

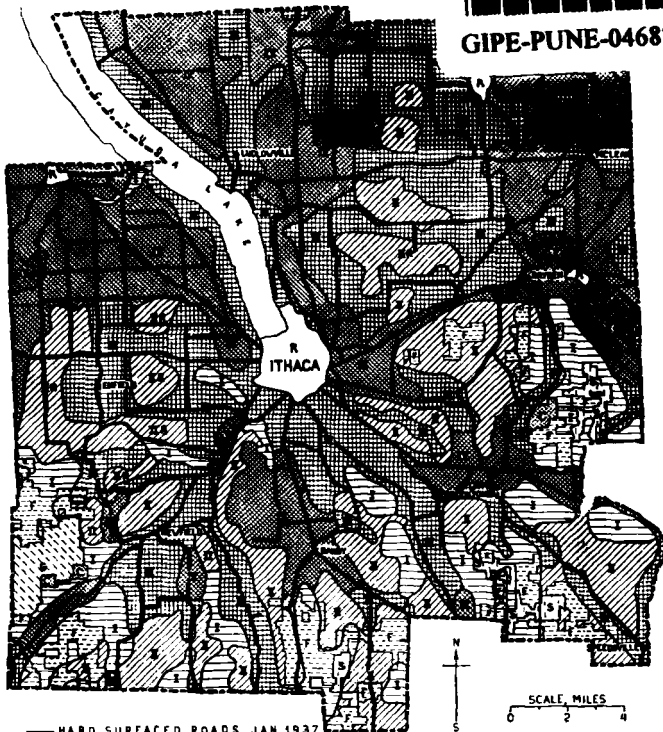
An Economic Study of Farming in Tompkins County, New York, 1937

Philip A. Hendersc

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LAND-CLASSIFICATION MAP OF TOMPKINS COUNTY

The higher the number, the higher is the proportion of well-drained soil, and the more intensive is the use made of the land

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AN ECONOMIC STUDY OF FARMING IN TOMPKINS COUNTY, NEW YORK, 1937¹

PHILIP A. HENDERSON

Farm-management studies of farms in Tompkins County, New York, were made for the crop years 1907, 1917, 1927, and 1937.² The present bulletin reports the findings of the study made for the crop year 1937.

METHOD OF STUDY

The records were obtained by the survey method from all active farmers who were willing to cooperate in furnishing the information. Usable reports giving complete details of receipts and expenses were obtained from 66 farmers in Danby Township, 150 in Dryden, 141 in Groton, 113 in Lansing, and 74 in Ulysses—a total of 544 farms in Tompkins County—for the year ended on March 31, 1938.

Some of these farmers derived sufficient income off the farm so that it was necessary to study their farms separately from farms not having such income.

DEFINITION OF TERMS

Farm capital is the value of all farm property, including land, buildings, livestock, equipment, and feed and supplies. The average of the value of these items at the beginning and at the end of the year was considered to be the average farm capital for the year. Property of both the landlord and the tenant was included.

Farm income is the difference between total receipts and total expenses. It is what the operator receives for his year's work and for the use of the farm capital.

Farm labor income is the amount of income left as pay for the operator's labor and for the supervision given by the landlord after farm expenses and interest at 5 per cent on the capital are deducted from the farm receipts. In addition to the labor income, the operator and or the landlord had the use of the house, and farm products produced on the farm and consumed by the family. To compute the farm labor income, all farms were considered as owner-operated farms regardless of tenure. A minus sign preceding a labor-income figure signifies that the farm income was not sufficient to equal the interest by the amount of the minus income.

Farm labor earnings is the farm labor income plus the value of the family privileges from the farm. It is the measure of income most nearly comparable to the wage of the city worker.

Return on farm capital is the farm income less the value of the operator's time.

Per cent return on farm capital is the return on farm capital expressed as a percentage of the average farm capital.

¹Also presented to the Faculty of the Graduate School at Cornell University, September 1939, as a thesis in partial fulfillment of the requirements for the degree of doctor of philosophy.

This bulletin is one of a series prepared under the direction of E. G. Misner.

Lloyd E. Slater and Norman Thompson assisted in the field work.

²Results for 1907 were published in *An Agricultural Survey*, by G. F. Warren and K. C. Livermore (Cornell Univ. Agr. Exp. Sta., Bul. 295, 1911).

Labor returns is the total income to all labor on the farm. It is the difference between farm receipts, and the sum of the interest on capital and all expenses except labor; that is, the total labor expense including the value of unpaid labor and of board furnished to hired help, plus the farm labor income, equals the labor returns.

Labor returns per man is the total labor returns divided by the man equivalent.

Man equivalent is the average number of persons working for the year, reduced to an adult-male basis. It is obtained by adding the total months of labor on the farm, including twelve months for the operator, and dividing by 12. Work done by women and children is expressed as the time required for a man to do the same work.

Expense for unpaid labor is the charge made to the farm business for the work done by members of the family or by others who do not receive a regular wage. The charge is made at the rate that it would cost the operator to hire the same work done by an adult man.

An animal unit is the number of animals of each kind in terms of a mature horse or cow. Thus each cow counts as one unit, each heifer or calf as one-half unit, and each 100 mature fowls as one unit.

A productive-man-work unit is the average amount of work one man can accomplish in a ten-hour day in the production of crops, livestock, or livestock products, or in labor off the farm. Work spent in care of work stock, repairing machinery, or other work connected with the upkeep of the farm, is not included in calculating the number of productive-man-work units, as it is considered non-productive work.

Net livestock increase is the amount by which the sum of the livestock sales and the value of livestock on hand at the end of the year, exceeds the sum of the livestock purchased and the value of livestock on hand at the beginning of the year. If the purchases and the beginning inventory exceed the sales and the end inventory, the difference is a *net livestock decrease*.

Net increase in other capital is the amount by which the value of capital other than livestock on hand at the end of the year exceeds the value of capital other than livestock on hand at the beginning of the year. If the latter is greater than the former, there is a *net decrease in other capital*.

Crop index, as used in this bulletin, is the yields of all crops on a particular farm expressed as a percentage of the average yields for the same crops in the entire area. In this study, the yields on each farm were weighted by the average productive-man-work units required to produce the amount of each crop grown.

Special farms are (1) those farms whose owners received as much as \$250 or more from sources other than their own farm, or (2) those farms where the nature of the receipts differed markedly from those on the majority of the farms visited. There were 91 "special" farms. The remaining 453 farms were considered *regular farms*.

Land class indicates the intensiveness of present and probable future use of land. The higher the land class, the better is the land and the more intensive is the use made of it.

Owners are those farmers who own all of the land which they operate.

Part owners are those farmers who rent some land in addition to what they own.

Share tenants are those farmers who rent on a share basis.

Cash tenants are those farmers who rent on a cash basis.

Mixed tenants are those farmers who rent on both a share and a cash basis.

LOCATION AND DESCRIPTION OF THE AREA

Tompkins County lies at the southern tip of Cayuga Lake, on the southeastern edge of the area known as the Finger Lakes Region of New York. This is slightly to the west and south of central New York, entirely within the area known as the Allegheny Plateau.

Ithaca, the only city within the county, has a population of about 21,738, and represents 50 per cent of the population in Tompkins County.³ It furnishes a market for a limited amount of farm products.

The nearest large cities are Syracuse and Binghamton, both of which are 20 miles or more from any part of Tompkins County. New York City is 250 miles from the center of Tompkins County. Practically all of the milk, the chief product in this area, is sent to New York City in fluid form. Most of the beans produced in the county are sold to dealers in Trumansburg. Most of the cabbage and potatoes are sold to truckers.

Opportunities for part-time work are furnished by the Corona type-writer factory located in Groton, the salt mines near Ludlowville, the cement plant near Myers, and the Morse chain factory in Ithaca. Many of the farmers from whom records were obtained took advantage of these opportunities during the year for which this study was made.

CLIMATE

The mean annual precipitation at Ithaca and at Cortland is 34 inches and 38 inches, respectively; of this amount, approximately 17 inches normally falls during the growing season at Ithaca, as compared with 19 inches at Cortland. The average mean monthly temperature during the growing season is about 65° F. at Ithaca, and approximately 63° at Cortland. In the year for which this study was made, precipitation during the growing season was 125 per cent of normal at Ithaca and 92 per cent of normal at Cortland. Temperatures were slightly above normal at both stations. The growing season in 1937 was unusually long. The last killing frost occurred on April 17 at both stations; the first killing frost in the fall was October 14. This was a frost-free period nearly three weeks longer than is normal for the region.

NATURAL FEATURES

Tompkins County is approximately square. The total area is about 476 square miles, or approximately 304,000 acres. The elevation of the county varies from 381 feet to more than 2000 feet above sea level. The topography of the southern half of the county is much rougher than that of the northern part, which might be described as rolling. Because of the more level topography, the lower elevation, and the more complete glaciation of the soil, the northern part of the county is much better suited to farming than is the southern part.

A large proportion of the land in Tompkins County was originally

³1935 estimate by the State Department of Health, New York State Legislative Manual, 1938, p. 857.

forested with sugar maple, beech, yellow birch, hemlock, and white pine. The soils in the county have been characterized as generally low in organic matter. Many of them have poor natural drainage. Liming is usually necessary to ensure a good stand and crop of legumes. The texture and the derivation of the soils differ widely. For these reasons, the problems of soil management are many.⁴

PRICE CONDITIONS

The success of a farmer depends to a large extent on the movement of the general price level. In periods of low prices, as in 1937 and 1938, prices of agricultural products are relatively low in relation to the prices of most other products.

When prices for the State in 1910-1914 are taken as 100, the price of milk in 1937 was 108 per cent of the average as compared with 145 for the price of cows, 135 for cabbage, 120 for potatoes, 100 for eggs, 117 for wheat, 116 for buckwheat, and 68 for hay.

Wages and prices of commodities which farmers had to buy were relatively high in 1937. Based on wages and prices in 1910-1914 taken as 100, wages in 1937 were 129, the wholesale price of a dairy ration was 125, the wholesale price of a poultry ration was 126, machinery prices were 154, and taxes were 249.

TYPE OF FARMING

Most of the farming in Tompkins County is centered about dairying. The intensity of the dairy enterprise varies considerably with the type of outlet for the milk. Consequently, a classification of the farms as to their market outlet for milk gives a fairly good indication of the type of farming.

Of the 453 regular farms, 139 sold milk at Grade A plants, 126 sold milk at Grade B plants, and 154 sold cream, butter, veals, or some combination of these, or else sold most of the milk not needed for family use to their neighbors. The remaining 34 farms in the regular group either produced no milk, or produced very little and had no one particular outlet for it.

All of the farms in each of these groups of regular farms which had as many as 400 hens or more were analyzed in a distinct group. This finally resulted in the following classification as to type of farming: 131 Grade A farms; 122 Grade B farms; 129 other dairy farms; 40 poultry farms; and 31 miscellaneous-type farms. In this study, these groups of farms are called "Grade A", "Grade B", "other dairy", "poultry", and "miscellaneous-type" farms.

BY TENURE

Approximately 90 per cent of the farms in each type of farming group were operated by owners and part owners, except in the case of poultry farms, of which 98 per cent were operated by owners or part owners. There were proportionately more part owners on the Grade B farms than on any other type of farm.

BY TOWNSHIP

Dairying is more intensive in Dryden and Groton Townships than in the other townships studied. The production of market milk has never been

⁴Soil survey of Tompkins County, New York, p. 1578-1581, by Frank B. Howe and others.

an important part of the system of farming in either Lansing or Ulysses Township. Grade A markets were established in the regions of most intensive milk production.

The distribution of the farms in each type of farming group by land classes is shown in table 1. In those townships where dairying was most important, the farms that had the best milk market tended to be located in the higher land classes.

TABLE 1. NUMBER OF FARMS IN EACH LAND CLASS, BY TYPES OF FARMING

Land class	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms	All regular farms	Special farms
	Number	Number	Number	Number	Number	Number	Number
I.....			2			2	
II.....	5	10	7	2	4	28	6
III.....	25	47	44	8	8	132	35
IV.....	78	59	73	29	18	257	42
V.....	23	6	3	1	1	34	8
Total.....	131	122	129	40	31	453	91

Of the 544 farms studied, 7 per cent were in land classes I and II, 30 per cent in land class III, 55 per cent in land class IV, and 8 per cent in land class V. The distribution of the regular farms was approximately the same as for the special farms studied.

TRUCKS AND TRACTORS

The importance of trucks and tractors in the farming operations in Tompkins County has increased considerably in recent years.

TRUCKS

Approximately one-third of the 18 trucks purchased on the regular farms during the year for which this study was made, were purchased on farms that did not have trucks at the beginning of the year. There were 2 trucks sold and not replaced.

Only one-fourth, or 25 per cent, of all the regular farms had trucks. These were found on 37 per cent of the Grade A farms, 25 per cent of the Grade B farms, 16 per cent of the other dairy farms, 22 per cent of the poultry farms, and 13 per cent of the miscellaneous-type farms. Of the special farms, 35 per cent had trucks.

Details of the costs were not obtained on all trucks. The use of buildings, and farm labor, were not included in the costs as shown in table 2. Because of the relatively small number of trucks, no attempt was made to analyze costs of trucks according to capacity ratings.

TRACTORS

Of the 5 10-20 tractors purchased on these farms during the year for which this study was made, 4 were purchased on farms that did not have tractors at the beginning of the year. Of the 23 other tractors purchased, 13 were purchased on farms that had no tractors at the beginning of the year. On the Grade A farms, 7 out of 10 tractors purchased were purchased on farms that had no tractors at the beginning of the year. There were no tractors sold which were not replaced.

Approximately one-half, or 46 per cent, of the farms had tractors of some kind. The poultry farms had relatively more tractors than did any other type of farm. Tractors were found on 65 per cent of these farms. Only 36 per cent of the other dairy farms had tractors.

TABLE 2. COSTS OF OPERATING 84 TRUCKS, BY TYPES OF FARMING, 1937*

	Grade A farms		Grade B farms		Other dairy farms	
	43		27		14	
	4,507		4,134		4,393	
Number of miles driven, 1937.....	Costs		Costs		Costs	
	Per truck	Per mile	Per truck	Per mile	Per truck	Per mile
	Dollars 205	Cents ...	Dollars 173	Cents ...	Dollars 125	Cents ...
Average value.....						
Costs:						
Depreciation.....	51	1.1	30	0.7	20	0.5
Interest.....	10	0.2	9	0.2	6	0.1
Insurance.....	6	0.1	9	0.2	5	0.1
License.....	23	0.5	21	0.5	21	0.5
Tires.....	10	0.2	7	0.2	8	0.2
Repairs.....	13	0.3	10	0.2	10	0.2
Fuel.....	58	1.3	45	1.1	63	1.4
Oil.....	6	0.1	5	0.1	7	0.2
Other costs.....	2	0.1	3	0.1	3	0.1
Total costs.....	179	3.9	139	3.3	143	3.3

*Data were obtained for only 6 trucks on poultry farms and 2 trucks on miscellaneous-type farms.

About one-third of the tractors for which costs were obtained were 10-20 tractors. The rest were chiefly smaller tractors, such as the Fordson, Farmall F 12, and other miscellaneous types. Costs for all these tractors are shown in tables 3 and 4.

TABLE 3. COSTS OF OPERATING 70 10-20 TRACTORS, BY TYPES OF FARMING, 1937*

	Grade A farms		Grade B farms		Other dairy farms		Poultry farms	
	22		21		16		11	
	Costs		Costs		Costs		Costs	
Average value.....	Per tractor	Proportion of total	Per tractor	Proportion of total	Per tractor	Proportion of total	Per tractor	Proportion of total
	Dollars 449	Per cent ...	Dollars 442	Per cent ...	Dollars 424	Per cent ...	Dollars 440	Per cent ...
	Costs:							
Depreciation.....	34	18	51	29	46	24	39	19
Interest.....	22	12	22	13	21	11	22	11
Fuel.....	81	43	73	41	81	43	107	52
Oil.....	17	9	13	7	14	8	19	9
Repairs.....	32	17	18	10	23	13	19	9
Other costs.....	1	1	1	0	2	1	0	0
Total costs.....	187	100	178	100	187	100	206	100

*Only 4 10-20 tractors were found on miscellaneous-type farms.

TABLE 4. COSTS OF OPERATING 134 OTHER TRACTORS, BY TYPES OF FARMING, 1937

	Grade A farms		Grade B farms		Other dairy farms		Poultry farms		Miscellaneous-type farms	
	46		39		28		12		9	
	Costs		Costs		Costs		Costs		Costs	
	Per tractor	Proportion of total	Per tractor	Proportion of total	Per tractor	Proportion of total	Per tractor	Proportion of total	Per tractor	Proportion of total
Average value	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent
Average value	365	...	309	...	330	...	275	...	303	...
Costs:										
Depreciation	54	36	46	31	53	34	45	28	22	15
Interest	18	12	15	11	17	11	14	8	15	11
Fuel	50	40	66	45	67	43	76	46	75	53
Oil	8	6	10	7	12	8	12	7	13	9
Repairs	9	6	6	4	5	3	17	11	17	12
Other costs	0	0	3	2	1	1	0	0	..	..
Total costs	148	100	146	100	155	100	164	100	142	100

Grade A, Grade B, and other dairy farms with tractors were separated from those without tractors, and some indication of the differences is shown in table 5. The farms with tractors kept approximately the same

TABLE 5. COMPARISON OF FARMS WITH AND FARMS WITHOUT TRACTORS, 382 FARMS, 1937

	Grade A farms		Grade B farms		Other dairy farms	
	With tractors	Without tractors	With tractors	Without tractors	With tractors	Without tractors
Number of farms	66	65	64	58	46	83
Acres of crops per farm	90	54	96	59	96	43
Animal units, except work animals	26.0	17.0	21.6	16.7	11.6	7.3
Total productive-man-work units	539	343	483	348	356	186
Number of horses per farm	2.7	2.6	2.9	2.8	2.2	2.3
Man equivalent	2.1	1.7	2.0	1.7	1.8	1.3
Per cent of productive-man-work units on cows	52	54	47	51	24	32
Productive-man-work units per man	254	208	244	200	198	146
Capital per productive-man-work unit	\$23	\$25	\$22	\$21	\$27	\$27
Age of operator (years)	47	55	49	50	52	57

number of horses as did the farms without tractors. They had from 163 per cent as many acres of crops on the Grade B farms, to 223 per cent as many on the other dairy farms. In addition, they kept from 129 to 159 per cent as many animal units other than work animals. Their businesses were 157 per cent of those without tractors, in size as measured by productive-man-work units, on the Grade A farms, 139 per cent on the Grade B farms, and 191 per cent on the other dairy farms. The farms with tractors were operated by younger men than were the farms without tractors, and had higher labor efficiency. The farms without tractors had a slightly

larger proportion of their total work units on cows than did the farms that had tractors, on each of the three types of dairy farms. The amount of capital employed per man-work unit was practically the same, regardless of whether or not the farm had a tractor.

USE OF LAND

On the Grade A farms the total acres operated were 149; on the Grade B farms, 168; on the other dairy farms, 112; on the poultry farms, 124; on the miscellaneous-type farms, 128; and on the special farms, 143 (table 6).

TABLE 6. USE OF LAND BY TYPES OF FARMING, ACRES PER FARM, 544 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscel- laneous- type farms	Special farms
Number of farms	131	122	129	40	31	91
	<i>Acres</i> 76	<i>Acres</i> 83	<i>Acres</i> 66	<i>Acres</i> 79	<i>Acres</i> 67	<i>Acres</i> 71
Crops						
Double-cropped	5	5	6	7	5	6
Total cropland	71	78	60	72	62	65
Woods not pastured	10	13	11	10	15	16
Woods pastured	9	12	6	7	4	7
Permanent pasture	46	46	19	16	22	37
Other land pastured throughout season	3	2	2	4	2	2
Farmstead, roads, fences	5	7	6	6	5	6
Other land	5	10	8	9	18	10
Total operated	149	168	112	124	128	143

Of the total acres in regular and special farms, 49 per cent was used for the production of crops, 9 per cent was in woods not pastured, 32 per cent was used for pasture, 4 per cent was occupied by farmsteads, roads, and fences, and 6 per cent was left idle.

The Grade A farms were mostly in Dryden and Groton Townships, where a larger proportion of the land was unsuitable for cropping, and therefore used for pasture, than on the other dairy and the miscellaneous-type farms. Some land that might have been used as pasture was left idle on farms which kept only a small amount of livestock.

CROPS

Of the total acreage in crops, 17 per cent was occupied by corn for grain, corn for silage, potatoes, cabbage, and field beans on the Grade A farms, as compared with 15 per cent on the Grade B farms, 11 per cent on the other dairy farms, 13 per cent on the poultry farms, 12 per cent on the miscellaneous-type farms, and 14 per cent on the special farms (table 7). Practically all of the corn on the Grade A and Grade B farms was grown for silage; on the farms where dairying was less important, corn was grown chiefly for grain.

Oats, or oats and barley, are commonly used as nurse crops for hay seedings. Buckwheat, since it is one of the few crops that can be put in late in the season—near the end of June or the first part of July—and still mature before frost in the fall, is often planted on soil which is slow to drain in the spring. These crops, together with barley alone and wheat,

TABLE 7. ACREAGE, PRODUCTION, AND RELATIVE IMPORTANCE OF CROPS GROWN ON 544 FARMS, 1937*

	Farms growing crop	Average per farm, all farms		Proportion of total crop acres	Proportion of total productive-man-work units on crops
		Area	Total crop		
131 Grade A farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for silage	113	8.5	78 tons	12	25
Potatoes	112	2.3	401 bushels	3	14
Cabbage	51	1.3	12 tons	2	8
Total		12.1		17	47
Oats	27	2.1	50 bushels	3	2
Oats and barley	98	9.3	247 bushels	13	11
Buckwheat	46	3.8	75 bushels	5	5
Wheat	32	1.9	43 bushels	3	2
Total		17.1		24	20
Alfalfa	49	4.4	10 tons	6	4
Clover and mixed hay	109	18.6	30 tons	27	12
Timothy	71	14.4	18 tons	20	9
Total		37.4		53	25
Other crops		3.8		6	8
Total, all crops		70.4		100	100
122 Grade B farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for grain	54	2.1	65 bushels	3	7
Corn for silage	92	6.9	60 tons	9	21
Potatoes	92	1.2	156 bushels	2	7
Field beans	19	1.1	16 bushels	1	3
Total		11.3		15	38
Oats	46	3.4	73 bushels	4	4
Oats and barley	73	8.6	195 bushels	11	11
Buckwheat	69	6.8	133 bushels	9	8
Wheat	52	4.2	87 bushels	5	5
Total		23.0		29	28
Alfalfa	42	4.1	9 tons	5	4
Clover and mixed hay	101	13.5	23 tons	20	10
Timothy	88	20.7	27 tons	26	12
Total		40.3		51	26
Other crops		3.8		5	8
Total, all crops		78.4		100	100

*Acreages are shown only for those crops which amounted to 1.0 acre or more per farm.

(Table 7 is continued on the following page)

occupied 24 per cent of the total acres in crops on the Grade A farms, 29 per cent on the Grade B farms, 35 per cent on the other dairy farms, 46 per cent on the poultry farms, 40 per cent on the miscellaneous-type farms, and 32 per cent on the special farms.

Hay made up from 46 to 53 per cent of the total acres in crops on each type of farm, except on the poultry and the miscellaneous-type farms, where it occupied 37 and 40 per cent, respectively, of the total acres in

TABLE 7* (continued)

	Farms growing crop	Average per farm, all farms		Proportion of total crop acres	Proportion of total productive-man-work units on crops
		Area	Total crop		
129 other dairy farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for grain.....	90	3.7	117 bushels	6	17
Corn fodder.....	107	(2.9)	5 tons	..	..
Field beans.....	42	2.7	44 bushels	5	8
Total.....		6.4		11	25
Oats.....	66	4.4	91 bushels	7	7
Barley.....	20	1.6	30 bushels	3	2
Oats and barley.....	50	2.8	52 bushels	5	4
Buckwheat.....	73	6.3	119 bushels	10	10
Wheat.....	73	6.2	132 bushels	10	9
Total.....		21.3		35	32
Alfalfa.....	35	3.4	6 tons	5	4
Clover and mixed hay.....	83	9.4	13 tons	16	8
Timothy.....	90	14.9	17 tons	25	11
Total.....		27.7		46	23
Apples.....	44	1.1	5 bushels	2	2
Other crops.....	..	4.1	.....	6	18
Total, all crops.....		60.6		100	100
40 poultry farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for grain.....	23	4.1	147 bushels	6	16
Corn for silage.....	9	1.4	16 tons	2	4
Corn fodder.....	22	(3.0)	5 tons	..	..
Potatoes.....	17	1.1	59 bushels	2	7
Field beans.....	7	2.4	47 bushels	3	6
Total.....		9.0		13	33
Oats.....	12	2.7	60 bushels	4	3
Barley.....	8	1.6	29 bushels	2	2
Oats and barley.....	20	6.9	161 bushels	10	9
Buckwheat.....	20	8.3	171 bushels	12	10
Wheat.....	32	13.1	285 bushels	18	17
Total.....		32.6		46	41
Alfalfa.....	15	5.6	12 tons	8	5
Clover and mixed hay.....	27	13.8	20 tons	19	9
Timothy.....	24	7.3	10 tons	10	5
Total.....		26.7		37	19
Other crops.....		3.1		4	7
Total, all crops.....		71.4		100	100

*Acres are shown only for those crops which amounted to 1.0 acre or more per farm.

(Table 7 is concluded on the following page)

crops. Timothy comprised more than 50 per cent of the total acreage in hay on the Grade B, other dairy, and miscellaneous-type farms. Alfalfa, or clover and mixed hay, was relatively more important on the other types of farms.

Work on intertilled crops made up approximately 47 per cent of the total work on crops on the Grade A farms, 38 per cent on the Grade B farms,

TABLE 7* (concluded)

	Farms growing crop	Average per farm, all farms		Proportion of total crop acres	Proportion of total productive-man-work units on crops
		Area	Total crop		
31 miscellaneous-type farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for grain.....	20	3.0	109 bushels	5	11
Corn fodder.....	23	(2.3)	5 tons	..	..
Potatoes.....	28	2.1	206 bushels	3	13
Field beans.....	10	2.2	40 bushels	4	6
Total.....		7.3		12	30
Oats.....	7	1.9	44 bushels	3	2
Barley.....	5	2.6	52 bushels	4	3
Oats and barley.....	10	3.7	82 bushels	6	5
Buckwheat.....	18	9.5	169 bushels	15	12
Wheat.....	15	7.5	162 bushels	12	10
Total.....		25.2		40	32
Alfalfa.....	8	2.2	6 tons	4	3
Clover and mixed hay.....	18	8.3	9 tons	13	5
Timothy.....	22	14.6	18 tons	23	9
Total.....		25.1		40	17
Grapes.....	2	1.1	2 tons	2	8
Other crops.....		3.6		6	13
Total, all crops.....		62.3		100	100
91 special farms					
	<i>Number</i>	<i>Acres</i>		<i>Per cent</i>	<i>Per cent</i>
Corn for grain.....	43	1.8	49 bushels	3	7
Corn for silage.....	42	4.4	41 tons	6	15
Corn fodder.....		(1.3)	3 tons	..	..
Potatoes.....	67	1.9	262 bushels	3	13
Field beans.....	11	1.2	17 bushels	2	3
Total.....		9.3		14	38
Oats.....	28	2.5	44 bushels	4	3
Barley.....	11	1.1	24 bushels	2	1
Oats and barley.....	48	6.3	165 bushels	10	9
Buckwheat.....	42	6.9	132 bushels	10	9
Wheat.....	34	4.2	93 bushels	6	6
Total.....		21.0		32	28
Alfalfa.....	29	3.1	7 tons	5	4
Clover and mixed hay.....	68	13.4	20 tons	21	10
Timothy.....	58	15.1	19 tons	23	10
Total.....		31.6		49	24
Other crops.....		3.2		5	10
Total, all crops.....		65.1		100	100

*Acreages are shown only for those crops which amounted to 1.0 acre or more per farm.

25 per cent on the other dairy farms, 33 per cent on the poultry farms, 30 per cent on the miscellaneous-type farms, and 38 per cent on the special farms. Work on small grains was 20 per cent of the total work on crops on the Grade A farms, 28 per cent on the Grade B farms, 32 per cent on the other dairy farms, 41 per cent on the poultry farms, 32 per cent on the miscellaneous-type farms, and 28 per cent on the special farms. Work on hay

crops was approximately one-fourth of the total amount of work on crops on every type of farm except the poultry and miscellaneous-type farms, where it amounted to 19 and 17 per cent, respectively.

Total work units on crops on the respective types of farms were: 167, or 38 per cent of the total work units on all enterprises, on the Grade A farms; 166, or 40 per cent, on the Grade B farms; 133, or 54 per cent, on the other dairy farms; 158, or 40 per cent, on the poultry farms; 158, or 64 per cent, on the miscellaneous-type farms; and 150, or 30 per cent, on the special farms (table 8).

TABLE 8. DISTRIBUTION OF PRODUCTIVE-MAN-WORK UNITS, BY TYPES OF FARMING, 544 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms	Special farms
Number of farms	131	122	129	40	31	91
	Productive-man-work units					
Cows	233	204	60	89	40	131
Other animals except work animals	32	36	34	144	38	49
Total livestock	265	240	103	233	78	180
Crops	167	166	133	158	158	150
Miscellaneous	10	12	11	5	12	165
Total productive-man-work units	442	418	247	396	248	495

Potatoes, cabbage, field beans, buckwheat, and wheat were the chief crops that were produced for sale. More than 50 per cent of all the cabbage, field beans, and buckwheat which was produced in the area, was sold.

TABLE 9. SALE OF CROPS IN PER CENT OF TOTAL PRODUCTION, 544 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms	Total regular farms	Special farms
Number of farms	131	122	129	40	31	453	91
	Proportion of total crop sold						
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Corn for grain	3.7	1.6	14.3	2.7	16.1	8.3	11.8
Potatoes	69.1	48.1	47.8	55.9	62.0	61.1	67.8
Cabbage	95.2	95.0	99.1	95.7	98.1	95.7	98.0
Field beans	96.5	97.4	94.9	99.8	95.4	96.3	96.4
Barley	13.1	15.0	20.6	22.8	62.1	29.0	31.3
Buckwheat	54.2	53.3	66.2	62.0	77.5	60.6	62.2
Wheat	36.6	43.6	52.2	27.5	60.7	43.8	32.1
Alfalfa (all cuttings)	4.5	7.7	32.8	42.4	68.8	18.4	7.8
Clover hay (all cuttings)	7.2	8.0	26.5	28.5	20.4	13.0	12.0
Timothy hay	21.7	27.7	33.2	23.3	53.6	28.9	27.9
Grapes .....	...	...	100.0	...	100.0	100.0	...

CROP YIELDS

The yields of the most important crops for each type of farming are shown in table 10. Corn for silage, potatoes, oats and barley, and hay yields showed more variation from one type of farming to another than did the yields of the other crops. Except for potatoes, which were lower on the poultry farms, the yields of all these crops except alfalfa were highest on the Grade A and poultry farms and lowest on the other dairy farms.

TABLE 10. YIELDS OF IMPORTANT CROPS GROWN ON 544 FARMS, 1937

	Unit	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms	Special farms
Number of farms.....		131	122	129	40	31	91
Yield of crops							
Corn for grain.....	Bushels	43	32	32	36	36	27
Corn for silage.....	Tons	9.2	8.8	6.2	11.2	.....	9.5
Corn fodder.....	Tons	6.5	3.7	4.0	4.0	2.2	4.6
Potatoes.....	Bushels	172	130	108	57	100	138
Cabbage.....	Tons	9.2	9.3	8.8	16.3	5.7	10.2
Field beans.....	Bushels	15	15	16	19	18	14
Oats.....	Bushels	24	22	21	22	24	18
Barley.....	Bushels	19	23	19	18	20	22
Oats and barley.....	Bushels	26	23	18	23	22	26
Buckwheat.....	Bushels	20	20	19	21	18	19
Wheat.....	Bushels	23	21	21	22	22	22
Alfalfa.....	Tons	2.3	2.2	1.7	2.1	2.6	2.4
Clover and mixed hay.....	Tons	1.6	1.5	1.3	1.4	1.1	1.5
Timothy.....	Tons	1.2	1.3	1.1	1.3	1.2	1.3

FACTORS AFFECTING CROP YIELDS

The type of soil, local weather conditions, fertility practices, and various other factors, are important in determining crop yields. In general, the farms that had the highest crop yields applied more fertilizer per acre fertilized, and had more manure available per acre of crops, than did the farms with lower yields (table 11).

On the Grade A farms, the value of fertilizer applied per acre fertilized and the amount of manure available per acre was more than it was on either the Grade B or the other dairy farms. The Grade A farms had yields that were 107 per cent of the average yields for the region, as compared with 98 per cent on the Grade B farms, 90 per cent on the other dairy farms, 98 per cent on the poultry farms, 89 per cent on the miscellaneous-type farms, and 96 per cent on the special farms.

LIVESTOCK

As measured by productive-man-work units and the proportion which work units on livestock were of the total work units, livestock was most important on the Grade A, Grade B, and poultry farms. Work units on livestock on the respective types of farms were: 265, or 60 per cent of the total work units, on the Grade A farms; 240, or 57 per cent, on the Grade B farms; 103, or 42 per cent, on the other dairy farms; 233, or 59 per cent, on the poultry farms; 78, or 31 per cent, on the miscellaneous-type farms;

TABLE 11. RELATION OF FERTILITY MAINTENANCE TO CROP YIELDS AND OTHER FACTORS, 542 FARMS, 1937

	Crop index			
	Less than 80	80-99	100-119	120 or more
	Grade A farms			
Number of farms.....	21	34	40	36
Acres of crops.....	81.6	82.6	66.9	75.4
Acres fertilized.....	21.0	24.7	18.8	26.9
Value of fertilizer.....	\$66	\$77	\$67	\$118
Value of fertilizer per acre fertilized.....	\$2.82	\$2.98	\$3.43	\$4.21
Manure per acre of crops (tons).....	2.0	2.5	2.8	2.8
Crop index.....	72	90	108	143
	Grade B farms			
Number of farms.....	22	47	33	20
Acres of crops.....	71.7	81.5	89.3	90.4
Acres fertilized.....	19.5	27.2	38.2	37.0
Value of fertilizer.....	\$50	\$64	\$117	\$122
Value of fertilizer per acre fertilized.....	\$2.30	\$2.37	\$3.05	\$3.30
Manure per acre of crops (tons).....	2.3	1.9	2.1	2.5
Crop index.....	66	90	109	136
	Other dairy farms			
Number of farms.....	45	37	35	12
Acres of crops.....	63.5	74.7	63.6	57.9
Acres fertilized.....	20.0	24.9	27.7	21.7
Value of fertilizer.....	\$43	\$62	\$62	\$65
Value of fertilizer per acre fertilized.....	\$2.15	\$2.50	\$2.25	\$3.01
Manure per acre of crops (tons).....	1.1	1.3	1.6	1.5
Crop index.....	63	89	109	136
	Special farms			
Number of farms.....	24	34	12	19
Acres of crops.....	57.9	63.8	97.1	89.5
Acres fertilized.....	13.5	25.1	45.0	34.7
Value of fertilizer.....	\$42	\$65	\$133	\$143
Value of fertilizer per acre fertilized.....	\$3.14	\$2.58	\$2.95	\$4.13
Manure per acre of crops (tons).....	1.6	1.9	1.5	2.2
Crop index.....	65	89	108	148
	Crop index			
	Less than 100	100 or more	Less than 100	100 or more
	Poultry farms		Miscellaneous-type farms	
Number of farms.....	18	22	22	9
Acres of crops.....	90.0	153.2	110.0	170.0
Acres fertilized.....	21.7	46.8	14.5	47.8
Value of fertilizer.....	\$56	\$133	\$35	\$175
Value of fertilizer per acre fertilized.....	\$2.59	\$2.83	\$2.21	\$3.65
Manure per acre of crops (tons).....	1.2	1.2	0.7	0.5
Crop index.....	71	119	73	128

and 180, or 36 per cent, on the special farms (table 8, page 14). On the Grade A and Grade B farms, practically all of the work units on livestock were on cows. On the poultry farms, work units on livestock other than cows were more than those on cows.

The average number of cows kept on the Grade A farms was 15.6, as compared with 13.5 on the Grade B farms, 4.4 on the other dairy farms, 5.9 on the poultry farms, 2.7 on the miscellaneous-type farms, and 8.6 on the special farms (table 12). For the regular and the special farms combined, 45 per cent of the cows were on farms which had a Grade A market for milk, and 35 per cent were on farms which had a Grade B market for milk.

TABLE 12. NUMBER OF LIVESTOCK KEPT, BY TYPES OF FARMING, 544 FARMS, 1937

	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscel- laneous- type farms	91 special farms
	Average number per farm					
Cows	15.6	13.5	4.4	5.9	2.7	8.6
Heifers 1 year or over	4.0	3.6	1.6	2.3	1.3	2.7
Heifers under 1 year	3.9	3.3	1.6	1.8	0.9	2.5
Bulls	0.9	0.9	0.4	0.4	0.3	0.7
Beef cattle	0.1	0.0	0.2	0.1	0.6	0.1
Horses	2.6	2.8	2.2	2.1	2.1	2.1
Mules	0.1	0.0	0.0	0.1	0.1	0.1
Colts	0.1	0.2	0.1	0.1	0.1	0.1
Ewes	1.3	1.2	5.2	4.6	8.5	2.9
Brood sows	0.1	0.2	0.5	0.1	0.3	0.3
Hens and pullets	57.7	92.9	97.6	655.8	120.7	155.8

Both the Grade A and the Grade B farms kept approximately one heifer for every two cows. On farms where dairying is less important in the farm organization, more heifers were kept in proportion to the average number of cows. Miscellaneous-type farms kept one heifer for every cow kept. Practically all of the Grade A and Grade B farms kept bulls. Less than half of the other farms had bulls.

Most of the farms kept one team of horses, and a few farms kept more than this. The average number of horses and mules was 2.7 on the Grade A farms, 2.8 on the Grade B farms, 2.2 on the other dairy farms, 2.2 on the poultry farms, 2.2 on the miscellaneous-type farms, and 2.2 on the special farms.

The average number of ewes kept was 1.3 on the Grade A farms, 1.2 on the Grade B farms, 5.2 on the other dairy farms, 4.6 on the poultry farms, 8.5 on the miscellaneous-type farms, and 2.9 on the special farms.

The average number of hens kept per farm was 58 on the Grade A farms, 93 on the Grade B farms, 98 on the other dairy farms, 656 on the poultry farms, 121 on the miscellaneous-type farms, and 156 on the special farms.

From 15 to 23 per cent of the other dairy, poultry, miscellaneous-type and special farms kept breeding ewes (table 13). Less than 10 per cent of the Grade A and Grade B farms kept breeding ewes.

About one-third, or 34 per cent, of the other dairy farms, 36 per cent of the miscellaneous-type farms, and 22 per cent of the special farms, kept brood sows. Not more than one-sixth of the farms of the other types kept brood sows, but approximately half or more than half of all the farms in each group kept hogs to butcher.

More sheep and hogs were kept on the miscellaneous-type farms than on any other type of farm.

The average distribution of capital in livestock for each type of farming

TABLE 13. PROPORTION OF FARMS IN EACH TYPE OF FARMING GROUP WHICH KEPT HOGS AND SHEEP, 544 FARMS, 1937

	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscellaneous-type farms	91 special farms
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Ewes.....	8.4	8.2	17.1	15.0	22.6	15.4
Other sheep.....	6.1	7.4	13.2	7.5	22.6	14.3
Brood sows.....	9.9	14.8	34.1	7.5	35.5	22.0
Other hogs.....	55.0	53.3	67.4	47.5	58.1	67.0

is shown in table 14. The distribution of capital in livestock is approximately the same as the distribution of animal units. Most of the capital in livestock was in cows, work horses, and poultry.

TABLE 14. DISTRIBUTION OF CAPITAL IN LIVESTOCK, BY TYPES OF FARMING, 544 FARMS, 1937

	Average value per farm	Proportion of total livestock capital	Average value per farm	Proportion of total livestock capital	Average value per farm	Proportion of total livestock capital
	131 Grade A farms		122 Grade B farms		129 other dairy farms	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
Cows.....	1,417	62.4	1,191	57.9	318	33.8
Heifers 1 year or over.....	225	9.9	190	9.2	76	8.1
Heifers under 1 year.....	99	4.4	85	4.1	36	3.9
Bulls.....	71	3.1	69	3.4	21	2.3
Beef cattle.....	6	0.3	1	0.1	16	1.7
Horses.....	353	15.5	382	18.6	266	28.3
Mules.....	9	0.4	8	0.4	2	0.2
Colts.....	7	0.3	21	1.0	13	1.4
Ewes.....	13	0.6	10	0.5	47	5.0
Brood sows.....	4	0.2	7	0.3	16	1.7
Hens and pullets.....	58	2.6	85	4.1	101	10.7
Other livestock.....	9	0.3	8	0.4	29	2.9
Total.....	2,271	100.0	2,057	100.0	941	100.0
	40 poultry farms		31 miscellaneous-type farms		91 special farms	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
Cows.....	587	32.8	197	25.1	749	48.3
Heifers 1 year or over.....	143	8.0	56	7.2	142	9.2
Heifers under 1 year.....	44	2.4	15	2.0	55	3.5
Bulls.....	32	1.8	11	1.4	47	3.0
Beef cattle.....	3	0.2	28	3.5	5	0.3
Horses.....	289	16.1	246	31.4	274	17.7
Mules.....	2	0.1	9	1.1	13	0.8
Colts.....	4	0.2	11	1.4	7	0.5
Ewes.....	35	1.9	54	6.9	20	1.3
Brood sows.....	3	0.2	11	1.4	8	0.5
Hens and pullets.....	615	34.4	119	15.2	151	9.7
Other livestock.....	33	1.9	27	3.4	81	5.2
Total.....	1,790	100.0	784	100.0	1,552	100.0

FARM CAPITAL

Nearly one-fourth, or 23 per cent, of the farms in the regular group employed less than \$5000 total capital. These farms were mostly the small dairies, which disposed of their milk in the form of cream, butter, veals, or some combination of these products, or farms that were classified as mis-

cellaneous-type. Nearly one-third, or 30 per cent, employed as much as \$10,000 capital or more. These farms were mostly the larger dairy farms, which sold Grade A or Grade B milk.

The average capital per farm was higher on the Grade A farms than on any of the other types of farms. It amounted to \$10,479 per farm, as compared with \$8969 on the Grade B farms, \$6617 on the other dairy farms, \$9210 on the poultry farms, \$7129 on the miscellaneous-type farms, and \$8751 on the special farms (table 15).

TABLE 15. CAPITAL PER FARM, BY TYPES OF FARMING, 544 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms	Special farms	All farms
Number of farms	131	122	129	40	31	91	544
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Capital in—							
Real estate	6,860	5,507	4,821	5,750	5,539	5,737	5,729
Livestock	2,271	2,057	941	1,790	784	1,552	1,667
Equipment	1,152	1,166	681	1,362	629	1,252	1,044
Feed and supplies	196	239	174	308	177	210	213
Total	10,479	8,969	6,617	9,210	7,129	8,751	8,653

When the work accomplished is considered in relation to the capital employed, it is seen that the Grade A farms had \$24 in capital per productive-man-work unit, as compared with \$21 on the Grade B farms, \$27 on the other dairy farms, \$23 on the poultry farms, \$29 on the miscellaneous-type farms, and \$18 on the special farms.

Capital per \$100 of receipts on the Grade A farms amounted to \$327, as compared with \$358 on the Grade B farms, \$517 on the other dairy farms, \$232 on the poultry farms, \$458 on the miscellaneous-type farms, and \$259 on the special farms. It would take 3.3 years for the receipts to equal the capital on the Grade A farms, 3.6 years on the Grade B farms, 5.2 years on the other dairy farms, 2.3 years on the poultry farms, 4.6 years on the miscellaneous-type farms, and 2.6 years on the special farms.

Capital in real estate on the respective types of farms was, per farm: \$6860, or 65 per cent of the total, on the Grade A farms; \$5507, or 61 per cent of the total, on the Grade B farms; \$4821, or 73 per cent of the total, on the other dairy farms; \$5750, or 63 per cent of the total, on the poultry farms; \$5539, or 78 per cent of the total, on the miscellaneous-type farms; and \$5737, or 66 per cent of the total, on the special farms.

Capital in livestock per farm amounted to: \$2271, or 22 per cent of the total, on the Grade A farms; \$2057, or 23 per cent of the total, on the Grade B farms; \$941, or 14 per cent of the total, on the other dairy farms; \$1790, or 19 per cent of the total, on the poultry farms; \$784, or 11 per cent of the total, on the miscellaneous-type farms; and \$1552, or 18 per cent of the total, on the special farms.

The value of equipment per farm was only about half as much on the other dairy farms and the miscellaneous-type farms as it was on the farms having more livestock. The average value of equipment per farm was: \$1152, or 11 per cent of the total capital per farm, on the Grade A farms; \$1166, or 13 per cent of the total, on the Grade B farms; \$681, or 10 per

cent of the total, on the other dairy farms; \$1362, or 15 per cent of the total, on the poultry farms; \$629, or 9 per cent of the total, on the miscellaneous-type farms; and \$1252, or 14 per cent of the total, on the special farms.

Feed and supplies made up a very small proportion of the total capital per farm on any of the types of farms. Only 3 per cent of the capital on the Grade B, other dairy, and poultry farms, and 2 per cent of that on the Grade A farms, the miscellaneous-type farms, and the special farms, was in feed and supplies.

Farms in the higher land classes employed more capital per farm and per man-work unit than did those in the lower land classes.

DISTRIBUTION OF CAPITAL IN REAL ESTATE

The average value of all real estate amounted to \$5729 per farm. Of this amount, approximately 25 per cent was the value of the operator's house, 33 per cent was the value of other buildings, and 42 per cent was the value of the land. The distribution of capital in real estate did not vary greatly with the type of farming.

On farms where dairying was less important, fewer and less expensive buildings were required for housing livestock. These farms had relatively better houses, however, and the value of the land was less. Consequently, the value of other buildings made up about the same proportion of the total capital in real estate as on the more intensive dairy farms.

The distribution of capital in real estate did not vary greatly from one land class to another. Farms in land class II had 49 per cent of their real capital in land, as compared with 40 to 43 per cent in land classes III, IV, and V. Farms in land class IV had a slightly higher proportion of their real capital in buildings other than the operator's house, than did the farms in the other land classes.

FARM PRIVILEGES

The contributions of the farm toward family living are called "privileges." The value of privileges did not vary much with the type of farming. On every type of farm, the use of the house, milk, garden, and firewood were the most important contributions to the family living, from the standpoint of value (table 16). They represented approximately 75 per cent of the total value of privileges. Scarcely any milk was used in the form of butter on the farms producing market milk for fluid purposes.

If comparisons of any kind are to be made between farmers' incomes and incomes of men in other industries, the value of contributions by the business to the individual's living should be added to the amount of the wage or labor income.

RECEIPTS, EXPENSES, AND NET INCOME TO LABOR AND CAPITAL

The receipts, expenses, and various measures of net returns were summarized according to the type of farming followed.

In calculating the labor income, interest was charged against each farm on the amount of capital employed. In 1937, the most common rate of interest on long-term mortgage loans was 5 per cent. Since many farmers were actually paying interest on loans at approximately this rate, interest

TABLE 16. VALUE PER FARM OF PRIVILEGES FURNISHED TO OPERATORS, 544 FARMS, 1937

	Unit	Grade A farms		Grade B farms		Other dairy farms	
		Amount	Value	Amount	Value	Amount	Value
Number of farms.....		131	...	122	...	129	...
Milk.....	Quarts	1,378.0	<i>Dollars</i> 58	1,442.0	<i>Dollars</i> 60	1,074.4	<i>Dollars</i> 48
Butter.....	Pounds	6.1	2	6.2	2	119.1	36
Eggs.....	Dozens	142.3	30	162.6	34	142.9	29
Pork.....	Pounds	276.6	29	270.5	28	262.4	28
Poultry, beef, and other livestock.....			18		21		20
Potatoes.....	Bushels	27.7	11	28.4	13	23.0	11
Fruit.....			2		4		6
Garden.....			41		46		50
Wheat flour.....	Pounds	16.1	0	25.5	1	71.9	2
Buckwheat flour.....	Pounds	5.2	0	15.8	1	11.1	0
Honey.....	Pounds	0.6	0	0.8	0	1.7	0
Maple sirup.....	Gallons	0.5	1	0.1	0	0.1	0
Cider.....	Gallons	0.2	0	0.4	0		
Wood.....	Cords	28.1	54	35.4	66	28.3	53
Use of dwelling.....			175		151		151
Total.....			421		427		434

	Unit	Poultry farms		Miscellaneous farms		Special farms	
		Amount	Value	Amount	Value	Amount	Value
Number of farms.....		40	...	31	...	91	...
Milk.....	Quarts	1,356.1	<i>Dollars</i> 63	856.8	<i>Dollars</i> 40	1,222.4	<i>Dollars</i> 60
Butter.....	Pounds	93.2	28	85.7	26	61.0	18
Cream.....	Pints	4.6	2				
Eggs.....	Dozens	221.4	39	141.1	27	170.5	35
Pork.....	Pounds	198.5	20	221.6	22	281.7	29
Poultry, beef, and other livestock.....			36		18		25
Potatoes.....	Bushels	16.2	8	22.6	10	26.2	12
Fruit.....			7		4		3
Garden.....			58		48		51
Wheat flour.....	Pounds	51.8	1	106.1	4	21.9	1
Buckwheat flour.....	Pounds			6.5	0	12.6	1
Honey.....	Pounds	7.5	1			0.7	0
Maple sirup.....	Gallons					0.1	0
Wood.....	Cords	22.0	43	33.1	60	26.6	46
Use of dwelling.....			169		162		170
Total.....			475		421		451

was charged on the entire amount of capital employed on each of the farms at the uniform rate of 5 per cent.

LABOR INCOME

The average labor income was \$407 on the Grade A farms, -\$28 on the Grade B farms, -\$150 on the other dairy farms, \$282 on the poultry farms, \$29 on the miscellaneous-type farms, and \$548 on the special farms (table 17).

The value of privileges which the farms furnished showed little variation with the type of farming followed (table 16). The labor earnings were higher than the labor incomes by about the same amount for each type of farming.

TABLE 17. LABOR INCOME AND OTHER FACTORS, BY TYPES OF FARMING,
544 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscel- laneous- type farms	Special farms
Number of farms	131	122	129	40	31	91
Average farm capital	<i>Dollars</i> 10,479	<i>Dollars</i> 8,969	<i>Dollars</i> 6,617	<i>Dollars</i> 9,210	<i>Dollars</i> 7,129	<i>Dollars</i> 8,751
Receipts:						
Sales of livestock products	2,292	1,745	468	2,740	433	1,359
Livestock increase	302	247	251	512	240	333
Crop sales	357	308	438	515	731	402
Miscellaneous*	109	94	85	92	109	1,038
Increase in all other capital	146	110	39	113	45	241
Total	3,206	2,504	1,281	3,972	1,558	3,373
Total current expense*	2,275	2,083	1,100	3,230	1,173	2,387
Income from labor and capital	931	421	181	742	385	986
Interest on capital at 5 per cent	524	449	331	460	356	438
Labor income	407	-28	-150	282	29	548
Labor earnings	840	413	285	759	470	1,003
Value of operator's time	696	616	498	650	517	589
Return on capital	235	-195	-317	92	-132	397
Percentage return on capital	2.2	-2.2	-4.8	1.0	-1.9	4.5

*Cash rent not included.

RECEIPTS

Total receipts per farm were \$3206 on the Grade A farms, \$2504 on the Grade B farms, \$1281 on the other dairy farms, \$3972 on the poultry farms, \$1558 on the miscellaneous-type farms, and \$3373 on the special farms (table 17). This amounted to \$31 per \$100 in capital on the Grade A farms, \$28 on the Grade B farms, \$19 on the other dairy farms, \$43 on the poultry farms, \$22 on the miscellaneous-type farms, and \$39 on the special farms.

Most of the miscellaneous income on the special farms (table 17) was obtained from work done off the farms. Salt mines, cement plants, and the typewriter factory at Groton, furnished work for many of the men on these farms. Others hauled milk, did custom threshing, or did other kinds of work more nearly related to farming.

Livestock products

The sale of livestock products furnished the most important part of the income on every type of farm except the miscellaneous-type farms. Receipts from the sale of livestock products made up 72 per cent of the total receipts per farm on the Grade A farms, 70 per cent of those on the Grade B farms, 36 per cent of those on the other dairy farms, 69 per cent of those on the poultry farms, 28 per cent of those on the miscellaneous-type farms, and 40 per cent of those on the special farms (table 18). Less than \$500 worth of livestock products were sold per farm on the other dairy farms and the miscellaneous-type farms. Receipts from this source were approximately three to six times as large on the other groups of farms.

Market milk and eggs were the principal livestock products sold (table

19). On farms where dairying was less intensive, cream and butter sales took the place of market-milk sales.

Details concerning the sale of market milk were obtained on 127 Grade A farms and 122 Grade B farms. Of the total receipts on all the regular farms, 45 per cent was from the sale of market milk.

On the 127 Grade A farms, the average sales of fluid milk were 932 hundredweight per farm (table 20). Sales of milk were lowest during August and September; approximately 13 per cent of the total sales for the year were made during these months. Milk sales were highest in May and June; about 20 per cent of the total milk sales for the year were made in these months. The average price received, including premiums, was \$2.30 per hundredweight. The highest prices were received in November and December and the lowest prices were received in May and June. The average butterfat test for the milk sold on these farms was 4.0 per cent.

TABLE 18. RECEIPTS PER FARM, 544 FARMS, 1937

	Farms on which products were sold			Farms on which products were sold			Farms on which products were sold		
	Value per farm, all farms	Proportion of receipts		Value per farm, all farms	Proportion of receipts		Value per farm, all farms	Proportion of receipts	
	131 Grade A farms			122 Grade B farms			129 other dairy farms		
	Number	Dollars	Per cent	Number	Dollars	Per cent	Number	Dollars	Per cent
Livestock products:									
Milk wholesaled	131	2,152	67.1	122	1,504	60.1	1	0	0.0
Cream wholesaled	2	0	0.0	3	2	0.1	62	92	7.2
Milk retailed	21	17	0.5	21	11	0.5	28	33	2.6
Butter	...	...	...	3	1	0.0	55	66	5.1
Wool	12	5	0.2	9	3	0.1	20	14	1.1
Eggs	82	117	3.7	96	223	8.9	102	254	19.8
Other livestock products	6	1	0.0	11	1	0.0	17	9	0.7
Total livestock products		2,292	71.5		1,745	69.7		468	36.5
Livestock increase		302	9.4		247	9.9		251	19.6
Crop sales:									
Corn for grain	2	5	0.2	2	1	0.0	11	40	3.1
Potatoes	96	113	3.5	54	33	1.3	69	21	1.6
Cabbage	45	108	3.4	18	64	2.6	9	22	1.7
Field beans	7	7	0.2	17	31	1.2	36	34	6.6
Factory peas	10	17	0.5	5	8	0.3	3	5	0.4
Barley	2	1	0.0	4	3	0.1	7	7	0.6
Buckwheat	24	25	0.8	38	47	1.9	39	53	4.1
Wheat	12	15	0.5	23	38	1.5	39	69	5.4
Straw	10	3	0.1	12	6	0.2	25	10	0.8
Alfalfa (all cuttings)	...	4	0.1	...	7	0.3	...	17	1.3
Clover hay (all cuttings)	...	11	0.3	...	11	0.5	...	26	2.0
Timothy hay	24	22	0.7	38	48	1.9	33	39	3.1
Grapes	...	...	...	...	11	0.5	1	0	0.0
All other crops	...	26	0.8	...	...	...	...	45	3.5
Total crops		357	11.1		308	12.3		438	34.2
Miscellaneous receipts		109	3.4		94	3.7		85	6.6
Increase in all other capital		146	4.6		110	4.4		39	3.1
Total receipts		3,206	100.0		2,504	100.0		1,281	100.0

(Table 18 is concluded on the following page)

TABLE 18 (concluded)

	Farms on which products were sold	Value per farm, all farms	Proportion of receipts	Farms on which products were sold	Value per farm, all farms	Proportion of receipts	Farms on which products were sold	Value per farm, all farms	Proportion of receipts
	40 poultry farms			31 miscellaneous-type farms			91 special farms		
	Number	Dollars	Per cent	Number	Dollars	Per cent	Number	Dollars	Per cent
Livestock products:									
Milk wholesaled	12	567	14.3	...	...	...	42	838	24.8
Cream wholesaled	14	43	1.1	9	51	3.3	22	41	1.2
Milk retailed	9	56	1.4	6	14	0.9	16	54	1.6
Butter	12	16	0.4	9	52	3.3	13	12	0.4
Wool	6	16	0.4	7	20	1.3	13	9	0.3
Eggs	40	2,041	51.4	20	296	19.0	60	403	11.9
Other livestock products	3	1	0.0	...	...	...	6	2	0.1
Total livestock products		2,740	69.0		433	27.8		1,359	40.3
Livestock increase		512	12.9		240	15.4		333	9.9
Crop sales:									
Corn for grain	1	2	0.0	2	22	1.4	6	3	0.1
Potatoes	10	32	0.8	21	60	3.9	45	72	2.1
Cabbage	5	42	1.1	7	39	2.5	19	87	2.6
Field beans	7	85	2.1	9	80	5.1	9	40	1.2
Factory peas	1	4	0.1	...	...	...	2	2	0.1
Barley	2	7	0.2	1	24	1.5	4	7	0.2
Buckwheat	10	63	1.6	13	87	5.6	27	62	1.8
Wheat	10	75	1.9	10	94	6.0	16	30	0.9
Straw	11	25	0.6	6	32	2.1	10	6	0.2
Alfalfa (all cuttings)	...	54	1.4	...	48	3.1	...	5	0.2
Clover hay (all cuttings)	...	41	1.0	...	15	1.0	...	21	0.6
Timothy hay	7	14	0.4	7	57	3.6	35	32	0.9
Grapes	...	...	...	2	102	6.5	...	...	...
All other crops	...	71	1.8	...	71	4.6	...	35	1.0
Total crops		515	13.0		731	46.9		402	11.9
Miscellaneous receipts		92	2.3		109	7.0		1,038	30.7
Increase in all other capital		113	2.8		45	2.9		241	7.2
Total receipts		3,972	100.0		1,558	100.0		3,373	100.0

TABLE 19. LIVESTOCK PRODUCTS SOLD, BY TYPES OF FARMING, 544 FARMS, 1937

	Farms on which products were sold	Average sales per farm		Farms on which products were sold	Average sales per farm		
		Amount	Value		Amount	Value	
131 Grade A farms				122 Grade B farms			
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Milk wholesaled . . .	131	93,569 pounds	2,152	122	77,089 pounds	1,504	
Cream wholesaled . . .	1	1 pound butterfat	0	3	7 pounds butterfat	2	
Milk retailed	21	208 quarts	17	21	159 quarts	11	
Cream retailed	1	0	0				
Butter				3	3 pounds	1	
Wool	12	11 pounds	5	9	7 pounds	3	
Eggs	84	495 dozens	117	97	882 dozens	223	
Breeding fees	5	0	1	9	1 head	1	
Honey	1	1 pound	0	2	1 pound	0	
Total			2,292			1,745	
129 other dairy farms				40 poultry farms			
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Milk wholesaled . . .	1	11 pounds	0	12	24,580 pounds	567	
Cream wholesaled . . .	61	324 pounds butterfat	92	13	90 pounds butterfat	25	
Milk retailed	28	405 quarts	33	9	980 quarts	56	
Cream retailed	1	0	0	1	33 quarts	18	
Butter	55	204 pounds	66	12	50 pounds	16	
Other dairy products	7		2				
Wool	20	41 pounds	14	6	43 pounds	16	
Eggs	105	994 dozens	254	40	7,632 dozens	2,041	
Breeding fees	6	1 head	1	2	1 head	1	
Honey	4	68 pounds	6	1	2 pounds	0	
Total			468			2,740	
31 miscellaneous-type farms				91 special farms			
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Milk wholesaled . . .				42	38,358 pounds	838	
Cream wholesaled . . .	7	85 pounds butterfat	24	21	145 pounds butterfat	41	
Milk retailed	6	186 quarts	14	16	535 quarts	54	
Cream retailed	3	63 quarts	27	1		0	
Butter	9	155 pounds	52	13	40 pounds	12	
Other dairy products				1		0	
Wool	7	57 pounds	20	13	23 pounds	9	
Eggs	21	1,157 dozens	296	62	1,601 dozens	403	
Breeding fees				3		2	
Honey				2	4 pounds	0	
Total			433			1,359	

TABLE 20. MARKET MILK SOLD, 127 GRADE A FARMS, 1937-38*

Month	Milk sold wholesale per farm	Proportion of milk sold each month	Fat		Butterfat test of milk	Value of milk sold, excluding premiums, per farm	Price received, excluding premiums, per hundred-weight	Grade A premiums		Value of milk sold, including premiums, per farm	Price received, including premiums, per hundred-weight
			Pounds	Per cent				Value per farm	Per hundred-weight		
1937:	<i>Pounds</i>	<i>Per cent</i>	<i>Pounds</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	
April.....	8,944	9.6	357	4.0	164	1.83	19	0.21	183	2.04	
May.....	9,695	10.4	392	4.0	166	1.72	20	0.20	186	1.92	
June.....	9,327	10.0	373	4.0	155	1.66	17	0.18	172	1.84	
July.....	7,535	8.1	303	4.0	140	1.87	18	0.23	158	2.10	
August.....	6,072	6.5	248	4.1	124	2.05	16	0.25	140	2.30	
September.....	6,157	6.6	252	4.1	136	2.20	17	0.29	153	2.49	
October.....	6,994	7.5	289	4.1	162	2.31	20	0.29	182	2.60	
November.....	7,003	7.5	286	4.1	181	2.60	24	0.33	205	2.93	
December.....	7,579	8.1	309	4.1	189	2.50	21	0.27	210	2.77	
1938:											
January.....	7,966	8.6	322	4.0	182	2.29	19	0.24	201	2.53	
February.....	7,476	8.0	296	4.0	157	2.10	16	0.21	173	2.31	
March.....	8,482	9.1	337	4.0	165	1.94	17	0.20	182	2.14	
Total.....	93,230	100.0	3,764	4.0	1,921	2.06	224	0.24	2,145	2.30	

*The distribution of milk sales was not ascertained for the other 4 farms classified as Grade A farms.

On the 122 Grade B farms, sales of milk averaged 771 hundredweight per farm (table 21). The monthly distribution of these sales was approximately the same as on the 127 Grade A farms. The average price received was \$1.95 per hundredweight. The average butterfat test was 3.9 per cent.

TABLE 21. MARKET MILK SOLD, 122 GRADE B FARMS, 1937-38

Month	Milk sold wholesale per farm	Proportion of milk sold each month	Fat	Butterfat test of milk	Value of milk sold per farm	Price received for milk per hundredweight
	<i>Pounds</i>	<i>Per cent</i>	<i>Pounds</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Dollars</i>
1937:						
April.....	7,022	9.1	269	3.8	120	1.70
May.....	8,114	10.5	311	3.8	125	1.54
June.....	7,895	10.3	301	3.8	117	1.49
July.....	6,436	8.4	248	3.9	110	1.71
August.....	5,242	6.8	205	3.9	105	2.00
September.....	5,623	7.3	224	4.0	124	2.21
October.....	6,124	7.9	244	4.0	140	2.28
November.....	5,778	7.5	228	4.0	145	2.52
December.....	6,106	7.9	239	3.9	148	2.42
1938:						
January.....	6,226	8.1	242	3.9	135	2.17
February.....	5,949	7.7	228	3.8	118	1.98
March.....	6,574	8.5	250	3.8	117	1.77
Total.....	77,089	100.0	2,989	3.9	1,504	1.95

Crop sales

The sale of crops was second to the sale of livestock products as a source of income on most of the different types of farms. Income from this source ranged from \$308 per farm on the Grade B farms, to \$731 on the miscellaneous-type farms (table 22). As a proportion of the total receipts

per farm, crop sales were 11 per cent of the total on the Grade A farms, 12 per cent on the Grade B farms, 34 per cent on the other dairy farms, 13 per cent on the poultry farms, 47 per cent on the miscellaneous-type farms, and 12 per cent on the special farms.

TABLE 22. SALES OF CROPS, 544 FARMS, 1937

	Farms selling crops	Average sales per farm		Farms selling crops	Average sales per farm		
		Amount	Value		Amount	Value	
			131 Grade A farms		122 Grade B farms		
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Corn for grain*	2	1.4 bushels	5	2	1.1 bushels	1	
Potatoes	96	276.8 bushels	113	54	75.3 bushels	33	
Cabbage	45	11.2 tons	108	18	4.8 tons	64	
Field beans	7	3.2 bushels	7	17	15.5 bushels	31	
Factory peas	10	0.3 ton	17	5	0.1 ton	8	
Barley	2	0.9 bushel	1	4	3.4 bushels	3	
Buckwheat	24	40.7 bushels	25	38	70.9 bushels	47	
Wheat	12	15.7 bushels	15	23	38.1 bushels	38	
Straw	10	0.6 ton	3	12	1.0 ton	6	
Alfalfa (all cuttings)	5	0.5 ton	4	9	0.7 ton	7	
Clover hay (all cuttings)	19	2.1 tons	11	18	1.8 tons	11	
Timothy hay	24	3.9 tons	22	38	7.4 tons	48	
Grapes	..	..	..	..	..	..
All other crops	..	..	26	..	..	11
Total	..	..	357	..	..	308
			129 other dairy farms		40 poultry farms		
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Corn for grain*	11	16.8 bushels	40	1	4.0 bushels	2	
Potatoes	69	45.9 bushels	21	10	33.3 bushels	32	
Cabbage	9	2.1 tons	22	5	5.0 tons	42	
Field beans	36	41.7 bushels	84	7	46.5 bushels	85	
Factory peas	3	0.1 ton	5	1	0.1 ton	4	
Barley	7	8.8 bushels	7	2	6.5 bushels	7	
Buckwheat	39	78.6 bushels	53	10	106.1 bushels	63	
Wheat	39	68.9 bushels	69	10	78.5 bushels	75	
Straw	25	1.5 tons	10	11	4.0 tons	25	
Alfalfa (all cuttings)	15	1.9 tons	17	8	5.0 tons	54	
Clover hay (all cuttings)	27	3.3 tons	26	9	5.6 tons	41	
Timothy hay	33	5.6 tons	39	7	2.3 tons	14	
Grapes	1	..	0	..	..	..
All other crops	..	..	45	..	..	71
Total	..	..	438	..	..	515
			31 miscellaneous-type farms		91 special farms		
	<i>Number</i>		<i>Dollars</i>	<i>Number</i>		<i>Dollars</i>	
Corn for grain*	2	17.7 bushels	22	6	5.8 bushels	3	
Potatoes	21	127.6 bushels	60	45	177.5 bushels	72	
Cabbage	7	3.3 tons	39	19	8.8 tons	87	
Field beans	9	38.0 bushels	80	9	16.2 bushels	40	
Factory peas	..	..	..	2	..	2
Barley	1	32.3 bushels	24	4	7.5 bushels	7	
Buckwheat	13	130.8 bushels	87	27	82.1 bushels	62	
Wheat	10	98.1 bushels	94	16	29.9 bushels	30	
Straw	6	4.4 tons	32	10	1.0 ton	6	
Alfalfa (all cuttings)	4	3.8 tons	48	29	0.6 ton	5	
Clover hay (all cuttings)	3	1.8 tons	15	68	2.4 tons	21	
Timothy hay	7	9.8 tons	57	35	5.4 tons	32	
Grapes	2	1.7 tons	102	..	..	..
All other crops	..	..	71	..	..	35
Total	..	..	731	..	..	402

*Includes corn for seed.

EXPENSES

Expenses were \$2275 per farm on the Grade A farms, \$2083 on the Grade B farms, \$1100 on the other dairy farms, \$3230 on the poultry farms, \$1173 on the miscellaneous-type farms, and \$2387 on the special farms (table 23). They amounted to \$5.15 per man-work unit on the Grade A farms, \$4.98 on the Grade B farms, \$4.45 on the other dairy farms, \$8.16

TABLE 23. EXPENSES PER FARM, BY TYPES OF FARMING, 544 FARMS, 1937

	Expenses per farm		Proportion of total expenses		Expenses per farm		Proportion of total expenses	
	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent
	131 Grade A farms		122 Grade B farms		129 other dairy farms			
Labor:								
Hired month help	213	9.4	131	6.3	50	4.5		
Hired day help	41	1.8	49	2.4	31	2.8		
Unpaid labor	109	4.8	139	6.7	87	7.9		
Board of hired month help	60	2.6	47	2.3	20	1.9		
Board of hired day help	9	0.4	5	0.2	7	0.6		
Board of unpaid labor	41	1.8	57	2.7	32	2.9		
Total for labor	473	20.8	428	20.6	227	20.6		
Livestock expense:								
Concentrated feed for-								
Cattle	450	19.8	326	15.6	47	4.2		
Poultry	87	3.8	125	6.0	126	11.5		
Other livestock	27	1.2	31	1.5	12	1.1		
Salt	4	0.2	4	0.2	2	0.2		
Feed-grinding	10	0.4	10	0.5	6	0.6		
Hay and silage	24	1.0	11	0.5	6	0.6		
Pasturage	4	0.2	4	0.2	1	0.1		
Rent of pasture land	4	0.2	1	0.1	1	0.0		
Bedding	3	0.1	2	0.1	1	0.0		
Total feed and bedding	613	26.9	514	24.7	202	18.3		
Other livestock expense:								
Cow-testing	2	0.1	2	0.1	0	0.0		
Registration fees	1	0.1	1	0.0	0	0.0		
Breeding fees	1	0.0	1	0.1	2	0.2		
Veterinary fees, medicine, and disinfectants	21	0.9	20	1.0	5	0.5		
Horseshoeing	9	0.4	8	0.4	4	0.4		
Sheep-shearing	0	0.0	1	0.0	1	0.1		
Total other livestock expense	34	1.5	33	1.6	12	1.2		
Total for livestock	647	28.4	547	26.3	214	19.5		
Machinery and equipment:								
Automobile	81	3.6	83	4.0	62	5.6		
New machinery	177	7.8	142	6.8	81	7.4		
Truck	40	1.7	23	1.1	13	1.2		
Tractor	50	2.2	50	2.4	37	3.4		
Repairs	24	1.1	26	1.2	14	1.3		
Fuel and lubrication	7	0.3	7	0.3	4	0.4		
Milk bottles, cans, etc.	36	1.6	24	1.2	1	0.0		
Total	415	18.3	355	17.0	212	19.3		
Hired machinery:								
Silo-filling	9	0.4	9	0.4	1	0.1		
Baling	3	0.1	6	0.3	11	1.0		
Threshing	20	0.9	23	1.1	21	1.9		
Milk-hauling	76	3.3	86	4.2	0	0.0		
Other machinery	9	0.4	11	0.5	9	0.8		
Total hired machinery	117	5.1	135	6.5	42	3.8		
Total for machinery and equipment	532	23.4	490	23.5	254	23.1		

(Table 23 is continued on the following page)

TABLE 23 (continued)

	Expenses per farm	Proportion of total expenses	Expenses per farm	Proportion of total expenses	Expenses per farm	Proportion of total expenses
	131 Grade A farms		122 Grade B farms		129 other dairy farms	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
Buildings:						
New buildings.....	72	3.2	83	4.0	22	1.9
Building repairs.....	97	4.2	112	5.4	82	7.5
Total for buildings.....	169	7.4	195	9.4	104	9.4
Fences.....	14	0.6	16	0.7	9	0.8
Fire insurance.....	33	1.5	32	1.5	22	2.0
Taxes.....	121	5.3	125	6.0	101	9.2
Crop expense:						
Seeds and plants.....	78	3.4	79	3.7	58	5.3
Fertilizer.....	86	3.8	85	4.1	56	5.0
Lime.....	25	1.1	17	0.8	5	0.5
Spray materials.....	7	0.3	1	0.1	1	0.1
Total crop expense.....	196	8.6	182	8.7	120	10.9
Miscellaneous expense:						
Electricity and lighting plant.....	29	1.3	12	0.6	3	0.3
Telephone.....	12	0.5	6	0.3	6	0.5
Twine.....	7	0.3	9	0.4	5	0.5
Ice.....	7	0.3	5	0.3	0	0.0
Other miscellaneous expense.....	35	1.6	36	1.7	35	3.2
Total miscellaneous expense.....	90	4.0	68	3.3	49	4.5
Total.....	2,275	100.0	2,083	100.0	1,100	100.0
Cash rent.....	37		26		16	
Total including cash rent.....	2,312		2,109		1,116	
	40 poultry farms		31 miscellaneous-type farms		91 special farms	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
Labor:						
Hired month help.....	150	4.6	70	5.9	206	8.7
Hired day help.....	44	1.3	29	2.5	55	2.3
Unpaid labor.....	148	4.6	61	5.2	131	5.5
Board of hired month help.....	52	1.6	20	1.7	56	2.3
Board of hired day help.....	9	0.3	6	0.5	8	0.3
Board of unpaid labor.....	60	1.9	25	2.2	44	1.8
Total for labor.....	463	14.3	211	18.0	500	20.9
Livestock expense:						
Concentrated feed for-						
Cattle.....	144	4.5	72	6.1	220	9.2
Poultry.....	1,305	40.4	127	10.8	270	11.3
Other livestock.....	9	0.3	10	0.8	22	0.9
Salt.....	2	0.1	2	0.2	3	0.1
Feed-grinding.....	5	0.1	5	0.4	6	0.3
Hay and silage.....	9	0.3	2	0.2	8	0.3
Pasturage.....	1	0.0	.....	.....	2	0.1
Rent of pasture land.....	.....	.....	.....	.....	1	0.1
Bedding.....	6	0.2	1	0.1	2	0.1
Total feed and bedding.....	1,481	45.9	219	18.6	534	22.4

(Table 23 is concluded on the following page)

on the poultry farms, \$4.73 on the miscellaneous-type farms, and \$4.82 on the special farms.

Expenses were high in proportion to the size of business on the farms keeping 400 hens or more, but the additional receipts offset this.

The distribution of expenses was about the same for each type of farm-

TABLE 23 (concluded)

	Expenses per farm	Proportion of total expenses	Expenses per farm	Proportion of total expenses	Expenses per farm	Proportion of total expenses
	40 poultry farms		31 miscellaneous-type farms		91 special farms	
	Dollars	Per cent	Dollars	Per cent	Dollars	Per cent
Livestock expense (concluded):						
Other livestock expense:						
Cow-testing.....	2	0.1	.....	.....	3	0.1
Registration fees.....	1	0.0	.....	.....	2	0.1
Breeding fees.....	2	0.1	1	0.1	1	0.1
Veterinary fees, medicine, and disinfectants.....	16	0.5	5	0.4	15	0.6
Horseshoeing.....	4	0.1	6	0.5	6	0.2
Sheep-shearing.....	1	0.0	1	0.1	0	0.0
Total other livestock expense	26	0.8	13	1.1	27	1.1
Total for livestock.....	1,507	46.7	232	19.7	561	23.5
Machinery and equipment:						
Automobile.....	112	3.5	62	5.3	90	3.8
New machinery.....	105	3.2	68	5.8	249	10.4
Truck.....	19	0.6	13	1.2	70	3.0
Tractor.....	83	2.6	53	4.5	72	3.0
Repairs.....	31	0.9	16	1.3	24	1.0
Fuel and lubrication.....	20	0.6	4	0.3	8	0.3
Milk bottles, cans, etc.....	8	0.3	0	0.0	14	0.6
Total.....	378	11.7	216	18.4	527	22.1
Hired machinery:						
Silo-filling.....	2	0.1	.....	.....	5	0.2
Baling.....	17	0.5	15	1.3	3	0.1
Threshing.....	26	0.8	20	1.7	18	0.7
Milk-hauling.....	34	1.1	.....	.....	26	1.1
Other machinery.....	7	0.2	6	0.5	6	0.3
Total hired machinery.....	86	2.7	41	3.5	58	2.4
Total for machinery and equipment.....	464	14.4	257	21.9	585	24.5
Buildings:						
New buildings.....	93	2.9	5	0.4	153	6.4
Building repairs.....	134	4.1	108	9.2	127	5.3
Total for buildings.....	227	7.0	113	9.6	280	11.7
Fences.....	15	0.5	6	0.6	11	0.5
Fire insurance.....	33	1.0	28	2.4	27	1.1
Taxes.....	124	3.8	114	9.7	116	4.8
Crop expense:						
Seeds and plants.....	78	2.4	54	4.5	72	3.0
Fertilizer.....	98	3.0	88	7.5	86	3.6
Lime.....	22	0.7	16	1.4	16	0.7
Spray materials.....	2	0.1	1	0.1	6	0.3
Total crop expense.....	200	6.2	159	13.5	180	7.6
Miscellaneous expense:						
Electricity and lighting plant..	29	0.9	6	0.5	19	0.8
Telephone.....	12	0.4	4	0.4	9	0.4
Twine.....	8	0.2	6	0.5	7	0.3
Ice.....	1	0.1	.....	.....	1	0.1
Other miscellaneous expense..	147	4.5	37	3.2	91	3.8
Total miscellaneous expense	197	6.1	53	4.6	127	5.4
Total.....	3,230	100.0	1,173	100.0	2,387	100.0
Cash rent.....	4		7		18	
Total including cash rent.....	3,234		1,180		2,405	

ing, except that the poultry farms had a smaller proportion of their expenses for labor and machinery and a higher proportion for feed. Expenses for labor, feed and bedding, and machinery and equipment, made up approximately two-thirds of the total expenses on the farms studied.

FACTORS AFFECTING LABOR INCOME

Probably the most important single factor affecting the labor income of farmers is the general price level, which farmers as individuals have little power to control. Other factors, over which farmers have some control, may be grouped under one of the following classifications: type of farming; size of business; rates of production; diversity of business; labor efficiency; and miscellaneous factors.

Usually, a change in one factor brings about a change in another factor, or occurs independently but at the same time as a change in some other factor. The increase or decrease in returns because of one factor may be larger or smaller than if other factors had remained unchanged. For this reason, it is desirable to know the shifts in factors other than the one considered as the cause.

The analysis which follows deals with the effect of the type of farming, and of other factors within the various types of farming, on the farm labor income.

TYPE OF FARMING

The type of milk market was used as a basis for sorting the farms into type-of-farming groups. Consequently the labor incomes vary from one type of farming to another, because of the difference in the average price received for the milk sold. This was particularly noticeable on farms where dairying made up a major part of the income.

In addition to the differences in the prices received for milk by the different types of farms, the Grade A farms were larger, had better labor efficiency, sold a higher proportion of their milk in the months of October to March, inclusive, had higher production per cow, and had higher crop yields, with a smaller proportion of the total work units on hay and grain, than did either of the other types of dairy farms.

The poultry farms had both high receipts and high expenses in proportion to the number of work units, although the receipts were high enough to more than offset the high expenses.

The miscellaneous-type farms kept their expenses low by hiring cheaper labor and because they did not buy much feed. Prices of crops which they sold and from which they received nearly half of their receipts, were higher in relation to the prices of things which they bought than was the price of Grade B milk, cream, or butter.

The fact that the special group of farms made higher labor incomes than did the other groups was not due to higher receipts from farm products sold or to lower expenses, but was a result of the extra income derived from work off the farm.

Differences in prices received for similar products as between one type of farming and another, and differences in the purchasing power of the different farm products, explain a large proportion of the difference in labor incomes between the different types of farms.

SIZE OF BUSINESS

The following factors are used to measure the size of business: productive-man-work units; number of cows; hundredweight of milk produced; and acres of crops.

Productive-man-work units

In an area where farming is more diversified on some farms than on others, productive-man-work units is probably the best measure of size of business if comparisons are to be made between the different types of farms. It takes into account the amount of work accomplished on all enterprises.

The average number of productive-man-work units on the Grade A farms was 442, as compared with 418 on the Grade B farms and 247 on the other dairy farms (table 8, page 14).

Only 2 Grade A farms had businesses less than 150 productive-man-work units in size. One-fourth, or 25 per cent, of the farms in this group were businesses with 150-299 work units; a little over one-third, or 35 per cent, had 300-449 work units; and 38 per cent had 450 work units or more.

There were only 2 Grade B farms which operated businesses less than 150 productive-man-work units in size. Approximately one-fourth, or 26 per cent, of these farms were businesses with 150-299 work units; 38 per cent had 300-449 work units; and slightly over one-third, or 34 per cent, had 450 work units or more.

The other dairy farms tended to be smaller than either the Grade A or the Grade B farms. Of the 129 farms in this group, 26 per cent were less than 150 productive-man-work units in size; nearly half, or 47 per cent, had 150-299 work units; 15 per cent had 300-449 work units; and 12 per cent had 450 work units or more.

On the Grade A farms, those operating businesses with 150-299 productive-man-work units made labor incomes averaging \$312 per farm, as compared with \$313 on the farms with 300-449 work units, and \$572 on the farms with 450 work units or more (table 24). The labor income increased 64 cents, and the labor returns per man increased 44 cents, with an average increase of 1 work unit on the Grade A farms.

On the Grade B farms, the average labor income for the group that had 150-299 productive-man-work units per farm was -\$289, as compared with -\$89 on the farms with 300-449 work units, and \$252 on the farms with 450 work units or more. The labor income increased \$1.40, and the labor returns per man increased \$1.18, with an average increase of 1 work unit on the Grade B farms.

The relation of labor income to the size of business as measured by the number of productive-man-work units was very slight on the other dairy farms. Labor returns per man increased, however, as the size of business was increased.

An increase in the size of business appears to have been more advantageous on the Grade B than on the Grade A farms, as shown by the change in labor income or in labor returns per man which accompanied a change in the number of productive-man-work units.

The amount of capital employed in proportion to the number of pro-

TABLE 24. RELATION OF PRODUCTIVE-MAN-WORK UNITS TO LABOR INCOME AND OTHER FACTORS, 378 FARMS, 1937

	Grade A farms*			Grade B farms*			Other dairy farms			
	Productive-man-work units			Productive-man-work units			Productive-man-work units			
	150-299	300-449	450 or more	150-299	300-449	450 or more	Less than 150	150-299	300-449	450 or more
Number of farms.....	33	46	50	32	46	42	33	61	19	16
Financial returns:										
Farm labor income.....	\$312	\$313	\$572	-\$289	-\$89	\$252	-\$203	-\$90	-\$180	-\$236
Farm labor earnings.....	\$638	\$761	\$1,063	\$87	\$366	\$735	\$168	\$312	\$343	\$358
Percentage return on farm capital.....	0.0	1.6	3.4	-9.5	-3.2	1.4	-10.8	-5.2	-3.8	-1.1
Labor returns per man.....	\$364	\$404	\$543	-\$50	\$162	\$408	-\$124	\$49	\$108	\$180
Size of business:										
Productive-man-work units.....	240	377	648	242	363	629	124	210	342	530
Number of cows.....	8.6	13.2	23.0	7.4	11.5	20.9	2.8	4.2	6.2	6.4
Average farm capital.....	\$6,412	\$9,489	\$14,330	\$5,819	\$8,293	\$12,290	\$4,030	\$5,638	\$8,968	\$12,894
Man equivalent.....	1.3	1.7	2.5	1.5	1.7	2.3	1.2	1.3	1.6	2.5
Acres of crops.....	43	67	107	50	76	120	33	55	87	155
Milk sold (hundredweight).....	559	790	1,358	424	617	1,249	76	160	222	187
Diversity:										
Per cent of receipts from crops†.....	6	8	15	6	12	15	19	27	38	48
Per cent of productive-man-work units on hay and grain.....	18	18	17	23	23	21	29	28	28	34
Per cent of milk sold October-March.....	48	48	48	45	44	48				
Acres of crops per animal unit.....	3.1	3.2	3.1	3.9	3.8	3.7	5.2	5.1	6.1	8.2
Rates of production:										
Milk produced per cow (hundredweight).....	73	66	65	64	60	65	55	60	53	55
Value of milk products sold per cow.....	\$155	\$143	\$132	\$113	\$106	\$116	\$34	\$48	\$39	\$47
Crop index (average for region = 100).....	107	103	112	94	94	106	87	91	94	88
Labor efficiency:										
Productive-man-work units per man.....	189	218	260	163	209	272	107	161	207	215
Tons of milk per man.....	24.6	25.2	30.1	16.0	19.9	29.2	6.8	9.7	10.1	7.1
Acres of crops per man.....	34	39	43	34	44	52	28	42	53	63
Capital efficiency:										
Capital-receipts ratio†.....	3.7	3.6	3.5	4.8	4.3	3.4	10.9	5.9	5.6	5.0
Per cent of capital in livestock.....	19	22	22	19	23	25	14	16	14	12
Capital per man.....	\$5,038	\$5,484	\$5,746	\$3,920	\$4,781	\$5,322	\$3,500	\$4,320	\$5,444	\$5,223
Capital per productive-man-work unit.....	\$27	\$25	\$22	\$24	\$23	\$20	\$33	\$27	\$26	\$24

*There were only 2 Grade A farms and 2 Grade B farms which had less than 150 productive-man-work units. Averages for these farms are not shown here.

†The percentage of receipts from crops, and the capital-receipts ratio (years required for receipts to equal capital), as used in tables 24 to 36, were calculated on the basis of total receipts less the net increase in real estate and equipment.

ductive-man-work units was less with the larger businesses than with the small businesses. This was true for each type of farm. Receipts were larger in proportion to the capital employed on the large farms than on the small farms.

Labor efficiency, capital efficiency, and the percentage of receipts from crops, increased as the size of business increased in each of the three types of farming. A part of the increase in labor income and in labor returns per man may have been due to changes in these factors as well as to changes in the size of business.

The increase in returns to Grade A farmers as the size of business increased took place in spite of the fact that production per cow tended to decrease with increased size, as is indicated by the number of hundred-weight of milk produced per cow and also by the value of milk products sold per cow.

The rates of crop production as indicated by the crop index apparently had little relation to the size of business.

Number of cows

The number of cows is a satisfactory measure of size of business on a dairy farm. The more diversified the business, however, the less useful is this factor as a measure of size.

The average number of cows on the Grade A farms was 15.6 per farm, as compared with 13.5 for the Grade B farms and 4.4 for the other dairy farms (table 12, page 17).

Of the Grade A farms, less than one-fifth kept fewer than 10 cows, 40 per cent kept herds of 10-14 cows, and 42 per cent kept herds of 15 cows or more. Grade A farms with less than 10 cows made an average labor income of \$109, as compared with \$337 on the farms with 10-14 cows, and \$599 on the farms with 15 cows or more (table 25). An additional cow on Grade A farms was accompanied by an average increase of \$30 in the labor income and \$20 in the labor returns per man.

Of the Grade B farms, approximately one-third had herds of less than 10 cows, a little more than one-third, or 37 per cent, had 10-14 cows, and 31 per cent had 15 cows or more. The labor incomes were lower on the Grade B than on the Grade A farms, but showed a similar relationship to the size of herd. The Grade B farms with less than 10 cows made an average labor income of -\$242, as compared with -\$126 on the farms with 10-14 cows, and \$307 on the farms with 15 cows or more. The labor income increased \$36, and the labor returns per man increased \$27, with an average increase of 1 cow.

Production per cow was lower on the Grade A farms with large herds than on those with small herds, while on the Grade B farms it was about the same regardless of the size of herd. Because of the higher prices received for milk, increased production per cow contributed more to the labor incomes on the Grade A farms than it did on the Grade B farms.

On both the Grade A and the Grade B farms, the number of productive-man-work units per man was higher with large than with small herds, but the increase in labor efficiency was greater on the Grade B farms than on the Grade A farms.

Labor efficiency, intensity of business, and efficiency in the use of capital, improved with increased size of herd on both the Grade A and the Grade B

TABLE 25. RELATION OF NUMBER OF COWS TO LABOR INCOME AND OTHER FACTORS, 375 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms*
	Number of cows			Number of cows			Number of cows
	Less than 10	10-14	15 or more	Less than 10	10-14	15 or more	Less than 10
Number of farms.....	23	53	55	39	45	38	122
Financial returns:							
Farm labor income.....	\$109	\$337	\$599	-\$242	-\$126	\$307	-\$161
Farm labor earnings.....	\$470	\$756	\$1,074	\$164	\$330	\$769	\$274
Percentage return on farm capital.....	-1.9	1.2	3.8	-7.5	-3.3	1.7	-5.0
Labor returns per man.....	\$230	\$413	\$556	\$13	\$149	\$427	\$46
Size of business:							
Productive-man-work units.....	229	354	616	254	390	621	243
Number of cows.....	6.7	12.0	22.9	6.9	11.8	22.3	4.0
Average farm capital.....	\$6,752	\$8,796	\$13,658	\$6,290	\$8,818	\$11,897	\$6,615
Man equivalent.....	1.3	1.7	2.3	1.6	1.7	2.3	1.5
Acres of crops.....	50	65	97	56	84	110	67
Milk sold (hundredweight).....	433	734	1,352	410	647	1,307	135
Diversity:							
Per cent of receipts from crops†.....	11.3	9.0	12.7	11.8	13.6	12.1	35.9
Per cent of productive-man-work units on cows.....	44	50	55	42	45	54	26
Per cent of milk sold October-March.....	50	48	48	44	46	47	.....
Acres of crops per animal unit.....	4.0	3.4	2.9	4.4	4.1	3.3	6.3
Rates of production:							
Milk produced per cow (hundredweight).....	76	68	65	66	61	63	59
Value of milk products sold per cow.....	\$152	\$145	\$134	\$118	\$107	\$113	\$44
Crop index (average for region = 100).....	104	105	111	97	94	104	90
Labor efficiency:							
Productive-man-work units per man.....	170	211	264	158	228	269	166
Tons of milk per man.....	18.7	24.3	31.8	14.4	21.1	30.6	8.1
Acres of crops per man.....	37	39	41	35	49	48	46
Capital efficiency:							
Capital-receipts ratio†.....	4.1	3.5	3.5	4.9	4.3	3.4	7.1
Per cent of capital in livestock.....	17.3	21.2	22.9	18.3	21.2	26.9	13.7
Capital per man.....	\$5,010	\$5,232	\$5,855	\$3,925	\$5,140	\$5,155	\$4,518
Capital per productive-man-work unit.....	\$30	\$25	\$22	\$25	\$23	\$19	\$27

*There were only 7 other dairy farms with 10 or more cows.
 †See corresponding footnote to table 24.

farms. Consequently, a part of the increase in labor income and in the labor returns per man was due to these factors rather than to the number of cows.

The other dairy farms practically all had small herds. Of the 129 farms in this group, all but 7, or a total of 95 per cent, had less than 10 cows per farm. Only 1 farm had more than 15 cows.

Hundredweight of milk produced

The total hundredweight of milk produced on a farm is a measure of size of business and rate of milk production combined. The number of cows and the production per cow both affect the total production of milk.

Only 1 Grade A farm produced less than 200 hundredweight of milk during the year, 18 per cent produced 200-599 hundredweight, 40 per cent produced 600-999 hundredweight, and 40 per cent produced 1000 hundredweight or more (table 26). On the Grade A farms, the average increase in the labor income which accompanied an increase in total production of 1 hundredweight of milk was 73 cents, and the average increase in the labor returns per man was 43 cents. The return on capital increased from -4.2 per cent on the farms producing the smallest amount of milk, to 5.2 per cent on the farms producing the most milk (table 26).

There were no Grade B farms that produced less than 200 hundredweight of milk during the year. The proportions of the Grade B farms falling in the three groups according to total production, were, respectively, 39 per cent, 34 per cent, and 27 per cent. On the Grade B farms, an average increase in output of 1 hundredweight of milk was accompanied by an increase of 64 cents in the labor income and 44 cents in the labor returns per man. The return on capital was -8.4 per cent on the group that had the smallest production of milk per farm, and 2.2 per cent on the farms with the largest production.

Nearly half, or 47 per cent, of the other dairy farms produced less than 200 hundredweight of milk during the year, 49 per cent produced 200-599 hundredweight, and only 4 per cent produced more than 599 hundredweight. On the other dairy farms, both the labor returns per man and the percentage return on capital were higher with the higher total production of milk.

Labor efficiency, rates of crop production, production per cow, and efficiency in the use of capital, all improved as the milk production increased in number of hundredweight. A part of the increase in the labor returns per man was due to these changes as well as to the additional milk produced.

The farms that produced the most milk had a higher proportion of their productive-man-work units on cows, and had larger businesses in proportion to the number of acres of crops, than did the farms producing less milk. About the same proportion of the receipts were derived from the sale of crops regardless of the quantity of milk produced, except on the other dairy farms, where the receipts from crops became much less important as the amount of milk produced increased.

Acres of crops

In an area where dairying is the most important part of the farming operations, acres of crops is not a good measure of size of business. It

TABLE 26. RELATION OF HUNDREDWEIGHT OF MILK PRODUCED TO LABOR INCOME AND OTHER FACTORS, 376 FARMS, 1937

	Grade A farms*			Grade B farms*			Other dairy farms*	
	Milk produced (hundredweight)			Milk produced (hundredweight)			Milk produced (hundredweight)	
	200-599	600-999	1000 or more	200-599	600-999	1000 or more	Less than 200	200-599
Number of farms.....	24	53	53	47	42	33	61	63
Financial returns:								
Farm labor income.....	-\$3	\$230	\$785	-\$338	-\$1	\$378	-\$155	-\$158
Farm labor earnings.....	\$378	\$665	\$1,238	\$68	\$446	\$864	\$267	\$285
Percentage return on farm capital.....	-4.2	0.2	5.2	-8.4	-1.8	2.2	-6.5	-3.8
Labor returns per man.....	\$160	\$353	\$625	-\$25	\$201	\$466	0	\$80
Size of business:								
Productive-man-work units.....	266	377	593	280	397	643	201	279
Number of cows.....	7.8	13.1	21.9	8.2	12.5	22.5	2.5	5.8
Average farm capital.....	\$6,850	\$9,242	\$13,491	\$6,664	\$8,571	\$12,758	\$5,659	\$7,400
Man equivalent.....	1.4	1.7	2.4	1.6	1.7	2.4	1.3	1.6
Acres of crops.....	51	69	94	59	83	118	62	68
Milk sold (hundredweight).....	424	711	1,418	389	682	1,450	40	222
Diversity:								
Per cent of receipts from crops†.....	11.2	7.9	13.3	10.6	12.6	13.4	43.2	28.7
Per cent of productive-man-work units on hay and grain.....	20	19	16	23	24	20	35	26
Per cent of milk sold October-March.....	47	47	50	42	48	49	.....	.....
Acres of crops per animal unit.....	3.7	3.3	2.9	4.0	4.0	3.4	7.8	5.0
Rates of production:								
Milk produced per cow (hundredweight).....	61	61	71	54	60	69	48	58
Value of milk products sold per cow.....	\$129	\$129	\$146	\$94	\$107	\$124	\$21	\$49
Crop index (average for region = 100).....	103	100	117	94	94	111	90	89
Labor efficiency:								
Productive-man-work units per man.....	185	227	252	175	230	267	150	179
Tons of milk per man.....	16.7	23.9	33.1	14.0	21.8	32.4	4.6	10.9
Acres of crops per man.....	36	42	40	37	48	49	46	44
Capital efficiency:								
Capital-receipts ratio‡.....	4.0	3.9	3.1	5.2	3.9	3.1	8.5	5.8
Per cent of capital in livestock.....	18	21	23	20	22	26	12	15
Capital per productive-man-work unit.....	\$26	\$25	\$23	\$24	\$22	\$20	\$28	\$27

*Only 1 Grade A farm and no Grade B farm produced less than 200 hundredweight of milk, and only 5 other dairy farms produced more than 599 hundredweight of milk.

†See corresponding footnote to table 24.

does not necessarily determine the carrying capacity of a dairy farm. On farms where crop farming is more important, as in the townships of Ulysses and Lansing, acres of crops is more satisfactory as a measure of size of business.

Of the Grade A farms, 27 per cent had less than 50 acres of crops, 43 per cent had 50-89 acres, and 30 per cent had 90 acres or more. Labor incomes increased from \$309 on the Grade A farms that had the smallest acreage of crops, to \$518 on the farms that had the largest acreage of crops (table 27). An increase of 1 acre of crops was accompanied by an average increase of \$2.46 in the labor income and \$1.87 in the labor returns per man. Return on capital increased from 0.4 per cent on the farms with the smallest crop acreage, to 3.2 per cent on the farms with the largest crop acreage.

Of the Grade B farms, 22 per cent had less than 50 acres of crops, 43 per cent had 50-89 acres, and 35 per cent had 90 acres or more. On the Grade B farms, labor incomes increased from -\$195 on the farms with less than 50 acres of crops, to \$172 on the farms with 90 acres or more. An increase of 1 acre of crops was accompanied by an average increase of \$4.37 in the labor income and \$4.60 in the labor returns per man. Return on capital increased from -7.0 per cent in the lowest crop-acreage group, to 0.9 per cent in the highest.

On the other dairy farms, 45 per cent of the farms had less than 50 acres of crops, 35 per cent had 50-89 acres, and 20 per cent had 90 acres or more. There was little relationship between the labor income and the acres of crops on the other dairy farms. The farms that had 50-89 acres of crops made an average labor income of -\$42, as compared with -\$144 on the farms with less than 50 acres of crops. But the average labor income on the farms that had 90 acres of crops or more was -\$350. A large proportion of the income on other dairy farms was derived from the sale of crops. Many of these farms grew wheat, buckwheat, and hay crops, with a low value per acre.

On both the Grade A and the Grade B farms, the number of cows increased as the number of acres of crops increased, but less rapidly. The percentage of the total receipts from crops was larger, and the labor efficiency was better, on the farms with the larger crop acreages than on those with the smaller crop acreages. Capital efficiency was slightly better on the farms with the larger crop acreages.

One reason why the labor returns showed a greater response to an increase in the acres of crops on the Grade B farms, was that production per cow and labor efficiency increased along with the increase in crop acreage on the Grade B farms more than they did on the Grade A farms. The increase in the labor incomes of the Grade A farms took place in spite of lower production per cow.

RATES OF PRODUCTION

Crop yields and production per cow are both dependent on capacity of the soil and of the cow to produce, and on the operator's management. The higher the crop yield or the production per cow, the more income there is to be derived from a single acre or a single cow. The additional costs involved do not equal the additional income derived from the extra production on farms with better-than-average rates of production.

TABLE 27. RELATION OF ACRES OF CROPS TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms		
	Acres of crops			Acres of crops			Acres of crops		
	Less than 50	50-89	90 or more	Less than 50	50-89	90 or more	Less than 50	50-89	90 or more
Number of farms.....	35	56	40	27	52	43	58	45	26
Financial returns:									
Farm labor income.....	\$309	\$389	\$518	-\$195	-\$107	\$172	-\$144	-\$42	-\$350
Farm labor earnings.....	\$671	\$811	\$1,026	\$172	\$316	\$682	\$235	\$387	\$220
Percentage return on farm capital.....	0.4	2.0	3.2	-7.0	-4.3	0.9	-8.6	-3.6	-2.7
Labor returns per man.....	\$368	\$445	\$527	-\$15	\$150	\$371	-\$33	\$120	\$81
Size of business:									
Productive-man-work units.....	271	395	659	246	368	587	161	256	422
Number of cows.....	10.3	14.3	22.3	8.3	12.6	18.0	3.8	5.0	4.8
Average farm capital.....	\$6,840	\$9,371	\$15,212	\$5,652	\$7,865	\$12,386	\$4,386	\$6,540	\$11,727
Man equivalent.....	1.4	1.7	2.6	1.4	1.7	2.3	1.2	1.4	2.1
Acres of crops.....	37	67	122	41	71	125	34	63	142
Milk sold (hundredweight).....	632	873	1,304	427	687	1,105	137	178	137
Diversity:									
Per cent of receipts from crops†.....	5	8	17	4	6	18	13	34	49
Per cent of productive-man-work units on hay and grain.....	13	17	19	17	21	24	23	26	40
Acres of crops per animal unit.....	2.3	3.0	3.6	3.0	3.4	4.3	3.9	5.5	9.3
Rates of production:									
Milk produced per cow (hundredweight).....	69	68	65	58	60	67	59	58	53
Value of milk products sold per cow.....	\$145	\$142	\$133	\$102	\$106	\$120	\$49	\$41	\$39
Crop index (average for region = 100).....	110	106	107	98	91	107	90	90	89
Labor efficiency:									
Productive-man-work units per man.....	197	226	257	176	213	254	133	181	202
Tons of milk per man.....	25.6	27.8	28.1	17.0	22.0	26.0	9.3	10.2	6.1
Acres of crops per man.....	27	38	48	29	41	54	28	45	68
Capital efficiency:									
Capital-receipts ratio†.....	3.4	3.6	3.7	5.2	4.2	3.6	8.2	6.3	5.6
Per cent of capital in livestock.....	22	21	22	20	24	23	16	16	11
Capital per productive-man-work unit.....	\$25	\$24	\$23	\$23	\$21	\$21	\$27	\$26	\$28

†See corresponding footnote to table 24 (page 33).

Crop index

Of the Grade A farms, 16 per cent had crop yields which were less than 80 per cent as good as the average for the entire region, 26 per cent had crop yields which were 80-99 per cent of the average, 31 per cent had yields which were 100-119 per cent of the average, and 27 per cent had yields which were 120 per cent or more of the average. The average labor incomes on the Grade A farms were \$65, \$90, \$564, and \$731 per farm, respectively, for the four groups of farms, from those with the lowest to those with the highest crop indexes (table 28). The percentage return on the capital was also highest on the farms in the group with the highest crop yields. The labor income increased \$94, and the labor returns per man increased \$57, with an average increase of 10 per cent in the crop index.

Of the Grade B farms, 18 per cent were in the first group, with the lowest crop yields, 39 per cent were in the second group, 27 per cent were in the third group, and 16 per cent were in the group with the highest yields. The average labor income per farm was -\$227 on the Grade B farms with the lowest crop yields, -\$148 in the second group, \$72 in the third group, and \$307 in the group with the highest crop yields. The percentage return on the capital increased from -5.6 on the farms with the lowest yields, to 1.5 per cent on the farms with the highest yields. The labor income increased \$76, and the labor returns per man increased \$49, with an average increase of 10 per cent in the crop index.

Of the other dairy farms, 35 per cent were in the group with the lowest crop yields, 29 per cent were in the second group, 27 per cent were in the third group, and only 9 per cent had yields as high as 120 per cent or more of the average for the area studied. The average labor incomes on the other dairy farms were, respectively, -\$262, -\$111, -\$167, and \$200 per farm, for the four groups of farms, from those with the lowest to those with the highest crop yields. The percentage return on the capital increased from -8.0 per cent on the farms with the lowest crop yields, to 1.2 per cent on the farms with the highest crop yields. With an average increase of 10 per cent in the crop index, the labor income increased \$63 and the labor returns per man increased \$56. The more intensive the system of farming, the more did the labor income increase for a given increase in crop yields. The increase in labor returns per man were much the same regardless of intensiveness of the farming system.

The size of business increased as the average crop index increased. Production per cow, as measured by the hundredweight of milk produced or by the value of milk products sold per cow, increased with the crop index on both the Grade A and the Grade B farms. The capital employed per man-work unit and the number of productive-man-work units increased in relation to the acres of crops, as the crop index increased. Even though the capital employed increased in proportion to the work units, the number of years required for the receipts to equal the capital decreased except in the case of the Grade A farms. Apparently there was little relation of the labor efficiency and the proportion of the total work units on cows, to the crop index. Farms with good yields were the better, larger, more intensive dairy farms of the area.

TABLE 28. RELATION OF CROP YIELDS TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms				Grade B farms				Other dairy farms			
	Crop index				Crop index				Crop index			
	Less than 80	80-99	100-119	120 or more	Less than 80	80-99	100-119	120 or more	Less than 80	80-99	100-119	120 or more
Number of farms.....	21	34	40	36	22	47	33	20	45	37	35	12
Financial returns:												
Farm labor income.....	\$65	\$90	\$504	\$731	-\$227	-\$148	\$72	\$307	-\$262	-\$111	-\$167	\$200
Farm labor earnings.....	\$452	\$523	\$1,013	\$1,171	\$184	\$279	\$556	\$745	\$113	\$340	\$295	\$736
Percentage return on farm capital.....	-3.6	-0.5	3.9	4.9	-5.6	-3.8	-0.9	1.5	-8.0	-3.3	-5.2	1.2
Labor returns per man.....	\$230	\$315	\$536	\$638	\$73	\$127	\$284	\$418	-\$84	\$86	\$77	\$328
Size of business:												
Productive-man-work units.....	399	467	410	480	375	368	459	518	225	276	247	240
Number of cows.....	13.4	16.5	14.8	17.1	13.1	11.3	14.8	17.4	4.2	4.6	4.7	3.9
Average farm capital.....	\$7,619	\$10,156	\$10,540	\$12,383	\$7,545	\$8,202	\$9,891	\$10,815	\$5,727	\$7,392	\$6,763	\$7,142
Man equivalent.....	1.6	2.0	1.8	2.0	1.6	1.8	2.0	2.1	1.3	1.5	1.6	1.4
Acres of crops.....	82	83	67	75	72	82	89	90	64	75	64	58
Milk sold (hundredweight).....	749	909	927	1,095	610	624	903	1,111	148	178	139	118
Diversity:												
Per cent of receipts from crops†	8	9	7	18	5	11	15	15	33	35	27	50
Per cent of productive-man-work units on hay and grain	21	19	16	15	21	25	22	18	32	30	29	24
Per cent of milk sold October-March.....	48	47	48	50	40	44	50	49	.....	.....	.....	.....
Acres of crops per animal unit.....	3.9	3.3	2.9	2.9	3.5	4.2	3.8	3.2	7.1	6.1	5.0	5.5
Rates of production:												
Milk produced per cow (hundredweight).....	62	60	71	71	53	62	66	69	55	63	54	54
Value of milk products sold per cow.....	\$127	\$128	\$147	\$146	\$94	\$109	\$118	\$123	\$52	\$43	\$37	\$38
Crop index (average for region = 100).....	72	90	108	143	66	90	109	136	63	89	109	136
Labor efficiency:												
Productive-man-work units per man.....	252	231	222	238	231	210	225	246	169	182	156	167
Tons of milk per man.....	26.2	24.6	28.3	30.0	21.4	19.7	24.0	28.7	8.6	9.6	8.1	7.4
Acres of crops per man.....	52	41	36	37	44	46	44	43	48	49	40	40
Capital efficiency:												
Capital-receipts ratio†.....	3.4	3.7	3.5	3.7	5.0	4.4	3.9	3.5	9.5	5.8	5.7	5.2
Per cent of capital in livestock.....	24	21	22	21	23	21	23	26	13	14	16	13
Capital per man.....	\$4,819	\$5,026	\$5,713	\$6,132	\$4,663	\$4,678	\$4,843	\$5,150	\$4,302	\$4,884	\$4,280	\$4,983
Capital per productive-man-work unit.....	\$19	\$22	\$26	\$26	\$20	\$22	\$22	\$21	\$25	\$27	\$27	\$30

†See corresponding footnote to table 24 (page 33).

Hundredweight of milk produced per cow

A change in the production per cow is more important on Grade A farms than it is on either of the other types of farms in this study, because of the higher price received for each hundredweight of milk sold.

Of the Grade A farms, one-fourth, or 25 per cent, had cows that produced less than 60 hundredweight of milk per cow, 31 per cent had cows that produced 60-69 hundredweight per cow, and 44 per cent had cows that produced 70 hundredweight or more per cow. The average labor incomes on the three groups of Grade A farms were -\$182, \$365, and \$761, respectively (table 29). The return on capital increased from -5.3 per cent on the farms with the lowest-producing cows, to 5.7 per cent on the farms with the highest-producing cows. The labor income increased \$29, the labor earnings increased \$29, and the labor returns per man increased \$16, for an average increase of 1 hundredweight of milk produced per cow.

Of the Grade B farms, 39 per cent had cows that produced less than 60 hundredweight of milk per cow, 28 per cent had cows that produced 60-69 hundredweight per cow, and one-third, or 33 per cent, had cows that produced 70 hundredweight or more per cow. The average labor incomes on the three groups of Grade B farms were -\$271, -\$64, and \$294, respectively. The return on capital increased from -5.5 per cent on the farms with the lowest-producing cows, to 1.2 per cent on the farms with the highest-producing cows. The labor income increased \$18, the labor earnings increased \$20, and the labor returns per man increased \$11, for an average increase of 1 hundredweight of milk produced per cow.

Of the other dairy farms, over half, or 52 per cent, had cows that produced less than 60 hundredweight of milk per cow, 12 per cent had cows that produced 60-69 hundredweight per cow, and 36 per cent had cows that produced 70 hundredweight or more per cow. The labor income on the other dairy farms did not show as close a relationship to the production per cow as it did on the Grade A and Grade B farms. This might be expected, because of the fact that a small proportion of the total receipts were derived from the sale of milk and because of the low price received for milk sold.

The proportion of the total receipts derived from the sale of crops increased as the production per cow increased, on the Grade A and Grade B farms. Total receipts increased in relation to the capital employed, on all types of farms. Labor efficiency as measured by productive-man-work units per man showed little relation to production per cow; but in terms of tons of milk produced per man, the labor efficiency improved as the production per cow increased. Farms with cows that produced 60-69 hundredweight of milk were the most profitable.

DIVERSITY OF BUSINESS

Several measures of diversification of the business have been used in this study, including the percentage of the receipts from crops, the percentage of the total productive-man-work units on hay and grain, the percentage of the capital in cows, and the percentage of milk sold from October through March.

TABLE 29. RELATION OF MILK PRODUCED PER COW TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms		
	Milk produced per cow (hundredweight)			Milk produced per cow (hundredweight)			Milk produced per cow (hundredweight)		
	Less than 60	60-69	70 or more	Less than 60	60-69	70 or more	Less than 60	60-69	70 or more
Number of farms.....	32	41	58	48	34	40	67	16	46
Financial returns:									
Farm labor income.....	-\$182	\$365	\$761	-\$271	-\$64	\$294	-\$188	-\$45	-\$132
Farm labor earnings.....	\$256	\$802	\$1,187	\$136	\$394	\$763	\$195	\$489	\$345
Percentage return on farm capital.....	-5.3	2.4	5.7	-5.5	-2.4	1.2	-6.1	-1.9	-4.4
Labor returns per man.....	\$125	\$449	\$649	\$55	\$239	\$383	\$21	\$110	\$71
Size of business:									
Productive-man-work units.....	407	506	416	371	489	415	238	308	239
Number of cows.....	14.5	18.3	14.4	12.6	16.8	12.0	4.7	4.8	3.9
Average farm capital.....	\$8,912	\$11,907	\$10,333	\$7,756	\$9,688	\$9,812	\$5,922	\$9,044	\$6,785
Man equivalent.....	1.7	2.2	1.8	1.7	2.1	1.8	1.4	1.7	1.4
Acres of crops.....	69	86	72	71	97	86	62	81	68
Milk sold (hundredweight).....	615	1,082	1,020	531	1,029	857	112	161	204
Diversity:									
Per cent of receipts from crops.....	8.8	11.0	12.5	8.7	14.7	13.4	36.8	30.8	31.8
Per cent of productive-man-work units on cows.....	54	54	52	51	52	44	32	25	23
Per cent of milk sold October-March.....	46	50	49	41	48	50			
Acres of crops per animal unit.....	3.1	3.1	3.1	3.5	3.9	4.0	5.9	5.4	6.4
Rates of production:									
Milk produced per cow (hundredweight).....	47	64	79	48	66	79	43	64	79
Value of milk products sold per cow.....	\$89	\$137	\$162	\$85	\$118	\$140	\$33	\$43	\$62
Crop index (average for region = 100).....	98	106	113	88	109	102	88	92	92
Labor efficiency:									
Productive-man-work units per man.....	242	234	229	217	231	227	168	179	166
Tons of milk per man.....	20.4	27.2	31.4	17.6	26.0	25.8	7.1	8.9	10.7
Acres of crops per man.....	41	40	40	42	46	47	44	47	47
Capital efficiency:									
Capital-receipts ratio.....	4.4	3.6	3.1	5.1	3.7	3.6	8.0	6.7	5.7
Per cent of capital in livestock.....	22.1	22.8	20.6	22.2	24.0	22.6	14.8	14.1	13.5
Capital per man.....	\$5,291	\$5,492	\$5,675	\$4,534	\$4,575	\$5,355	\$4,199	\$5,243	\$4,707
Capital per productive-man-work unit.....	\$22	\$24	\$25	\$21	\$20	\$24	\$25	\$29	\$28

†See corresponding footnote to table 24 (page 33).

Percentage of receipts from crops

Of the Grade A farms, 40 per cent derived less than 5 per cent of their total receipts from crop sales, 40 per cent derived 5-14 per cent of their total receipts from crop sales, and 20 per cent derived 15 per cent or more of their total receipts from crop sales. The labor income increased as the percentage of the receipts from crops increased for all three types of farms—Grade A, Grade B, and other dairy (table 30).

On the Grade A farms, the average labor incomes for the three groups of farms were \$298, \$407, and \$629, respectively. Return on the capital increased from 1.2 per cent to 3.6 per cent as the percentage of receipts from crops increased. The average increase in the labor income was \$13, the increase in the labor earnings was \$14, and the increase in the labor returns per man was \$8, for an average increase of 1 per cent in the receipts from the sale of crops.

Of the Grade B farms, 37 per cent derived less than 5 per cent of their total receipts from crop sales, 37 per cent derived 5-14 per cent of their total receipts from crop sales, and 26 per cent derived 15 per cent or more of their total receipts from crop sales. The average labor incomes for the three groups of farms were -\$73, -\$84, and \$115, respectively. Return on the capital increased from -3.6 per cent to -0.1 per cent as the percentage of receipts from crops increased. The labor income increased \$7, the labor earnings \$11, and the labor returns per man \$7, for an average increase of 1 per cent in the receipts from the sale of crops.

Of the other dairy farms, 22 per cent received less than 5 per cent of their total receipts from crop sales, 21 per cent received 5-14 per cent of their total receipts from crop sales, and over half, or 57 per cent, received 15 per cent or more of their total receipts from crop sales. The average labor incomes for the three groups of farms were -\$173, -\$159, and -\$138, respectively. Return on the capital increased from -7.1 per cent to 3.6 per cent as the percentage of receipts from crops increased. The labor income increased \$1, the labor earnings \$2, and the labor returns per man \$3, for an average increase of 1 per cent in the receipts from the sale of crops.

The farms that received a larger proportion of their receipts from the sale of crops operated larger businesses, and obtained higher yields, than did the farms that had a smaller proportion of their receipts from crops. Although the farms in the former group had higher yields, the intensity of stocking, and consequently the amount of manure available per acre of crops, was less.

The relation of labor efficiency to the percentage of the receipts from crops depends on the measure of labor efficiency used. The number of productive-man-work units per man did not show much relationship to this factor. Since the proportion of work units on cows also decreased, tons of milk per man decreased, as the percentage of receipts from crops increased. Acres of crops per man was larger on the farms that derived a larger proportion of their receipts from the sale of crops.

Percentage of productive-man-work units on hay and grain

Of the Grade A farms, 37 per cent had less than 15 per cent of their work units on hay and grain, 48 per cent had 15-24 per cent of their work units

TABLE 30. RELATION OF PERCENTAGE OF RECEIPTS FROM CROPS TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms		
	Per cent of receipts from crops			Per cent of receipts from crops			Per cent of receipts from crops		
	Less than 5	5-14	15 or more	Less than 5	5-14	15 or more	Less than 5	5-14	15 or more
Number of farms.....	53	52	26	45	45	32	28	27	74
Financial returns:									
Farm labor income.....	\$298	\$407	\$629	-\$73	-\$84	\$115	-\$173	-\$159	-\$138
Farm labor earnings.....	\$714	\$850	\$1,075	\$345	\$336	\$618	\$208	\$271	\$320
Percentage return on farm capital.....	1.2	2.3	3.6	-3.6	-2.7	-0.1	-7.1	-6.8	3.6
Labor returns per man.....	\$387	\$453	\$597	\$151	\$197	\$319	-\$26	-\$5	\$94
Size of business:									
Productive-man-work units.....	377	456	549	354	450	464	200	206	279
Number of cows.....	14.7	15.7	17.4	12.8	14.7	13.1	5.9	4.4	3.9
Average farm capital.....	\$9,458	\$9,867	\$13,781	\$7,653	\$9,256	\$10,416	\$5,271	\$5,574	\$7,507
Man equivalent.....	1.7	1.8	2.4	1.6	2.0	2.1	1.3	1.3	1.6
Acres of crops.....	58	80	103	62	89	105	39	49	83
Milk sold (hundredweight).....	891	925	1,071	713	830	793	207	176	121
Diversity:									
Per cent of receipts from crops.....	1.6	8.6	27.9	1.6	8.8	27.1	0.8	9.4	47.9
Per cent of productive-man-work units on cows.....	58	51	47	54	49	42	43	33	22
Per cent of productive-man-work units on hay and grain.....	15	18	18	19	22	26	20	25	34
Per cent of milk sold October-March.....	50	48	47	45	48	44	.....	.....	.....
Acres of crops per animal unit.....	2.5	3.3	3.9	3.0	3.7	4.9	3.4	4.3	7.7
Rates of production:									
Milk produced per cow (hundredweight).....	67	64	71	61	62	67	54	60	57
Value of milk products sold per cow.....	\$142	\$136	\$137	\$108	\$111	\$120	\$47	\$46	\$41
Crop index (average for region = 100).....	101	106	123	94	98	106	87	93	90
Labor efficiency:									
Productive-man-work units per man.....	218	248	233	225	229	218	150	158	178
Tons of milk per man.....	28.5	27.4	26.0	24.8	23.2	20.5	12.1	10.3	7.1
Acres of crops per man.....	34	44	44	39	45	50	29	38	53
Capital efficiency:									
Capital-receipts ratio.....	3.7	3.5	3.5	4.4	4.2	3.9	8.8	7.6	6.1
Per cent of capital in livestock.....	23	23	19	24	24	21	18	18	12
Capital per productive-man-work unit.....	\$25	\$22	\$25	\$22	\$21	\$22	\$26	\$27	\$27

†See corresponding footnote to table 24 (page 33).

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on hay and grain, and 15 per cent had 25 per cent or more of their total work units on hay and grain. The labor income on the Grade A farms decreased \$31, and the labor returns per man decreased \$15, with an average increase of 1 per cent in the work units on hay and grain. The return on capital decreased from 4.2 per cent in the group which had the smallest proportion of work units on hay and grain, to 0.1 per cent in the group with the largest proportion of work units on hay and grain (table 31).

Of the Grade B farms, 16 per cent had less than 15 per cent of their work units on hay and grain, 50 per cent had 15-24 per cent of their work units on hay and grain, and 34 per cent had 25 per cent or more of their work units on hay and grain. The labor income on the Grade B farms decreased \$24, and the labor returns per man decreased \$13, with an average increase of 1 per cent in the work units on hay and grain. The return on capital decreased from 1.7 per cent on the farms with the smallest proportion of work units on hay and grain, to -2.5 per cent on the farms with the largest proportion of work units on hay and grain.

Of the other dairy farms, 11 per cent had less than 15 per cent of their work units on hay and grain, 32 per cent had 15-24 per cent of their work units on hay and grain, and 57 per cent had 25 per cent or more of their work units on hay and grain. The labor income on the other dairy farms decreased \$11, and the labor returns per man decreased \$7, with an average increase of 1 per cent in the work units on hay and grain. The return on capital decreased from -3.5 per cent for the group with the smallest proportion of work units on hay and grain, to -4.8 per cent for the group which had the largest proportion of work units on hay and grain.

On each type of farm, the labor income decreased as the proportion of work units on hay and grain increased. The labor incomes were \$650, \$312, and \$123, respectively, on the Grade A farms. On the Grade B farms they declined from \$291 in the group with the smallest proportion of work units on hay and grain, to -\$136 in the group with the largest proportion of work units on hay and grain. On the other dairy farms they were \$106, -\$141, and -\$204, respectively. Under conditions prevailing in 1937, it did not pay so well to operate an extensive hay and grain farm with relatively small numbers of livestock, as it did to operate an intensive dairy farm.

Acres of crops operated increased as the proportion of work units on hay and grain increased. Offsetting this in size of business was the fact that the number of cows decreased.

The amount of milk produced per man decreased on each type of farm, but acres of crops per man increased, with an increase in the proportion of work units on hay and grain. On the Grade A farms the decrease in the amount of milk handled per man, as indicated by the tons of milk per man, was more than offset by the increase in work done per man on other things, such as crops. This was not true for the Grade B farms and the other dairy farms.

On all three types of farms, the length of time required for the 1937 receipts to equal the average amount of capital employed, increased as the proportion of the work on hay and grain increased.

Production per cow had little relation to the percentage of work units on hay and grain, but the crop index on the Grade A and Grade B farms was highest where a small proportion of the work units was on hay and grain.

TABLE 31. RELATION OF PERCENTAGE OF PRODUCTIVE-MAN-WORK UNITS ON HAY AND GRAIN TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms		
	Per cent of productive-man-work units on hay and grain								
	Less than 15	15-24	25 or more	Less than 15	15-24	25 or more	Less than 15	15-24	25 or more
Number of farms.....	48	63	20	19	61	42	14	41	74
Financial returns:									
Farm labor income.....	\$650	\$312	\$123	\$291	-\$53	-\$136	\$108	-\$141	-\$204
Farm labor earnings.....	\$1,067	\$738	\$612	\$676	\$383	\$339	\$486	\$207	\$241
Percentage return on farm capital.....	4.2	1.3	0.1	1.7	-3.4	-2.5	-3.5	-5.2	-4.8
Labor returns per man.....	\$584	\$398	\$332	\$417	\$179	\$186	\$245	\$20	\$32
Size of business:									
Productive-man-work units.....	489	416	412	527	375	433	270	237	248
Number of cows.....	18.3	14.7	12.2	20.1	12.6	12.0	5.8	5.6	3.5
Average farm capital.....	\$11,373	\$9,571	\$11,190	\$10,258	\$7,890	\$9,952	\$5,764	\$5,736	\$7,266
Man equivalent.....	2.0	1.8	2.0	1.9	1.8	2.0	1.4	1.3	1.5
Acres of crops.....	65	75	102	71	70	108	36	48	82
Milk sold (hundredweight).....	1,129	851	771	1,188	692	715	243	210	101
Diversity:									
Per cent of receipts from crops†.....	14	8	15	9	10	17	29	20	42
Per cent of productive-man-work units on cows.....	56	53	47	57	50	42	39	36	21
Per cent of productive-man-work units on hay and grain.....	12	19	29	12	20	30	10	20	39
Productive-man-work units per acre of crops.....	7.5	5.5	4.0	7.4	5.3	4.0	7.4	4.9	3.0
Rates of production:									
Milk produced per cow (hundredweight).....	68	65	70	64	60	66	59	55	58
Value of milk products sold per cow.....	\$140	\$136	\$145	\$115	\$106	\$119	\$70	\$44	\$35
Crop index (average for region = 100).....	121	99	100	114	96	95	85	95	88
Labor efficiency:									
Productive-man-work units per man.....	242	235	207	279	213	216	187	178	161
Tons of milk per man.....	30.7	26.9	21.3	34.1	21.6	19.8	11.8	11.6	6.7
Acres of crops per man.....	32	43	52	37	40	54	25	36	53
Capital efficiency:									
Capital-receipts ratio†.....	3.3	3.7	4.1	3.7	4.3	4.4	4.2	6.6	7.7
Per cent of capital in livestock.....	23	21	19	30	23	20	17	18	12
Capital per productive-man-work unit.....	\$23	\$23	\$27	\$19	\$21	\$23	\$21	\$24	\$29

†See corresponding footnote to table 24 (page 33).

Capital in cows at end of year as a percentage of total capital

Large herds with good cows have a larger proportion of the total capital in cows than do small herds with poor cows.

Of the Grade A farms, 15 per cent had less than 10 per cent of the total capital in cows at the end of the year, 38 per cent had 10-14 per cent of the capital in cows, and 47 per cent had 15 per cent or more of the capital in cows.

On the Grade B farms, 24 per cent had less than 10 per cent of the total capital in cows at the end of the year, 39 per cent had 10-14 per cent of the capital in cows, and 37 per cent had 15 per cent or more of the capital in cows.

On the other dairy farms, 85 per cent had less than 10 per cent of the capital in cows, 12 per cent had 10-14 per cent of the capital in cows, and 3 per cent had 15 per cent or more of the capital in cows.

The labor income increased as the percentage of capital in cows increased. On the Grade A farms the labor incomes were -\$124, \$495, and \$508 in the three groups, respectively (table 32). On the Grade B farms the labor incomes were -\$312, -\$101, and \$233. On the other dairy farms the labor incomes were -\$169, -\$58, and \$22.

As the percentage of capital in cows increased, the size of business also increased. This increase in size of business was mostly because of the increased number of cows kept. The acres of crops had little relation to the percentage of capital in cows.

The number of productive-man-work units per man, and the tons of milk per man, increased as the proportion of capital in cows increased. Likewise, the farms with a larger proportion of capital in cows used capital more efficiently than did the farms with a smaller proportion of the capital in cows.

The increase in labor incomes must have been due largely to the fact that the farms having a larger proportion of their capital in cows also operated larger businesses, had better labor efficiency and better capital efficiency, and were engaged in an enterprise that was more profitable than were other more extensive types of farming.

Percentage of milk sold from October through March

The prices received in the months of October to March inclusive are the highest prices received for milk during the year.

Of the Grade A farms, 31 per cent sold less than 45 per cent of their milk during the months of October to March inclusive, 37 per cent sold 45-50 per cent of their milk during those months, and 32 per cent sold more than 50 per cent of their milk during those months. The average labor incomes on the Grade A farms were \$132, \$522, and \$479, for the respective groups (table 33). With an average increase of 1 per cent in quantity sales from October through March, the labor income increased \$18 and the labor returns per man increased \$11. The return on capital increased from -0.5 per cent in the group selling the smallest proportion of milk during the winter months, to 3.1 per cent in the group selling the largest proportion.

Of the Grade B farms, 49 per cent sold less than 45 per cent of their milk during the months of October to March inclusive, 21 per cent sold 45-50 per cent of their milk during those months, and 30 per cent sold more than

TABLE 32. RELATION OF PERCENTAGE OF CAPITAL IN COWS TO LABOR INCOME AND OTHER FACTORS, 382 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms		
	Per cent of capital in cows			Per cent of capital in cows			Per cent of capital in cows		
	Less than 10	10-14	15 or more	Less than 10	10-14	15 or more	Less than 10	10-14	15 or more
Number of farms	20	50	61	29	48	45	110	15	4
Financial returns:									
Farm labor income	-\$124	\$495	\$508	-\$312	-\$101	\$233	-\$169	-\$58	\$22
Farm labor earnings	\$380	\$934	\$913	\$148	\$344	\$659	\$282	\$265	\$447
Percentage return on farm capital	-2.6	3.3	3.0	-4.1	3.6	0.5	-4.5	-9.7	-2.0
Labor returns per man	\$197	\$509	\$514	\$40	\$186	\$336	\$47	\$70	\$126
Size of business:									
Productive-man-work units	338	459	463	334	378	516	247	220	338
Number of cows	10.0	15.8	17.4	8.8	11.6	18.7	4.0	5.9	11.8
Average farm capital	\$11,190	\$11,788	\$9,172	\$9,834	\$8,246	\$9,182	\$7,021	\$3,820	\$6,000
Man equivalent	1.9	1.9	1.9	1.8	1.9	1.9	1.5	1.3	1.4
Acres of crops	76	81	71	82	78	90	70	44	52
Milk sold (hundredweight)	577	962	1,041	544	656	1,056	133	201	476
Diversity:									
Per cent of receipts from crops†	11	14	9	16	14	10	37	14	0
Per cent of productive-man-work units on cows	45	51	56	39	46	54	25	42	52
Per cent of productive-man-work units on hay and grain	26	18	15	28	24	18	32	21	2
Rates of production:									
Milk produced per cow (hundredweight)	64	68	66	70	63	61	58	53	56
Value of milk products sold per cow	\$136	\$141	\$138	\$124	\$111	\$109	\$42	\$46	\$51
Crop index (average for region = 100)	104	106	109	100	96	100	91	77	108
Labor efficiency:									
Productive-man-work units per man	181	239	245	189	201	270	166	171	241
Tons of milk per man	17.3	28.0	30.4	17.4	19.4	29.9	7.8	12.0	23.6
Acres of crops per man	41	42	38	46	42	47	47	34	37
Capital efficiency:									
Capital-receipts ratio†	5.1	3.8	2.9	5.6	4.2	3.3	7.3	5.5	4.6
Per cent of capital in livestock	14	19	27	16	21	30	13	22	30
Capital per productive-man-work unit	\$58	\$50	\$36	\$51	\$39	\$34	\$42	\$22	\$26

†See corresponding footnote to table 24 (page 33).

TABLE 33. RELATION OF PERCENTAGE OF MILK SOLD OCTOBER-MARCH TO LABOR INCOME AND OTHER FACTORS, 249 FARMS, 1937

	Grade A farms*			Grade B farms		
	Per cent of milk sold October-March, inclusive			Per cent of milk sold October-March, inclusive		
	Less than 45	45-50	More than 50	Less than 45	45-50	More than 50
Number of farms.....	39	47	41	60	26	36
Financial returns:						
Farm labor income.....	\$132	\$522	\$479	-\$221	\$141	\$172
Farm labor earnings.....	\$564	\$943	\$924	\$214	\$600	\$610
Percentage return on farm capital....	-0.5	3.0	3.1	-4.3	1.1	0.1
Labor returns per man.....	\$302	\$509	\$509	\$112	\$314	\$318
Size of business:						
Productive-man-work units.....	411	457	462	373	455	467
Number of cows.....	14.1	16.6	16.3	11.7	15.0	15.6
Average farm capital.....	\$9,462	\$10,930	\$11,093	\$8,400	\$9,358	\$9,636
Man equivalent.....	1.7	2.0	2.0	1.8	2.0	1.9
Acres of crops.....	74	74	81	79	88	87
Milk sold (hundredweight).....	768	1,001	1,025	584	948	975
Diversity:						
Per cent of receipts from crops.....	11	11	12	15	11	11
Per cent of productive-man-work units on cows.....	51	54	52	47	50	50
Per cent of productive-man-work units on hay and grain.....	18	17	18	24	21	20
Per cent of milk sold October-March, Productive-man-work units per acre of crops.....	39	48	58	38	48	57
Rates of production:	5.6	6.2	5.7	4.7	5.2	5.4
Milk produced per cow (hundred- weight).....	62	66	69	56	68	68
Value of milk products sold per cow..	\$123	\$142	\$144	\$98	\$124	\$121
Crop index (average for region = 100)	104	107	109	91	105	105
Labor efficiency:						
Productive-man-work units per man..	236	233	233	207	229	249
Tons of milk per man.....	25.0	28.1	28.3	18.1	25.8	28.4
Acres of crops per man.....	42	38	41	44	44	46
Capital efficiency:						
Capital-receipts ratio.....	3.8	3.6	3.5	4.8	3.5	3.7
Per cent of capital in livestock.....	21	22	22	21	24	24

*The distribution of milk sales was not obtained on 4 of the Grade A farms.
†See corresponding footnote to table 24 (page 33).

50 per cent of their milk during those months. The average labor incomes on the Grade B farms were -\$221, \$141, and \$172, respectively. With an average increase of 1 per cent in quantity sales from October through March, the labor income increased \$21 and the labor returns per man increased \$11. The return on capital increased from -4.3 per cent in the group selling the smallest proportion of milk during the winter months, to 0.1 per cent in the group selling the largest proportion.

As the proportion of milk sold from October through March increased, the amount of work accomplished increased. A part of the increase in the labor incomes was due to this increase in amount of work done, better labor efficiency, and better rates of crop and milk production, as well as to the higher proportion of milk sales during the months of highest prices.

The percentage of receipts from crops, and the percentage of work units on cows, seemed to have very little, if any, relation to the proportion of milk sales during the winter months.

LABOR EFFICIENCY

Several measures of labor efficiency are commonly used. When the farms studied are dairy farms, the tons of milk produced per man is a satis-

factory measure. On crop farms, the acres of crops per man is satisfactory although it does not take into consideration the difference in intensity of the crops. The use of productive-man-work units per man solves this problem, and also makes it possible to compare dairy farms with crop farms since it takes into consideration all of the work accomplished regardless of whether it was on crops, cows, or some other part of the business. This measure of labor efficiency does not take into consideration the fact that better yields of either milk or crops tend to increase the amount of work to be done. Consequently, although the actual pounds of milk or tons of crops handled are greater, a farm which has high rates of milk or crop production may show as poor labor efficiency as will a farm with much poorer rates of production.

Productive-man-work units per man

Of the Grade A farms, only 5, or 4 per cent, had less than 130 productive-man-work units per man, 24 per cent had 130-199 work units per man, 40 per cent had 200-269 work units per man, and 32 per cent had 270 or more work units per man.

The average labor income increased as the productive-man-work units per man increased. There were so few Grade A and Grade B farms—less than 10 in each type—with less than 130 work units per man, that averages are not shown for those farms.

On the Grade A farms the labor incomes in the three groups were \$79, \$329, and \$794, respectively (table 34). With an average increase of 1 work unit per man, the labor income increased \$4.47 and the labor returns per man increased \$2.38. The return on capital increased from 0.2 per cent to 5.1 per cent as the work units per man increased.

Of the Grade B farms, only 8, or 7 per cent, had less than 130 work units per man, 32 per cent had 130-199 work units per man, 32 per cent had 200-269 work units per man, and 29 per cent had 270 work units or more per man. The labor incomes on the Grade B farms were -\$288, -\$92, and \$412, respectively, in the three groups. With an average increase of 1 work unit per man, the labor income increased \$4.40 and the labor returns per man increased \$2.35. The return on capital increased from -7.2 per cent in the group with 130-199 work units per man, to 2.7 per cent in the group with 270 or more work units per man.

Of the other dairy farms, 25 per cent had less than 130 work units per man, 44 per cent had 130-199 work units per man, 21 per cent had 200-269 work units per man, and only 10 per cent had 270 or more work units per man. The labor incomes on the other dairy farms were -\$273, -\$141, -\$100, and \$7, respectively, in the four groups. With an average increase of 1 work unit per man, the labor income increased \$1.35 and the labor returns per man increased \$1.13. The return on capital increased from -8.7 in the group with the lowest labor efficiency, to -0.9 in the group with the highest labor efficiency.

There seems to be little, if any, relation of the crop index to labor efficiency as measured by productive-man-work units per man. Production per cow was slightly lower in the groups which had the highest labor efficiency, as these farms had the larger herds.

TABLE 34. RELATION OF PRODUCTIVE-MAN-WORK UNITS PER MAN TO LABOR INCOME AND OTHER FACTORS, 369 FARMS, 1937

	Grade A farms*			Grade B farms*			Other dairy farms			
	Productive-man-work units per man			Productive-man-work units per man			Productive-man-work units per man			
	130-199	200-269	270 or more	130-199	200-269	270 or more	Less than 130	130-199	200-269	270 or more
Number of farms.....	31	53	42	39	39	36	32	57	27	13
Financial returns:										
Farm labor income.....	\$79	\$329	\$794	-\$288	-\$92	\$412	-\$273	-\$141	-\$100	\$7
Farm labor earnings.....	\$528	\$767	\$1,219	\$157	\$352	\$875	\$107	\$293	\$349	\$555
Percentage return on farm capital.....	0.2	1.0	5.1	-7.2	-2.2	2.7	-8.7	-5.4	-3.0	-0.9
Labor returns per man.....	\$306	\$414	\$687	\$87	\$215	\$460	-\$36	\$52	\$86	\$199
Size of business:										
Productive-man-work units.....	338	423	572	324	442	549	150	219	317	462
Number of cows.....	11.9	15.1	20.2	9.8	14.2	18.6	3.4	3.7	5.7	7.5
Average farm capital.....	\$10,458	\$9,472	\$12,276	\$7,567	\$9,264	\$10,964	\$5,122	\$6,349	\$7,226	\$10,208
Man equivalent.....	2.1	1.9	1.8	2.0	1.9	1.7	1.5	1.4	1.4	1.5
Acres of crops.....	61	72	96	70	91	100	42	59	87	114
Animal units, excluding work animals.....	17.1	20.8	27.3	14.5	20.0	26.0	6.1	7.8	11.4	14.5
Milk sold (hundredweight).....	750	920	1,170	549	818	1,074	81	145	211	225
Diversity:										
Per cent of receipts from crops†.....	9	9	15	13	15	10	27	35	33	40
Per cent of productive-man-work units on hay and grain.....	18	18	17	25	23	20	30	30	30	29
Per cent of milk sold October-March.....	51	48	47	44	47	46	.....	.....	.....	.....
Rates of production:										
Milk produced per cow (hundredweight).....	70	68	64	63	63	63	54	61	59	48
Value of milk products sold per cow.....	\$147	\$141	\$132	\$113	\$112	\$111	\$29	\$47	\$52	\$39
Crop index (average for region = 100).....	113	104	110	94	100	98	92	89	93	84
Labor efficiency:										
Productive-man-work units per man.....	161	226	321	164	231	323	99	154	219	307
Tons of milk per man.....	19.7	27.3	36.4	15.5	23.3	34.6	6.0	8.0	11.6	12.0
Acres of crops per man.....	29	38	54	35	47	59	27	42	60	75
Capital efficiency:										
Capital-receipts ratio†.....	4.1	3.4	3.4	4.5	3.8	3.7	11.1	6.0	5.0	5.1
Per cent of capital in livestock.....	20	22	23	21	23	25	14	13	16	15

*There were 5 Grade A farms and 8 Grade B farms with less than 130 productive-man-work units per man.

†See corresponding footnote to table 24 (page 33).

Tons of milk per man

Of the Grade A farms, 21 per cent produced less than 20 tons of milk per man, 37 per cent produced 20–29 tons of milk per man, and 42 per cent produced 30 tons of milk or more per man. The average labor incomes in the three groups of Grade A farms were –\$289, \$232, and \$914, respectively (table 35). With an average increase of 1 ton of milk produced per man, the labor income increased \$51 and the labor returns per man increased \$25. The return on capital increased from –3.3 per cent to 6.5 per cent as the tons of milk produced per man increased.

Of the Grade B farms, 45 per cent produced less than 20 tons of milk per man, 30 per cent produced 20–29 tons of milk per man, and 25 per cent produced 30 tons of milk or more per man. The labor incomes on the Grade B farms were –\$367, \$25, and \$528, respectively, for the three groups. With an average increase of 1 ton of milk per man, the labor income increased \$35 and the labor returns per man increased \$20. The return on capital increased from –8.0 per cent in the group with the poorest labor efficiency as measured by tons of milk per man, to 3.9 per cent in the group with the highest labor efficiency.

Of the other dairy farms, 94 per cent produced less than 20 tons of milk per man. Only 6 per cent of all the farms in this group produced as much as 20 tons of milk or more per man, and only 1 farm produced more than 30 tons of milk per man. On these other dairy farms, where dairying is relatively unimportant, tons of milk per man is not a very good measure of labor efficiency.

Practically all of the other dairy farms fell in the group with the lowest labor efficiency. Not enough farms were left in the other groups to make averages significant. The average labor income for the group which produced less than 20 tons of milk per man was –\$161. This is slightly lower than the average labor income for the Grade A and Grade B farms combined.

A part of the increase in the labor income was probably due to the fact that farms which produced the most milk per man were larger, had higher-producing cows and higher crop yields, and made more efficient use of capital as indicated by the capital employed per man-work unit.

MISCELLANEOUS FACTORS

To name all of the miscellaneous factors affecting labor income would be practically impossible. Only one of these factors, land class, is dealt with here.

Land class

Not enough Grade A, Grade B, and other dairy farms in land classes I, II, and V were found to make comparisons possible for these three types of farms. Practically all of the farms studied were in land classes III and IV. Consequently, only comparisons for these land classes are here shown.

Of the Grade A farms, 103 were located in land classes III and IV (table 36). About one-fifth, or 19 per cent, of all of the Grade A farms were located in land class III, and 60 per cent were located in land class IV. The labor income on the Grade A farms increased from \$82 in land class

TABLE 35. RELATION OF TONS OF MILK PER MAN TO LABOR INCOME AND OTHER FACTORS, 374 FARMS, 1937

	Grade A farms			Grade B farms			Other dairy farms*
	Tons of milk per man						
	Less than 20	20-29	30 or more	Less than 20	20-29	30 or more	Less than 20
Number of farms.....	28	48	55	55	37	30	121
Financial returns:							
Farm labor income.....	-\$289	\$232	\$914	-\$367	\$25	\$528	-\$161
Farm labor earnings.....	\$224	\$623	\$1,342	\$56	\$496	\$967	\$272
Percentage return on farm capital.....	-3.3	-1.6	6.5	-8.0	-1.5	3.9	-5.0
Labor returns per man.....	\$153	\$349	\$743	\$16	\$275	\$522	\$44
Size of business:							
Productive-man-work units.....	378	370	537	313	454	569	244
Number of cows.....	11.4	13.1	20.0	9.3	13.8	21.0	4.2
Average farm capital.....	\$11,132	\$8,602	\$11,784	\$7,153	\$9,778	\$11,300	\$6,588
Man equivalent.....	2.2	1.8	1.9	1.8	2.0	1.8	1.5
Acres of crops.....	80	62	86	67	98	95	67
Milk sold (hundredweight).....	546	780	1,281	450	825	1,317	128
Diversity:							
Per cent of receipts from crops†.....	13	9	12	11	18	9	36
Per cent of productive-man-work units on cows.....	45	53	56	45	46	56	27
Per cent of productive-man-work units on hay and grain.....	23	17	16	25	24	17	30
Per cent of milk sold October-March.....	48	48	49	43	48	49	.....
Acres of crops per animal unit.....	4.1	3.0	2.9	4.1	4.3	3.0	6.2
Rates of production:							
Milk produced per cow (hundredweight).....	54	66	71	55	65	68	55
Value of milk products sold per cow.....	\$116	\$137	\$146	\$97	\$118	\$120	\$39
Crop index (average for region = 100).....	100	106	112	92	101	106	89
Labor efficiency:							
Productive-man-work units per man.....	176	207	288	171	232	314	166
Tons of milk per man.....	14.2	24.4	37.9	13.9	23.1	39.2	7.8
Capital efficiency:							
Capital-receipts ratio†.....	5.0	3.4	3.0	4.9	3.8	3.4	7.2
Per cent of capital in livestock.....	17	23	23	20	22	27	14
Capital per productive-man-work unit.....	\$29	\$23	\$22	\$23	\$22	\$20	\$27

*There were only 8 other dairy farms which produced more than 19 tons of milk per man.

†See corresponding footnote to table 24 (page 33).

TABLE 36. RELATION OF LAND CLASS TO LABOR INCOME AND OTHER FACTORS, 349 FARMS, 1937

	Grade A farms*			Grade B farms*		Other dairy farms*	
	Land class			Land class		Land class	
	III	IV	V	III	IV	III	IV
Number of farms.....	25	78	23	47	59	44	73
Financial returns:							
Farm labor income.....	\$82	\$512	\$421	-\$107	\$25	-\$185	-\$160
Farm labor earnings.....	\$513	\$960	\$814	\$331	\$480	\$220	\$319
Percentage return on farm capital.....	-1.8	3.2	2.4	-4.5	-0.7	-7.0	-3.8
Labor returns per man.....	\$250	\$528	\$464	\$169	\$264	-\$12	-\$81
Size of business:							
Productive-man-work units.....	385	476	411	378	471	210	277
Number of cows.....	13.1	16.7	15.7	12.3	15.3	5.2	4.0
Average farm capital.....	\$8,036	\$11,756	\$9,857	\$7,815	\$10,495	\$5,352	\$7,774
Man equivalent.....	1.7	2.0	1.9	1.8	2.0	1.3	1.6
Acres of crops.....	70.1	81.0	65.1	75.0	94.9	52.2	78.6
Animal units, excluding work animals.....	18.3	23.2	20.9	17.3	21.7	8.5	9.3
Milk sold (hundredweight).....	696	1,029	954	694	906	206	118
Diversity:							
Per cent of receipts from crops†.....	7	14	7	11	13	16	42
Per cent of productive-man-work units on cows.....	51	52	56	49	49	36	23
Per cent of productive-man-work units on hay and grain.....	19	17	17	22	22	26	32
Per cent of milk sold October-March.....	47	48	52	45	47	.....	.....
Acres of crops per animal unit.....	3.4	3.1	2.8	3.8	3.8	4.9	6.8
Rates of production:							
Milk produced per cow (hundredweight).....	59	68	68	62	65	56	58
Value of milk products sold per cow.....	\$120	\$142	\$143	\$110	\$117	\$49	\$39
Crop index (average for region = 100).....	97	111	108	92	104	87	93
Labor efficiency:							
Productive-man-work units per man.....	230	240	216	208	238	161	175
Tons of milk per man.....	23	29	28	21	25	11	7
Capital efficiency:							
Capital-receipts ratio†.....	3.8	3.6	3.5	4.4	4.1	8.1	6.5
Per cent of capital in livestock.....	23	21	21	23	23	17	13
Capital per productive-man-work unit.....	\$35	\$48	\$44	\$36	\$44	\$33	\$43

*Of the Grade A farms, 5 were located in land class II; of the Grade B farms, 10 were located in land class II, and 6 in land class V; of the other dairy farms, 2 were located in land class I, 7 in land class II, and 3 in land class V.

†See corresponding footnote to table 24 (page 33)

III, to \$512 in land class IV. The labor returns per man increased from \$250 on the farms in land class III, to \$528 on the farms in land class IV, and the return on capital increased from -1.8 per cent to 3.2 per cent.

Of the Grade B farms, 106 were located in land classes III and IV. About 39 per cent of all the Grade B farms were located in land class III, and 48 per cent were located in land class IV. The labor income on the Grade B farms increased from -\$107 for the farms in land class III, to \$25 for the farms in land class IV. The labor returns per man increased from \$169 to \$264, and the return on capital increased from -4.5 to -0.7 per cent, for the farms in these two respective land classes.

Of the other dairy farms, 117 were located in land classes III and IV. The farms in land class III made up 34 per cent of all the other dairy farms, and those in land class IV made up 57 per cent. The labor income on the other dairy farms showed no significant increase for the farms in land class IV as compared with those in land class III, the increase being from -\$185 in land class III to -\$160 in land class IV. The labor returns per man actually declined, from -\$12 on the farms in land class III to -\$81 on the farms in land class IV. Poor markets and an extensive system of farming result in higher losses on the more expensive land of a high land class, than on a low land class.

Since the farms in land class IV had larger businesses, higher production per cow, better crop yields, and better labor efficiency, and derived a higher proportion of their receipts from the sale of crops, than did the farms in land class III, much of the higher returns on those farms was due to better farm organization.

The farms in land class IV employed more capital per productive-man-work unit than did the farms in land class III. The receipts were enough larger, however, on the farms in land class IV so that the time required for the receipts to equal the amount of capital employed was less in land class IV than in land class III.

COMBINATION OF FACTORS

The effect of different business-organization factors on farm profits varies with different types of farming. High production per cow is much more effective on Grade A farms than on other dairy farms. To have good crop yields is more important to other dairy farms or to crop farms, than to Grade A farms.

The three types of dairy farms were sorted and subsorted on the basis of four of the most important factors. These were total productive-man-work units, productive-man-work units per man, production per cow, and crop index. Although the number of farms in each group is small, some indication of the relative importance of the four factors in their effect on labor income is shown in table 37 for each of the three types of farming.

Those farms which were below average in all four of the factors, made average labor incomes of -\$194 on the Grade A farms, -\$532 on the Grade B farms, and -\$389 on the other dairy farms.

Those farms which were average or above average in at least one of the four factors, made average labor incomes of -\$88 on the Grade A farms, -\$375 on the Grade B farms, and -\$142 on the other dairy farms.

Those farms which were average or above average in at least two of the

TABLE 37. RELATION OF THE NUMBER OF FACTORS THAT ARE AVERAGE OR ABOVE, TO THE LABOR INCOME, BY TYPES OF FARMING, 382 FARMS, 1937

	Grade A farms		Grade B farms		Other dairy farms	
	Farms	Labor income	Farms	Labor income	Farms	Labor income
	<i>Number</i>	<i>Dollars</i>	<i>Number</i>	<i>Dollars</i>	<i>Number</i>	<i>Dollars</i>
No factors above average.....	6	-194	10	-532	11	-389
One factor above average.....	27	-88	35	-375	34	-142
Two factors above average.....	59	284	34	-43	36	-259
Three factors above average.....	24	736	23	175	35	-91
Four factors above average.....	15	1,493	20	624	13	176

four factors, made average labor incomes of \$284 on the Grade A farms, -\$43 on the Grade B farms, and -\$259 on the other dairy farms.

Those farms which were average or above average in at least three of the four factors, made average labor incomes of \$736 on the Grade A farms, \$175 on the Grade B farms, and -\$91 on the other dairy farms.

Those farms which were average or above average in all of the four factors, made average labor incomes of \$1493 on the Grade A farms, \$624 on the Grade B farms, and \$176 on the other dairy farms.

There was an average increase of \$141 in labor income for each additional factor as good as or better than the average for all farms.

BUSINESS-ANALYSIS FACTORS

The business-analysis factors for the different types of farming are given in table 38.

TABLE 38. BUSINESS-ANALYSIS FACTORS, BY TYPES OF FARMING, 453 FARMS, 1937

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms
Number of farms.....	131	122	129	40	31
Financial returns:					
Farm labor income.....	\$407	-\$28	-\$150	\$282	\$29
Farm labor earnings.....	\$840	\$413	\$285	\$759	\$470
Percentage return on farm capital.....	2.2	-2.2	-4.8	1.0	-1.9
Labor returns per man.....	\$464	\$219	\$52	\$412	\$158
Operator's labor income.....	\$402	-\$27	-\$136	\$248	\$46
Landlord's percentage return on capital.....	5.2	4.7	3.1	9.3	3.1
Size of business:					
Productive-man-work units.....	442	418	247	396	248
Man equivalent.....	1.9	1.9	1.5	1.8	1.5
Number of cows.....	15.6	13.5	4.4	5.9	2.7
Number of hens.....	58	93	98	656	121
Animal units, excluding work animals.....	21.6	19.3	8.8	16.0	7.6
Total animal units.....	24.3	22.1	11.1	18.0	9.7
Milk produced (hundredweight).....	1,042	854	253	400	146
Milk sold (hundredweight).....	940	778	151	312	76
Acres of crops.....	76	83	66	79	67
Total acres operated.....	149	168	112	124	128
Average farm capital.....	\$10,479	\$8,969	\$6,617	\$9,210	\$7,129
Diversity:					
Per cent of productive-man-work units on cows.....	53	49	28	22	16
Per cent of productive-man-work units on hay and grain.....	17	22	30	24	31
Per cent of productive-man-work units on crops.....	38	40	54	40	64
Productive-man-work units per acre of crops.....	6	5	4	5	4
Per cent of milk sold October-March.....	49	46			

(Table 38 is concluded on the following page)

TABLE 38 (concluded)

	Grade A farms	Grade B farms	Other dairy farms	Poultry farms	Miscellaneous-type farms
Number of farms.....	131	122	129	40	31
Rates of production:					
Milk produced per cow (hundredweight) ..	67	63	57	68	55
Value of milk products sold per cow	\$139	\$112	\$44	\$116	\$44
Average butterfat test of milk sold (per cent)	4.0	3.9	.....	.....	.....
Crop index (average for region = 100)	107	98	90	98	89
Dozens of eggs sold per hen	9	9	10	12	10
Value of eggs sold per hen	\$2.03	\$2.40	\$2.59	\$3.11	\$2.45
Labor efficiency:					
Productive-man-work units per man	233	224	169	219	163
Tons of milk per man	27.5	22.9	8.7	11.1	4.8
Acres of crops per man	40	45	45	44	44
Number of cows per man	8.2	7.3	3.0	3.3	1.8
Number of animal units, excluding work animals, per man	11.4	10.3	6.0	8.8	5.0
Capital efficiency:					
Capital-receipts ratio	3.3	3.6	5.2	2.3	4.6
Capital per productive-man-work unit	\$24	\$21	\$27	\$23	\$29
Capital per man	\$5,526	\$4,812	\$4,531	\$5,095	\$4,702
Per cent of capital in livestock	22	23	14	19	11
Per cent of capital in real estate	65	61	73	63	78
Fertility:					
Acres of crops fertilized	25	31	24	36	25
Cost of fertilizer	\$84	\$85	\$56	\$98	\$88
Tons of manure available per acre of crops	2.6	2.1	1.3	1.8	1.2
Cost of fertilizer per acre of crops	\$1.11	\$1.03	\$0.84	\$1.25	\$1.32
Receipts:					
Milk products sold	\$2,169	\$1,518	\$193	\$682	\$117
Crops sold	\$357	\$308	\$438	\$515	\$731
Eggs sold	\$117	\$223	\$254	\$2,041	\$296
Miscellaneous receipts	\$109	\$94	\$85	\$92	\$109
Total receipts	\$3,206	\$2,504	\$1,281	\$3,972	\$1,558
Per cent of receipts from milk products sold	68	61	15	17	7
Per cent of receipts from crops sold	11	12	34	13	47
Per cent of receipts from eggs sold	4	9	20	51	19
Per cent of receipts from miscellaneous sources	3	4	7	2	7
Expenses:					
Feed	\$564	\$482	\$185	\$1,458	\$209
Labor, except operator	\$473	\$428	\$227	\$463	\$211
Total expense	\$2,275	\$2,083	\$1,100	\$3,230	\$1,173
Per cent of expense for feed	25	23	17	45	18
Per cent of expense for labor, except operator	21	21	21	14	18
Miscellaneous factors:					
Age of operator (years)	51	49	55	53	54
Value of operator's time	\$696	\$615	\$498	\$650	\$517
Value of real estate per acre of cropland	\$98	\$70	\$80	\$81	\$89
Value of total capital per acre of cropland	\$149	\$114	\$109	\$129	\$115
Value of real estate per acre operated	\$46	\$33	\$43	\$46	\$43
Value of total capital per acre operated	\$71	\$53	\$59	\$74	\$56
Number of horses	2.7	2.8	2.2	2.2	2.2
Per cent of farms having trucks	37	25	16	22	13
Per cent of farms having tractors	50	52	36	65	45

VARIATION IN IMPORTANT BUSINESS FACTORS

The number of farms with different values for each of several business factors are given in table 39, by types of farming.

TABLE 39. VARIATION IN FACTORS, BY TYPES OF FARMING, 453 FARMS, 1937

Range	Proportion of total number				
	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscel- laneous- type farms
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Dollars of labor income per farm:					
Less than -1,500	1	1	1	2	..
-1,500 to -1,001	4	8	2	2	..
-1,000 to -501	8	10	15	13	10
-500 to -1	14	37	47	20	42
0 to 499	28	28	26	32	35
500 to 999	26	10	8	8	7
1,000 to 1,499	11	3	..	10	3
1,500 to 1,999	5	2	1	13	..
More than 1,999	3	1	..	..	3
Total	100	100	100	100	100
Dollars of labor returns per man:					
Less than 60	1	4	5	5	3
60-79	4	6	16	5	16
80-99	8	17	27	8	23
100-119	11	22	27	22	29
120-139	21	29	12	15	16
140-159	22	10	9	22	..
160-179	17	6	3	..	7
180-199	7	4	..	8	3
More than 199	9	2	1	15	3
Total	100	100	100	100	100
Number of cows per farm:					
Less than 5	4	2	65	58	78
5-9	14	30	29	20	19
10-14	41	37	5	12	3
15-19	18	13	1	5	..
20-24	12	11	..	5	..
25-29	5	2	..	..	..
30-34	3	2	..	..	..
35-39	1	2	..	..	..
More than 39	2	1	..	..	..
Total	100	100	100	100	100
Number of animal units, excluding work animals, per farm:					
Less than 10	8	9	60	28	61
10-19	46	55	34	43	32
20-29	30	24	5	22	7
30-39	10	6	1	5	..
More than 39	6	6	..	2	..
Total	100	100	100	100	100
Number of total productive-man-work units per farm:					
Less than 200	8	3	42	15	42
200-299	19	24	30	20	19
300-399	20	27	13	18	13
400-499	26	16	6	27	10
500-599	11	15	7	8	6
More than 599	16	15	2	12	10
Total	100	100	100	100	100
Number of men per farm:					
Less than 1.5	39	30	66	40	65
1.5-1.9	12	26	14	20	13
2.0-2.4	33	28	15	28	13
2.5-2.9	3	11	2	5	6
3.0-3.4	8	2	..	5	..
3.5-3.9	1	2	1	..	3
4.0-4.4	2	1	1	2	..
4.5-4.9	..	..	..	..	..
More than 4.9	2	..	1	..	..
Total	100	100	100	100	100

TABLE 39 (continued)

Range	Proportion of total number				
	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscel- laneous- type farms
	Per cent	Per cent	Per cent	Per cent	Per cent
Acres of crops per farm:					
Less than 40.....	14	7	31	30	39
40-59.....	25	26	29	17	13
60-79.....	22	18	17	15	23
80-99.....	16	23	5	5	10
100-119.....	12	10	8	10	3
120-139.....	5	6	2	8	6
140-159.....	3	6	2	8	..
More than 159.....	3	4	6	7	6
Total.....	100	100	100	100	100
Dollars of total farm capital per farm:					
Less than 2,000.....	..	..	1	..	3
2,000-3,999.....	3	5	21	5	29
4,000-5,999.....	16	20	34	18	23
6,000-7,999.....	23	20	19	27	13
8,000-9,999.....	13	24	10	15	13
10,000-11,999.....	13	11	4	10	7
12,000-13,999.....	13	10	5	10	3
14,000-15,999.....	7	6	2	5	3
16,000-17,999.....	4	3	2	5	..
18,000-19,999.....	2	..	2	3	3
More than 19,999.....	6	1	..	2	3
Total.....	100	100	100	100	100
Hundredweight of milk produced per farm:					
Less than 400.....	6	13	83	70	94
400-599.....	13	26	13	5	..
600-799.....	19	24	3	8	3
800-999.....	21	11	..	2	3
1,000-1,199.....	13	8	1	8	..
1,200-1,399.....	8	7	..	5	..
1,400-1,599.....	8	2	..	2	..
1,600-1,799.....	3	2	..	..	..
More than 1,799.....	9	7	..	..	..
Total.....	100	100	100	100	100
Hundredweight of milk sold per farm:					
Less than 400.....	8	17	90	73	97
400-599.....	18	30	8	5	..
600-799.....	21	20	2	8	..
800-999.....	21	11	..	5	3
1,000-1,199.....	9	7	..	2	..
1,200-1,399.....	8	6	..	5	..
1,400-1,599.....	5	1	..	2	..
1,600-1,799.....	5	3	..	..	..
More than 1,799.....	5	5	..	..	..
Total.....	100	100	100	100	100
Dollars of milk products sold per farm:					
Less than 250.....	..	..	72	60	81
250-499.....	2	3	18	5	10
500-749.....	1	10	6	5	6
750-999.....	8	24	2	3	..
1,000-1,499.....	23	29	2	10	3
1,500-1,999.....	17	14	..	3	..
2,000-2,499.....	19	8	..	2	..
2,500-2,999.....	13	4	..	10	..
3,000-3,499.....	5	4	..	..	..
3,500-3,999.....	7	2	..	2	..
More than 3,999.....	5	2	..	..	..
Total.....	100	100	100	100	100

TABLE 39 (continued)

Range	Proportion of total number				
	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscel- laneous- type farms
	Per cent	Per cent	Per cent	Per cent	Per cent
Hundredweight of milk produced per cow:					
Less than 30.....	1	2	7	..	49
30-39.....	2	4	13	8	10
40-49.....	7	13	13	5	3
50-59.....	15	20	19	28	6
60-69.....	31	28	13	15	6
70-79.....	24	23	13	22	13
80-89.....	10	6	8	15	..
90-99.....	6	2	9	2	3
More than 99.....	4	2	9	5	10
Total.....	100	100	100	100	100
Crop index:					
Less than 70.....	5	10	22	20	32
70-79.....	11	8	13	10	10
80-89.....	11	18	16	10	16
90-99.....	15	21	13	5	13
100-109.....	18	15	14	10	6
110-119.....	12	12	13	23	10
120-129.....	11	5	3	12	10
130-139.....	6	6	5	10	..
140-149.....	4	2	..	..	..
More than 149.....	7	3	1	..	3
Total.....	100	100	100	100	100
Per cent of milk sold October-March:					
Less than 40.....	10	26			
40-49.....	45	38			
50-59.....	33	25			
More than 59.....	9	11			
Unknown.....	3	..			
Total.....	100	100			
Per cent of productive-man-work units on cows:					
Less than 10.....	..	..	10	28	51
10-19.....	..	1	20	30	13
20-29.....	2	2	21	18	23
30-39.....	8	17	23	10	3
40-49.....	24	34	19	12	10
50-59.....	41	30	4	..	..
More than 59.....	25	16	3	2	..
Total.....	100	100	100	100	100
Tons of milk per man:					
Less than 10.....	2	3	62	60	78
10-19.....	19	42	32	22	19
20-29.....	37	30	5	8	3
30-39.....	25	17	1	5	..
40-49.....	15	5	..	5	..
50-59.....	2	1	..	..	..
More than 59.....	..	2	..	..	..
Total.....	100	100	100	100	100
Number of productive-man-work units per man:					
Less than 120.....	2	5	19	5	32
120-159.....	11	12	31	10	23
160-199.....	15	21	19	27	10
200-239.....	25	16	16	25	19
240-279.....	20	22	10	12	10
280-319.....	9	12	3	8	3
320-359.....	12	4	..	5	..
More than 359.....	6	8	2	8	3
Total.....	100	100	100	100	100

TABLE 39 (concluded)

Range	Proportion of total number				
	131 Grade A farms	122 Grade B farms	129 other dairy farms	40 poultry farms	31 miscel- laneous- type farms
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Age of operator (years):					
Less than 30.....	7	5	4	..	..
30-39.....	11	17	9	13	13
40-49.....	25	29	14	30	23
50-59.....	31	21	29	30	32
60-69.....	17	25	32	18	23
More than 69.....	8	3	12	8	9
Not obtained.....	1	..	..	1	..
Total.....	100	100	100	100	100
Dollars of expense for labor, per farm:					
Less than 100.....	23	16	44	18	45
100-299.....	19	23	28	25	29
300-499.....	18	25	15	23	13
500-699.....	18	18	8	10	7
700-899.....	10	7	3	12	3
More than 899.....	12	11	2	12	3
Total.....	100	100	100	100	100
Dollars of purchased fertilizer, per farm:					
Less than 20.....	15	20	42	18	39
20-39.....	17	11	15	10	19
40-59.....	17	14	12	15	3
60-79.....	14	11	5	7	10
80-99.....	11	9	8	7	13
100-199.....	18	24	11	30	13
More than 199.....	8	11	7	13	3
Total.....	100	100	100	100	100

ARBITRARY STANDARD FOR A SUCCESSFUL FARM

Every farm should strive to maintain a high standard if the business is to be profitable. To be the most profitable, farms should have favorable size of business, diversity of business, high rates of production, good labor efficiency, and efficient use of capital.

SIZE OF BUSINESS

1. A herd of 20 cows or more is desirable for both Grade A and Grade B farms. Large businesses are the most profitable if they are supported by high rates of production, efficient use of labor, and favorable prices.

2. Dairy farms should have 100 acres or more of crops.

3. Grade A and Grade B farms should strive for businesses of 600 or more productive-man-work units.

4. No more capital should be used than is necessary to provide good land, satisfactory buildings and equipment, and good livestock. On Tompkins County farms, \$12,000-\$13,999 was required with the size of business indicated above.

5. Approximately 2.0 men, with some help in harvest, are required to operate a dairy farm of this size.

DIVERSITY OF BUSINESS

6. As large a proportion of the milk as is possible should be produced in the winter months.

7. A ratio of not more than 3.0 to 3.5 acres of crops for each animal unit kept should be maintained.

8. Farms should have a relatively small proportion of their total work units on hay and grain, in order to provide satisfactory rotations and labor efficiency.

9. Advantage should be taken of any opportunity to get better-than-average prices for products to be sold. Premiums should be obtained, if possible.

RATES OF PRODUCTION

10. Production should be 7000 pounds or more of milk per cow. For Grade A farms, the butterfat test should average 4.0 per cent.

11. Yields of the important crops should be from 10 to 40 per cent above the average for the region.

12. Where poultry is a minor enterprise, at least 10 dozens of eggs per hen should be produced; where it is the major enterprise, at least 12 dozens per hen should be produced.

LABOR EFFICIENCY

13. Grade A and Grade B farms should produce 35 tons or more of milk per man.

14. Grade A and Grade B farms should have 300 or more productive-man-work units per man.

15. Grade A and Grade B farms should have as near to 40 acres or more of crops per man as is possible, depending on the crop index and the cropping system.

CAPITAL EFFICIENCY

16. The total capital employed should be such that receipts would equal the capital in 3.5 years or less, on Grade A and Grade B farms.

17. From 10 to 15 per cent of the capital employed should be invested in cows.

18. Grade A farms should operate on not more than \$24 in capital per man-work unit. Grade B farms should operate on not more than \$20 in capital per man-work unit.

SUMMARY

1. Financial records on 544 farms in Tompkins County, New York, for the year ended on March 31, 1938, furnished the data for this study. The records were taken by the survey method.

2. The study was made to ascertain what factors affected labor incomes in the area in 1937, and to find out which of these factors were the most important.

3. Because of the differences in prices and the resulting effect on incomes, the farms were divided into groups on the basis of the type of market for milk, the main product in the area. But all of the farms in each of these groups which had as many as 400 hens or more were analyzed in a separate group, as poultry farms. Also, the records of farms which received as much as \$250 or more of outside income or whose receipts differed noticeably from those on most of the farms, were analyzed separately as "special" records.

4. There resulted 131 farms which sold Grade A milk, 122 which sold Grade B milk, 129 which sold milk only to their neighbors or which sold cream, butter, or veals, 40 which kept 400 hens or more, 31 which sold very little milk with no particular outlet or else sold no milk at all, and 91 which were classified as special farms.

5. Dairy cattle made up 84 per cent of the total animal units on the farms selling Grade A milk, 81 per cent on the farms selling Grade B milk, 57 per cent on the other dairy farms, 47 per cent on the poultry farms, 41 per cent on the miscellaneous-type farms, and 70 per cent on the special farms.

6. Farms which sold Grade A milk kept an average of 15.6 cows, as compared with 13.5 on the farms selling Grade B milk, 4.4 on the other dairy farms, 5.9 on the poultry farms, 2.7 on the miscellaneous-type farms, and 8.6 on the special farms. Of all the cows in the area, 80 per cent were on farms selling Grade A or Grade B milk.

7. The average number of hens kept on the poultry farms was 656. On the other types of farms, the average number of hens ranged from 58 on the farms which sold Grade A milk, to 156 on the special farms.

8. Other kinds of livestock were not important. An average of less than one animal unit of beef cattle was kept per farm. Sheep were most important on the miscellaneous-type farms, where an average of 8.5 ewes were kept. Hogs were unimportant except as they were kept for home butchering. About half of the farms raised one or two hogs a year for this purpose.

9. The average number of acres operated on the farms studied was 140. Approximately half of the total acreage was used for the production of crops, 32 per cent was used for pasture, 9 per cent was in woods not pastured, and 6 per cent was left idle. The farmsteads, roads, and fences occupied about 4 per cent of the total acreage.

10. Of the acreage used for the production of crops, about 14 per cent was used for intertilled crops, 32 per cent for small grains, and 49 per cent for hay.

11. The principal crops grown were corn for silage, corn for grain, potatoes, cabbage, field beans, oats, oats and barley, buckwheat, wheat, alfalfa, clover and mixed hay, and timothy.

12. Approximately one-fourth of the farms had trucks and one-half of them had tractors. The farms with tractors were larger, and had better labor efficiency, than those depending on horses for power.

13. The average amount of capital employed was \$10,479 on the farms that sold Grade A milk, \$8969 on the farms that sold Grade B milk, \$6617 on the other dairy farms, \$9210 on the poultry farms, \$7129 on the miscellaneous-type farms, and \$8751 on the special farms.

14. Of the total amount of capital employed, approximately 66 per cent was in real estate, 20 per cent was in livestock, 12 per cent was in equipment, and 2 per cent was in feed and supplies. The farms where dairying was less intensive had a higher proportion of the total capital in real estate, and a smaller proportion in livestock, than did the intensive dairy farms.

15. Of the capital in real estate, 42 per cent was in land, 25 per cent was in the operator's house, and 33 per cent was in other buildings.

16. The receipts were \$3206 per farm on the farms that sold Grade A milk, \$2504 on the farms that sold Grade B milk, \$1281 on the other dairy

farms, \$3972 on the poultry farms, \$1558 on the miscellaneous-type farms, and \$3373 on the special farms.

17. The major proportion of the income was derived from the sale of market milk on the Grade A and Grade B farms, from the sale of crops and eggs on the other dairy and the miscellaneous-type farms, from the sale of eggs on the poultry farms, and from work off the farm and the sale of market milk on the special farms.

18. The expenses were \$2275 on the farms that sold Grade A milk, \$2083 on the farms that sold Grade B milk, \$1100 on the other dairy farms, \$3230 on the poultry farms, \$1173 on the miscellaneous-type farms, and \$2387 on the special farms.

19. Expenses for labor, feed and bedding, and machinery made up approximately two-thirds of the total expenses.

20. The average labor incomes were \$407 on the farms that sold Grade A milk, -\$28 on the farms that sold Grade B milk, -\$150 on the other dairy farms, \$282 on the poultry farms, \$29 on the miscellaneous-type farms, and \$548 on the special farms.

21. The use of the house, and products furnished by the farm which were used by the operator's family, amounted to approximately \$430 per farm. Milk, garden, and firewood were the most important farm products from the standpoint of value. The operator's labor earnings were higher than labor income by about this amount, for each group of farms.

22. The differences in prices received for products sold were important in causing variations in labor income between types of farming.

23. Size of business, milk produced per cow, crop yields, and labor efficiency, were four of the most important factors affecting labor income. The farms which were below average in all of these factors, made average labor incomes of -\$194 on the farms that sold Grade A milk, -\$532 on the farms that sold Grade B milk, and -\$389 on the other dairy farms. The farms which were average or above average in all four of these factors, made average labor incomes of \$1493 on the farms that sold Grade A milk, \$624 on the farms that sold Grade B milk, and \$176 on the other dairy farms.