UNIVERSITY OF MINNESOTA
Department of Agriculture
and the
United States Department of Agriculture
Soil Conservation Service

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Fourth Annual Report of the Farm Management Service for Farmers in Soil Conservation Demonstration Areas for the year 1938

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Fourth Annual Report of the Farm Management Service for Farmers in Soil Conservation Demonstration Areas

Prepared by W. P. Ranney, T. R. Nodland and G. A. Pond

INDEX

Introduction

Through a joint agreement between the Division of Agricultural Economics of the University of Minnesota and the Soil Conservation Service of the United States Department of Agriculture, a complete farm record service has been made available to farmers in the Soil Conservation Demonstration Areas of Minnesota. Farmers in the Gilmore Creek Area at Winona, the Beaver Creek Area at Caledonia, and the Deer-Bear Creek Area at Spring Valley, who were cooperating with the Soil Conservation Service and operating their farms under a complete erosion control program, had the opportunity to keep records. This is the fourth year that records were kept in the Gilmore Creek and Deer-Bear Creek Areas; and the third year in the Beaver Creek Area.

The work of supervising these records was taken care of by James C. Jensen of Spring Valley, Minnesota, Austin B. Sanford of Caledonia, Minnesota, and C. Herman Welch, Jr., of St. Paul, Minnesota, members of the staff of the Soil Conservation Service. The summary and analysis were under the direction of G. A. Pond, W. P. Ranney and T. R. Nodland of the Department of Agricultural Economics of the University of Minnesota. The record books were furnished by the Division of Agricultural Extension, University of Minnesota, which is also cooperating in this study.

Note: Completion of this project was made possible by workers supplied on Federal Students' Work Project, 1938-39, Project No. 78-70; and Project No. 6320, Sub-Project No. 420, Minnesota Works Progress Administration. Sponsor: University of Minnesota.

Full cooperation has been given during the past year by members of the Divisions of Operations and Economic Research, Soil Conservation Service, and the Division of Agricultural Extension, University of Minnesota, as well as county agricultural agents in the locality.

Records Kept

The records kept by the cooperators included inventories at the beginning and end of the year, cash receipts and expenses, a report of feed to the various classes of livestock, and a record of farm produce used by the family. Supplementary information was also secured during the year regarding crop and livestock production practices.

The cooperators were assisted and supervised in keeping their records by the fieldmen from the Soil Conservation Service, who visited each farm several times during the year. In addition to securing the supplementary information, the fieldmen's duties included numerous services, viz., helping the farmer place uniform values on real estate and equipment, checking the cash and feed records, answering any questions that might arise as to how the entries should be made in the account book, and helping with farm management problems which came up due to changes brought about by the introduction of a complete erosion control program.

At the end of the year, the books were taken to the central office at the University Farm where they were checked for completeness and accuracy. Then the fieldman of the Soil Conservation Service visited each cooperator and asked for corrections and secured any data which had been omitted.

Thirty-four books contained complete household statements which were summarized and tabulated on page 21. This portion of the summary was an extra service given in addition to the regular farm accounts and it was entirely up to the cooperator as to whether he kept that portion of the record or not.

Topography, Soils, Climate

The Gilmore Creek Area, in which 7 records were completed, is located at the southwestern edge of the city of Winona, in Winona county. The valley and side coulees are very narrow with steep sides. The ridges are narrow, varying from a few rods to usually less than one-fourth of a mile in width. The upland soils fall mainly into two types, Clinton silt loam, a forest soil developed on loess, and Dubuque silt loam, a forest soil developed on residual limestone. The valley soils consist mostly of Jackson silt loam and Chariton silt loam. A considerable portion of the steep valley slopes is classified as rough, stony land. Serious sheet and gully erosion has taken place over the area. The annual rainfall of this area is approximately 34 inches and is distributed throughout the year satisfactorily for crop production; approximately 64 per cent occurs during the frost-free period. The winters are cold, and followed by short but warm summers; the annual mean temperature is 46 degrees. Droughts may endure for short periods; or unusual precipitation, with heavy water and soil losses may occur; but these unusual periods are not frequent.

The Beaver Creek Area in which 23 of the records were kept is located in Houston county in the southeastern portion of the state. The area may be divided into two parts, the gently undulating to moderately rolling prairie region of the upper one-third of the watershed, and the undulating to hilly region of the lower two-thirds of the area.

In the upper portion of the area the greatest agricultural development has taken place, since the land is more level, less cut up by ravines, and has a lower degree of erosion all of which permit more land in cultivation and much larger fields. The soil in this section is predominantly a deep prairie soil (Tama Silt Loam) which is high in organic matter, but needs lime for the best production of alfalfa or sweet clover.

The lower two-thirds of the area is composed of a main valley with accompanying tributary valleys surrounded by high steep ridges. The bottom of the valley is excellent corn land but due to annual overflow is not adaptable to other crops. A broad terrace on either side affords excellent soil for cultivated fields, many of which extend part way up the lower slopes of the adjoining ridges. Due to the steep character of the ridge slopes about 25 per cent of the area is on land too steep for crops or pasture so is predominantly in woods. On the ridge tops we again find fields with soil very similar to that of the soils on the lower slopes of the ridges. This is a forest soil (Fayette Silt Loam), low in nitrogen, shows a marked response to barnyard manure or legumes in rotation and needs lime for the best growth of alfalfa or sweet clover. Sheet erosion has taken a severe toll and many of the old fields have less than three inches of topsoil remaining.

The Deer-Bear Creek Area, in which 25 records were completed, is located in Fillmore and Mower counties and is drained by the middle branch of the Root River. The topography varies from very gently rolling to almost level land, in the upper part of the area, to very steep, hilly and rough land in the lower end. In many cases the upper end of the area lacks sufficient undulation of surface to allow proper drainage, in contrast to the lower, where creeks have cut deeply into the underlying limestone. The entire area has been glaciated almost equally between soils composed of drift material and of loessial mantle overdrift. Carrington, and Lindley, silt loam soils with glacial drift derivation and Tama, Clinton, silt loams with loess derivation are among the more important soil types of the area. Erosion varies from slight amounts of sheet erosion in the upper reaches of the drainage areas to severe sheet and gully erosion in the middle and lower parts of the area. The mean annual temperature for the area is 45 degrees Fahrenheit, with a range of -37 to 108 degrees, occurring in January and July, respectively. The average growing season is around 150 days with an annual precipitation of 32 to 33 inches well distributed throughout the growing season.

Type of Farming

Agriculture in the three areas covered by this report centers primarily around the dairy enterprise with smaller proportions of hogs, poultry and sheep included. In the Deer-Bear Creek and Beaver Creek Areas a few farmers have both dairy cattle and beef cattle enterprises. Dairy products were sold principally as cream altho a few farmers had an outlet for whole milk. In those cases where cream was sold, the skimmilk was fed to calves, hogs, and poultry.

The principal crops grown are oats, barley, hay, and corn. The proportion of total farm land devoted to crop production and rotation pasture land varies from 40 per cent on some of the rougher farms in the Gilmore Creek Area to more than 80 per cent on some of the Deer-Bear Creek farms, with an average of 63 per cent for all farms studied. Approximately 20 per cent of the areas is devoted to permanent pasture, with twice as much woodland in the Gilmore Creek Area as in the Deer-Bear Creek Area, and an average of 10 per cent of all the farms being handled as protected timber areas.

Purpose of the Project

The farm management unit of the Operations Division of the Soil Conservation Service has three main objectives; first, enabling the cooperator to know the returns he is getting for his labor and management, second, to secure information which when compared with similar data secured on other farms will enable the cooperator to increase his efficiency and organize his farm on a more profitable basis and third, to rebalance the farm business in light of economic conditions after the establishment of the erosion control program.

Since success under our present economic order is measured in terms of dollars and cents, and since the profit motive is the governing factor in our modern agriculture, it is important that both the cooperator and the soil conservationist know what returns the farmer is obtaining for his capital, management, and labor. In other words, the farmer's income is the yardstick by which we measure the success of his enterprise and if the soil conservation program is to succeed it must increase or at least maintain the farmer's income. This information may be obtained through farm account books and furnish a common basis from which the conservationist and the farmer may build a better erosion control program for that farm.

In any community we find certain farms above the average yet almost adjoining it will be a farm far below the community standard. Sometimes physical conditions will make it impossible to change the situation, but frequently it is a question of inefficiency and poor management.

Through the records kept for the farm management service, each cooperator furnishes data dealing with the operation of his farm or affecting its income. By comparing this data with that obtained on the most profitable farms the operator can often find many ways of operating his farm more efficiently.

Farms cannot be operated efficiently if the soil has been allowed to become so badly eroded as to reduce crop yields. In order to prevent this, very decided changes have been made in the field plans of the individual farm and in the crop rotations. These changes are bound to upset the fine balance formerly existing on a well-managed farm. Readjustment of labor and livestock is bound to follow and the sooner these readjustments are made the easier it will be. By means of farm account books both the cooperator and the fieldman can see just how the income is being affected and take steps to improve the situation. At the same time, the fieldman is able to get the information which he can apply on other farms in the locality and know that he has concrete evidence to back his statements.

Fortunately most practices which make for efficient farm management are also important measures in good erosion control. In this section of the country livestock farming is in practically every case the most profitable type of operation, but it requires efficient handling if the full benefits are to be received,- good quality pasture throughout the grazing season, high quality roughages for the feeding season, and above all a balanced ration. Good erosion control requires fencing out of very steep hillsides to woods, to prevent silting and gullying of fertile land lower down the slope. Other land that is not so steep but too rough to cultivate makes excellent permanent hayfields and pasture. Of our various permanent hay crops alfalfa is one of the best and without question it is the best roughage we have for dairy cattle. Well-balanced rotations make for higher crop yields and at the same time are important factors in good erosion control. In other words, good farm management and good erosion control in this area call for efficient livestock farming, good land utilization and all done with a minimum of labor.

Analysis of the Farm Business

On pages eight and nine are presented financial summaries of the year's business, showing the average results for the 55 farms on which the work was completed for the twelve months' period, January 1, 1938 to December 31, 1938, the average results for the highest one-fifth of the farms in respect to Operator's Labor Earnings, and the average for the lowest one-fifth. In the "your farm" column, in the copy sent to the farmer, the results of his individual farm business are inserted in order that he may compare his figures with the averages of the various groups.

The data on page 10 and the remaining pages should suggest to each cooperator some possibilities for improvement in his production, control of expenses, and in his organization of the various enterprises and of the business as a whole. There are some variations in soil and climatic conditions and available markets in this area, which, of course, affect the choice of crops and classes of livestock. Each farm is an individual problem and has its particular advantages and limitations in respect to natural resources and markets. However, it is significant that the same general factors account for financial success in all three of the soil conservation areas.

Capital Investment in Farm Business

The data on pages six and seven show that the average size of the farm in this report was 202 acres. The average farm inventory was $15,220. This does not include the value of the house in which the operator lived. In 1938, 45 per cent of the average farm inventory consisted of land; 21 per cent of permanent improvements; 7 per cent of feeds and supplies; 10 per cent of machinery and equipment; and 17 per cent of livestock, of which about one-third or an average of $762 was the average inventory value of milk cows.

Returns to Operators for Their Labor and Management

(See page 8)

The average cash receipts per farm were $3,352. In addition, farm produce to the value of $315 was consumed by the farm family and there was an average inventory increase of $50 per farm. The total average receipts per farm were the sum of these three items, $3,717. The average total expense per farm, $1,833, includes $1,755 cash expense and an estimated allowance of $78 for board of hired labor. The difference between the total income and total expense figure is $1,884. This is the return which the farmer received for his own labor and management, the services of members of his family and the use of his capital. After deducting a charge of 5 per cent on the average inventory valuation, $761, for the services of capital, there remains $1,123 for the services of the farmer and his family. The average value of family labor used, if computed at hired man's wages, was $244. The average operator's labor earnings are the family earnings less their allowance of $244, or $879. This is the return to the farmer for his labor and management over and above a 5 per cent return for his capital and going wages for other members of the family.

The average total value of farm produce used in the house, $315, represents an important item in the farmer's income. This produce is figured at farm prices; if it was purchased at retail price, the total value would be approximately double this figure. On many farms a saving could be made if more produce were raised on the farm rather than purchased. The table on page 21 shows the average amounts and values for each item included in the total of farm produce used in the house.

Summary of Farm Inventories (Beginning of Year)

Items	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
Size of farm (acres)	_____	202	218	202
Size of business (days of prod. work) (1)	_____	628	859	588
Average farm inventory (without house)	_____	$15,195	$16,916	$17,581
Land	_____	6,820	7,202	9,230
Farm improvements	_____	3,246	3,249	3,167
Machinery and equipment (total)	_____	1,523	1,980	1,593
General machinery and equipment	_____	966	1,243	1,061
Tractor	_____	280	324	315
Truck and trailer	_____	92	183	46
Auto (farm share)	_____	145	167	144
Gas engine (farm share)	_____	14	13	14
Electrical equipment (farm share)	_____	26	50	13
Miscellaneous supplies	_____	33	20	24
Feeds and seeds	_____	1,058	1,499	1,179
Horses (total)	_____	495	546	464
Horses	_____	421	442	408
Colts	_____	74	104	56
Productive livestock (total)	_____	2,020	2,420	1,924
Cows	_____	756	951	807
Other cattle	_____	636	646	547
Hogs	_____	332	500	271
Sheep	_____	197	205	151
Poultry	_____	99	118	148

(1) Explanation of term: "Days of Productive Work".

The total "Days of Productive Work" for any one farm are a measure of size of that farm business. The average number of "ten-hour days" of man labor required per head of productive livestock and per acre of crops is used in combining the crops and the livestock in one single measure of size of business.

The number of days of productive work for each animal and each acre of crops, computed from data presented in Minnesota Technical Bulletin 44, "A Study of Dairy Farm Organization in Southeastern Minnesota", are listed as follows:

Item	Per	No. of days of prod. work	Item	Per	No. of days of prod. work
Cows	Cow	16.6	Corn for grain (husked)	Acre	2.1
Other cattle	Animal unit*	7.6			
Sheep	Animal unit*	2.7	Corn for grain (husk. & shred.)	Acre	2.8
Poultry	100 hens	20.1			
Hogs	100 lbs. hogs produced	.55	Corn for silage	Acre	2.6
			Corn hogged	Acre	1.25
Alfalfa	Acre	1.5	Corn for fodder	Acre	1.8
Tame & wild hay	Acre	.6	Sweet corn	Acre	3.0
Small grain & flax	Acre	1.0	Potatoes	Acre	6.4
Small grain hogged	Acre	.4	Sugar beets	Acre	4.0
Canning peas	Acre	2.5			

*Animal Unit represents one cow, one bull, two head of young cattle, seven head of sheep, fourteen lambs, five hogs, ten pigs, 100 hens, or 1400 pounds of turkeys.

Summary of Farm Inventories (End of Year)

Items	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
Average farm inventory (without house)	_____	$15,245	$17,337	$17,267
Land	_____	6,821	7,202	9,230
Farm improvements	_____	3,220	3,240	3,111
Machinery and equipment (total)	_____	1,589	2,119	1,631
General machinery and equipment	_____	1,003	1,314	1,094
Tractor	_____	337	444	334
Truck and trailer	_____	73	164	35
Auto (farm share)	_____	138	141	145
Gas engine (farm share)	_____	12	9	14
Electrical equipment (farm share)	_____	26	47	9
Miscellaneous supplies	_____	29	20	19
Feeds and seeds	_____	1,059	1,466	1,028
Horses (total)	_____	470	514	450
Horses	_____	371	373	397
Colts	_____	99	141	53
Productive livestock (total)	_____	2,057	2,776	1,798
Cows	_____	768	974	806
Other cattle	_____	601	804	495
Hogs	_____	372	637	229
Sheep	_____	219	261	118
Poultry	_____	97	100	150

Summary of Amount of Livestock

Items	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
No. of horses	_____	4.0	4.2	4.2
No. of colts	_____	1.0	1.2	.6
No. of cows	_____	14.2	18.0	15.5
No. of cows per worker	_____	8.0	8.4	8.0
Head of other cattle	_____	19.9	23.3	20.5
Litters of pigs raised	_____	8.7	11.5	7.1
Pounds of hogs produced	_____	12808	20980	7916
Head of sheep (2 lambs equal 1 head)	_____	30.2	32.2	20.4
No. of hens	_____	100	110	177
Total no. of prod.livestock animal units	_____	35.2	43.7	35.1
% of tot. prod.lvst. units that are cows	_____	45.5	46.0	48.8
% of tot. prod.lvst. units that are o.cattle	_____	28.4	26.8	29.2
% of tot. prod.lvst. units that are hogs	_____	14.2	17.5	8.5
% of tot. prod.lvst. units that are sheep	_____	8.6	6.6	8.1
% of tot. prod.lvst. units that are poultry	_____	3.3	3.1	5.4
Number of farms with tractors	_____	36	9	9

Summary of Farm Earnings

Items	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
CASH EXPENSES				
Tractor (new & exp.)	$_____	$206	$320	$151
Truck (new & exp.)	_____	40	131	15
Auto (new & exp.) (farm share)	_____	76	37	102
Gas engine (new & exp.) (farm share)	_____	6	7	6
Electricity (new & exp.) (farm share)	_____	8	8	6
Machinery and equipment (new)	_____	124	185	112
Machinery and equipment (exp.)	_____	36	52	35
Buildings, fences, tiling (new)	_____	55	72	22
Buildings, fences, tiling (exp.)	_____	40	78	16
Hired labor	_____	196	274	184
Feed for livestock	_____	253	537	126
Other expense for livestock	_____	63	76	53
Horses bought	_____	33	9	23
Cows bought	_____	49	148	0
Other cattle bought	_____	84	213	39
Hogs bought	_____	32	69	14
Sheep bought	_____	43	23	8
Poultry bought	_____	18	21	24
Crop (seed, twine, spray)	_____	145	185	137
Taxes and insurance	_____	236	282	218
General farm	_____	12	12	15
(1) Total cash expense	_____	1,755	2,739	1,306
(2) Decrease in farm inventory	_____	-	-	314
(3) Board for hired labor	_____	78	115	82
(4) Total expense (sum of (1),(2),&(3)	_____	1,833	2,854	1,702
CASH RECEIPTS				
Horses	_____	54	62	15
Cows	_____	181	268	154
Dairy products	_____	800	1,292	667
Other cattle	_____	492	685	326
Hogs	_____	890	1,468	592
Sheep	_____	128	134	79
Poultry	_____	58	81	37
Eggs	_____	162	178	320
Small grain	_____	51	124	50
Corn	_____	7	25	0
Hay	_____	21	35	22
Root crops	_____	5	1	18
Other crops	_____	16	22	11
Miscellaneous	_____	142	264	60
Income from work off the farm	_____	177	390	38
Agricultural Conservation payments	_____	168	216	192
(5) Total cash receipts	_____	3,352	5,245	2,581
(6) Increase in farm inventory	_____	50	421	-
(7) Farm produce used in house	_____	315	403	266
(8) Total receipts (sum of (5) & (6)	_____	3,717	6,069	2,847
Total expenses (4)	_____	1,833	2,854	1,702
(9) Ret. to cap.& fam.labor (8) - (4)	_____	1,884	3,215	1,145
(10) Interest on farm inventory	_____	761	856	871
(11) Family labor earnings (9) - (10)	_____	1,123	2,359	274
(12) Unpaid family labor	_____	244	362	302
(13) Oper. labor earnings (11) - (12)	_____	879	1,997	-28

Summary of Farm Earnings (A)

Items	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
EXPENSES AND NET DECREASES				
Total power	$____	$422	$419	$441
Hired	____	80	98	48
Tractor	____	98	110	113
Truck	____	21	20	23
Auto (farm share)	____	69	64	87
Gas engine (farm share)	____	8	12	6
Elec. plant or current (farm share)	____	9	12	10
Horses	____	137	103	154
General machinery and equipment	____	117	152	112
Buildings, fencing, tiling	____	120	160	96
Productive livestock misc. expense	____	22	23	25
Crop	____	100	137	106
Real estate taxes	____	182	216	167
Personal property tax	____	25	31	21
Insurance	____	29	35	30
General farm	____	12	12	15
Hired labor & board, & unpaid fam.labor	____	518	751	568
Interest on farm inventory	____	761	856	871
(1) Total	____	2,308	2,792	2,452
RETURNS AND NET INCREASES				
All productive livestock	____	2,826	4,379	2,238
Cows	____	999	1,532	819
Other cattle	____	525	813	420
Hogs	____	953	1,591	583
Sheep	____	109	168	39
Poultry	____	240	275	377
Crops, feed, vegetables and fuel	____	8	- 207	- 52
Agricultural Conservation payments	____	168	216	192
Miscellaneous	____	8	11	8
Income from work off the farm	____	177	390	38
(2) Total	____	3,187	4,789	2,424
Total expenses (1)	____	2,308	2,792	2,452
(3) Oper. labor earnings (2) - (1)	____	879	1,997	- 28

(A) Cash receipts and expenses are adjusted for changes in inventory for each enterprise and for each item of expense in order to show total receipts and net increases, and total expenses and net decreases. The operator's labor earnings are the same as those on page 8.

Analysis of the Reasons for Differences in Operator's Earnings

The financial statement on the preceding pages shows that there is a wide range in earnings. The average operator's labor earnings for the eleven most profitable farms was $1,997, and for the eleven least profitable farms $ - 28. The difference between the averages for these two groups was $2,025. Some of the causes for these differences in earnings may be beyond the control of the farmer. It is significant, however, that the data secured from the records on these 55 farms indicate that there are several very definite factors that enable some farmers to make substantial earnings on these farms that are subject to rather serious erosion, while others fail to meet expenses. These factors and their relationship with earnings are the following:

Table 1. Relation of Dairy Production to Farm Earnings.

Lbs. butterfat per cow Group	Average	No. of Farms	Average Earnings
Below 175	150	16	$597
175 - 224	199	22	944
225 and above	249	17	1,059

High production per cow tends to lower the cost of producing a pound of butterfat. This is very important on those farms on which butterfat sales are the major source of income.

Table 2. Relation of Returns Above Feed for Other Productive Livestock to Farm Earnings.

Returns above feed per animal unit of prod. livestock other than cows Group	Average	No. of Farms	Average Earnings
Below $25	$15	13	$371
$25 - 54	39	28	829
$55 and above	78	14	1,449

These farms have, in addition to the dairy herd, quite an investment in other classes of productive livestock, as young cattle, hogs, sheep, or poultry. Most or all of the feed raised is fed, and considerable additional feed is purchased. Feed is the major item of cost in livestock production. High returns from livestock above the value of feed usually accompany greater profits from the livestock. This means another addition to the farm earnings.

Table 3. Relation of Amount of Productive Livestock to Farm Earnings.

Productive livestock units per 100 A. Group	Average	No. of Farms	Average Earnings
Below 16.0	13.9	13	$694
16.0 to 23.9	20.0	32	820
24.0 and above	28.6	10	1,308

On some farms the returns from livestock are so low that they do not cover feed and other costs. Such livestock is unprofitable, especially if there is more than enough to utilize what would otherwise be waste feed.

If the livestock is yielding a net return, an increased amount of livestock adds to size of business and the opportunity to increase the farm earnings. Livestock produces and aids in keeping up the fertility of the land, and utilizes waste products on the farm. Livestock also helps to provide productive employment throughout the year. Any method that aids in utilizing the available resources to full and efficient capacity should add to the farm income.

Table 4. Relation of Crop Yields to Farm Earnings.

Per cent crop yields were of the average for all the 55 farms Group	Average	No. of Farms	Average Earnings
Below 85	77	9	$559
85 - 114	99	36	862
115 and above	124	10	1,228

High production per acre, up to certain limits, tends to lower the cost per bushel of grain or per ton of hay. Any possible method of management that will increase crop yields and therefore lower cost of production more than the extra expense incurred in securing the higher yields should be given consideration. As a rule, plowing under legumes and manure and control of erosion tend to increase crop yields on these farms.

Table 5. Relation of Choice of Crops to Farm Earnings.

Per cent of tillable land in high return crops* Group	Average	No. of Farms**	Average Earnings
Below 38	30.4	13	$728
38 - 48	42.5	27	776
49 and above	54.8	9	858

*Crops are marked on page 16 as (A), (B), (C) or (D). All of the acres in (A) crops, one-half of acres in (B) crops, and one-fourth of acres in (C) crops are used in calculating per cent of tillable land in high return crops.

**Farms with less than 15 per cent of the total productive work units expended on crops were not included.

As a rule, on these farms, such crops as alfalfa, sweet clover, red clover, corn, barley, winter wheat, and flax bring a higher net return per acre than other crops usually grown. Additions can be made to earnings by putting a greater percentage of the tillable land into these higher return crops.

Soil erosion and fertility maintenance are vital problems on the farms included in this study. Biennial and perennial legumes, especially alfalfa and sweet clover, form a sod that helps to check erosion, conserve humus and soil fertility. If properly inoculated they tend to increase the nitrogen content of the soil. Legume hays and pastures are also valuable for feed, for they lessen the necessity to purchase high-priced protein feeds. Alfalfa is undoubtedly the most profitable crop available for these farms.

Table 6. Relation of Size of Business (days of prod. work) to Farm Earnings.

Days of productive work Group	Average	No. of Farms	Average Earnings
Below 500	380	20	$533
500 to 799	647	26	889
800 and above	1,126	9	1,616

Average farm earnings tend to increase with an increase in size of business where size of business is measured by days of productive work. However, for those farmers who are operating their farms at a loss, the larger the volume of business the larger will be the loss. On the other hand, a farmer who is making a profit, could make a larger profit if he increased his size of business, providing that in so doing he does not lower materially the efficiency in some one or more important branches of his business. Those farmers who have large businesses usually have more flexibility of their organization than does the man with a small business, and can utilize more efficiently and to better advantage available labor, power, machinery, and buildings.

Table 7. Relation of Amount of Work Accomplished per Worker to Farm Earnings.

Days of productive work per worker Group	Average	No. of Farms	Average Earnings
Below 300	254	19	$659
300 - 399	341	22	843
400 and above	453	14	1,233

More days of productive work accomplished per worker reduce the labor charge per unit of business. Higher labor accomplishment can be secured in several ways. In the first place the business must be large enough so that there will be at least sufficient work available for the family labor. The farm should be so organized that the labor requirements are well distributed throughout the year. Handling pastures in an efficient manner, in such a way that as large a proportion as possible of the year's feed for livestock may be obtained from them, helps to reduce labor requirements. Proper planning of the farm work, economical use of labor saving machinery, etc., help to increase the work accomplished per worker.

Table 8. Relation of Power, Machinery and Building Expense to Farm Earnings.*

Expense per day of productive work Group	Average	No. of Farms	Average Earnings
$1.60 and above	$1.72	6	$470
.90 to 1.59	1.14	33	756
Below .90	.66	16	1,286

*Includes building, fencing, and all machinery expense, horse feed, and miscellaneous horse expense.

The expense factor shows a higher relation with earnings when prices are very low than when they are high. Some farms are under-equipped. On a few farms, excessive expenses constitute the main factor causing earnings to be very low. Some of the cash expenses can be kept down by careful management. Oftentimes necessary repairs and improvements can be made by using the available farm labor rather than by hiring extra help. Repairs and overhauling should be done before spring work begins insofar as possible; or on rainy days or in other spare time during the summer. Reducing the number of horses to the minimum required for efficient operation of the farm, helps reduce the power expense. In some cases farmers can offset some or all of the power and machinery expense by using their equipment for outside work.

Effect of Well-Balanced Efficiency on Farm Profits

It is quite evident from this report that few farmers have a monopoly on efficiency. Quite often farm operators show efficient management in one part of the farm business, which is offset by poor results in other phases. These farmers get medium returns while those who fall down all along the line get the lowest returns, and on the other hand those few who can manage to attain high efficiency in all parts of their organization receive returns well above the average. This is well illustrated in Table 9.

Table 9. Relation of Operator's Labor Earnings to the Number of Factors in Which the Farmer Is Above the Average

No. of factors in which farm excels	No. of Farms	Your Farm	The length of the shaded lines are in proportion to the average operator's labor earnings	Average Operator's Earnings
Seven or eight	4	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	$1,932
Five or six	15	_____	xxxxxxxxxxxxxxxxxxxx	1,233
Three or four	23	_____	xxxxxxxxxxxx	756
One or two	13	_____	xxxxxx	363

The array in Table 9 indicates that it will be worth-while for each cooperator to study carefully his ranking on pages 14 and 15, and learn his standing in respect to each of the above factors and the elements of strength and weakness in his farm business.

Measures of Farm Organization and Management Efficiency

Measures used in chart on page 15.		Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
Operator's Labor Earnings	$		$879	$1,997	$ - 28
(1) Pounds of butterfat per cow			200	216	175
(2) Return over feed (pr.lvst.,other than cows)*	$		$43	$57	$26
(3) Productive livestock units per 100 acres**			20.1	22.6	19.7
(4) Crop yields***			100	108	95
(5) % of tillable land in high return crops****			40.3	39.9	42.6
(6) Size of business--days of productive work			628	859	588
(7) Days of productive work per worker			340	397	296
(8) Power and eq. exp. per day of prod. work	$		$1.06	$ .84	$1.13
Measures and items related to some of the above measures:					
(2) Return over feed per head other cattle	$		$9.64	$13.06	$4.44
Return over feed per 100 lbs. hogs prod.			3.04	3.76	1.14
Return over feed per hen			1.21	1.03	1.04
Return over feed per head sheep			1.71	2.71	.41
(6) Days of productive work on crops			151	186	150
Days of productive work on prod. livestock			418	542	426
Days of other productive work			59	131	12
(7) Total number of workers			1.8	2.2	1.9
Number of family workers			1.4	1.6	1.5
Number of hired workers			.4	.6	.4
(8) Power expense per day of productive work	$		$ .68	$ .47	$ .79
Mach. & equip. exp. per day of prod. work			.18	.18	.19
Bldg. & fencing exp. per day of prod. work			.20	.19	.15

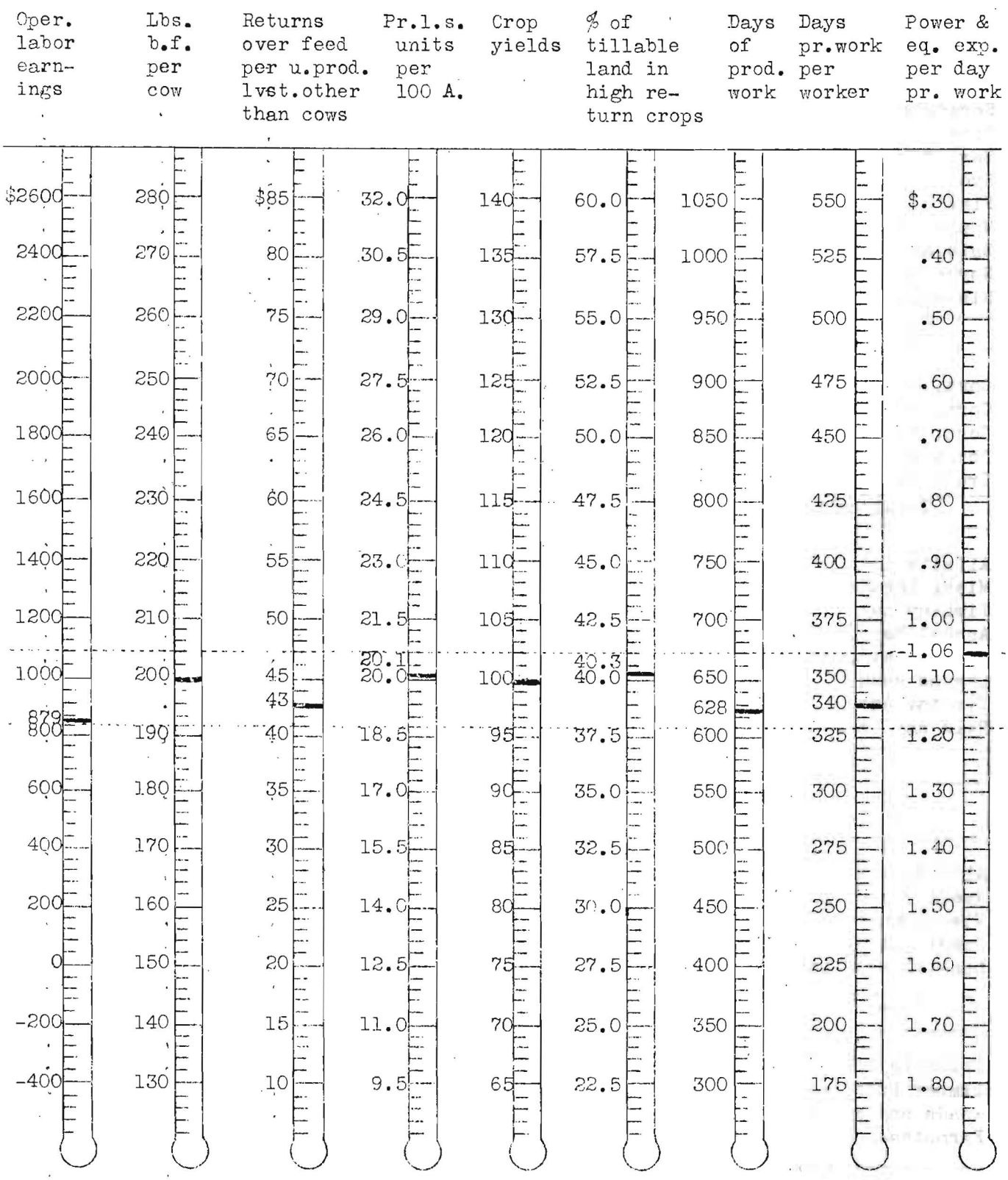
*Given as returns over feed cost per animal unit of productive livestock other than cows.

**Excluding acreage in protected woodlots.

***Given as a percentage of the average.

****Crops are marked on page 16 as (A), (B), (C), (D). All of the acres in (A) crops, one-half of acres in (B) crops, and one-fourth of acres in (C) crops are used in calculating per cent of tillable land in high return crops.

Using your figures from page 14, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for 55 farms included in this summary are located between the two dotted lines across the center of this page.



Distribution of Acres in Farm

Crop (A) (B) (C) (D) refer to ranking used in calculating % of tillable land in High Return Crops (see page 11).		No. of farms growing this crop	Your farm	Aver. of 55 farms	11 most profitable farms	11 least profitable farms
Winter wheat	(B)	21		3.8	2.5	7.1
Spring wheat	(C)	12		1.0	.8	1.3
Oats	(D)	31		10.8	9.4	13.3
Barley	(B)	29		10.9	17.4	13.5
Rye	(D)	2		.3	.0	1.5
Flax	(B)	2		.4	.0	.0
Wheat and oats	(C)	13		7.3	8.8	4.9
Oats and barley	(C)	22		10.3	12.9	3.2
Soybeans	(C)	6		.6	1.9	.3
Miscellaneous	(D)	2		.3	.0	1.4
Total grain				45.7	53.7	46.5
Corn, grain	(B)	52		18.8	28.0	14.3
Corn, silage	(C)	45		7.9	8.0	9.0
Corn, fodder	(D)	15		1.8	3.0	1.0
Potatoes	(A)	20		.5	.1	1.8
Truck crops	(A)	9		.3	.3	.1
Total cultivated crops				29.3	39.4	26.2
Alfalfa	(A)	50		17.1	20.2	16.5
Misc. legumes and mixtures	(C)	40		13.1	15.5	11.4
Timothy hay	(D)	15		2.9	5.6	3.4
Annual hay (millet, Sudan grass, sm. grain, etc.)	(D)	8		.5	.4	.7
Legume seed	(B)	5		.7	1.1	1.6
Timothy seed	(D)	5		1.1	.7	.0
Wild hay (non-tillable land)		4		.5	.6	.9
Total hay				35.9	44.1	34.5
Total crop acreage				110.9	137.2	107.2
Alfalfa pasture	(A)	13		1.5	.3	3.0
Sweet clover pasture	(B)	10		1.6	.0	2.4
Miscellaneous legume pasture	(C)	25		7.7	5.9	6.6
Other tillable pasture	(D)	17		5.9	6.8	8.1
Non-tillable pasture		52		45.4	49.0	43.0
Total pasture				62.1	62.0	63.1
Tillable land not cropped	(D)	22		2.1	1.8	1.4
Timber (not pastured)		47		19.2	9.6	22.4
Roads and waste				3.1	1.9	3.9
Farmstead				4.9	5.9	4.2
Total acres in farm				202.3	218.4	202.2
% of land tillable				63.2	69.6	62.2
% of tillable land in high return crops				40.3	39.9	42.6

Yield of Crops per Acre

Crop	Your farm	Average of 55 farms	11 most profitable farms	11 least profitable farms
Winter wheat, bu.	_____	11.7	10.7	14.0
Spring wheat, bu.	_____	13.9	16.0	10.2
Oats, bu.	_____	31.6	36.9	24.7
Barley, bu.	_____	26.6	25.8	20.0
Rye, bu.	_____	9.4	-	9.4
Flax, bu.	_____	6.5	-	-
Wheat and oats, bu.	_____	32.5	35.9	38.2
Oats and barley, bu.	_____	33.0	39.7	41.3
Soybeans, bu.	_____	19.4	14.2	26.9
Corn, grain, bu.	_____	49.5	48.8	49.6
Corn, silage, tons	_____	8.9	9.3	7.7
Corn, fodder, tons	_____	3.0	2.7	2.3
Potatoes, bu.	_____	80.0	35.0	69.4
Alfalfa hay, tons	_____	2.4	2.6	2.3
Soybean hay, tons	_____	1.4	1.3	1.4
Sweet clover, tons	_____	1.1	.6	-
Clover and timothy, tons	_____	1.7	2.0	1.8
Timothy hay, tons	_____	1.2	1.3	1.3

Feed Costs per Horse and Other Power Expense Items

	Your farm	Average* of 54 farms	11 most profitable farms	11 least profitable farms
Feed per horse,** bu.:				
Grain	_____	1,559	1,480	1,567
Tame hay and alfalfa	_____	3,754	2,895	3,377
Wild hay and fodder	_____	448	434	702
Feed costs per horse:				
Grain	$_____	$12.06	$11.13	$12.62
Roughage	_____	13.12	10.83	11.90
Pasture	_____	3.26	4.05	2.48
TOTAL	$_____	$28.44	$26.01	$27.00
Number of work horses	_____	4.1	4.2	4.2
Number of colts	_____	1.0	1.2	.6
Total acres in farm	_____	202.3	218.4	202.2
Crop acres per horse	_____	28.6	37.9	25.8
Tractor and horse exp. per crop acre	$_____	$2.14***	$1.60	$2.26
Farm power exp. per day of prod. work	_____	1.06	.84	1.13

*One farm had no horses.
**Two colts equal one horse.
***Average of 55 farms.

Factors of Cost and Return in Dairy Production

Items	Your farm	Average of 55 farms	11 farms highest in B.F. per cow	11 farms lowest in B.F. per cow
COWS				
Pounds of butterfat per cow	_____	200	256	141
Feeds per cow, lbs.:				
Corn	_____	203	235	239
Small grain	_____	550	835	322
Com. feeds - under 25% protein	_____	46	86	5
Com. feeds - over 25% protein	_____	39	76	49
Tame hay	_____	979	629	1,309
Alfalfa	_____	2,829	3,457	2,093
Wild hay	_____	50	32	16
Corn fodder	_____	317	694	129
Silage	_____	5,854	7,929	4,087
Total concentrates	_____	838	1,232	615
Total dry roughage	_____	4,175	4,812	3,547
Total digestible nutrients	_____	3,721	4,690	2,949
Total digest.nutrients per lb. B.F.*	_____	18.8	18.2	21.3
% protein in ration	_____	14.4	14.0	14.4
% cows fresh- Sep.to Dec.,incl.	_____	43.0	63.3	41.5
Feed cost per cow:				
Concentrates	$_____	$7.12	$10.71	$5.14
Roughages	_____	21.36	25.51	17.08
Pasture	_____	5.74	5.67	5.88
TOTAL FEED COSTS	$_____	$34.22	$41.89	$28.10
Value of produce per cow:				
Butterfat sales	$_____	$53.53	$78.68	$35.36
Dairy produce used in the house	_____	5.05	4.94	4.35
Milk to other livestock	_____	12.33	11.56	18.46
Appreciation or depreciation	_____	.54	-2.47	1.77
TOTAL VALUE OF PRODUCT	$_____	$71.45	$92.71	$59.94
RETURNS ABOVE FEED COST PER COW	$_____	$37.23	$50.82	$31.84
Price received per lb. B.F. sold:				
As manufacturing cream	$_____	$ .30	$ .30	$ .30
As market milk and cream and cheese milk	_____	.37	.37	.30
Feed cost per lb. B.F.	_____	.17	.16	.20
Number of cows**	_____	14.2	16.3	15.9

*Not including nutrients secured from pasture.

**All cows which have at some time in the past freshened are included in the dairy herd, and affect the average number of cows used in computing this table. There is some variation in the number of months of dry period per cow; however, this variation is small for the majority of the farms.

Feed Costs and Returns for Other Cattle and Sheep

Items	Your farm	Average of all farms	Farms highest in returns above feed per head	Farms lowest in returns above feed per head
Other cattle: number of farms		55	11	11
Feeds used per head, lbs.:				
Concentrates		242	488	202
Hay and fodder		1,569	1,522	1,863
Silage		1,752	1,875	1,569
Whole milk		461	878	367
Skim milk		1,161	1,042	1,741
Feed cost per head:				
Concentrates	$	$2.00	$4.17	$1.77
Roughages		7.31	7.27	8.47
Milk		7.39	12.58	7.05
Pasture		2.21	1.54	2.61
TOTAL	$	$18.91	$25.56	$19.90
RETURNS PER HEAD	$	$28.55	$49.43	$16.70
RETURNS ABOVE FEED COST PER HEAD	$	$9.64	$23.87	$-3.20
% death loss		6	6	11
Lbs. of butterfat per cow		200	216	197
Number of head of young cattle		19.9	16.5	22.4
Sheep: number of farms		32	5	5
Feeds used per head,* lbs.:				
Concentrates		27	19	11
Tame hay		52	40	65
Alfalfa		210	183	169
Corn fodder and wild hay		61	32	77
Silage		72	0	69
Feed cost per head:				
Concentrates	$	$ .21	$ .14	$ .10
Roughages		1.17	.91	1.06
Pasture		.87	.90	.69
TOTAL	$	$ 2.25	$ 1.95	$ 1.85
Value of production per head:				
Wool	$	$1.01	$ .88	$1.37
Mutton		2.95	5.31	-.27
TOTAL	$	$ 3.96	$ 6.19	$ 1.10
RETURNS ABOVE FEED COST PER HEAD	$	$ 1.71	$ 4.24	$ -.75
Price per lb. wool sold	$	$ .20	$ .19	$ .21
Value per lamb sold		5.61	6.50	4.46
% lamb crop		95	99	71
% death loss		14	7	21
No. of head of sheep		75.4	24.4	58.5

*Two lambs under six months of age are considered as one head.

Feed costs and Returns for Hogs and Poultry

Items	Your farm	Average of all farms	Farms highest in returns above feed	Farms lowest in returns above feed
Hogs: number of farms		52	10	10
Lbs. of feed per 100 lbs. hogs produced:				
Corn	_____	265	213	377
Small grain	_____	173	87	229
Commercial grain feeds	_____	9	10	14
Total grain and commercial feeds	_____	447	310	620
Tankage	_____	2	1	1
Skim milk, buttermilk and whey	_____	468	345	923
Cost of feed per 100 lbs. hogs produced:				
Grain and commercial feeds	$_____	$3.54	$2.40	$4.96
Tankage, skim milk, buttermilk & whey	_____	.64	.47	1.23
Pasture	_____	.19	.16	.21
Total Feed Cost per 100 lbs. Hogs Prod.	$_____	$4.37	$3.03	$6.40
RETURNS PER 100 LBS. HOGS PRODUCED	$_____	$7.41	$7.60	$6.97
RET. ABOVE FEED COST PER 100# HOGS PROD.	$_____	$3.04	$4.57	$ .57
Price received per 100# hogs sold	$_____	$7.55	$7.51	$7.50
Total no. of litters	_____	9.4	9.0	9.5
Total no. of pigs weaned per litter	_____	6.7	6.4	6.4
% of two-litter system	_____	33.1	26.6	22.4
Pounds of hogs produced	_____	13,545	14,340	10,008
Poultry: number of farms		52	10	10
Lbs. of feed per hen:				
Concentrates	_____	115	156	125
Skim milk	_____	65	94	52
Cost of feed per hen:				
Concentrates	$_____	$1.14	$1.50	$1.19
Skim milk	_____	.08	.12	.06
TOTAL	$_____	$1.22	$1.62	$1.25
Value of product per hen:				
Eggs sold and used in house	$_____	$1.73	$2.32	$ .93
Poultry sold and used in house plus appreciation or less depreciation	_____	.70	1.75	.42
TOTAL	$_____	$2.43	$4.07	$1.35
RETURNS ABOVE FEED COST PER HEN	$_____	$1.21	$2.45	$ .10
Price received per dozen eggs sold (cts.)	_____	17.6	17.2	17.7
Eggs laid per hen	_____	118	161	63
No. of hens	_____	106	65	62
% of hens that are pullets (at end of yr.)	_____	59	68	63
% death loss of hens	_____	16	11	20

Distribution of Farm Produce Used in House

	Quantities				Value			
	Your farm	Average 55 farms	11 most profitable	11 least profitable	Your farm	Aver. 55 farms	11 most profitable	11 least profitable
Whole milk	_____	1020 qts.	1,297	778	$_____	$28.87	$36.85	$22.71
Skim milk	_____	61 qts.	100	47	_____	.17	.28	.13
Cream	_____	365 pts.	450	285	_____	31.83	41.18	24.55
Farm-made butter	_____	12 lbs.	14	2	_____	3.78	4.54	.51
Eggs	_____	154 doz.	184	144	_____	27.53	32.99	25.38
Poultry	_____	30 head	45	42	_____	13.48	20.78	17.53
Cattle	_____	299 lbs.	523	202	_____	17.26	31.18	11.05
Hogs	_____	570 lbs.	744	651	_____	43.20	54.90	48.50
Sheep	_____	9 lbs.	0	18	_____	.42	.00	.82
Potatoes	_____	27 bu.	34	31	_____	12.64	15.50	15.54
Vegetables & fruit	_____	-	-	-	_____	82.67	117.73	52.73
Farm fuel	_____	14 cds.	12	11	_____	52.69	47.82	46.66
Total					$_____	$314.54	$403.75	$266.11
Average value of farm dwelling					$_____	$1808	$2152	$1780
Interest and depreciation on farm dwelling					_____	145	158	136

Distribution of Household and Personal Expenses for Those Farms which Kept Complete Accounts of These Expenses

	Your farm	Average 34 farms	7 most profitable	7 least profitable
Number of persons,) Family	_____	3.6	5.0	3.2
adult equivalent) Other*	_____	.2	.3	.4
Food	$_____	$185.76	$270.56	$182.79
Operating and supplies	_____	45.60	63.04	48.20
Furnishing and equipment	_____	25.38	53.95	8.58
Clothing and materials	_____	75.53	115.50	74.05
Health	_____	28.31	41.42	24.51
Development and recreation	_____	52.68	75.36	75.70
Personal	_____	27.94	28.91	38.52
Life insurance and savings	_____	64.42	69.15	80.47
Personal share of auto expense	_____	48.28	68.69	32.83
Housing	_____	7.00	2.58	1.70
Total Household & Personal Cash Exp.	$_____	$560.90	$789.16	$567.35
Food furnished by the farm	$_____	$250.37	$356.37	$236.46
Fuel furnished by the farm	_____	53.48	52.86	46.89
Interest and deprec. on farm dwelling	_____	128.94	143.43	123.89
Interest and deprec. on miscellaneous**	_____	39.13	45.80	35.15
Total Household & Personal Expenses	$_____	$1,032.82	$1,367.62	$1,009.74

*Hired help or others boarded.

**Personal share of auto, gas engine, electric plant, and household goods.

Summary of Farm Earnings

Items	Deer-Bear Creek Area	Beaver Creek Area	Gilmore Creek Area
Number of farms	25	23	7
CASH EXPENSES			
Tractor (new & exp.)	$220	$217	$118
Truck (new & exp.)	48	40	15
Auto (new & exp.) (farm share)	105	45	72
Gas engine (new & exp.) (farm share)	6	5	11
Electricity (new & exp.) (farm share)	6	13	1
Machinery and equipment (new)	157	111	50
Machinery and equipment (exp.)	43	31	25
Buildings, fences, tiling (new)	66	42	58
Buildings, fences, tiling (exp.)	29	61	9
Hired labor	269	156	61
Feed for livestock	343	203	96
Other expense for livestock	99	36	23
Horses bought	64	6	14
Cows bought	42	70	0
Other cattle bought	141	41	21
Hogs bought	36	33	16
Sheep bought	95	0	0
Poultry bought	19	14	30
Crop (seed, twine, spray)	189	115	82
Taxes and insurance	254	234	177
General farm	16	8	14
(1) Total cash expense	2247	1481	893
(2) Decrease in farm inventory	-	-	156
(3) Board for hired labor	116	58	12
(4) Total expense (sum of (1),(2),& (3)	2363	1539	1061
CASH RECEIPTS			
Horses	70	45	23
Cows	189	192	119
Dairy products	732	883	768
Other cattle	690	370	185
Hogs	1093	879	202
Sheep	262	22	0
Poultry	68	54	34
Eggs	209	96	213
Small grain	83	8	83
Corn	13	4	0
Hay	33	11	9
Root crops	1	2	33
Other crops	22	7	18
Miscellaneous	205	107	30
Income from work off the farm	214	185	16
Agricultural Conservation payments	205	147	109
(5) Total cash receipts	4089	3012	1842
(6) Increase in farm inventory	2	164	-
(7) Farm produce used in house	316	330	260
(8) Total receipts (sum of (5) & (6)	4407	3506	2102
Total expenses (4)	2363	1539	1061
(9) Ret.to cap.& fam.labor (8) minus (4)	2044	1967	1041
(10) Interest on farm inventory	888	653	660
(11) Family labor earnings (9) minus (10)	1156	1314	381
(12) Unpaid family labor	218	248	327
(13) Oper. labor earnings (11) minus (12)	938	1066	54

Distribution of Acres in Farm and Average Yields per Acre

	Distribution of Acres			Crop Yields		
	Deer-Bear Creek Area	Beaver Creek Area	Gilmore Creek Area	Deer-Bear Creek Area	Beaver Creek Area	Gilmore Creek Area
Winter wheat	5.2 A.	1.1 A.	7.8 A.	9.0 bu.	8.8 bu.	18.6 bu.
Spring wheat	1.6	.5	.4	12.9 "	15.8 "	12.9 "
Oats	13.1	7.6	13.7	32.4 "	33.1 "	26.6 "
Barley	17.0	3.8	11.6	25.2 "	32.8 "	21.1 "
Rye	.0	.0	2.4	-	-	9.4 "
Flax	.8	.0	.0	6.5 "	-	-
Oats and wheat	13.3	3.0	.0	35.2 "	23.6 "	-
Oats and barley	7.5	16.2	1.9	35.1 "	31.2 "	41.6 "
Soybeans	1.3	.0	.0	19.4 "	-	-
Miscellaneous	.6	.0	.0	-	-	-
Total grain	60.4	32.2	37.8			
Corn, grain	21.6	20.3	4.1	46.5 bu.	53.6 bu.	44.8 bu.
Corn, silage	10.7	5.0	7.1	7.9 tons	10.2 tons	9.1tons
Corn, fodder	3.8	.3	.0	3.1 "	2.5 "	-
Potatoes	.2	.1	3.0	101.9 bu.	57.9 bu.	70.7 bu.
Truck crops	.5	.0	.0	-	-	-
Total cultivated crops	36.8	25.7	14.2			
Alfalfa	19.9	14.0	17.2	2.1 tons	2.7 tons	2.4tons
Misc. legumes & mixtures	17.3	9.1	11.1	-	-	-
Timothy	4.2	1.6	2.5	1.2 "	1.1 "	1.2 "
Annual hay	.9	.1	.1	1.4 "	.8 "	1.0 "
Legume seed	1.6	.0	.0	86.7 lbs.	-	-
Timothy seed	2.5	.0	.0	171.9 "	-	-
Wild hay (non-tillable)	.3	.5	1.4	-	1.3 "	.9 "
Total hay and seed	46.7	25.3	32.3			
Total crop acreage	143.9	83.2	84.3			
Alfalfa pasture	3.0	.2	.4			
Sweet clover pasture	2.7	.3	1.8			
Misc. legume pasture	15.7	1.3	.2			
Other tillable pasture	12.9	.0	.5			
Non-tillable pasture	43.5	46.8	47.2			
Total pasture	77.8	48.6	50.1			
Tillable land not cropped	2.9	1.7	.8			
Timber & brush (not pastured)	12.4	24.2	27.1			
Roads and waste	5.5	.8	2.4			
Farmstead	6.0	4.1	3.8			
Total acres in farm	248.5	162.6	168.5			
Per cent of land tillable	74.3	54.5	52.0			

Measures of Farm Organization and Management Efficiency

	Deer-Bear Creek Area	Beaver Creek Area	Gilmore Creek Area
Operator's labor earnings	$938	$1066	$55
Pounds of butterfat per cow	210	194	187
Returns over feed (prod. livestock other than cows)	$36	$55	$31
Productive livestock units per 100 acres	18.3	22.5	18.9
Crop yields	95	107	96
Per cent of tillable land in high return crops	37.0%	42.3%	45.7%
Size of business - days of productive work	706	590	474
Days of productive work per worker	359	333	293
Power, machinery and building expense per day of productive work	$1.21	$ .94	$ .93
Returns over feed per head other cattle	$8.07	$12.36	$6.34
Returns over feed per 100 lbs. hogs produced	2.64	4.09	.80
Returns over feed per hen	1.35	1.19	.81
Returns over feed per head sheep	1.17	4.16	-

Amount of Livestock

No. of horses	4.6	3.2	4.7
No. of colts	1.2	.8	.5
No. of cows	13.1	15.2	15.0
No. of cows per worker	7.1	8.7	9.2
Head of other cattle	24.5	16.9	13.0
Litters of pigs raised	10.0	9.2	2.1
Pounds of hogs produced	14854	13477	3299
Head of sheep	63.0	3.6	.0
No. of hens	113	73	144
Total number of productive livestock animal units	42.3	30.7	24.9
% of total prod. livestock units that were cows	35.1	52.1	60.4
% of total prod. livestock units that were other cattle	29.9	26.7	28.7
% of total prod. livestock units that were hogs	14.6	16.7	5.3
% of total prod. livestock units that were sheep	17.2	1.9	.0
% of total prod. livestock units that were poultry	3.2	2.6	5.6

Summary of Earnings by Years (see footnote, page 26)

	1935	1936	1937	1938
No. of farms	40	81	57	55
CASH EXPENSES				
Tractor (new & expense)	$ *	$117	$166	$206
Truck (new & expense)	*	42	76	40
Auto (new & expense) (farm share)	90	92	147	76
Gas engine (new & expense (farm share)	*	5	12	6
Electricity (new & expense) (farm share)	*	9	9	8
Machinery and equipment (new)	132*	139	180	124
Machinery and equipment (expense)	136*	36	41	36
Buildings, fences, tiling (new)	152	96	128	55
Buildings, fences, tiling (expense)	28	39	37	40
Hired labor	162	167	217	196
Feed for livestock	184	271	369	253
Other expense for livestock	21	30	55	63
Horses bought	41	42	33	33
Cows bought	38	39	37	49
Other cattle bought	41	75	115	84
Hogs bought	31	51	42	32
Sheep bought	105	43	16	43
Poultry bought	27	30	19	18
Crop	99	108	141	145
Taxes and insurance	193	204	226	236
General farm	14	19	14	12
(1) Total cash expense	$1494	$1654	$2080	$1755
(2) Decrease in farm inventory	-	-	-	-
(3) Board for hired labor	88	87	95	78
(4) Total expense (sum of (1), (2) & (3)	1582	1741	2175	1833
CASH RECEIPTS				
Horses	$ 18	$ 25	$ 39	$ 54
Cows	130	122	152	181
Dairy products	700	812	919	800
Other cattle	438	258	504	492
Hogs	474	802	920	890
Sheep	247	159	161	128
Poultry	106	142	122	58
Eggs	136	136	135	162
Small grain	149	183	113	51
Corn	4	8	20	7
Hay	13	16	20	21
Root crops	46	24	16	5
Other crops	38	62	31	16
Miscellaneous	69	115	189	142
Income from work off the farm	101	82	137	177
Agricultural Conservation payments	68	131	149	168
(5) Total cash receipts	$2737	$3077	$3627	$3352
(6) Increase in farm inventory	160	254	66	50
(7) Farm produce used in house	311	361	317	315
(8) Total receipts (sum of (5), (6) & (7)	3208	3692	4010	3717
Total expenses (4)	1582	1741	2175	1833
(9) Returns to capital & family labor (8) minus (4)	1626	1951	1835	1884
(10) Interest on farm inventory	638	703	752	761
(11) Family labor (9) minus (10)	988	1248	1083	1123
(12) Unpaid family labor	156	241	247	244
(13) Operator's labor earnings (11) minus (12)	832	1007	836	879

*Tractor, truck, gas engine and electricity (new & expense) was included with machinery and equipment.

Summary of Miscellaneous Items by Years

Miscellaneous items:	1935	1936	1937	1938
Acres in farm	193.9	189.9	203.7	202.3
Crop acres in farm	106.2	100.7	108.7	110.9
% of tillable land in high return crops	*	36.7	41.7	40.3
Yield per acre, corn (bu.)	39.1	30.1	34.8	49.5
Yield per acre, barley (bu.)	20.8	18.1	23.9	26.6
Yield per acre, oats (bu.)	33.2	20.8	37.0	31.6
Yield per acre, alfalfa (tons)	3.2	1.8	2.0	2.4
Productive livestock units per 100 A.	14.9	17.6	17.9	20.1
No. of days of productive work	506	550	597	628
No. of days of productive work per worker	288	301	314	340
Power and equipment expense per day of prod.work	$.76	$1.13	$1.10	$1.06
No. of work horses	4.4	4.2	4.3	4.0
No. of colts	.6	.9	.8	1.0
No. of cows	12.7	13.9	13.7	14.2
No. of head of other cattle	13.8	17.2	21.2	19.9
No. of litters of pigs	3.7	7.6	6.8	8.7
Pounds of hogs produced	*	8404	9950	12808
No. of head of sheep	26.0	23.7	30.9	30.2
No. of hens	102.5	78.9	93.4	100.4
Pounds of butterfat per cow	190	178	192	200
No. of pigs per litter	6.3	5.6	6.8	6.7
No. of eggs laid per hen	95	102	114	118
Price received per pound of butterfat sold	$.30	$.31	$.37	$.30
Price received per cwt. hogs sold	*	9.22	9.01	7.55
Price received per dozen eggs sold	.21	.18	.18	.18

*Information not available.

Footnote for page 25:

The financial statements differ in that the unpaid family labor rate was $40 per month for 1935, $43 in 1936, and $45 in 1937 and 1938; and the board for hired labor was figured at $15 per month in 1935, and $18 per month in 1936, 1937 and 1938. These adjustments to meet changes in the price level should be considered in comparing 1938 results with previous years.

The data for each of the first three years were for the 12 months' period beginning March first of the years indicated and ending February twenty-eighth of the following year. The data for 1938 were for the period January 1, 1938 to December 31, 1938.

Suggestions for Improvements