A FARM MANAGEMENT STUDY

AND

COSTS AND RETURNS ON SHEEP

YATES COUNTY, 1939

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CONTENTS

A FARM MANAGEMENT STUDY OF 52 FARMS KEEPING SHEEP, YATES COUNTY, 1939[1]

This report is based on a farm management study of 52 farms in the towns of Middlesex and Potter in the northwestern part of Yates County for the year 1939. The receipts and expenses on the whole farm business and the costs and returns on sheep were obtained. The same type of study was made in this area and in southern Ontario County for the year 1932-33.[2] Records were taken for 1939 only on those farms included in the survey seven years earlier.

In this area many farmers who operate farms on the better land pasture their sheep in the partly abandoned areas to the south. This pasture is often 5 or more miles away and may be owned or rented. To obtain more information on this detached pasture the following information was obtained for all farms in the towns of Middlesex and Potter: number of sheep, number of cows, acres operated in 1939 (including pasture), location of each detached parcel, and distance from the farmstead.

The primary objectives of this study were: (1) to obtain information on the organization of farms on which sheep were being kept and what type of organization paid best, (2) to determine the costs and returns on sheep and what factors accounted for some farmers making more money from sheep than other farmers, and (3) to determine the general profitableness of the sheep enterprise where the sheep were pastured in partly abandoned areas and the feed crops were raised on good land.

1/ The authors gratefully acknowledge the cooperation of the farmers who gave the information on which this report is based. They also wish to express their appreciation to Mr. G. B. Robinson, State Bureau of Agricultural Economics representative for his assistance in taking the field records.

2/ "Sheep Farm Management and Production Costs" by P. V. Kepner, mimeographed report A.E.296, Department of Agricultural Economics, Ithaca, New York, January, 1940.

ECONOMIC CONDITIONS IN 1939

Lamb prices were relatively high in 1939 and averaged 35 per cent above the 1910-14 average (table 1). Wool prices in the spring of 1939 and milk during the whole year averaged 10 per cent above pre-war. Prices of eggs, wheat, and beans were low. The average of prices received for all farm products in New York in 1939 was approximately pre-war.

On the other hand, the costs in farming were 28 per cent above the pre-war level. The only costs below pre-war were feed and fertilizer.

TABLE 1. COMPARISON OF PRICES OF FARM PRODUCTS AND COSTS IN FARMING IN NEW YORK IN 1939

Index numbers 1910-14 = 100

Things bought or hired*		Things sold**	
Farm wages	122	Lambs (July to December)	135
Feed	97	Wool (April and May)	110
Farm machinery	134	Milk	110
Building materials	145	Eggs	82
Taxes	259	Wheat (July to December)	82
Superphosphate	96	Beans (September to December)	90
Red clover seed	107		
All costs	128	All farm products	101

* From mimeographed supplement to "Costs in Dairy Farming," by L. C. Cunningham, Cornell Extension Bulletin 427, 1940.

** From Farm Economics. Prices are for New York State. The months for prices listed above are when most of the Yates County farmers sold the product.

DESCRIPTION OF THE AREA

Most of the land in the towns of Middlesex and Potter in the northwestern part of Yates County has a rolling to rough topography. The elevation ranges from 700 to 1900 feet above sea level. At the higher elevations, the soils are derived from the weathering of a thin layer of glacial till derived from

the underlying shales and sandstone rocks. These soils are acid. In the northern part of these towns the soil is largely Ontario which is a well-drained soil containing lime. This area is excellent for the production of cash crops.

The precipitation during the growing season has averaged 14.8 inches at Penn Yan and 16.2 inches at Geneva (table 2). During 1939 the rainfall at Penn Yan was 11.5 inches for the growing season, or 78 per cent of normal. The average length of growing season at these stations was 153 and 162 days respectively. These stations are at the lower elevations in the area. The growing season would be considerably shorter at the higher elevations. Above 700 feet, in New York State, the length of growing season shortens about four days for each 100 foot rise in elevation. 3/

TABLE 2. PRECIPITATION AND LENGTH OF GROWING SEASON IN YATES AND ONTARIO COUNTIES

Station	Period observed	Elevation	Precipitation			Average length of growing season
			Annual	Growing season (May 1 to Sept. 30)		
				Normal	1939	
	years	feet	inches	inches	inches	days
Penn Yan	82	730	29.0	14.8	11.5	153
Geneva*	43	615	33.5	16.2	10.5	162
Hemlock*	33	920	29.4	15.5	13.4	163

* Geneva and Hemlock are in Ontario County.

LAND CLASS OF FARMS

In 1937 an economic classification of land was made in Yates County. 4/ The land was classified into 5 classes which are defined as follows: Land Class I is mostly woods or abandoned farm land and is best adapted to forests and recreational uses. Land Class II is more intensively used than Land Class I, but contains much idle land and many abandoned farms. The soil, topography,

3/ "Elevation and Land Use" by H. R. Kling, mimeographed report, A.E. 280, Department of Agricultural Economics and Farm Managements, page 21, 1939.

4/ "An Economic Study of Land Utilization in Yates County," by M. D. Woodin, Cornell Experiment Station Bulletin 727, 1940.

elevation, crops grown, size and conditions of farm buildings indicate that most of the land is better suited to forests and to recreational uses than to

FARM ORGANIZATION AND MANAGEMENT ANALYSIS

Tenure Situation

The amount of tenancy in the area was rather small; less than 10 per cent of all farms in the two towns and only 6 per cent of the 52 farms studied were operated by tenants (table 4). About one-third of all farms and about one-half of the 52 farms were operated by farmers who owned some land and in addition rented either crop or pasture land. This group is referred to as "part-owners".

TABLE 4. DISTRIBUTION OF FARMS IN MIDDLESEX AND POTTER ACCORDING TO TENURE
Yates County, 1939

Tenure	Land class II	Land class III	Land class IV	All farms in 2 towns	52 farms studied
	per cent	per cent	per cent	per cent	per cent
Owner	67	52	58	57	42
Part-owner	23	39	34	34	52
Tenant	10	9	8	9	6
Total	100	100	100	100	100

About three-quarters of the land operated was owned by the operator and about one-quarter was rented (table 5). Farmers in land class II rented a smaller percentage of the land they operated than did those in the higher land classes.

TABLE 5. ACRES OWNED AND ACRES RENTED, BY LAND CLASSES
159 Farms in Middlesex and Potter, Yates County, 1939

Land class	Number of farms	Total acres per farm		
		Owned	Rented	Total
II	31	124	27	151
III	67	161	54	215
IV	61	155	57	212
Total or average	159	151	50	201

Use of Land

In this area the average size of farm was 258 acres (table 6). Approximately 43 per cent was used for crops, 9 per cent for woods and 38 per cent for pasture. Part of this pasture was at some distance from the home farm, and in a lower land class.

The farms in land class II were smaller than the farms in the higher land classes. Because of the lower returns from farming in land class II, there has been less incentive to enlarge the farm business than in land classes III and IV.

TABLE 6. ACRES OF CROP LAND, WOODS AND PASTURE PER FARM IN EACH LAND CLASS
52 Farms in the Towns of Middlesex and Potter, Yates County, 1939

	Acres per farm				Per cent of total
	Land class II	Land class III	Land class IV	All farms	
Crop land	77	124	111	110	43
Woods	12	29	24	24	9
Pasture	61	101	110	98	38
Farmstead, waste, etc.	21	25	28	26	10
Total	171	279	273	258	100

Detached Pasture

In this area it is a common practice for farmers in the higher land classes to own or rent pasture in a lower land class - usually in land class II. For farmers in land classes III and IV, 41 per cent had pasture land that was not a part of, or did not adjoin the farm on which the operator lived (table 7). This pasture averaged 3.8 miles away from the operator's farmstead, and the average size was 100 acres. Ninety-one per cent of this pasture was in land

TABLE 7. NUMBER AND PER CENT OF FARMS WITH DETACHED PASTURE
159 Farms in Middlesex and Potter, Yates County, 1939

Land class	Number of farms	Number with detached pasture in land class			Per cent with detached pasture	Average acreage of detached pasture per farm having	Average miles to detached pasture
		II	III	Total			
II	31	2	2	4	13	63	2.2
III	67	19	4	23	34	105	4.2
IV	61	25	5	30	49	96	3.6
III & IV	128	44	9	53	41	100	3.8

class II and 9 per cent in land class III. Forty-four per cent of this detached pasture was rented and 56 per cent was owned by the operator.

The percentage of farms having detached pasture was higher for the farms studied than for all farms in the area (See page 58).

Crops Grown and Yields

Approximately 38 per cent of the crop area of these farms was used for hay; and alfalfa accounted for one-third of the hay acreage. The average yield of alfalfa in 1939 was 2.0 tons per acre while clover hay yielded only 1.1 tons and timothy and other hay only 0.8 tons (table 8), due to the dry weather in 1939 (table 2), yields were low, but in this area the drought was less severe than in most parts of the central and southern New York. Because of its deep root system, alfalfa is less affected by dry weather than clover or timothy. Due to its high yield, alfalfa accounted for one-half of the hay tonnage.

Corn silage was grown on 18 of the 52 farms and amounted to 7 acres per farm. The average yield was 10 tons per acre.

Corn for grain was grown on 46 farms and yielded 38 bushels of shelled corn per acre.

About 17 per cent of the crop area was in wheat or wheat with a small amount of winter barley. The barley was added in order to keep the acreage

TABLE 8. ACRES OF CROPS AND AVERAGE YIELD
52 Farms, Middlesex and Potter, Yates County, 1939

Crop	Per cent of crop area	Number of farms growing	Acres per farm growing	Average yield in 1939	Average yield in 1932*
Hay:					
Alfalfa	12.4	45	16	2.0 tons	3.1 tons
Clover	13.9	47	17	1.1 tons	1.3 tons
Timothy and other	11.6	27	22	0.8 tons	1.1 tons
Silage-fodder:					
Corn silage	2.3	18	7	10 tons	9.1 tons
Corn fodder	0.2	6	2	3 tons	
Grain:					
Corn	5.5	46	7	38+ bu.	30+ bu.
Wheat	13.8	47	17	25 bu.	25 bu.
Wheat and barley	2.8	15	10	25 bu.	
Oats and barley	9.6	35	16	34 bu.	31 bu.
Oats	4.5	22	12	31 bu.	29 bu.
Barley-spring	0.7	7	6	18 bu.	27 bu.
Barley-winter	0.4	4	6	25 bu.	-
Rye	1.2	9	8	18 bu.	14 bu.
Buckwheat	1.0	8	7	18 bu.	16 bu.
Other:					
Beans (dry)	8.3	34	15	14 bu.	15 bu.
Peas	1.8	23	4.5	0.3 ton	0.6 ton
Potatoes	0.7	34	1.2	112 bu.	113 bu.
Sweet corn	1.0	6	9	1.7 tons	1.7 tons
Fruit:					
Grapes	13.1	23	8	1.6 tons	2.2 tons
Apples	2.3	22	6	82 bu.	68 bu.
Pears	0.3	8	2	27 bu.	79 bu.
All other crops	1.6	20			
Total crops	100.0				

* Yields for 1932 are for 109 farms in Yates and Ontario Counties. Data are from "Sheep Farm Management and Production Costs," by P. V. Kepner, mimeographed report, A.E. 296, page 8, 1940

\+ Shelled corn.

of clear wheat in line with the acreage allotted under the Agricultural Conservation Program. Forty-seven of the 52 farms grow wheat and the average yield was 25 bushels per acre.

Most of the spring grains grown were a combination of oats and barley. This mixture gave more bushels per acre than oats alone and considerably more pounds of feed per acre.

Beans were the most important cash crop grown in the area. Thirty-four farmers grew beans and averaged 15 acres per farm; the average yield was 14 bushels per acre.

Peas were grown on 23 farms with an average yield of only 0.3 tons per acre; most farmers did not obtain enough peas to cover the cost of seed.

Grapes were grown on 23 farms and these farms averaged 8 acres per farm. The average yield of grapes was 1.6 tons.

Apples were grown on 22 farms with an average of 6 acres per farm growing apples. Many of these orchards were not cared for and were used for pasture. Only 7 farms produced 500 bushels or more apples per farm.

Yield of Crops by Land Classes

The higher the land class the higher was the proportion of land in wheat and alfalfa and the lower the proportion in timothy and other hay (table 9). No corn silage was grown on the 9 farms in land class II.

The greatest difference in crop yields between land classes was in the yield of wheat, oats, oats and barley, and potatoes (table 9). The yields of alfalfa, clover and timothy were each somewhat higher in the higher land classes. Due to the higher proportion of alfalfa in the higher land classes, the yield of all hay was much greater in the higher land classes; the yield in land class IV was double the yield in land class II.

TABLE 9. USE OF CROP LAND AND AVERAGE YIELD BY LAND CLASSES
52 Farms in Middlesex and Potter, Yates County, 1939

Crop	Per cent crop area			Average yield*		
	II	III	IV	II	III	IV
Alfalfa	1.6	13.3	14.3	-	1.9	2.0
Clover	11.0	15.7	13.0	0.9	1.1	1.2
Timothy and other	34.9	11.4	3.5	0.8	0.8	1.2
All hay	47.5	40.4	30.8	0.8	1.3	1.6
Corn for silage	0	2.3	3.0	-	9	10
Corn for grain	4.7	4.5	6.5	28	38	39
Wheat and mixture	10.4	14.6	19.9	15	24	27
Oats	2.6	5.4	4.2	22	24	40
Oats and barley	8.4	10.3	9.3	26	31	39
Dry beans	7.3	7.8	11.1	12	15	14
Peas	2.8	1.5	1.8	0.2	0.4	0.3
Potatoes	1.8	0.4	0.7	96	103	128
Grapes	3.4	4.3	1.9	1.8	1.5	1.7
All other crops	11.1	8.5	10.8			
Total	100.0	100.0	100.0			

* For unit of measurement see table 8.

The yield of grapes in land class II was slightly higher than in the other land classes. Some farms in land class II have a very limited area of well-drained soil. Where such land is not too far from the Lake, grapes do well even though the topography is rough.

Income from Individual Crops

Beans were the most important cash crop in the area and sales of beans amounted to $330 per farm or 32 per cent of the total crop sales (table 10). Wheat sales amounted to 20 per cent, and grapes to 15 per cent of the crop sales on these farms.

The income from all crops sold averaged $1,024 per farm.

TABLE 10. CROP SALES PER FARM
52 Farms in Middlesex and Potter, Yates County, 1939

Crop	Average quantity sold per farm	Unit	Price per unit	Receipts per farm	Per cent of total crop sales
Dry Beans	136	Bu.	$2.42	$330	32.3
Wheat	218	Bu.	0.93	202	19.8
Grapes	5.4	Tons	29.24	158	15.4
Alfalfa	4.4	Tons	15.09	66	6.4
Peas	0.7	Tons		34	3.3
Apples	112	Bu.	.26	30	2.9
Sweet corn	1.8	Tons	14.67	27	2.6
Potatoes	43	Bu.	.59	26	2.5
Cabbage	1.2	Tons	18.02	21	2.0
Other crops				130	12.8
Total				$1,024	100.0

Livestock Numbers and Products

Sheep

For all farms in the two towns of Middlesex and Potter the average number of sheep over a year old was 59 per farm as compared with 87 on 52 farms studied. (table 11). In this area 23 per cent of the farms did not have any sheep and 13 per cent had from 1 to 24 head. Only 12 per cent of the farms had 125 head or more.

For the 52 farms studied, 2 farms did not have any sheep in 1939; both of these farmers had sheep in 1932-33. About one-half of the farmers had between 50 and 99 head. Only 8 per cent had 150 head or more. The largest flock was 288 head.

During 1939 the number of sheep on these farms increased 6 per cent, and from 1932 to 1939 the increase was 27 per cent. During this seven-year period there was a change in acreage on some of the farms. For the 38

TABLE 11. DISTRIBUTION OF FARMS ACCORDING TO NUMBER OF SHEEP *
Middlesex and Potter, Yates County, January 1, 1940

	Land class			All farms in two towns	52 farms studied
	II	III	IV		
	per cent	per cent	per cent	per cent	per cent
None	20	27	21	23	4
1 to 24	26	11	10	13	4
25 to 49	29	18	13	18	19
50 to 74	13	15	18	16	21
75 to 99	3	13	15	12	23
100 to 124	6	5	8	6	11
125 to 149	0	1	6	3	10
150 to 199	0	0	5	2	4
200 to 249	0	4	2	3	0
250 to 299	0	5	0	2	4
300 or more	3**	1	2	2	0
Total	100	100	100	100	100
Average number of sheep per farm	43	61	65	59	87

* Number of sheep are those over one year old.
** One farm.

farms on which there was little or no change in acreage, the number of sheep increased 19 per cent from 1932 to 1939.

The average value of ewes was $9.60 per head in 1939 (table 12). This was approximately the same as the price paid for ewes bought during the year.

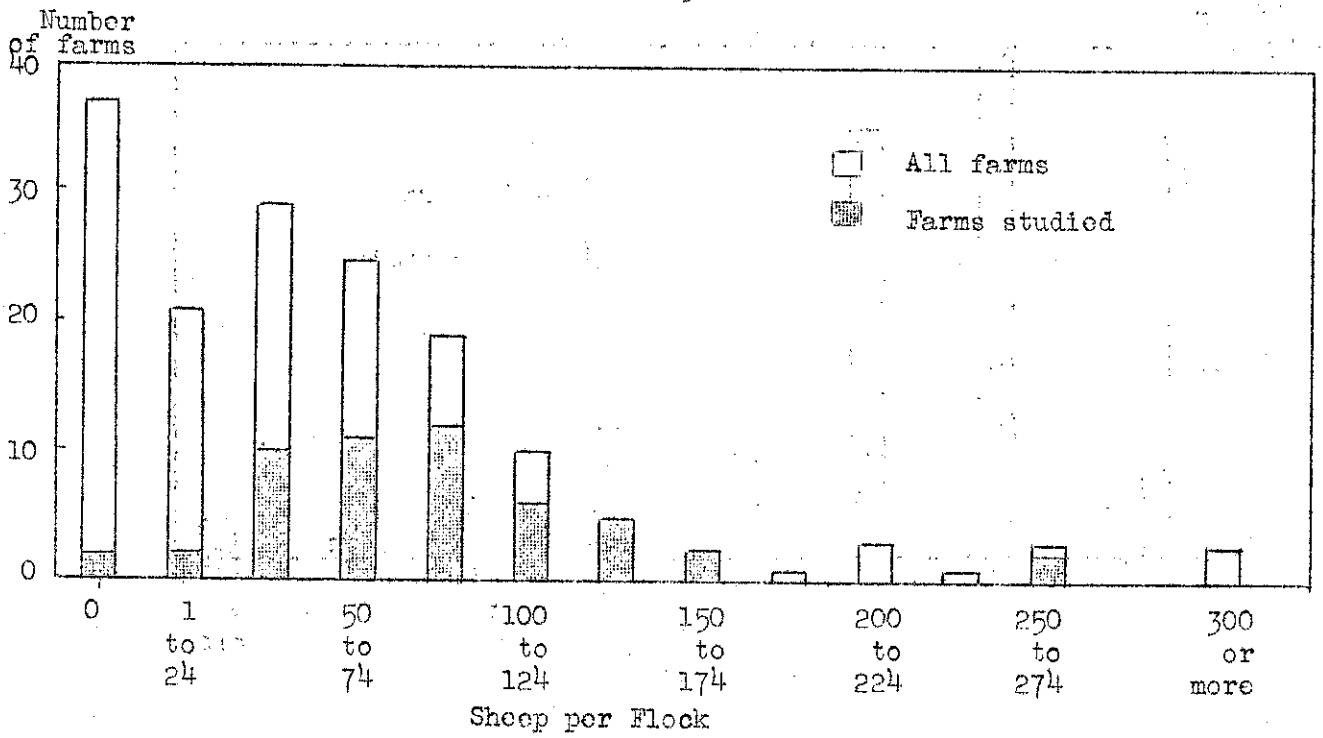

FIGURE 1. DISTRIBUTION OF FARMS ACCORDING TO NUMBER OF SHEEP OVER 1 YEAR OLD. Middlesex and Potter, Yates County, January 1, 1940

In this area 46 per cent of the farms had sheep flocks of from 25 to 99 head.

TABLE 12. AVERAGE LIVESTOCK NUMBERS AND VALUES
52 Farms, Middlesex and Potter, Yates County, 1939

	Average number	Average value per head
Ewes	78	$9.60
Yearlings	5	8.49
Bucks	2	18.64
Total	85	
Cows	5.8	$82
Heifers	3.6	
Bulls	0.5	
Total	9.9	
Beef cattle	0.3	
Horses	2.9	
Colts	0.7	
Brood sows	0.7	
Other hogs	3.2	
Hens and pullets	238	

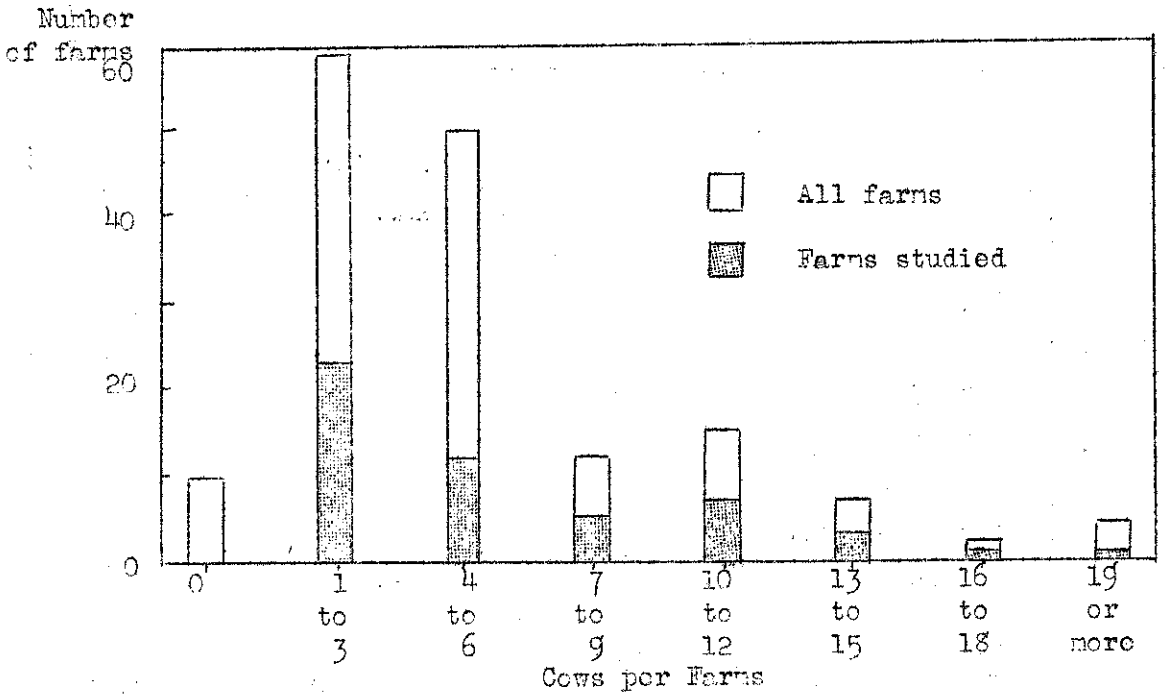

FIGURE 2. DISTRIBUTION OF FARMS ACCORDING TO NUMBER OF COWS AND HEIFERS OVER 2 YEARS OLD
Middlesex and Potter, Yates County, January 1, 1940

In this area two-thirds of the farms had less than 7 cows per farm.

Cows

For all farms in the two towns of Middlesex and Potter the average number of cows per farm was 5.2 and the 52 farms studied averaged 5.8 (table 13). In this area nearly one-half of the farms had less than 4 cows; 13 per cent had 10 to 15 cows; only 4 per cent had more than 15. For the 52 farms studied the size of herds was about the same as for all farms.

During 1939 the number of cows on the 52 farms studied increased 4 per cent, and from 1932 to 1939 the increase was 11 per cent. During this seven-year period the number of cows in land class II decreased 6 per cent, as compared with an increase of 25 per cent in land class IV. There was little change in cow numbers in land class III.

There was very little change from 1932 to 1939 in the percentage of farmers selling fluid milk.

The average value of cows in 1939 was $82 per head (table 12).

TABLE 13. DISTRIBUTION OF FARMS IN MIDDLESEX AND POTTER ACCORDING TO NUMBER OF COWS
Yates County, 1939

	Land class			All farms in two towns	52 farms studied
	II	III	IV		
	per cent	per cent	per cent	per cent	per cent
None	3	10	3	6	0
1 to 3	52	31	36	37	44
4 to 6	29	34	30	32	23
7 to 9	6	8	8	8	10
10 to 12	10	9	10	9	13
13 to 15	0	6	5	4	6
16 to 18	0	0	3	1	2
19 or more	0	2	5	3	2
Total	100	100	100	100	100
Average number of cows	3.9	5.0	6.1	5.2	5.8

Hens

The average number of hens on the 52 farms was 238. Land classes II and III averaged about 170 as compared with 340 for land class IV. Twenty farms had less than 100 hens, while 10 had between 200 and 399, and 9 had 400 or more. Thus on 60 per cent of these farms, the poultry enterprise constituted an important part of the farm business. The number of hens on these farms on January 1, 1940 was 28 per cent higher than a year earlier.

Livestock and Livestock Products Sold

The income from hens and the income from cows on these farms were each more important than the income from sheep (table 14). Eggs and poultry sold amounted to $775 per farm or 35 per cent of the income from livestock. The income from

TABLE 14. LIVESTOCK AND LIVESTOCK PRODUCTS SOLD PER FARM
52 Farms, Middlesox and Potter, Yates County, 1939

	Quantity sold per farm	Average price	Receipts per farm	Per cent of total
Sheep				
Lambs	66 head	$6.93	$455	20
Ewes	4 head	2.71	11	1
Bucks	0.4 "	8.45	3	-
Wool	672 pounds	.23	156	7
Total			$625	28
Dairy cattle				
Milk-wholesale	26,927 cwt.	1.84	$496	22
Milk-retail			11	1
Cream			52	2
Butter			4	-
Dairy cattle sold			147	7
Total			$710	32
Poultry				
Eggs	1962 doz.	.23	$445	20
Poultry sold			330	15
Total			$775	35
Hogs sold			59	3
Horses sold			24	1
Turkeys sold			19	1
Beef cattle sold			7	-
Breeding fees			9	-
Total			$2,228	100

milk and other dairy products plus cattle sold amounted to $710 per farm or 32 per cent of the livestock income. Only 20 of the 52 farms sold fluid milk; the price of milk averaged $1.84 per hundred and the test was 4.3. Lambs and sheep sold plus wool amounted to $625 per farm or 28 per cent of the income from livestock. Lambs sold averaged $6.93 per head and old ewes $2.71. Most of the wool was sold in April and May and averaged 23 cents per pound.

The total income from livestock averaged $2,228 per farm. The average for land class II was $995 as compared with $1,887 in land class III and $2,960 in land class IV.

Capital

According to the estimates of farmers, the average value of land and buildings, livestock, equipment and feed in these farm businesses in 1939 was $13,207 (table 15). Of this amount the value of land and buildings was $8,778 or two-thirds of the total.

The average value of land and buildings for the farms in different land classes ranged from $3,339 for land class II to $10,603 in land class IV. Some farmers owned or rented pasture in a lower land class but since all the land used by one person in 1939 is considered as a unit, such pasture land is included in the higher land class.

TABLE 15. AVERAGE CAPITAL PER FARM BY LAND CLASSES
52 Farms, Middlesex and Potter, Yates County, 1939

	Dollars per farm				
	Land class II	Land class III	Land class IV	All farms	Per cent of total
Land and buildings	$3,339	$9,050	$10,603	$8,778	67
Livestock					
Sheep	418	734	859	737	6
Other livestock	728	1,610	1,698	1,498	11
Equipment	778	1,493	1,772	1,498	11
Feed	335	815	736	696	5
Total	$5,598	$13,702	$15,668	$13,207	100

To determine the value of land in each land class the acres and value of each parcel of land were tabulated. The average value per acre of land and buildings in land class II was $13; land class III $37; and land class IV $5Q. For the nine operated farms studied in land class II, the average value per acre was $17, and the land used for pasture in this land class by farmers in land classes III and IV was valued at $10 per acre.

Receipts

The average farm receipts on these 52 farms from the year's business was $3,768 (table 16). In land class II total receipts amounted to $1,686 as compared with $4,640 in land class IV. Livestock and livestock products were the source of 59 per cent of the receipts on these farms and crops sold amounted to 27 per cent. The income from sheep was $625 per farm, which was 17 per cent of the total receipts. In land class II, 23 per cent of the farm receipts were from sheep as compared with 15 per cent in land class IV.

TABLE 16. SUMMARY OF FARM RECEIPTS BY LAND CLASSES
52 Farms, Middlesex and Potter, Yates County, 1939

	Dollars per farm				
	Land class II	Land class III	Land class IV	All farms	Per cent of total
Crops	$400	$1,121	$1,180	$1,024	27
Livestock sold	495	789	1,475	1,055	28
Livestock products	500	1,098	1,485	1,173	31
Increase in inventory					
Feed	101	258	296	247	7
Other	-	249	-	70	2
Agricultural Conservation	51	102	110	97	2
Miscellaneous	139	95	94	102	3
Total	$1,686	$3,712	$4,640	$3,768	100
Sheep enterprise (included above)					
Lamb and sheep sales	$303	$496	$511	$469	13
Wool	82	168	174	156	4

Increase in the inventory of feed accounted for $247 per farm or 7 per cent of the receipts; this is due mostly to the fact that farmers valued their hay at a higher price on January 1, 1940 than they did a year earlier.

Agricultural Conservation payments averaged $97 per farm. This is the amount of money received during the year 1939; it covered soil building payments for the year 1938, and the 1939 wheat payments. In addition to these payments the farmers received grant-of-aid lime in the fall of 1939 for which the farmer paid $1.00 per ton delivered to his farm.

Expenses

The average farm expenses on these farms amounted to $2,388 (table 17). The largest expense was for labor which amounted to $472 per farm or 20 per cent of the total. Unpaid family labor was higher in land class II than in the higher land classes, but the reverse was true of hired labor; in land classes III and IV hired labor was 4 to 5 times as important as in land class II. The returns from farming in land class II are usually not sufficient to pay hired men's wages.

Machinery and building expenses were the next largest class of expenses, amounting to 17 per cent of the total.

Feed purchased amounted to $358 per farm or 15 per cent of the total expenses. About three-quarters of the feed bought was for poultry and most of the remaining one-quarter for dairy cattle. Sheep feed purchased amounted to only $13 per farm.

The expense for fertilizer and lime amounted to $127 per farm. Of this, $110 was for fertilizer and $17 for lime. The low expense for lime is due to the fact that a large proportion of the lime used in 1939 was acquired through grant-of-aid in the Agricultural Conservation program at $1.00 per ton delivered at the farm. The grant-of-aid program for lime went into effect in the summer

TABLE 17. AVERAGE FARM EXPENSE BY LAND CLASSES
52 Farms, Middlesex and Potter, Yates County, 1939

Item	Dollars per farm: Land class II	Land class III	Land class IV	All farms	Per cent of total
Hired labor	$91	$409	$441	$368	15
Unpaid family labor	123	107	95	104	5
Total	$214	$516	$536	$472	20
Current building expense	$ 36	$106	$76	$80	3
Machinery purchased	18	172	143	132	6
Machinery operating costs*	164	198	221	203	8
Total	$218	$476	$440	$415	17
Feed purchased					
For sheep	$4	$18	$12	$13	$1
For other livestock	175	233	497	345	14
Total	$179	$251	$509	$358	15
Taxes	$141	$269	$291	$257	11
Insurance	31	48	54	48	2
Total	$172	$317	$345	$305	13
Fertilizer and lime	$64	$126	$151	$127	5
Seed and plants	82	120	144	124	5
Total	$146	$246	$295	$251	10
Livestock bought	$191	$260	$359	$294	12
Threshing and machines hired	34	68	123	87	4
Milk hauling	16	57	55	49	2
Decrease in inventory	69	0	23	0	
All other expenses	67	138	203	157	7
Total	$1,306	$2,329	$2,888	$2,388	100

* Machinery operating cost does not include depreciation or interest.

of 1939. All other lime used in 1939 was figured at the net price the farmer would have to pay; that is, the price paid less the $3.50 per ton he would receive through the conservation payment. This method was used to make the expense for lime more comparable on the different farms and because of the increase in the use of lime in 1939 as compared with 1938.

These farmers used an average of 11 tons of lime per farm in 1939. Land class II averaged 10 tons per farm; land class III, 14 tons and land class IV 9 tons. The soils in land classes II and III are more in need of lime than those in land class IV.

Labor Income

In order to determine some of the reasons why certain of these farms were more successful than others financially during the period covered by this study a common measure of returns must be employed. Experience has shown that the best measure for financial success in farming is "labor income". Labor income is the return the operator receives for his year's work and management after charging all farm expenses including unpaid labor and after deducting 5 per cent interest on the total capital invested. In addition he has a house to live in and farm products to use in the house.

After deducting the average farm expenses of $2,388 from farm receipts of $3,768 there remained $1,380 to cover interest on the investment and pay for the operator's labor and management (table 18). Interest on the average investment of $13,207 at 5 per cent was $660. After deducting this interest item from the $1,380, there was $720 left for the operator's own labor and management during the year. In other words his labor income was $720.

In land class II the average labor income was $100 as compared with $698 in land class III and $969 in land class IV.

TABLE 18. FINANCIAL SUMMARY
52 Farms, Middlesex and Potter, Yates County, 1939

	Average per farm			
	Land class II	Land class III	Land class IV	All farms
Total receipts	$1,686	$3,712	$4,640	$3,768
Total expenses	1,306	2,329	2,888	2,388
Return for capital and operator's labor	380	1,383	1,752	1,380
Interest at 5 per cent on average capital	280	685	783	660
LABOR INCOME	$100	$698	$969	$720

The distribution of farms according to labor income is shown in table 19. In land class II no farmer made more than $500 or less than minus $500 labor income. In class IV, 4 farms had labor incomes of more than $2,000, while two had loss than minus $1,000. The higher the land class the greater are the chances of making a high income.

TABLE 19. DISTRIBUTION OF FARMS ACCORDING TO LABOR INCOME BY LAND CLASSES
52 Farms, Middlesex and Potter, Yates County, 1939

Labor income	Land class II	Land class III	Land class IV	All farms
	Number of farms			
-$1,000 or less	0	0	2	2
-$500 to -$1,000	0	1	0	1
-$500 to 0	3	3	2	8
0 to $500	6	5	2	13
$500 to $1,000	0	3	8	11
$1,000 to $2,000	0	6	6	12
$2,000 to $2,500	0	1	1	2
$2,500 or more			3	3
Total	9	19	24	52

Factors Affecting Returns from the Farm Business

A number of factors affect the net return a farmer receives from his farm business. One of these is the change in the price level, but this is beyond the control of the individual farmer. Many factors, however, are within his control; some of the more important of these, as they affect returns on the 52 farms studied in 1939, are discussed in the following pages.

Land Class

The farms in land classes III and IV were larger than the farms in land class II; they had more acres of crops and pasture, more sheep and more cows per farm (table 20). The farms in land class IV were only slightly larger than those in land class III as measured by man work units which reflects the total amount of farm business. The chief difference in size of business between land classes III and IV was in number of hens; land class IV had twice as many hens per farm as land class III or land class II.

The higher the land class the greater was the labor efficiency. This was measured by the number of productive man work units per man which is the number of days of productive work accomplished per worker during the year. The better labor efficiency in the higher land classes was the result of a larger size of business and better farm organization.

TABLE 20. SIZE OF FARM IN EACH LAND CLASS
52 Farms, Middlesex and Potter, Yates County, 1939

Land class	Number of farms	Acres			Number per farm			Productive man work units*	Man equivalent
		Total	Crops	Cash crops	Cows	Sheep	Hens		
II	9	171	77	17	3.5	50	172	301	1.4
III	19	279	124	32	6.0	91	164	497	2.0
IV	24	273	111	41	6.5	95	340	527	1.9
Total or average	52	258	110	34	5.8	87	238	477	1.8

* For definition, see page 31.

It has been shown previously that the yields of the individual crops were higher in the higher land classes (table 9). The yield of all crops combined is shown in table 21 by the crop index, which is based on the yields of all crops grown on a farm in comparison with average yields of the same crops for the area.

Crop index expresses only part of the difference because more intensive crops are grown in the higher land classes. For example, a higher percentage of hay acreage was alfalfa on the better land.

TABLE 21. YIELDS OF CROPS AND PRODUCTION OF LIVESTOCK IN EACH LAND CLASS
52 Farms, Middlesex and Potter Yates County, 1939

Land class	Number of farms	Per cent of hay acreage alfalfa	Productive man work units per man	Per cent selling fluid milk	Sales of dairy products per cow	Lambs raised per 100 ewes	Crop index
II	9	3	215	22	$34	103	87
III	19	37	248	37	69	88	98
IV	24	45	277	46	72	93	105
Total or average	52	35	265	38	$64	93	99

A larger proportion of the farmers in the higher land classes were selling fluid milk and the sales of dairy products per cow were also much higher (table 21). The number of lambs raised per 100 ewes was highest in land class II, and the sheep accounted for a larger percentage of the farm receipts in this land class. Total farm receipts as well as dollars received from sheep were considerably smaller, however, in land class II. The opportunities for producing cash crops, fluid milk, and other intensive products are better in the higher land classes.

As previously shown, labor incomes averaged larger in the higher land classes (table 22). This is because of the larger-sized farm

business, better yields, and higher labor efficiency which are associated with the better land. The effects of these factors on labor income will be shown in the following section, based on farms in land classes III and IV only. The purpose of this selection was to obtain a more uniform group with respect to productivity of the land.

TABLE 22. LABOR INCOME IN EACH LAND CLASS
52 Farms, Middlesex and Potter, Yates County, 1939

Land class	Number of farms	Per cent receipts		Total farm receipts	Total capital	Labor income
		Crops	Sheep			
II	9	23	26	$1,679	$5,598	$100
III	19	31	20	3,758	13,702	698
IV	24	29	16	4,686	15,668	969
Total or average	52	29*	20*	$3,827	$13,207	$720

* These percentages which are simple averages differ slightly from those shown in table 16, which are weighted averages.

Type of Farm

The 43 farms in land classes III and IV were classified into five different type-of-farm groups, on the basis of the important enterprises of each farm (table 23). The average size of the farm business was larger on farms having an important dairy or poultry enterprise in addition to sheep and cash crops. Farms having an important dairy or poultry enterprise had more sheep and more acres of crops than did the "sheep-cash crop" farms.

TABLE 23. TYPE OF FARM AND FARM ORGANIZATION
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Type	Number of farms	Crop acres	Number of — Cows	Sheep	Hens	Productive man work units	Total capital
Miscellaneous	3	66	8.0	17	170	373	$9,733
Sheep-cash crops	9	101	2.3	85	78	362	10,189
Sheep-cash crops-dairy	12	117	9.0	100	59	561	15,050
Sheep-cash crops-poultry	9	123	2.1	96	446	526	16,400
Sheep-cash crops-dairy-poultry	10	141	9.6	114	525	674	18,750
Total or average	43	117	6.2	93	260	525	$14,805

Farms that had a dairy or poultry enterprise in addition to sheep and cash crops had larger incomes than the "sheep-cash crop" farms (table 24). Those with both dairy and poultry in addition to sheep and cash crops had still larger incomes. The amount of work accomplished per man during the year, as measured by work units per man, was about 25 per cent higher on the farms with a dairy or poultry enterprise than on the "sheep-cash crops" farms. The most important factor accounting for the better incomes on the farms with more enterprises was probably size of business. Farmers in this area apparently have found that size of business can be obtained best by having a dairy or poultry enterprise, or both, in addition to sheep and crops.

TABLE 24. TYPE OF FARM AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Type	Number of farms	Per cent of receipts from Crops	Per cent of receipts from Sheep	Productive man week units per man	Lambs raised per 100 ewes	Labor income
Miscellaneous	3	7	12	287	100	$250
Sheep-cash crops	9	41	27	226	88	292
Sheep-cash crops-dairy	12	31	17	280	88	727
Sheep-cash crops-poultry	9	29	15	292	91	1022
Sheep-cash crops-dairy-poultry	10	26	16	281	94	1523
Total or average	43	30	18	276	90	$850

Farmers selling fluid milk operated larger farm businesses, had greater labor efficiency, and had more income per cow from sales of dairy products than did farmers selling cream (table 25). The average labor income was $1,161 for the farmers selling fluid milk as compared with $409 for those that sold cream.

TABLE 25. TYPE OF DAIRY PRODUCTS SOLD AND LABOR INCOME
34 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Type of dairy product	Number of farms	Productive man work units		Sales of dairy products per cow	Total capital	Labor income
		Total	Per man			
Fluid milk	18	635	288	$121	$17,594	$1,161
Cream	16	431	253	41	13,125	409

Size of Business

There was considerable variation in size of business among the 43 farms studied in land classes III and IV. Total acres operated ranged from less than 100 to more than 400 per farm, number of cows from 1 to 21, number of sheep from none to more than 170, and total capital from less than $4,000 to more than $20,000.

On these rather diversified farms it is necessary to use some measure of size of business that can be applied to all the enterprises of the farm. The productive man work unit is a measure of this type. A work unit is the average amount of productive work accomplished by a man in a ten-hour day. Thus, each crop and livestock enterprise on a farm can be expressed in terms of work units. This was done for each of the farms studied, and the total work units added to measure the total amount of business for each farm.

The 43 farms were divided into three size groups according to the

number of work units per farm. About one-third fell in the group with less than 400 work units, and about one-third in the group with 600 or more (table 26). There was a strong tendency for farms that were large in terms of work units to be large with respect to each of the farm enterprises. In other words, the larger farm businesses usually obtained their size by having more crop acres, more cows, more sheep, and more hens rather than by having more of any one enterprise.

TABLE 26. RELATION OF PRODUCTIVE MAN WORK UNITS PER FARM TO OTHER MEASURES OF SIZE OF BUSINESS
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Productive man work units		Number of farms	Acres of crops	Number of cows	Number of hens	Number of sheep	Man equivalent
Range	Average						
Less than 400	332	16	81	3.4	141	76	1.5
400 to 599	490	12	125	6.9	145	78	2.0
600 or more	759	15	149	8.7	479	123	2.3
Total or or average	525	43	117	6.2	260	93	1.9

The size of the farm business, as measured by work units, had a very pronounced effect on income (table 27). On farms with less than 400 work units, the average labor income was $161 as compared to $1,689 for farms with 600 or more work units. This relationship was due partly to the fact that the larger farms also had higher crop yields and more sales dairy products per cow. The farms with 600 or more work units also sold an average of 113 eggs per hen as compared to 90 eggs per hen for the 43 farms. There was a very slight tendency for lambs raised per ewe to be higher on the larger farms.

TABLE 27. PRODUCTIVE MAN WORK UNITS AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Productive man work units		Number of farms	Productive man work units per man	Sales of dairy products per cow	Crop index	Total capital	Labor income
Range	Average						
Less than 400	332	16	221	$46	97	$10,819	$161
400 to 599	490	12	245	74	99	13,967	718
600 or more	759	15	330	94	110	19,727	1689
Total or average	525	43	276	71	102	$14,805	$850

Although the best measure of size of business on these farms is probably work units, other measures may be useful. The labor incomes for small, medium, and large farm businesses, grouped by crop acres, number of sheep, and other size factors are shown in table 28. Regardless of the measure of size used, the larger farms had higher average incomes.

With the limited number of records, it is difficult to measure the relative importance of the different farm enterprises in affecting income in this area. The larger farms averaged more acres in crops, and more of each type of livestock than the smaller farms. Size of business was definitely associated with income, but the relative importance of the different size factors cannot be shown definitely in this report.

TABLE 28. SIZE OF FARM BUSINESS AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Measure of size	Size group		
	Small	Medium	Large
		Labor Income	
Acres of crops	$262	$1,122	$1,082
Acres of cash crops	707	759	1,067
Number of cows	638	759	1,214
Number of sheep	645	861	1,057
Man equivalent	713	813	983
Productive man work units	161	718	1,689

Crop Yields and Livestock Production Rates

Crop yields and livestock production rates varied greatly among the 43 farms in land classes III and IV. Crop yields on 8 farms were more than 20 per cent below the average for the area, while 6 farms had crop yields 20 per cent or more above average. Lambs raised per 100 ewes varied from below 70 to more than 115. The farms on which crop yields were low had less lambs raised per ewe, less eggs sold per hen, and smaller sales of dairy products per cow than the farms with better yields of crops (table 29).

TABLE 29. RELATION OF CROP INDEX TO OTHER PRODUCTION RATES
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Crop index Range	Crop index Average	Number of farms	Sales of dairy products per cow	Eggs sold per hen	Lambs raised per 100 ewes
Less than 90	75	12	$54	69	84
90 to 109	101	15	90	96	92
110 or more	123	16	65	98	93
Total or average	102	43	71	90	90

Farms with high crop yields had higher incomes on the average than did farms with lower yields (table 30). This relationship was due in part to the fact that high crop yields were associated with high livestock production rates, and in part to the fact that farms with good crop yields also had larger farm businesses.

TABLE 30. CROP INDEX AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Crop index Range	Crop index Average	Number of farms	Productive man work units	Man equivalent	Total capital	Labor income
Less than 90	75	12	445	1.8	$12,392	$167
90 to 109	101	15	546	1.8	14,367	1,014
110 tor more	123	16	566	2.2	17,025	1,208
Total or average	102	43	525	1.9	$14,805	$850

The labor income for the 43 farms when divided into low, medium, and high groups on the basis of different measures of production rates are given in table 31. Regardless of the measure used, higher rates of production were associated with higher farm incomes. The sales of dairy products per cow are affected by the type of dairy product as well as by the amount sold (see table 25). Most of the farms in the high group with respect to sales of dairy products per cow were selling fluid milk, and were large farm businesses.

TABLE 31. PRODUCTION RATES AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Measure of production rate	Production Rate Group		
	Low	Medium	High
Crop index	$167	$1,014	$1,208
Dollar sales of dairy products per cow	367	835	1,224
Eggs sold per hen	735	854	961
Lambs raised per 100 ewes	658	904	1,161

The effect of crop yields on labor income was greater on large farms than on small ones. On farms with less than 490 work units, labor income increased about $400 as crop index increased from 79 to 114 (table 32).

TABLE 32. SIZE OF FARM BUSINESS, CROP INDEX, AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

	Number of farms	Productive man work units	Crop index	Total capital	Labor income
Productive man work units less than 490					
Crop index below 100	10	368	79	$10,480	$ 98
Crop index 100 or more	11	349	114	12,318	495
Productive man work units 490 or more					
Crop index below 104	11	618	90	$16,436	$ 915
Crop index 104 or more	11	752	122	19,591	1,822

On farms with 490 or more work units, labor income increased about $900 as crop index increased from 90 to 122. Similar relationships were found with other measures of production rates.

Labor Efficiency

Labor efficiency refers to the amount of work accomplished per man during the year, and may be measured by work units per man. This measure was found to be directly related to labor income (table 33). The farmers having high labor efficiency were operating large farm businesses. One of the advantages of a large farm business is the fact that it usually makes possible a greater accomplishment of work per man.

The relationship between labor efficiency and farm income was due partly to the fact that the more efficient farmers with respect to labor were also operating larger farms. In other words the highincomes associated with high labor efficiency were due in part to efficiency and in part to large size of business.

TABLE 33. LABOR EFFICIENCY AND LABOR INCOME
43 Farms in Land Classes III and IV, Middlesex and Potter, Yates County, 1939

Productive man work units per man		Number of farms	Productive man work units	Man equivalent	Crop index	Labor income
Range	Average					
Less than 230	193	13	405	2.1	97	$88
230 to 299	265	14	477	1.8	104	742
300 or more	380	16	665	1.9	104	1562
Total or average	276	43	525	1.9	102	$850

A summary of this section "Factors Affecting Returns from the Farm Business" will be found on page 63.

COSTS AND RETURNS ON SHEEP

Most of the costs on sheep in New York State are non-cash costs. In this study only 4 per cent of the costs on sheep were paid directly in cash. Thus it is difficult for a farmer to determine the profitableness of the sheep enterprise on his farm without first recording the value of the items not paid in cash. In this area, practically all the grain and roughage fed to sheep except cull beans, which were purchased, could be fed other livestock. The pasture on the home farm and the building could in most cases be economically used for other livestock. Therefore, these items when used by sheep should be charged against sheep even though they are not paid in cash.

Costs and returns on sheep were obtained from 49 farmers who had 4,450 sheep or an average of 91 head per farm. Eight of these were in land class II, 18 in land class III, and 23 in land class IV. Most of the ewes kept on those farms were grade westerns and a large proportion of the rams were Hampshire.

Data were obtained for the calendar year 1939. During this year lamb prices were high compared with the price of feed. The index of the price of lambs in the fall of 1939 was 135 when 1910 - 1914 = 100, and wool during the spring of 1939 was 110 (table 1). The index of the price of grain during the late winter and spring of 1939 was 97 and hay was as low as it had been at any time since 1932. Also in 1939 the pasture season was 17 days longer than normal.

The methods of calculating the different costs and their importance are given in the following paragraphs:

Feed

Feed charges represent the farm value of the feeds used. The farmers interviewed valued these feeds on the basis of the going farm price for the

quality of the feed used. Since but very little feed was purchased, these estimated values were the basis of most of the feed costs. The study was for the calendar year 1939, so all the concentrates and nearly all of the hay fed to ewes was charged at the value during the late winter and spring of 1939. The grain fed to lambs was charged at the value in the fall of 1939. Any labor for getting the purchased feed to the barns was not charged against feed but was included in the miscellaneous labor costs.

Concentrates

The pounds of concentrates fed to ewes and to lambs and the average price at which farmers valued it is given in table 34.

About 47 per cent of the concentrates fed to ewes in this area was oats and barley or oats. About one-quarter was cull beans and nearly 20 per cent corn. Bran accounted for only 4 per cent. The average price of home grown grain was $1.01 per hundred pounds. Beans averaged 31 cents per 100 pounds or $6.20 per ton, so that all concentrates fed to ewes averaged 86 cents per hundred pounds. Concentrates were fed for an average of 117 days or approximately 4 months.

Of the grain fed to lambs, two thirds was oats and barley or oats. Corn and wheat each accounted for about 12 per cent. Grain fed per lambs averaged 46 pounds per head and was valued at $1.26 per hundred pounds.

About one-quarter of the pounds of concentrates fed to ewes and lambs was purchased. Because cull beans were low in price only 17 per cent of the dollars was for concentrates purchased.

The quantity of concentrates and roughage fed per sheep are shown in table 40.

Roughage

The average price of hay charged to ewes was $7.92 per ton (table 35). In this

TABLE 34.

GRAIN FED TO SHEEP
49 Farms, Middlesex and Potter, Yates County

	Ewes			Lambs		
	Pounds per farm	Average price per hundred-weight	Value per farm	Pounds per farm	Average price per hundred-weight	Value per farm
Home grown						
Oats and barley	2715	$1.02	$28	1728	$1.23	$21
Oats	1673	1.07	17	628	1.26	8
Barley	261	1.00	3	77	1.24	1
Corn	1741	1.00	17	427	1.25	5
Wheat	213	1.03	2	412	1.23	5
Rye	96	.80	1	15	1.10	*
Total	6699	$1.01	$68	3287	$1.23	$40
Purchased						
Cull beans	2515	$.31	$8	-	-	-
Bran	443	1.47	6	84	$1.54	$ 1
Oats	132	1.25	2			
Molasses	69	1.24	1	65	1.19	1
Soybean meal				69	2.18	2
Linseed meal				4	2.00	*
Lamb feed				63	1.75	1
Total	3159	$.54	$17	285	$1.62	$5
Total	9858	$.86	$85	3572	$1.26	$45

* Less than $.50.

area half of the hay tonnage was alfalfa, and approximately one-half of the hay fed to sheep was alfalfa. Farmers usually fed to sheep the first cutting of alfalfa and clover where these were available. Where timothy was grown it was fed to horses and the remainder fed to other stock. The hay fed to lambs was usually the best quality hay. The higher price for hay fed to lambs is partly due to the better quality and partly to the fact that this hay was fed to lambs in the fall of 1939 when hay was high in price.

Bean pods accounted for one-sixth of the dry roughage fed to sheep and were valued at $3.74 per ton.

Silage was fed to sheep on only 14 of the 49 farms. Most of this was corn silage which was valued at $2.85 per ton. On cost account farms the cost of producing corn silage in 1938 was $3.98 per ton. 1/

TABLE 35. ROUGHAGE FED TO SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

	Tons per farm	Average price per ton	Value per farm
Dry roughage			
Hay - ewes	22.8	$7.92	$181
Hay - lambs	0.4	12.62	5
Bean pods	5.1	3.74	19
Corn stover	1.3	3.38	5
Buckwheat straw	0.1	1.00	*
Straw, fed	0.4	4.59	2
Total dry roughage	30.1	$ 5.73	$212
Silage			
Corn silage	3.0	$ 2.85	$9
Pea silage	0.6	1.78	1
Total silage	3.6	$2.32	$10
Total roughage	33.7	$ 4.02	$222

* Less than $.50.

On these farms about one-half of the hay was fed to sheep. More than one-quarter to cattle and less than one-quarter to horses (table 36). Nearly all of the bean pods were fed to sheep. Eighty-six per cent of the corn silage was fed to cows and heifers, and 14 per cent to sheep.

1/ "Costs and Returns from Farm Enterprises from 75 Cost Account Farms, 1938", by Paul S. Williamson, Cornell Extension Bulletin 422, Page 31, 1939.

TABLE 36. USE OF ROUGHAGE
49 Farms, Middlesex and Potter, Yates County, 1939

	Hay	Bean pods	Corn stover	Straw, fed	Corn silage	Pea silage
	Tons per farm					
Sheep	23.2	5.1	1.3	0.5	3.0	0.6
Cattle	14.6	0.1	4.4	0.2	18.8	0.1
Horses	10.8	0.0	0.6	1.3	0	0
Total	48.6	5.2	6.3	2.0	21.8	0.7
	Per cent of total					
Sheep	48	98	21	25	14	86
Cattle	30	2	69	10	86	14
Horses	22	0	10	65	0	0
Total	100	100	100	100	100	100

Pasture

In 1939 the average pasture season in this area extended from May 11 to December 2 or 205 days. This is equivalent to 6.8 months. The normal pasture season as given by these farmers is from May 12 to November 16, a period of 188 days or 6.2 months. Thus, the 1939 pasture season was 17 days longer than usual.

The costs for permanent pasture owned by the operator include interest, taxes, the value of new posts used, and man and horse labor fixing fence. A team and wagon were generally used for hauling and driving posts. Practically no new fence was purchased and nothing was included for depreciation on fences. Seventy-one per cent of the costs on permanent pasture were for interest and taxes (table 40.) Where pasture was rented it was charged at the rate paid, which was usually $1 per acre. In some cases the renter had to repair the fence and this work was included in the cost. The value of other pasture used by

ewes or lambs, such as second or third growth of alfalfa or second growth clover were estimated by the farmer. If another cutting of hay could have been made, the value of the pastured was determined from the value of the standing hay. On some fields the after growth was so small, due to the dry weather in 1939, that the farmer said no charge should be made.

Pasture used by sheep and lambs amounted to 0.9 acres of permanent pasture and 0.3 acres of other pasture (mostly after-math growth on hay fields) per mature sheep (table 40). Permanent pasture cost $1.12 an acre or $1.04 per mature sheep. Other pasture for ewes cost 48 cents an acre and for lambs 77 cents, and averaged 65 cents per acre or 21 cents per mature sheep.

Buildings

Building charge was determined from the value of the barn and the percentage used for sheep. The farmer was first asked the value of his farm. Then he was asked the value of the different buildings, crop land and pasture land. In most cases the farmers lowered the value of the buildings so that the sum of the different items would not exceed the value of the farm. The annual building charge used in this study was 11 per cent of the estimated value of the barn used by the sheep.[1/] This item was then multiplied by the percentage of the barn used for sheep. The average value of that part of barns used for sheep was $10.00 per head, and the annual cost was $1.10. (table 40).

Man Labor

The sheep were charged with the value of labor actually used on this enterprise. The farmers were asked what they would have to pay per hour for a man who boarded himself to do the work that he did on sheep. It was pointed out that most of the work was in the winter time. Nearly all of these estimates were between 20 and 25 cents per hour; the average was 23 cents per hour and this rate was used for all farms studied.[2/]

1/ The average annual building cost on farms keeping cost accounts in New York State has averaged about 11.5 per cent of the value of the buildings. Five per cent is for interest, about 3 per cent for taxes, and the other 3.5 per cent for depreciation, repairs, and insurance.

2/ On farms keeping cost accounts the average cost of all labor during the year 1938 was 31 cents per hour.

Man labor averaged 5.1 hours per sheep per year. The distribution of this labor is shown in figure 3. The most labor was required in April when these farmers averaged 3.7 hours per day taking care of sheep and lambs. About three-fourths of the work on sheep was from December 1 to April 30 when there is little if any work on crops except during the latter part of the month of April.

Daily chores of feeding sheep and caring for lambs accounted for 88 per cent of the labor on sheep (table 37).

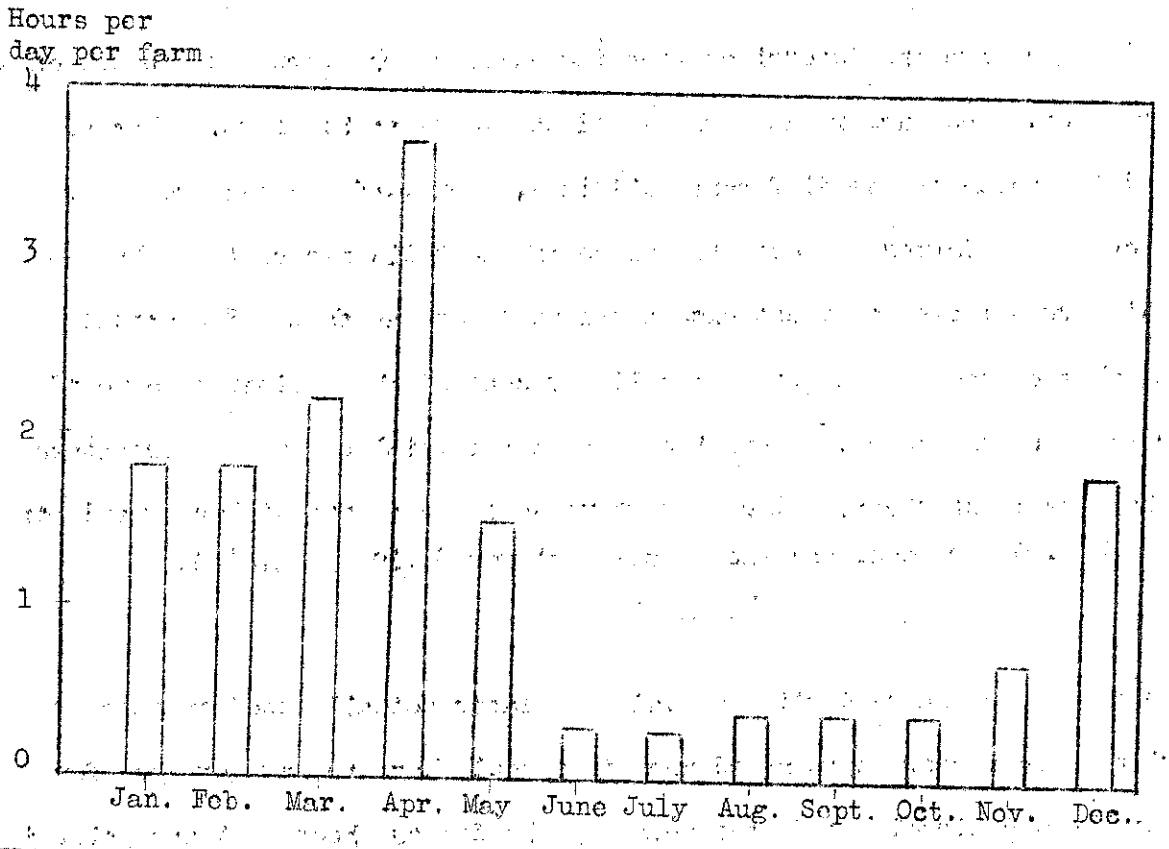

FIGURE 3. HOURS OF MAN LABOR ON SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

About three-quarters of the labor on sheep was from December 1 to April 30. During April these farmers averaged nearly 4 hours per day on sheep.

TABLE 37. DISTRIBUTION OF MAN LABOR ON SHEEP ACCORDING TO OPERATIONS
49 Farms, Middlesex and Potter, Yates County, 1939

Operation	Hours of man labor per farm	Per cent of total
Daily chores	409	88.4
Moving to and from pasture	16	3.3
Helping shearers*	15	3.2
Drenching	11	2.4
Dipping	2	0.5
Marketing	4	0.9
Hauling feed	3	0.6
Dressing for market and other	3	0.7
Total	463	100.0

*All except one farmer hired their sheep sheared. Hired shearing is not included above.

Depreciation

Depreciation on the flock due to death losses and advancing age were obtained by subtracting the value of the flock at the end of the year from that at the beginning; credit was given for old ewes sold and a debit made for any ewes purchased. Where ewe lambs were kept for replacements in the flock they were handled the same as lambs sold; that is, they were included as a receipt. This made the depreciation item comparable on the different farms; this is also true of lambs sold. Where the flock was not replaced by young stock, most of the farmers figured that the ewes decreased a dollar per head in value as they became a year older.

Depreciation on sheep amounted to $1.39 per head (table 40). The average age of the sheep on these farms on January 1, 1940 was older than those on January 1, 1939, and the ewes were valued at 54 cents less per head at the end of the year than at the beginning. At the beginning of the year, there were

6 yearling ewes per farm, and 6 ewes were bought per farm during the year. When one considers that 5 of these were used to enlarge the flock, it leaves only 7 for replacements. At this rate it would take 12 years to replace the flock. The average death loss was 4.5 ewes and 0.4 bucks per farm or 5 per cent. The number of old ewes sold averaged 4 per farm and averaged $2.71 per head.

Interest

Interest was charged at 5 per cent on the average value of the flock for the year. This amounted to 49 cents per head.(table 40).

Lambing Period

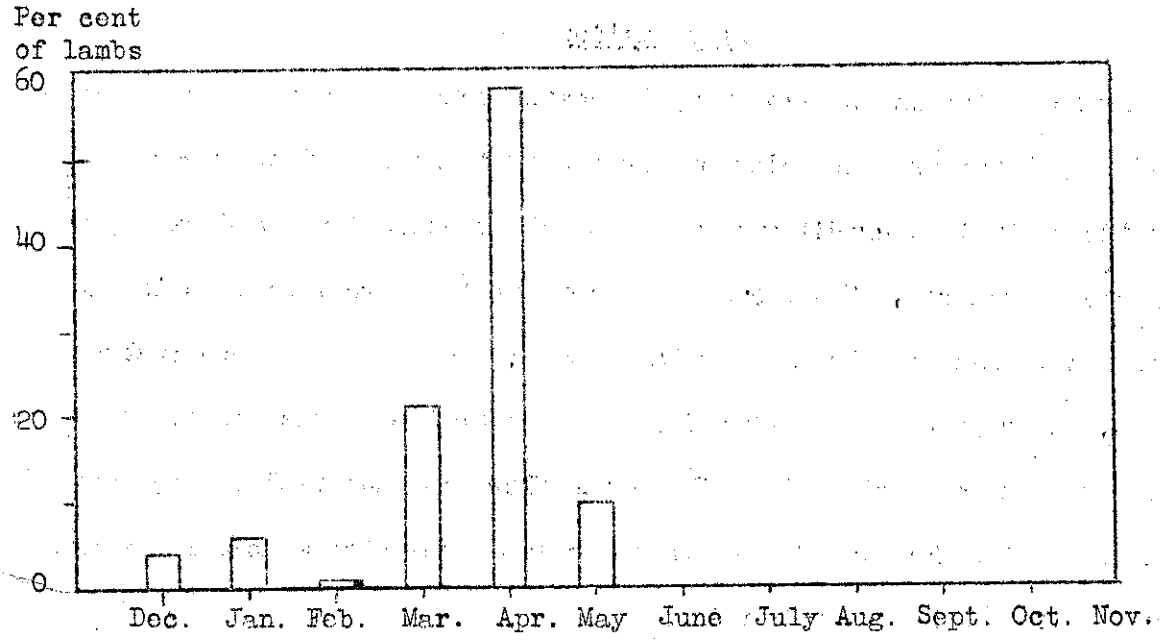

FIGURE 4. PER CENT OF LAMBS BORN IN EACH MONTH
49 Farms, Middlesex and Potter, Yates County, 1939

Nearly 60 per cent of the lambs were born in April; only 11 per cent were born before March 1.

When Lambs Were Sold

In this area more than one-half of the lambs were sold in October and November, and the average weight was about 80 pounds (table 38). Only 9 per cent were sold before June 1; most of those were trucked to Buffalo and sold for the Easter trade.

The average price per 100 pounds for lambs sold before June 1 was $11.17, while those sold from July to January averaged $8.59. There was no seasonal trend in price of lambs during the last half of 1939.

TABLE 38. LAMBS SOLD AND AVERAGE PRICE BY MONTHS, 1939
49 Farms; Middlesex and Potter, Yates County, 1939

Month sold	Number of sales	Number of lambs sold	Per cent of total lambs sold	Average weight of lamb	Price per 100 pounds	Price per lamb
March	2	49	1	61	$11.64	$7.08
April	8	228	7	65	11.27	7.31
May	2	46	1	74	10.35	7.63
Total or average	12	323	9	65	$11.17	$7.32
June	0					
July	3	39	1	75	$8.25	$6.18
August	5	189	5	84	8.64	7.28
September	12	356	10	78	8.53	6.69
October	17	915	26	78	8.65	6.74
November	21	1005	29	79	8.54	6.73
December	12	469	14	85	8.64	7.35
January*	7	217	6	88	8.65	7.58
Total or average	77	3190	91	80	$8.59	$6.90
Total-all lambs	89	3513	100	79	$8.79	$6.94

* January includes those sales made since January 1, 1940, and two lots of lambs which had not yet been sold.

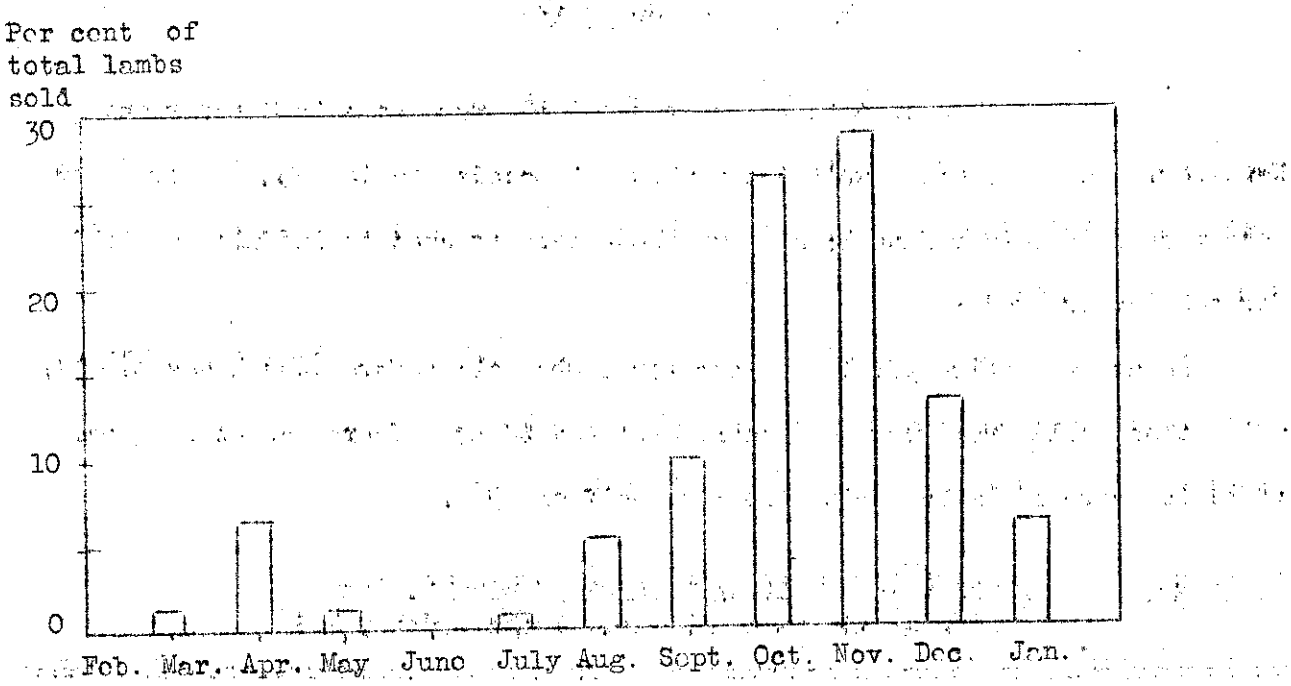

FIGURE 5. PER CENT OF LAMBS SOLD IN EACH MONTH
49 Farms, Middlesex and Potter, Yates County, 1939

About one-half of the lambs were sold in October and November.

Method of Selling Lambs

One butcher in Rochester bought two-thirds of the lambs sold from this area in 1939 (table 39). He bought the lambs at the farms and then the farmer delivered them to Rushville. This buyer purchased only one lot of lambs before June 1. One farmer-trucker handled 19 per cent of the lambs sold. He trucked them to the Buffalo Market, sold them on commission, and charged one cent per pound for the trucking, commission, and yardage. One-half of the early lambs in this area were handled by this farmer-trucker. Six per cent

were trucked by the farmer or hired trucked to Buffalo and sold on commission.

The average price received from July to January from the Rochester butcher was $8.57 per 100 pounds and from the farmer-trucker $8.67; prices received were practically the same, especially when the shrink is considered.

TABLE 39.

METHOD OF SELLING LAMBS
49 Farms, Middlesex and Potter, Yates County, 1939

Method of sale	Number of sales	Number of lambs sold	Per cent of total number
One butcher, Rochester*	44	2258	64
Other butchers**	5	106	3
One-farmer-trucker+	24	665	19
Buffalo commission	7	205	6
Local buyer and trucker	7	231	7
Not yet sold	2	48	1
Total	89	3513	100

* This Rochester butcher purchased the lambs from the farmer at the farm and then the farmer delivered them to Rushville.

** Other butchers include one in Rochester, one in Macedon and one in Penn Yan.

\+ This farmer-trucker hauled the lambs to Buffalo and sold them on commission. He charged one cent per pound to cover trucking, commission and yardage.

Summary of Costs and Returns

Costs and returns on sheep were obtained from 49 farmers who had 4,450 sheep or an average of 91 head per farm. On these farms the average cost of keeping sheep was $9.88 per head (table 40).

Feed and bedding were the most important items in cost and amounted to $4.11 per head or 42 per cent of the total cost. These farmers fed on the average 109 pounds of concentrates, 665 pounds dry roughage and 80 pounds of silage per mature sheep. Grain fed to lambs was divided by the number of mature sheep to obtain the 39 pounds per head shown in table 40.

Pasture cost was $1.25 per head or 12 per cent of the total cost. Man labor averaged 5.1 hours per head; at 23 cents per hour the cost was $1.17 per sheep, or 12 per cent of the total cost.

The value of that part of building used by sheep averaged $10.00 per head and the annual cost was $1.10. This was 11 per cent of the cost of keeping sheep.

Depreciation on sheep amounts to $1.39 per head or 14 per cent of the total cost.

Lambs sold plus ewe lambs kept for replacement averaged .85 per mature sheep (table 40). This is not lambs raised per ewe because the yearlings not bred and bucks are included. The lambs raised per ewe on these farms averaged .93. Lambs sold averaged $6.95 per head or $5.48 per mature sheep, and ewe lambs kept averaged $.48 per head.

Wool averaged 7.8 pounds per head and at 23 cents per pound averaged $1.82 per head in value.

The amount of manure produced per sheep averaged three-quarters of a ton and farmers valued it at $1.00 per ton in the barn.

TABLE 40. COSTS AND RETURNS ON THE SHEEP ENTERPRISE
49 Farms, Middlesex and Potter, Yates County, 1939
(4450 sheep or 91* per farm)

	Quantity per farm	Average price	Cost per farm	Quantity per sheep	Cost per sheep	Per cent of total cost
Costs						
Feed and bedding						
Concentrates						
Ewes	99 cwt.	$.86	$85	109 lbs.	$.93	9
Lambs	36 cwt.	1.25	45	39 lbs.	.49	5
Dry roughage	30 ton	7.05	212	665 lbs.	2.34	24
Silage	4 ton	2.68	10	80 lbs.	.11	1
Salt	6 cwt.	.62	4	6 lbs.	.04	1
Bedding	7 ton	2.79	18	146 lbs.	.20	2
Total feed and bedding			$374		$4.11	42
Pasture-permanent+	84 acres	$1.12	94	0.9 acres	1.04	10
Pasture-other	29 acres	.65	19	0.3 acres	.21	2
Man labor	463 hrs.	.23	107	5.1 hrs.	1.17	12
Building	$909**	11%	100	$10	1.10	11
Depreciation			126		1.39	14
Interest		5%	44		.49	5
Shearing	91 head	$.18	16		.18	2
Auto, truck, & miscellaneous			17		.19	2
Total cost			$897		$9.88	100
Returns						
Lambs sold	72	$6.95	$498	.79	$5.48	
Ewe lambs kept	5	8.51	43	.06	.48	
Wool	711 lbs.	.23	165	7.8 lbs.	1.82	
Manure	69 ton	1.00	69	.76 ton	.76	
Total returns			$775		$8.54	
Profit			- $122		-$1.34	
Returns per hour of labor			- $.03			

* Number of sheep includes 83 ewes, 6 yearlings and 2 bucks, and are the number at the beginning of the year.

** The average value of the barns used for sheep was $1,424 and 64 per cent of these barns were used for sheep or for storing sheep feed.

+ The average value of permanent pasture was $10.48 per acre. The annual pasture cost of $1.12 per acre was divided as follows: interest and taxes 71 per cent, repair work 16 per cent, posts 5 per cent, wire 3 per cent, and manure, lime and seed 5 per cent.

Total returns from sheep averaged $8.54 per head as compared with a total cost of $9.88. Thus receipts lacked $1.34 per head of covering all costs. If the charge for labor of $1.17 per head is omitted from the costs, returns still lack 17 cents of equaling the costs. Thus the return per hour of labor was minus 3 cents.

Even though the average return from sheep on these farms was less than the cost, there were some farms that made fair to good returns on sheep during 1939. Twenty-two farmers or nearly one-half made a plus return per hour of labor, and eleven made more than 20 cents an hour. The factors which were related to returns on sheep are discussed in the following pages. It should be kept in mind that there were only 49 records. When this number of flocks is divided into three groups it leaves only about 16 records per group which is a rather small number from which to draw definite conclusions.

Factors Affecting Returns on Sheep

Size of Flock

The farmers with the larger flocks had considerable lower pasture and building costs per head and were more efficient in the use of labor (table 41). The group with medium size flocks of from 60 to 99 head raised the most lambs per ewe and also had the lowest feed cost per sheep. This group made a return per hour of 16 cents, while the other groups made a minus return for labor.

TABLE 41. SIZE OF FLOCK AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Number of sheep per flock		Number of flocks	Costs per sheep			Man labor per head	Lambs raised per 100 ewes	Returns per hour of labor
Range	Average		Pasture	Building	Total			
Less than 60	41	14	$1.53	$1.33	$10.90	8.0	88	$ -.24
60-99	78	19	1.26	1.14	9.44	5.7	99	+.16
100 or more	149	16	1.18	1.01	9.91	4.2	89	-.12
Total or average	91	49	$1.25	$1.10	$9.88	5.1	93	$ -.03

Lambs Raised per 100 Ewes

Those that raised more than 100 lambs per 100 ewes made a return per hour of labor of 23 cents as compared with minus 33 cents for those who raised less than 85 (table 42). On those farms which raised the most lambs per ewe the lambing percentage (live lambs dropped per ewe) was considerably higher than on the other farms. This was the result of having fewer ewes that failed to lamb and having a higher proportion of twins. Another important factor affecting the number of lambs raised was the death loss in lambs. Those that raised less than 85 lambs per 100 ewes lost 25 per cent of the lambs born, while the group that raised more than 100 lambs lost only 8 per cent.

One of the problems of many sheep raisers in this area is how to prevent the heavy death losses in their lambs. The relation of death loss to feed is discussed in section on Cost of Feed.

TABLE 42. LAMBS RAISED PER 100 EWES AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Lambs raised per 100 ewes* Range	Average	Number of flocks	Per cent of ewes barren	Lambing percentage	Per cent death loss in lambs	Returns per hour of labor
Less than 85	73	17	13	99	25	$-.33
85 to 100	96	19	4	110	12	.03
101 or more	112	13	1	122	8	.23
Total or average	93	49	6	109	16	$ -.03

* The number of ewes that was used to calculate the number of lambs raised per 100 ewes was the number of ewes other than yearlings at lambing time plus the yearling that did lamb.

Feed Cost per Sheep

The flocks that had the lowest feed cost made 11 cents per hour of labor as compared with minus returns for the other two (table 43). This better return was made in spite of the fact that the flocks with the lowest feed cost raised the fewest lambs per 100 ewes. The better return was made on the farms with low feed cost for two reasons: (1) that with an extensive enterprise like sheep, where the returns are small, one must not become too intensive and invest too much in feed; and (2) the farmers who estimated too low on the amount of hay fed may be in the low feed group. The hay and other roughage fed to each class of livestock was obtained and where it appeared that there was too much for one class of livestock and not enough for another, the quantities fed were rechecked with the farmer. The total amount fed to all livestock checked with the amount produced plus or minus any inventory changes. In this way the quantity of hay and other roughage fed are as accurate as it is possible to obtain by the survey method.

TABLE 43. FEED COST PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Feed cost per sheep* Range	Average	Number of flocks	Pounds per sheep: Concentrates	Pounds per sheep: Dry roughage+	Total cost per sheep	Lambs raised per 100 ewes.	Returns per hour of labor
Less than $3.10	$2.72	16	101	531	$8.02	87	$.11
$3.10 to $4.45	3.70	17	111	684	9.77	92	-.10
$4.46 or more	5.22	16	139	802	11.67	99	-.09

* Feed cost per sheep includes that fed to lambs. The concentrates, silage, and dry roughage is that fed to sheep only.

\+ The pounds of silage was 30 pounds per sheep for the first two groups and 166 for the group with the highest feed cost.

Pounds of Concentrates and Roughage per Sheep

When the flocks are sorted by pounds of concentrates fed per sheep or by pounds of roughage fed, one finds the same general relationship as when they were sorted by total feed cost per head (tables 44 and 45).

TABLE 44. POUNDS OF CONCENTRATES PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Pounds of concentrates per sheep		Number of flocks	Pounds of dry roughage per sheep	Feed cost per sheep	Total cost per sheep	Lambs raised per 100 ewes	Returns per hour of labor
Range	Average						
Less than 75	51	15	687	$3.42	$9.26	94	$.03
75 to 125	99	17	639	3.85	9.91	93	-.01
126 or more	193	17	694	4.24	10.31	91	-.09

TABLE 45. POUNDS OF DRY ROUGHAGE PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Pounds of dry roughage per sheep		Number of flocks	Pounds of concentrates per sheep	Feed cost per sheep	Total cost per sheep	Lambs raised per 100 ewes	Returns per hour of labor
Range	Average						
Less than 560	427	16	121	$3.21	$8.78	88	$.08
560 to 785	677	17	79	3.76	9.74	88	-.12
786 or more	914	16	152	4.66	11.44	102	-.06

Only 14 farmers fed silage; of these 6 fed pea ensilage and 8 fed corn silage. Due to the cost of growing corn silage as compared with hay, it probably does not pay to grow this crop to feed sheep.

Percentage of Ration Beans

The flocks were sorted according to the percentage of the ration that was beans to see if there was any relation between beans and the death loss in lambs on these farms. The 10 farmers that fed a ration composed of 46 per cent or more beans had a death loss of 18 per cent/ which was slightly higher than any other group/ (table 46) The group that did not feed any beans had a death loss of 16 per cent, which indicates there were other factors as well as beans that were related to the death loss in lambs.[1] Since only 7 farmers fed any bran and only one of these fed more than 500 pounds, it was not possible to study the effects of bran on the death loss. The death loss in lambs on those farms was related to the percentage of hay alfalfa.[2]

TABLE 46. PER CENT OF CONCENTRATES THAT WERE BEANS AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Per cent of concentrates that were beans		Number of flocks	Per cent Lambs of death/raised per loss in sheep	100 ewes	Feed cost per head	Returns per hour of labor
Range	Average					
None	-	31	16	91	$3.84	$-.05
1 to 45	26	8	11	100	3.91	.07
46 or more	69	10	18	90	3.96	-.08

Pasture Cost per Sheep

The flocks where the pasture cost per sheep was the highest were fed more concentrates and dry roughage during the winter than the other flocks (table 47). This may indicate that the pasture was not of better quality where the pasture cost per sheep was high, but rather more valuable land and pasture that was less fully utilized. The best returns were obtained on those farms where the pasture cost was less than $1.15 per head.

1/ The cause of stiff lambs has been studied by the Animal Husbandry Department of Cornell University. See "Cause of Stiff Lamb Disease" by John P. Willman, S. A. Asdell and Peter Olafson, Cornell Exp. Sta. Bul. 603, 1934. The results of experiments during four years are reported. Further work is now in progress.

2/ On farms with less than 25 per cent of the hay acreage in alfalfa, the death loss in lambs was 13 per cent as compared with 18 per cent on farms with 45 per cent or more alfalfa.

TABLE 47. PASTURE COST PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Pasture cost per sheep* Range	Average	Number of flocks	Feed cost per sheep	Total cost per sheep	Lambs raised per 100 ewes	Lamb price per head	Returns per hour of labor
Less than $1.15	$.82	19	$3.67	$8.93	91	$6.71	$.07
$1.15 to $1.45	1.31	15	3.80	10.27	94	6.55	-.09
$1.46 or more	1.93	15	4.21	10.94	93	7.29	-.11

* Includes permanent and other pasture whether used for sheep or lambs.

In this area about two-thirds of the 41 farmers whose crop land is in land classes III or IV own or rent pasture land in land class II (table 48). The average distance to these detached parcels of pasture was 5 miles; two were more than 10 miles. The pasutre cost per sheep for farmers in land classes III and IV was about the same for those with pasture in land classes II as for the other farmers. The pasture cost per sheep for those farmers whose crop land and pasture were in land class II was higher than for farmers in the higher land classes. The acres of permanent pasture for sheep for farms in land class II was 1.2 as compared with 0.9 for farms in the higher land classes.

The lambs raised per 100 ewes was low for those in land classes III and IV who pastured their sheep at home, and their returns from sheep were lower than for farmers in land class II and lower than for those in land classes III and IV who pastured their sheep in land class II.

Twenty of the 49 farmers or 41 per cent rotated their pastures every two or three weeks. Returns from sheep were somewhat better on farms where pastures were rotated.

TABLE 48. LOCATION OF PASTURE AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Land class of farm	Land class of pasture	Number of flocks	Pasture cost per sheep	Feed cost per sheep	Total cost per sheep	Lambs raised per 100 ewes +	Returns per hour of labor
II	II	8	$1.64	$3.55	$10.14	104	$.04
III or IV	II	26	1.23	3.59	9.28	93	.06
III or IV	III or IV*	15	1.28	4.55	11.24	86	-.23

* Pasture in land classes III or IV was usually a part of the farm.

\+ Death loss in lambs was 10 per cent in land class II and 17 per cent in land classes III and IV. This may be due to the difference in quality of hay.

Building Cost per Sheep

Those farms that had the highest building cost per sheep had larger death losses and the lowest number of lambs raised per ewe (table 49). This indicates that better buildings did not result in smaller death losses in lambs. Best returns were secured on those farms where the building cost was less than $1.15 per sheep. This would be where the investment in buildings per sheep was less than $10.50.

TABLE 49. BUILDING COST PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Building cost per sheep Range	Building cost per sheep Average	Number of flocks	Number of sheep per flock	Total cost per sheep	Per cent death loss on lambs	Lambs raised per 100 ewes	Returns per hour of labor
Less than $.75	$.53	13	103	$8.96	14	93	$.08
$.75 to $1.14	.92	20	88	9.97	15	98	.09
$1.15 or more	1.94	16	84	10.68	17	85	-.28

Hours of Man Labor per Sheep

The sheep flocks where less than 4.5 hours of labor were spent per sheep were about 70 per cent larger than those on which 6.0 or more hours were spent (table 50). There was little or nor relation between the number of hours spent per sheep and the death loss in lambs, or the lambs raised per 100 ewes. The smallest loss per sheep was on those flocks where the least labor was used.

TABLE 50. HOURS OF MAN LABOR PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Hours of man labor per sheep		Number of flocks	Number of sheep per flock	Labor cost per sheep	Feed cost per sheep	Total cost per sheep	Profit per sheep
Range	Average						
Less than 4.5	3.4	17	110	$.78	$3.42	$8.79	$-.54
4.5 to 5.9	5.2	15	99	1.20	3.99	10.53	-2.00
6.0 or more	7.9	17	65	1.71	4.23	10.85	-1.83

Wool Clip

Those farmers who sold more than 8.4 pounds of wool per sheep made a return per hour of labor of 11 cents as compared with minus 22 cents for those who sold only 7.3 or less (table 51). The group that sold the most wool per sheep also raised the most lambs per 100 ewes which is a more important factor affecting returns than the wool clip.

TABLE 51. POUNDS OF WOOL PER SHEEP AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Pounds of wool per sheep	Number of flocks	Average pounds of wool per sheep	Sheep per farm	Wool sales per sheep	Total cost per sheep	Lambs raised per 100 ewes	Returns per hour of labor
Less than 7.3	17	6.7	97	$1.56	$9.17	84	-$.22
7.3 to 8.3	16	7.8	86	1.79	9.92	97	+ .02
8.4 or more	16	9.2	89	2.13	10.66	98	+ .11

Date of Lambing

Eleven flocks or about 20 per cent started lambing in November, December, or January and 41 per cent of the lambs from these flocks were sold before June 1 (table 52). Most of those sold before June 1 were sold for the Easter holiday trade. Most of the farmers who had early lambs had two flocks of ewes - one for early lambs and one for late lambs. In such cases, the costs on the two flocks were not kept separate.

The number of lambs raised per 100 ewes was highest for the flocks that started lambing from November to January and lowest for the February and March group. Returns on the sheep enterprise were better on those flocks that started lambing before April 1.

The percentage of early lambs in this area is increasing; in 1932 very few lambs were born before March 1.

TABLE 52. MONTH FIRST LAMB BORN AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Month first lamb born	Number of flocks	Pounds of concentrates per sheep	Feed cost per sheep	Lambs raised per 100 ewes	Per cent of lambs sold before June 1	Value of lambs per head	Returns per hour of labor
Nov. to Jan.*	11	119	$4.51	100	41	$7.39	$.07
Feb. and Mar.+	11	121	3.29	88	0	6.83	.08
April and May**	27	114	3.85	92	0	6.61	-.14

* Nov. to Jan. includes 1 for November, 5 for December and 5 for January.
\+ Feb. and Mar. includes 2 in February and 9 in March.
** April and May includes only 1 for May.

When Lambs Sold

In this area, 9 of the 49 farmers interviewed sold 15 per cent or more of their lambs before June 1; and these 9 farmers sold about one-half of their lambs before that date. The average price received by the owners of these

flocks was about $1.30 more per 100 pounds than that received by the other farmers. (table 53).

TABLE 53. PERIOD LAMBS WERE SOLD AND RELATED FACTORS
49 Farms, Middlesex and Potter, Yates County, 1939

Period lambs sold	Number of flocks	Per cent sold After June 1	Per cent sold After Dec. 1	Feed cost per sheep	Average weight of lamb-pounds	Average price per 100 ewes	Lambs raised per 100 ewes
15 per cent or more before June 1	9	48	14	$4.41	74	$9.79	98
Less than 25 per cent after Dec. 1	27	1	1	3.67	78	8.43	94
25 per cent or more after Dec. 1	13	1	74	3.94	82	8.54	86

Sale Price per Lamb

The farmers who obtained the most dollars per lamb had heavier lambs and obtained a higher price per pound (table 54). The higher price probably is due to the fact that they sold a higher percentage of their lambs before June 1. The middle group, those whose lambs brought between $6.55 and $7.25 per head had the most lambs raised per ewe and made a better return than those in the other two groups.

TABLE 54. SALE PRICE PER LAMB AND RETURNS FROM SHEEP
49 Farms, Middlesex and Potter, Yates County, 1939

Sale price per lamb Range	Sale price per lamb Average	Number of flocks	Feed cost per sheep	Per cent sold before June 1	Average weight of lamb	Average price per 100 pounds	Lambs raised per 100 ewes	Return per hour
Less than $6.55	$5.74	16	$3.41	2	71	$8.07	83	-$.20
$6.55 to 7.25	6.91	17	3.71	7	79	8.74	101	+ .09
$7.25 or more	7.85	16	4.52	18	85	9.31	93	+ .01

Change in Number of Sheep from 1932 to 1939

During the 7 years from 1932 to 1939 the number of sheep decreased on 13 farms and increased on 36. The returns on sheep in 1939 were better on those farms where the greatest increase occurred in the number of sheep.(table 55).

TABLE 55. PER CENT CHANGE IN NUMBER OF SHEEP AND RETURNS FROM SHEEP 49 Farms, Middlesex and Potter, Yates County, 1939

Per cent increase in number of sheep from 1932 to 1939		Number of flocks	Number of sheep per flock in 1939	Hours of man labor per sheep	Total cost per sheep	Lambs raised per 100 ewes	Returns per hour of labor
Range	Average						
None	-25	13	54	8.3	$10.85	91	$-.15
1 to 55	+22	19	95	5.3	10.03	93	-.06
55 to 200	+102	17	114	4.6	9.38	94	+.06

Age of Ewes

Forty-one per cent of the ewes on these farms were under four years of age. There was no relation between the age of ewes and returns from sheep on these farms.

Treatment for Parasites and Ticks

Thirty-four farmers or two-thirds of them treated their sheep one or more times for internal parasites in 1939. Of those, 12 treated them once, 16 two times, and 6 three or four times. Most of them also treated the lambs as well as the ewes. Some farmers reported that they drenched their sheep in some years but not in others.

Only 16 farmers or one-third of them dipped their sheep in 1939. Most of those who did not dip reported no ticks or very few.

On these farms there was no relation between the treatment for parasites or ticks and returns from sheep. This probably is due to the small number of records and to the fact that other factors were more important.

SUMMARY — FACTORS FOR SUCCESS

The 52 farms studied were located in land classes II, III and IV. Of these 52 farms, nine were in land class II and 43 were in land classes III or IV. Many of the 43, however, had sheep pasture in land class II.

The 9 farms in land class II had an average of 50 sheep, 3.5 cows, and 172 hens. Farms in the higher land classes had an average of 93 sheep, 6.2 cows, and 260 hens.

Practically all of the farms in land classes III and IV but only about one half of those in land class II were selling cash crops. About two-thirds of the farms in land class II and about four-fifths of those in land classes III and IV had a dairy or poultry enterprise in addition to sheep. In land class II, sheep were a more important part of the total farm business than was true in the higher land classes.

The farms in land class II were much smaller businesses and had much lower incomes and different problems than the farms in the higher land classes. It seemed desirable to treat them as a separate group. The statements which follow regarding farms on land classes III and IV are based on analysis of the 43 records in these land classes. The suggestions for land class II farmers are based on what could be learned from the nine records in II, plus results of studies of farmers on similar land in other sections of the state.

Factors Affecting Returns from Farming in Land Classes III and IV

1. Size of Farm Business

Incomes averaged much higher on farm businesses large enough to require the full time of two or more men than on smaller farms.

Farmers in this area appear to have found that size of business and good incomes can be obtained best by having a dairy or poultry enterprise,

or both, in addition to sheep and crops.

Many farmers in this area have enlarged their farm businesses by renting crop or pasture land in addition to that owned.

2. Yields of Crops and Production of Livestock

Farmers with crop yields below 90 per cent of average for the area had low incomes. This was due partly to the fact that livestock production rates were also low on these farms. Farms with crop yields of 90 per cent or more of average paid well.

Farms raising 100 or more lambs per 100 ewes had good incomes.

Farms having sales of dairy products per cow of more than $100 paid well; the higher sales per cow were due partly to a large proportion of the milk being sold as fluid milk.

On large farms, it was especially important to have good crop yields and livestock production.

3. Use of Labor

The amount of work accomplished per man was an important factor affecting income in this area. Labor efficiency may be obtained by having a moderately large, well-organized farm business. On the farms studied, a two-man farm was large enough to make possible good labor efficiency.

4. Combination of Enterprises

Among the farms studied, those with a poultry or dairy enterprise, or both, in addition to sheep and crops paid much better than "sheep-cash-crop" farms.

In this area enough livestock should be kept to utilize fully the available pasture and roughage. Livestock also provide winter work and increase the efficiency of labor. Cows use more man labor in relation to feed consumed than do sheep. Poultry is a good enterprise on farms with limited pasture or roughage.

Suggestions for Farmers in Land Class II

Average returns from farming in land class II in this area and others are not as large as in the higher land classes. In view of this fact, most farmers located in land class II should obtain as much outside employment as possible. If he is young, a farmer should consider the possibility of renting or buying a farm in the higher land classes. For the farmer who decides to continue to live in land class II, the following suggestions are made:

1. Raise crops on only the better fields and use the others for pasture, or let them grow up to trees. Fields that are poorly-drained, far from the buildings, or steep give a very low return for labor spent in working them.

2. Operate the sheep enterprise as efficiently as possible. Sheep appear to be better adapted to this quality of land than do cash crops or fluid milk production.

3. Place more emphasis on poultry, as this enterprise is less dependent on the quality of the land than most other farm enterprises.

4. Depend largely on family labor to run the farm. Hired help usually cannot produce enough to earn wages.

5. Do not attempt to operate as large a business or strive to obtain as high yields of crops as do farmers in the higher land classes, unless the farm is exceptional in its land class.

6. Get as much as possible of the living from the farm, such as garden products, milk, eggs, meat, and fuel.

7. Spend a minimum amount of money on buildings. Make the necessary repairs with a maximum use of farm labor and materials available on the farm and a minimum use of cash.

8. Obtain as much outside employment as possible.

9. Invest any accumulated capital or savings in more education for the children, rather than purchase more land or make additional farm improvements to expand the farm business.

Factors Affecting Returns from Sheep

1. Lambs Raised per 100 Ewes - Best returns were obtained in those flocks where 100 or more lambs were raised per 100 ewes.
2. Feed Cost per Sheep - Feed made up 40 per cent of the cost of keeping sheep, and farms with low feed costs made the best returns. Less grain and the use of some cheap roughage help to keep down the feed cost.
3. Size of Flock - The average size of flock was 91 sheep. The best returns were on flocks of from 60 to 99 head. Larger flocks that had a good lambing percentage made good returns.
4. Labor Efficiency - Fewer hours of man labor per sheep were the result of moderately large flocks, better arrangement of buildings, and other factors.
5. Building Cost per Sheep - In some cases building costs can be reduced by fuller utilization of buildings through keeping more sheep, cows, or hens.
6. Wool Clip per Sheep - Flocks that produced eight or more pounds of wool per sheep made the best returns.
7. Date of Lambing - Flocks that started lambing before April 1 paid better than the other flocks.

A.E. 314 Farm No. _____

A SUMMARY OF YOUR FARM BUSINESS AND COMPARISON WITH OTHERS
Middlesex and Potter, Yates County, 1939

Item	Average of 9 farms in land class II	YOUR FARM land class __	Average of 43 farms in land classes III and IV
Size of Farm Business			
Total acres operated	171	_____	276
Acres in crops	77	_____	117
Number of cows	3.5	_____	6.2
Number of sheep	50	_____	93
Number of hens	172	_____	260
Total man work units	301	_____	525
Man equivalent	1.4	_____	1.9
Total capital	$5598	$_____	$14,805
Labor Efficiency			
Man work units per man	216	_____	276
Rates of Production			
Crop yields in per cent of average	87	_____	102
Milk, cream and butter sales per cow	$34	$_____	$71
Lambs raised per 100 ewes	103	_____	90
Important Receipts			
Crop sales	$400	$_____	$1154
Dairy products sales	174	_____	644
Lamb sales	299	_____	487
Egg sales	244	_____	487
Wool sales	82	_____	171
Total farm receipts	$1686	$_____	$4277
Total farm expenses	1306	_____	2687
Farm income	$380	$_____	$1590
Interest on capital	280	_____	740
LABOR INCOME	$100	$_____	$850

A.E. 314

Farm No. _____

A SUMMARY OF YOUR SHEEP ENTERPRISE AND COMPARISONS WITH OTHERS
Middlesex and Potter, Yates County, 1939

		Your farm	Average of 49 farms
Number of sheep, Jan. 1, 1939		_____	91
Rates of Production			
Lambs raised per ewe		_____	93
Pounds of wool per sheep		_____	7.8
Death Losses			
Flock (per cent of number beginning)		_____	6
Lamb (per cent of live lambs)		_____	16
Lamb Sales			
Average weight		_____	79
Price per 100 pounds		_____	8.79
Price per head		_____	6.94
Quantities of Labor and Feed per Sheep			
Man labor, hours		_____	5.1
Concentrates, pounds		_____	109
Silage, pounds		_____	80
Hay, pounds		_____	503
Bean pods, pounds		_____	111
Total dry roughage, pounds		_____	665
Returns on Sheep	(Your Farm)		
Lamb sales	____ head	$_____	$498
Yearlings end	____ "	_____	43
Wool sales	____ lbs.	_____	165
Manure	____ tons	_____	69
Total returns		$_____	$775
Costs on Sheep			
Home grown concentrates	____ lbs.	$_____	$108
Purchased concentrates	____ "	_____	22
Total roughage	____ tons	_____	222
Salt		_____	4
Bedding		_____	18
Total feed and bedding		$_____	$374
Pasture		$_____	$113
Depreciation on flock		_____	126
Interest		_____	44
Building		_____	100
Shearing and miscellaneous		_____	33
Man labor	____ hours	_____	107
Total cost		$_____	$897
Profit or Loss		$_____	$-122
Returns per Hour of Labor		$_____	$-.03