildings, and get market prices for the hay, grain, and roughage used by the livestock.

For the four years, 1927 to 1930, the dairy and poultry enterprises paid fairly well. In 1927, there was an average return of 28 cents per hour of man labor on sheep and in 1928, the average return was 19 cents an hour. The losses in 1930 were extremely heavy due to a drastic decline in sheep prices. Feeder lambs paid very well for the 3 feeding seasons of 1927-1928, 1928-1929, and 1930-1931. The loss in 1929-1930, due to a drop in prices, cancelled the profits made in the other three seasons. The return per hour of man labor on hogs was very low in all four years from 1927 to 1930 (table 2).

TABLE 2 - RETURN PER HOUR OF MAN LABOR ON LIVESTOCK

Kind of Livestock	1927	1928	1929	1930
Dairy cows	$.54	$.59	$.42	$.24
Hens	.48	.50	.68	.46
Raising chicks	.56	.57	.68	.18
Sheep	.28	.19	-.10	-1.59
Feeder lambs	.85	.46	- 1.93	.64
Hogs	.12	-.07	-.01	.10

In comparing the net returns for man labor on livestock enterprises, one should consider not only the rate of return but also the time requirements of these enterprises. For the 3 years 1927 to 1929, dairy cows and hens gave a good return for the relatively large amount of time spent on them. The sheep and hog enterprises gave a very low rate of return for man labor and for a relatively few days of work. An 18 cow dairy, or a flock of 462 hens netted about the same profit over all costs including labor. The average loss on a flock of 64 ewes was $120, and on fattening 16 pigs, the average loss was $91 (table 3).

TABLE 3 - COMPARATIVE RETURNS ON LIVESTOCK, 1927 - 1929 *

	Return per hour of man labor	Averages for the Enterprise			
		Numbers	Days of work provided	Return for man labor	Profit or loss on enterprises
Cows	$.52	18	254	$1320	$216
Hens	.55	462	85	470	217
Sheep	.12	64	45	54	-120
Hogs	.01	16	22	2	- 91

*1930 was omitted because of the drastic drop in the prices of livestock in that year.

Dairy Cows

Accounts with Dairy Cows for the years 1914 to 1930 show that the average production per cow has increased, costs and returns have increased, and the hours of man labor required to care for a cow have decreased. For the seventeen years, the average return per hour of man labor on cows was thirty-two cents, and there was no year in which dairymen did not get some pay for their time. In 1921, they received only 10 cents an hour, while in 1928, they received an average of 59 cents an hour (table 4).

With an average of 18 cows per farm, and with 7536 pounds of milk per cow, the average cost to keep a cow for the four years, 1927 to 1930, was $227.40. Of this total, 50 per cent was for feed and bedding, and 26 per cent for labor (table 5).

Average returns for the years 1927 to 1930 were $230.37 per cow, or $2.97 above all costs. The total returns per cow exceeded all costs except labor by $62. This means that the dairy farmer was paid on the average $62.00 for caring for a cow for a year. This was at the rate of 45 cents an hour.

The average net cost per 100 pounds of milk produced during these 4 years was $2.70, and the average value of 100 pounds of milk was $2.74.

TABLE 4 - AVERAGES FROM ACCOUNTS WITH DAIRY COWS, 1914 - 1930

Year	Number of accounts	Number of cows	Hundred weight of milk per cow	Value per cow	Total cost per cow	Total returns per cow	Profit or loss per cow	Cost per 100 pounds milk	Value per 100 pounds milk	Hours of man labor per cow	Returns per hour of man labor
1914	9	16.6	69	$89	$135	$124	-$11	$1.72	$1.56	153	$.18
1915	26	16.9	55	87	140	117	- 23	1.97	1.55	161	.12
1916	17	20.1	68	93	143	139	- 4	1.87	1.80	143	.27
1917	17	22.6	63	99	172	191	19	2.40	2.70	129	.50
1918	18	21.5	60	103	208	212	4	3.06	3.12	137	.42
1919	22	19.8	65	108	228	252	24	2.90	3.27	157	.55
1920	17	17.1	62	99	256	235	- 22	3.48	3.13	150	.27
1921	21	18.9	65	101	213	175	- 37	2.79	2.21	148	.10
1922	18	18.7	63	108	189	168	- 21	2.31	1.98	157	.21
1923	18	18.2	66	108	215	181	- 33	2.64	2.13	159	.14
1924	21	19.2	68	99	207	177	- 30	2.80	2.35	152	.15
1925	21	19.6	69	100	199	197	- 2	2.64	2.61	147	.35
1926	19	18.2	70	102	203	203	0	2.61	2.61	147	.38
1927	18	19.2	74	107	211	229	18	2.57	2.76	143	.54
1928	14	18.3	76	137	223	243	20	2.66	2.84	138	.59
1929	31	16.5	78	144	246	245	- 2	2.88	2.84	141	.42
1930	33	17.8	73	133	229	205	- 24	2.87	2.53	136	.24
Averages:											
1914-1919	109	19.6	63	96	171	172	2	2.32	2.33	147	.34
1920-1924	95	18.4	65	103	216	187	- 29	2.80	2.36	153	.17
1925-1929	103	18.4	73	118	216	223	7	2.67	2.73	143	.46

TABLE 5 - DETAILED COSTS AND RETURNS FOR DAIRY COWS, 96 ACCOUNTS 1927 - 1930 *
Number of cows per dairy 18; Value per cow $130; Pounds of milk produced per cow 7536.

	Quantity per cow	Value per cow	Per cent
Items of cost:			
Grain	2428 pounds	$51.70	22.7
Hay	2.0 tons	23.62	10.4
Silage	3.4 tons	24.09	10.6
Pasture and fences		9.96	4.4
Other feed and bedding		5.07	2.2
Total feed and bedding		$114.44	50.3
Man labor	139.3 hours	59.28	26.1
Total labor and equipment		68.78	30.2
Depreciation		10.28	4.5
Interest		7.92	3.5
Use of buildings		6.06	2.7
Breeding fees		3.41	1.5
Veterinary and medicine		1.30	.6
Miscellaneous		15.21	6.7
Total cost		$227.40	100.0

Returns per cow from milk	$206.92	Net cost per 100 pounds milk	$2.70
Returns per cow from manure	12.24	Value per 100 pounds milk	2.74
Returns per cow from calves	8.34	Labor returns per cow	62.00
Total returns per cow	$230.37	Returns per hour of man labor	.45

*Of the 96 accounts, 12 were in Washington, 11 in Livingston, 9 in Onondaga, 8 in Steuben, 6 in Monroe and 40 in 15 other counties.

Relation of Milk Production per Cow to Costs and Returns

The high producing cows were fed more grain, more hay, and more silage than were the low producing cows. The cost to keep high producing cows was more than for low producing cows, but these costs did not increase in the same ratio as milk production. Consequently, the cost of 100 pounds of milk was much lower with the high producing cows. Herds averaging over 9000 pounds of milk per cow paid more than twice as much per hour for labor than herds averaging less than 6000 pounds of milk per cow (table 6).

TABLE 6 - RELATION OF MILK PRODUCTION PER COW TO COST AND RETURNS, 96 ACCOUNTS - 1927-1930

	Low third in pounds of milk per cow	Middle third in pounds of milk per cow	High third in pounds of milk per cow
Production per cow	5765	7318	9274
Cows per farm	17.4	17.6	18.2
Value per cow	$115	$122	$155
Pounds of grain fed per cow	1755	2371	3160
Tons of hay fed per cow	1.8	2.1	2.0
Tons of silage fed per cow	2.4	3.4	4.3
Cost of feed and bedding per cow	$91.03	$113.25	$136.70
Cost of feed and bedding per 100 pounds of milk	1.58	1.55	1.47
Man hours per cow	119.8	142.0	152.6
Labor and equipment cost per cow	$63.57	$75.63	$82.71
Labof and equipment cost per 100 pounds of milk	1.10	1.03	.89
Total cost per cow	$198.30	$223 .60	$263.36
Cost per 100 pounds of milk	3.14	2.77	2.52
Returns per hour of man labor	.22	.40	.54

Relation of Size of Dairy to Costs and Returns

With the same production per cow large dairies and small dairies had the same cost for feed and bedding per cow. With a 10 cow dairy averaging 8800 pounds of milk per cow, 187 man hours were required per cow, and with 26 cows averaging 8800 pounds of milk per cow, only 139 man hours were required per cow. The larger dairies paid on the average about twice as much per hour for the time spent on them (table 7).

TABLE 7 - RELATION OF THE SIZE OF DAIRY TO COSTS AND RETURNS, 48 ACCOUNTS-1927-1930

	Dairies with production above average	
	Below average in size	Above average in size
Number of cows per farm	10.4	26.0
Pounds of milk per cow	8800	8800
Value per cow	$136	$148
Pounds of grain fed per cow	2903	3054
Tons of hay fed per cow	2.5	1.9
Tons of silage fed per cow	3.8	3.8
Cost of feed and bedding per cow	$132	$132
Man hours per cow	187	139
Labor and equipment cost per cow	$94	$77
Total cost per cow	$271	$249
Cost per 100 pounds of milk	$2.79	$2.53
Return per hour of man labor	$ .31	$ .60

Hens

Accounts with hens over the period 1915 to 1930, show significant increases in the average number of eggs produced, the total cost, the total returns and the hours of man labor per hen. The cost per dozen of eggs has decreased slightly. Yearly averages of egg values during this period ranged from 31 cents a dozen in 1916, to 61 cents a dozen in 1920. In all but one year, 1917, the average return per hour of man labor on hens has been 30 cents or more. In 2 years, it exceeded $1.00, and for the 16 years, it averaged 52 cents (table 8).

TABLE 8 - AVERAGES FROM ACCOUNTS WITH HENS, 1915 - 1930

Year	Number of accounts	Number of hens per farm	Eggs produced per hen	Total cost per bird	Total returns per bird	Cost per dozen eggs	Value per dozen eggs	Man hours per 100 birds	Return per hour of man labor
1915	3	1200	72	$1.73	$1.82	$.29	$.31	142	$ .33
1916	6	546	75	1.97	1.97	.31	.31	158	.30
1917	6	661	72	3.00	2.47	.50	.41	139	-.02
1918	7	306	129	4.80	5.22	.45	.49	211	.50
1919	5	349	104	3.82	5.13	.43	.59	169	1.27
1920	4	461	105	3.73	5.34	.42	.61	139	1.63
1921	6	613	83	2.77	3.00	.40	.44	147	.57
1922	7	497	98	2.99	3.08	.37	.38	191	.45
1923	7	472	106	3.57	3.44	.40	.39	185	.30
1924	10	398	113	3.66	3.75	.39	.40	193	.40
1925	7	413	112	3.69	4.15	.39	.44	201	.62
1926	10	416	118	4.06	3.98	.41	.41	206	.36
1927	10	400	127	3.89	3.97	.37	.38	197	.48
1928	20	406	126	3.97	4.11	.37	.39	183	.50
1929	23	579	137	4.34	4.79	.38	.42	175	.68
1930	29	626	142	4.02	4.09	.34	.35	181	.46
Averages:									
1915-1919	27	612	90	3.06	3.32	.40	.42	164	.48
1920-1924	34	488	101	3.34	3.72	.40	.44	171	.67
1925-1929	70	443	124	3.99	4.20	.38	.41	192	.53

With an average of 503 hens per flock, and a production of 133 eggs per hen, the average cost per bird for the 4 years, 1927 to 1930, was $4.05. Of this total, 51 per cent was for feed, 19 per cent for labor, and 14 per cent was for depreciation (table 9).

Total returns for the years 1927 to 1930 averaged $4.24 per bird and exceeded all costs by 19 cents. After deducting from the total returns all charges except for man labor, there remained 53 cents for each hour of labor on the flock.

TABLE 9 - DETAILED COSTS AND RETURNS FOR HENS, 82 ACCOUNTS, 1927 - 1930 *

Number of hens per farm 503; Value per bird $1.36; Eggs produced per hen 133.

	Quantity per bird	Value per bird	Per cent
Items of cost:			
Grain	43.2 pounds	$ .91	22.4
Mash	37.4 pounds	.97	24.0
Other feed		.17	4.2
Total		$2.05	50.6
Litter		.04	1.1
Man labor	1.8 hours	.79	19.3
Use of equipment		.14	3.5
Depreciation		.58	14.3
Interest		.09	2.2
Egg cases, fillers, etc.		.04	1.0
Express and commission		.04	1.0
Fees for supervision and certification		.01	0.3
Other costs		.27	6.7
Total		$4.05	100.0

Returns per bird from eggs	$4.12	Cost per dozen eggs	$ .35
Returns per bird from manure	.12	Value per dozen eggs	.37
Total returns per bird	$4.24	Return per hour of man labor	.54

*Of the 82 accounts, 26 were in Genesee, 9 in Washington, 8 in Monroe, 6 in Livingston, 6 in Cayuga, 6 in Onondaga, and 21 in 10 other counties.

Raising Chicks

Averages from 74 accounts for the raising of chicks for the years 1927 to 1930 show that out of 1122 chicks started, 417 pullets and cockerels were raised per farm. The total cost per bird raised was $1.76. About 43 per cent of the total cost was for feed, 28 per cent was for the cost of chicks, 18 per cent was for labor and 7 per cent for housing and the use of equipment. Credits for broilers and manure made the net cost per bird raised $1.24. The average value of the pullets and cockerels, about 6 months old, was $1.30. With this value, there was a profit of 6 cents per bird raised and an average return of $.48 per hour of man labor on the enterprise (table 10).

TABLE 10 - DETAILED COSTS AND RETURNS FOR RAISING CHICKS, 74 ACCOUNTS, 1927-1930*
Number of chicks started per farm 1122. Number of birds raised per farm 417

	Quantity per bird raised	Value per bird raised	Per cent
Items of cost:			
Cost of chicks	2.7	$ .49	27.8
Grain	12 Pounds	.27	15.3
Mash	16 Pounds	.45	25.6
Other feed		.04	2.3
Man labor	0.8 Hours	.32	18.2
Fuel		.04	2.3
Housing and use of equipment		.12	6.8
Other costs		.03	1.7
Total		$1.76	100.0

Credits for broilers per bird raised	$ .51	Net cost per bird raised	$1.24
Credits for manure per bird raised	.01	Value per bird raised	1.30
Total credits per bird raised	$ .52	Return per hour of man labor	.48

*Of the 74 accounts, 21 were in Genesee, 8 in Livingston, 8 in Onondaga, 7 in Monroe, 7 in Washington, 6 in Cayuga, 4 in Ontario and 13 in 9 other counties.

Sheep

With 60 ewes per farm, the average cost per ewe for the 4 years, 1927 to 1930, was $14.53. Of this total cost, 57 per cent was for feed, bedding, and pasture, 18 per cent was for labor and 9 per cent was for use of buildings. Average costs exceeded average returns by $4.12 a ewe. If no charge were made for man labor, other costs incurred would have exceeded total returns by $1.47 per ewe, (table 11).

TABLE 11 - DETAILED COSTS AND RETURNS FOR SHEEP, 59 ACCOUNTS, 1927-1930 *

Number of ewes per farm 60. Value per ewe $14.

	Quantity per ewe	Value per ewe	Per cent
Costs:			
Grain	143 pounds	$2.49	17.1
Pasture		1.68	11.6
Other feed and bedding		4.06	27.9
Total		$8.23	56.6
Man labor	6.6 hours	2.65	18.2
Equipment		.19	1.3
Depreciation		.30	2.1
Interest		.81	5.6
Use of buildings		1.29	8.9
Shearing		.18	1.2
Other costs		.88	6.1
Total		$14.53	100.0

Increase and net sales per ewe	$5.29	Loss per ewe	-$4.12
Returns from wool per ewe	2.58	Return per hour of man labor	$-.37
Return from manure per ewe	1.85		
Total returns per ewe	$10.41 (also included $.69 miscellaneous returns)		

*Of the 59 accounts, 28 were in Genesee, 9 in Wyoming, 5 in Orleans, 3 in Monroe, 3 in Livingston, 3 in Onondaga, 3 in Steuben, 3 in Washington, 1 in Cayuga and 1 in Dutchess County.

In 1930, there was a drastic decline in sheep values. The income from lambs sold was not sufficient to offset the decreases in the value of ewes. This resulted in a depreciation

charge of $1.21 per ewe. For the 3 years previous to 1930, the average increase and net sales of sheep averaged $7.06 per ewe. For these three years, returns from sheep paid all other costs and gave about 12 cents an hour for the time spent on the flock.

Large flocks were fed more but cheaper grain, and required less labor per ewe. The increase and net sales per ewe was higher with the larger flocks but the value of wool per ewe was lower. With large flocks, there was a smaller loss per ewe, but a greater total loss, than with small flocks (table 12).

TABLE 12 - RELATION OF NUMBER OF EWES PER FLOCK TO COSTS AND RETURNS, 59 ACCOUNTS, 1927-1930

	Low third in number of ewes	Middle third in number of ewes	High third in number of ewes
Number of ewes per farm	22	50	111
Pounds of grain per ewe	67	116	166
Feed cost per ewe	$8.37	$8.02	$8.17
Man hours per ewe	8.6	5.2	5.1
Cost per ewe	$15.48	$12.93	$14.75
Increase and net sales per ewe	4.51	5.05	5.75
Value of wool per ewe	3.02	2.92	2.46
Loss per ewe	- $5.09	-$2.95	-$3.51
Loss per flock	-$112.45	-$148.15	-$389.05

Feeder Lambs

With an average of 436 lambs fed per farm, the cost per lamb fed for the four years, 1927 to 1930 was $12.10. Of this total cost, the purchase price of the lamb was 59 per cent, feed and bedding was 26 per cent, and labor 5 per cent. Average costs exceeded average returns by 55 cents per lamb fed (table 13).

TABLE 13 - DETAILED COSTS AND RETURNS FOR FEEDER LAMBS, 29 ACCOUNTS, 1927-1930*

	Quantity per lamb fed	Value per lamb fed	Per cent
Costs:			
Purchase price		$7.20	59.4
Grain	130 pounds	2.24	18.5
Dry roughage	147 pounds	.75	6.2
Succulent feed	44 pounds	.05	0.4
Bedding		.08	0.7
Man labor	1.4 hours	.60	5.0
Horse labor	0.1 hours	.02	0.2
Use of truck		.05	0.4
Use of other equipment		.04	0.3
Veterinary and medicine		.07	0.6
Shearing		.05	0.4
Use of buildings		.31	2.6
Selling expenses		.37	3.1
Miscellaneous		.27	2.2
Total		$12.10	100.0

Returns from lambs sold per lamb fed	$10.58	Number of lambs fed per farm	436
Returns from wool sold per lamb fed	.53	Loss per lamb fed	$.55
Returns from manure per lamb fed	.44	Returns per hour of man labor	.04
Total returns per lamb fed	$11.55		

*All of these accounts were in Genesee, Monroe, Wyoming, Orleans and Livingston Counties.

Of the 4 feeding seasons reported, 1927-28 season was the most profitable, there being an average profit of 68 cents per lamb fed. For the 1929-30 season, there was an average loss of $3.24 per lamb fed. Losses in this one season more than offset the profits of the other three seasons.

Hogs

With an average of 1.4 sows and 13.4 pigs fatted per farm, the cost per sow kept or pig fatted for the 4 years, 1927 to 1930, was $20.39. Of this total cost, feed represented 59 per cent, and man labor 27 per cent. Average costs exceeded average returns by $5.06 per sow kept or pig fatted (table 14).

TABLE 14 - DETAILED COSTS AND RETURNS FOR HOGS - 64 ACCOUNTS, 1927-1930*
Number of sows per farm 1.4. Number of pigs fatted per farm 13.4

	Quantity per sow kept or pig fatted	Value per sow kept or pig fatted	Per cent
Cost:			
Grain	566 pounds	$10.56	51.8
Pasture		.31	1.5
Other feed		1.17	5.7
Total feed		$12.04	59.1
Bedding		.21	1.0
Man labor	12.9 hours	5.53	27.1
Use of equipment		.62	3.0
Interest		.48	2.4
Use of buildings		.87	4.3
Veterinary and medicine		.04	.2
Other costs		.60	2.9
Total		$20.39	100.0

Increase and net sales per sow kept or pig fatted	$14.45	Loss per sow kept or pig fatted	$5.06
Returns from manure per sow kept or pig fatted	.70	Return per hour of man labor	.04
Total returns per sow kept or pig fatted	$15.53		

*Of the 64 accounts, 26 were in Genesee, 9 in Livingston, 5 in Onondaga, 5 in Dutchess, 4 in Orleans, 4 in Monroe, 4 in Cayuga and 7 in 4 other counties.

The farms on which a larger number of hogs were fatted had a lower cost of feed per hog and also a lower return per hog. They were probably not fed for as long a period. Less than half as much labor was required per hog fatted on these farms with the larger numbers. There was a much lower loss per hog fatted in this group, and the return per hour of man labor was 19 cents (table 15).

TABLE 15 - RELATION OF SIZE OF HOG ENTERPRISE TO COSTS AND RETURNS, 64 ACCOUNTS, 1927-1930

	Low third in size of enterprise	Middle third in size of enterprise	High third in size of enterprise
Number of sows and boars per farm	1.0	1.2	2.3
Number of pigs fatted per farm	5.9	10.3	24.8
Total number of hogs per farm	6.9	11.5	27.1
Cost of feed per hog	$16.88	$13.90	$10.84
Man hours per hog	26	15	10
Cost per hog	$32.71	$24.20	$17.10
Return per hog	$19.00	$16.48	$14.94
Loss per hog	-$13.71	-$ 7.72	-$ 2.16
Loss on enterprise	-$94.00	-$88.45	-$58.48
Return per hour of labor	-$ .11	-$ .03	$ .19

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ANNUAL COST AND COST RATES FOR LAND, BUILDINGS, HORSES, EQUIPMENT AND MAN LABOR

From year to year farmers vary their expenditures for fertilizers, feeds, seeds and other supplies, and for hired labor. How much they spend in any year depends on the prices they must pay, and whether they consider it necessary or worth while to use more fertilizer, feed more grain, or hire more labor. Such expenses vary with the volume of business or with the intensity of farming operations. There are other annual farm expenses or costs that go on year after year, whether the volume of business is large or small. Taxes, interest and insurance must be paid; farm buildings and machinery and tools must be repaired and replaced; horses must be fed and cared for. These overhead costs, as well as all direct cash outlays for materials and for hired labor, must be paid before there is any profit or any return for the farmer's labor and management.

An individual farmer can do little about reducing his taxes, lowering the rate of interest he pays, or getting cheaper fire insurance. He does have control over the costs of maintaining farm equipment and work horses. A reduction in the annual costs of these items would be desirable if it were obtained without restricting volume of business or interfer ing with the timeliness and efficiency of farming operations. The best way to lower these overhead charges is to spread them over a larger volume of business.

Overhead Costs on Farms With Cost Accounts

On 68 farms with cost accounts for 1930, the total of overhead expense averaged $3191 per farm. Of this total, interest at the

rate of 5 per cent on the average value of land and buildings accounted for 33 per cent; depreciation, repairs and interest on equipment were 25 per cent; the costs of keeping work horses were 18 per cent; depreciation and repairs on buildings were 13 per cent; and taxes were 8 per cent (table 1).

TABLE 1 - OVERHEAD COSTS ON FARMS KEEPING COST ACCOUNTS - 1930

Item of Cost	Average annual cost per farm	Per cent of total cost
Interest at 5% on value of farm	$1047	32.8
Taxes	262	8.2
Depreciation, Interest, Repairs on equipment	800	25.1
Cost to keep work horses	591	18.5
Depreciation and Repairs on Buildings	414	13.0
Insurance	77	2.4
Total	$3191	100.0

Average number of men	3.0
Overhead cost per man	$1064
Per cent of receipts to pay overhead costs	29.0

With a two man business, the overhead cost per man was $165 higher than with a four man business. With the smaller business, about one-third of the receipts would pay all overhead costs, and with the larger business, about one-fourth of the receipts would pay all overhead costs (table 2).

TABLE 2 - RELATION OF OVERHEAD COSTS TO NUMBER OF MEN PER FARM 1930

Items of Cost	Average annual cost per man with: Less than 2.5 men per farm	2.5 to 3.0 men per farm	More than 3.0 men per farm
Interest on value of farm	$326	$352	$355
Taxes	93	91	81
Depreciation, Interest and Repairs on Equipment	290	287	240
Cost to keep work horses	258	207	159
Depreciation and Repairs on Buildings	156	148	122
All Insurance	25	25	26
Total per man	$1148	$1110	$983
Average number of men	2.0	2.8	4.3
Per cent of receipts to pay overhead	32.2	31.1	26.2

Cost Account Farms Compared with Average Farms

Overhead costs for farms on which cost accounts were kept are probably higher per farm but lower per man than on the average New York farms. On the average, the farms of the cost account co-operators for 1930 were two-thirds larger and were valued at about 50 per cent more per acre than the average of all New York farms. The average value of the buildings on the cost account farms was twice the average value of buildings on all New York farms, but the proportion of farm value in buildings was the same for both groups. Cost account farmers grew twice as many acres of crops, used twice as many horses, and had twice as much invested in equipment as the average New York farmer (table 3).

TABLE 3 - COMPARISON OF FARMS ON WHICH COST ACCOUNTS WERE KEPT IN 1930 WITH ALL NEW YORK FARMS

	Average of all New York Farms (1930 Census)	Average of 68 Cost Account Farms 1930
Acres per farm	113	187
Value per farm	$8,247	$20,946
Value per acre (land and buildings)	$73	$112
Acres of cropland per farm	51	113
Value of dwellings per farm	$2,294	$4,087
Value of all buildings per farm	$4,473	$9,470
Per cent of farm valuation buildings	44	45
Value of all equipment per farm	$1,086	$2,485
Number of horses per farm	2.0	4.0

Cost to Maintain Cropland

The average acreage of cropland per farm in 1930 was 133 acres, and the average value per acre was $67. The annual cost of maintaining this cropland was $6.10 an acre or 9.1 per cent of the value of the land. Interest accounted for 55 per cent, and taxes for 14 per cent of the cost (table 4)

TABLE 4 - COST OF MAINTAINING CROPLAND, 68 ACCOUNTS - 1930
Acres of cropland per farm, 113; Value per acre $67.

Items of Cost	Cost per acre	Per cent of total cost	Cost in per cent of value
Interest at 5 per cent	$3.38	55.4	5.0
Taxes	.84	13.8	1.3
Share of general farm expense	.52	8.5	0.8
Materials, labor and use of farm equipment	1.36*	22.3	2.0
Total	$6.10	100.0	9.1

*The total expense per acre for tile and dynamite amd for farm labor and equipment was $1.72 per acre. An allowance of $.36 per acre for increased value of the cropland made the net maint.enance cost $1.36 per acre.

Cost to Maintain Buildings

The average value of 75 dwellings on 66 farms was $2816. The annual maintenance cost was $333 per dwelling, or 11.8 per cent of the value. Of the net maintenance cost for the year interest accounted for 42 per cent, depreciation and repairs 36 per cent, taxes 11 per cent, and insurance 4 per cent (table 5).

TABLE 5 - COST OF MAINTAINING FARM DWELLINGS * - 1930
75 dwellings on 66 farms; Value per dwelling $2816

Items of Cost	Cost per dwelling	Per cent of total cost	Cost in per cent of value
Interest at 5 per cent	$140.81	42.3	5.0
Taxes	35.50	10.6	1.3
Insurance	14.84	4.4	.5
Share of general farm expense	22.37	6.7	.8
Repairs and depreciation	119.76**	36.0	4.2
Total	$333.38	100.0	11.8

* Does not include tenant houses.

** The total expense for materials, labor and equipment, for repairs and improvements was $202.36 per dwelling. An allowance of $82.60 for increased value made the net cost of repairs and depreciation $119.76.

The value of all buildings except houses averaged $5,373 per farm. The annual maintenance cost of these buildings averaged $669 per farm, or 12.4 per cent of their value. Of the annual maintenance cost, interest accounted for 40 per cent, depreciation and repairs 39 per cent, taxes 10 per cent and insurance 4 per cent (table 6).

TABLE 6 - COST OF MAINTAINING FARM BUILDINGS* 67 ACCOUNTS - 1930
Value of all buildings, except houses, per farm $5373.

Items of Cost	Cost per farm	Per cent of total cost	Cost in per cent of value
Interest at 5 per cent	$268.66	40.1	5.0
Taxes	68.62	10.3	1.3
Insurance	30.25	4.5	.6
Share of general farm expense	42.60	6.4	.7
Repairs and depreciation	258.77**	38.7	4.8
Total	$668.90	100.0	12.4

*All buildings except dwellings and tenant houses.

** The total expense for repairs and improvements to buildings averaged $419.29 per farm. An allowance of $160.52 for increased value made the net cost of repairs and depreciation $258.77.

Horse Labor Costs

With 4.0 horses per farm, the average cost to keep a horse on 64 farms in 1930 was $156.95. Of this total, 50 per cent was for feed and bedding, 27 per cent for labor, and 13 per cent for depreciation and interest. Allowing a credit for manure of $12.06, the net cost of horse labor was $144.89 per horse, or 19.5 cents per hour worked (table 7).

TABLE 7 - COST TO KEEP FARM HORSES, 64 ACCOUNTS - 1930
Value per horse $114. Horses per farm 4.0

Item of Cost	Quantity per horse	Value per horse	Per cent of total cost
Grain (pounds)	1770	$31.04	19.8
Hay (tons)	2.7	34.68	22.1
Other feed and bedding	----	13.52	8.6
Total feed and bedding		$79.24	50.5
Man labor (hours)	99	$42.13	26.8
Depreciation		13.62	8.7
Interest		6.99	4.5
Use of buildings		9.38	6.0
Horseshoeing		2.55	1.6
Veterinary and medicine		1.09	0.7
Other costs		1.95	1.2
Total cost		$156.95	100.0
Credit for manure		12.06	
Net cost of horse labor		$144.89	
Hours worked per horse	743	Net cost per hour worked	19.5¢

Cost to Maintain Farm Equipment

The average inventory value of all farm equipment was $2485 per farm. The annual cost for depreciation, repairs, and interest on this equipment was $800, or about one-third of its value. The depreciation cost was 18 per cent of the value, repairs 8 per cent, and interest 6 per cent (table 8). If charges for housing, farm labor for repairs, and a share of the fire insurance costs were added, it would bring the annual cost for all farm machinery to more than 40 per cent of its average value.

TABLE 8 - DEPRECIATION, REPAIRS AND INTEREST ON FARM EQUIPMENT *
68 Farms - 1930

Value of all equipment at beginning of year	$2363
Purchases during the year	746
Value of all equipment at end of year	2552
Sales and trade-in allowances	105

Items of Cost	Cost per farm	Per cent of total	Cost in per cent of value
Depreciation	$453	56.6	18.4
Repairs	200	25.0	8.1
Interest at 6 per cent	147	18.4	6.0
Total for depreciation, repairs and interest	$800	100.0	32.5

*Includes tractors, trucks, general farm machinery and special equipment.

The average value of 68 tractors on 59 farms was $413. Each tractor was used an average of 406 hours at a cost of $310 for the year, or $.76 per hour of tractor use. Of the total cost, fuel and oil represented about two-fifths, and depreciation about one-third (table 9).

TABLE 9 - COST OF OPERATING TRACTORS* - 1930
59 accounts with 68 tractors. Average value per tractor $413
Hours of use per tractor 406. Cost per hour of use $.76

Item of Cost	Cost per tractor	Cost per hour	Per cent of total
Fuel and oil	$126	$.31	40.6
Depreciation	101	.25	32.6
Repairs	27	.07	8.7
Interest at 6 per cent	25	.06	8.1
Farm labor for care and repairs	16	.04	5.2
Housing	9	.02	2.9
All other costs	6	.01	1.9
Total	$310	$.76	100.0

*Does not include charge for tractor operator or tools used with the tractor.

Man Labor Costs

Hired men are usually given board, or the use of a house together with wood, milk, potatoes, garden, and other privileges. All of these items are just as much a part of the cost of labof as the cash wages paid. The supervision of this hired labor and the general management of the farm is done by the operator. Farm labor costs should include an allowance for the operator's management as well as for the actual work which he does. In estimating the operator's wage allowance, the value of farm privileges received by the operator and his family should be considered. The value of unpaid family labor should also be included as a cost, based on what it would cost to hire this same amount of work.

On 68 farms in 1930, the total cost of all man labor averaged $3766 per farm. Of this total cost, 47 per cent was for hired labor, 45 per cent for the operator and 8 per cent for unpaid family labor (table 10).

There was an average of 36 months of labor per farm. This is equivalent to 3.0 men per farm for the year. Each worker put in an average of 2923 hours for the year. The average cost of an hour of labor was 43 cents.

TABLE 10 - COST OF MAN LABOR - 68 FARMS - 1930

	Cost per farm	Per cent of total
Operator		
Wage (11.2 months)	$1135	30.1
Privileges:		
House rent	270	7.3
Milk	76	2.0
Wood	62	1.6
Eggs	35	.9
Meat	30	.8
Potatoes	20	.5
Garden	18	.5
Fruit	9	.2
All else	48	1.3
Total privileges (operator)	$ 568	15.1
Unpaid Family Labor	292	7.8
Hired labor		
Wage	$1459	38.7
Board	151	4.0
Privileges:		
House rent	87	2.3
Milk	26	.7
Wood	22	.6
Potatoes	8	.2
All else	16	.5
Total privileges (hired labor)	$ 161	4.3
Grand total	$3766	100.0

Hours of work per person 2923; Cost of man labor per hour $.43

Averages from accounts with Man Labor, Horses and Land and Buildings for the years 1914 to 1930 are shown in tables 11, 12 and 13.

TABLE 11- AVERAGES FROM ACCOUNTS WITH MAN LABOR, 1914-1930

Year	Number of accounts	Average number of workers	Hours of man labor per farm	Hours worked per person per year	Cost per hour of man labor (cents)
1914	18	3.0	8956	2975	25.1
1915	46	2.7	8424	3164	26.0
1916	31	2.8	8501	3066	30.3
1917	31	2.8	8285	2948	35.6
1918	32	2.9	8870	3089	39.6
1919	38	2.7	8339	3086	41.4
1920	33	2.7	8143	3058	43.7
1921	34	2.8	8618	3076	39.0
1922	30	3.0	9327	3080	37.7
1923	26	3.0	9648	3184	37.8
1924	34	2.8	8857	3130	39.0
1925	32	2.8	8912	3218	39.5
1926	32	2.7	8260	3063	42.8
1927	81	2.6	7622	2970	41.4
1928	72	2.8	8140	2932	43.4
1929	73	2.8	8538	3056	42.6
1930	68	3.0	8812	2923	42.8
Averages:					
1914-1919	196	2.8	8562	3055	33.0
1920-1924	157	2.9	8919	3105	39.4
1925-1929	290	2.7	8295	3048	41.9

TABLE 12 - AVERAGES FROM ACCOUNTS WITH FARM WORK HORSES, 1914-1930

Year	Number of accounts	Number of horses per farm	Value per horse	Hours worked per horse per year	Pounds of grain per horse	Pounds of dry forage per horse	Man hours to care for a horse	Cost of feed and bedding per horse	Total cost of keeping a horse	Cost per hour of horse labor(cents)
1914	18	5.1	$156	1040	3357	7376	144	$104	$172	15.8
1915	46	4.9	154	1016	3074	6094	143	97	169	15.5
1916	31	5.3	155	933	3210	7289	116	101	170	16.7
1917	31	5.1	148	922	2736	7755	116	123	203	19.7
1918	32	4.5	152	1041	3295	7499	124	167	255	22.6
1919	37	4.5	147	895	2810	6858	117	146	237	24.4
1920	33	4.3	146	901	2395	6078	111	125	215	21.9
1921	34	4.3	132	906	2405	6059	108	96	189	19.1
1922	30	4.3	127	876	2512	5952	105	85	163	16.8
1923	26	4.3	117	885	2681	6616	110	100	179	18.6
1924	34	4.4	109	852	2483	6567	111	94	168	18.0
1925	32	4.1	105	838	2327	6326	112	91	160	17.3
1926	32	3.8	109	881	2420	6185	116	88	175	18.2
1927	70	4.4	109	763	2188	6808	100	80	157	19.1
1928	61	4.2	110	759	2088	6583	106	85	171	20.9
1929	60	4.0	120	722	2110	6560	102	88	175	22.7
1930	64	4.0	118	743	1770	5480	99	79	157	19.5
Averages:										
1914-1919	195	4.9	152	974	3080	7145	127	123	201	19.1
1920-1924	157	4.3	126	884	2495	6254	109	100	183	18.9
1925-1929	255	4.1	111	793	2227	6492	107	86	168	19.6

TABLE 13 - AVERAGES FROM ACCOUNTS WITH REAL ESTATE, 1914 - 1930

Year	Number of accounts	Acres per farm	Value per farm	Value per acre	Annual cost of buildings in % of value Other buildings	Crop acres per farm	Value of cropland per acre	Annual cost of cropland in per cent of value
1914	17	166	$13,873	$84	10.0	109	$74	6.6
1915	45	151	12,227	81	10.4	94	68	6.3
1916	30	176	15,013	85	8.3	110	74	6.6
1917	31	168	14,513	86	9.2	104	74	7.1
1918	28	165	15,249	92	9.3	103	82	6.7
1919	35	165	15,186	92	10.1	102	80	7.2
1920	33	167	17,148	103	10.6	104	90	7.4
1921	34	175	18,727	107	11.7	101	93	7.8
1922	30	177	19,438	110	11.2	103	92	7.3
1923	26	186	20,380	110	10.2	111	86	7.2
1924	34	193	20,573	107	11.3	110	82	7.6
1925	32	198	19,687	99	10.8	109	78	7.5
1926	32	200	19,136	96	11.2	114	72	7.9
1927	85	176	19,337	110	11.4	124	71	7.5
1928	70	186	19,831	107	12.2	115	71	7.6
1929	33	185	22,258	120	12.5	129	69	8.1
1930	68	187	20,946	112	12.7	114	66	8.6

Chart 572 RETURNS PER HOUR OF MAN LABOR
Cost Account Farms - 1914-30

	7 years 1914-20	6 years 1921-26	4 years 1927-30
Cows	$.33	$.22	$.45
Hens	.67	.45	.53
Apples		.67	.90
Beans	.12	-.17	.58
Cabbage	.51	.33	.57
Potatoes	.55	.84	.62
Alfalfa	.97	.75	.75
Other hay	.88	.23	.12
Barley	-.03	-.14	-.07
Buckwheat	.07	-.10	-.46
Corn for grain	.14	-.14	-.03
Oats	.01	-.20	-.12
Wheat	.57	-.03	-.06

Chart 573 RETURNS PER HOUR OF MAN LABOR ON CROPS
Cost Account Farms - 1927-30

	1927-30	1930
Apples	$.90	$.66
Cherries	---	1.06
Peaches	---	.94
Pears	---	.42
Beans (dry)	.58	- .12
Beans (string)	.22	.47
Cabbage	.57	.01
Corn (sweet)	.01	.23
Cucumbers	---	.24
Peas (factory)	.57	1.75
Potatoes	.62	.56
Tomatoes	---	-.30
Alfalfa	.75	1.02
Clover and Timothy	.21	.68
Barley	-.07	-.23
Buckwheat	-.46	-.67
Corn (grain)	-.03	.10
Oats	-.12	-.09
Oats and Barley	-.10	.16
Oats, Barley and Peas	.03	.20
Wheat	-.06	-.11

Chart 574

COMPARATIVE RETURNS ON CROPS
Cost Account Farms - 1927-30

	Return per hour man labor	Hours labor per acre	Labor return per acre	Profit per acre (above all costs)
Apples	$.90	80	$73	$36
Beans	.58	29	18	5
Cabbage	.57	87	53	15
Peas	.57	20	11	3
Potatoes	.62	82	50	11
Alfalfa	.75	14	10	4
Clover and Timothy	.21	8	2	- 2
Oats	-.12	17	- 1	- 9
Wheat	-.06	15	- 1	- 8

Chart 575

YIELD PER ACRE AND LABOR RETURNS
Cost Account Farms - 1927-30

	Low Third in yield		Middle Third in yield		High Third in yield	
	Yield per acre	Return per hour	Yield per acre	Return per hour	Yield per acre	Return per hour
Apples	88	$ .65	145	$.81	210	$1.06
Beans	7	-.22	14	.58	19	1.16
Cabbage	4	.02	8	.60	12	.90
Peas	1306	-.21	1984	.70	2766	1.35
Potatoes	102	.05	147	.59	216	1.05
Alfalfa	1.4	.22	2.2	.83	2.9	1.10
Clover and Timothy	1.0	-.41	1.7	.15	2.3	.54
Barley	17	-.53	29	-.09	42	.30
Oats	29	-.40	39	-.12	57	.23
Oats and Barley	22	-.74	39	-.04	46	.29
Oats, Barley & Peas	26	-.44	38	.10	49	.34
Wheat	12	-.62	20	-.21	30	.44

Chart 576 ACREAGE AND COST OF LABOR & EQUIPMENT TO GROW
Cost Account Farms - 1927-30

	Low Third in acreage		Middle Third in acreage		High Third in acreage	
	Acres per farm	Cost of labor & equip. to grow an acre	Acres per farm	Cost of labor & equip. to grow an acre	Acres per farm	Cost of labor & equip. to grow an acre
Beans	6	$22	12	$20	25	$17
Cabbage	4	39	7	36	14	36
Peas	4	14	8	11	19	9
Potatoes	4	36	11	32	28	28
Oats	5	12	11	10	24	7
Wheat	8	12	16	11	37	8

Chart 577 COST TO GROW AND HARVEST HAY
Cost Account Farms - 1927-30

	Alfalfa	Clover	Clover and Timothy	Timothy
Costs per Acre for:				
Manure	$2.48	$3.58	$4.05	$5.43
Seeding	2.05	3.56	1.68	.30
Grow	$10.24	$14.07	$10.15	$10.75
Harvest	10.21	8.25	6.43	6.24
Total	$20.45	$22.32	$16.58	$16.99
Tons per acre	2.1	1.8	1.6	1.4
Cost per ton	$9.74	$12.28	$10.36	$12.14

Chart 578 COST TO GROW AND HARVEST GRAIN
Cost Account Farms - 1927-30

	Cost to grow & harvest an acre	Yield Bu. per acre	Yield Lbs. per acre	Net cost to grow and harvest 100 lbs.
Oats, Barley & Peas	$35	38	1668	$1.84
Oats and Barley	33	36	1460	1.99
Barley	31	29	1382	2.10
Oats	32	41	1299	2.25
Wheat	33	21	1284	2.36
Buckwheat	28	19	926	2.99
Corn	63	30	1652	3.42

Chart 579 RETURNS PER HOUR OF MAN LABOR ON LIVESTOCK
Cost Account Farms - 1927-30

	1927	1928	1929	1930
Dairy cows	$.54	$.59	$.42	$.24
Hens	.48	.50	.68	.46
Rearing chicks	.56	.57	.68	.18
Feeder lambs	.85	.46	- 1.93	.64
Sheep	.28	.19	- .10	-1.59
Hogs	.12	-.07	- .01	.10

Chart 580 COMPARATIVE RETURNS ON LIVESTOCK
Cost Account Farms - 1927-29*

	Returns per hour of labor	Averages for the Enterprise: Numbers	Days of work provided	Return for labor	Profit (above all costs)
Cows	$.52	18	254	$1320	$216
Hens	.55	462	85	470	217
Sheep	.12	64	45	54	- 120
Hogs	.01	16	22	2	- 91

*1930 was omitted because of the drastic drop in prices of livestock.

Chart 581 PRODUCTION OF MILK PER COW AND RETURNS
Cost Account Farms - 1927-30

	Low Third in lbs. of milk per cow	Middle Third in lbs. of milk per cow	High Third in lbs. of milk per cow
Averages per cow			
Lbs. of milk	5765	7318	9274
Number of cows	17.4	17.6	18.2
Value	$115	$122	$155
Lbs. of grain	1755	2371	3160
Tons of hay	1.8	2.1	2.0
Tons of silage	2.4	3.4	4.3
Cost of feed & bedding	$91	$113	$137
Man hours	120	142	153
Cost of labor & equipment	$64	$76	$83
Total cost	$198	$224	$263
Cost per 100 lbs. milk	$3.14	$2.77	$2.52
Returns per hour of man labor	$.22	$.40	$.54

Chart 582 NUMBER OF COWS AND RETURNS
Cost Account Farms - 1927-30

	Dairies with Production above Average	
	Small	Large
Averages per cow		
Number of cows	10	26
Lbs. of milk	8800	8800
Value	$136	$148
Lb. of grain	2903	3054
Tons of hay	2.5	1.9
Tons of silage	3.8	3.8
Cost of feed & bedding	$132	$132
Man hours	187	139
Cost of labor & equipment	$94	$77
Total cost	$271	$249
Cost per 100 lbs. milk	$2.79	$2.53
Returns per hour of man labor	$.31	$.60