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

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Annual Report of the Division of Agricultural Economics
of the United States Department of Agriculture
Soil Conservation Service
Farm Management Service
1939

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Mimeographed Report No. 115
Division of Agricultural Economics
University Farm
St. Paul, Minnesota
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Fifth Annual Report of the Soil Conservation Farm Management Service
for the Year 1939

Prepared by T. R. Nodland and G. A. Pond

INTRODUCTION

The Department of Agriculture of the University of Minnesota and the Soil Conservation Service of the United States Department of Agriculture have for the past five years been maintaining a complete farm record service for farmers in the Soil Conservation Demonstration Areas of Minnesota. For the first year only farmers who were cooperating with the Soil Conservation Service and operating their farms under a complete erosion control program in the Gilmore Creek Area at Winona and the Deer-Bear Creek Area at Spring Valley were included. The service was extended to include the Beaver Creek Area at Caledonia in 1936. In 1939 the service was further extended to include cooperators in the Houston and Caledonia Camp Areas and also a considerable number of farmers in Houston county who were not cooperating in erosion control with the Soil Conservation Service. The total number of farmers included in 1939 were as follows:

| | |
|---|----|
| Gilmore Creek Demonstration Area | 6 |
| Deer-Bear Creek Demonstration Area | 25 |
| Houston County (cooperators with S.C.S.) | 21 |
| Houston County (not cooperating in a soil erosion control program) | 39 |
| Total | 91 |

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 for the various classes of livestock, and a record of the farm produce used by the farm family. Complete household and personal records were also kept by 50 cooperators. Supplementary information was secured during the year regarding crop and livestock and production practices.

The cooperators were assisted and supervised during the year by the fieldman, Mr. James C. Jensen of the Operations Division, Soil Conservation Service, who checked the records several times during the year for accuracy, completeness, and comparability. At the end of the year the records were completed and closed by C. Herman Welch, Jr., and H. O. Anderson of the Economics Division, Soil Conservation Service, and George V. Bowers, Austin B. Sanford, and J. E. Russell of the Operations Division. The records were then brought to University Farm where they were checked and summarized under the direction of T. R. Nodland and G. A. Pond of the Division of Agricultural Economics of the University of Minnesota, who prepared this report.

The account books were furnished by the Agricultural Extension Division of the University of Minnesota. S. B. Cleland of this division handled the field organization and was assisted in securing the cooperation of the record-keeping farmers by Francis Brady, county agricultural agent of Houston county.

Note: Completion of this project was made possible by workers supplied on Federal Students' Work Project, 1939-40, Projects 70-100 and 833-60, and Official Project No. 65-1-71-140, Sub-project 468, Minnesota Work Projects Administration. Sponsor: University of Minnesota.

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 Area and in Houston county a few farmers have both dairy cattle and beef cattle enterprises. Dairy products were sold principally as cream, although a few farmers had an outlet for whole milk. In those cases where cream was sold, the skim milk was fed to the 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 60 per cent for all farms studied. Approximately 28 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 9 per cent of all the farms being handled as protected timber areas.

TOPOGRAPHY, SOILS AND WEATHER

The Gilmore Creek Area, in which 6 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 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.

Houston county, in which 60 records were completed, is located in the southeastern corner of the state. Most of the southwestern quarter of the county, in which somewhat more than one-half of the cooperating farmers are located, is undulating to moderately rolling. Productive forest and prairie soils (Fayette silt loam and Tama silt loam), mostly tillable, occupy about 75 per cent of this area. These areas are subject to some erosion. The remaining land in this area is generally too steep to till, but is satisfactory for grazing. Some of the hillsides are wooded.

The remainder of the county is undulating to hilly. The farmers keeping records are located largely in the Root River watershed. The Root River and other streams have cut numerous deep valleys with shallower tributaries. The soil on the ridges (Fayette silt loam) is quite productive. The soil below the most level part of the ridges (Dubuque silt loam) is less productive and is more subject to erosion. The valley floors represent excellent corn land, but frequent overflows reduce its value

for other crops. Considerably more than half of the land is too steep to be tillable, much so steep as to be of limited value for grazing. The steepest north-facing slopes are covered with woods. The lime content of the soils throughout the county is too low for the satisfactory production of alfalfa and sweet clover. Outcrops of limestone of suitable quality for application to the soil occur in many parts of the county.

The farms operated by men who are not cooperating with the S.C.S. in a program of erosion control are, in general, more level than the other farms in this county included in this study and present a less serious erosion problem. This fact must be kept in mind in comparing the figures for Houston county in previous years with those for 1939.

The average mean temperature in these areas is approximately 45°. For the three summer months, June, July, and August, the average mean is 70°, and for the three winter months, December, January, and February, it is 18°. The average frost-free season is 150-160 days. The temperature was above normal every month except April of the growing season in 1939. The only large excess was 7 degrees in May. Data concerning precipitation are given in the following table. An annual deficit of from 9 to 12 inches was registered in 1939. Rainfall was below normal during each of the growing months except August, and in the Gilmore Creek Area in June. A large deficit in May coupled with high temperatures served to reduce hay yields materially and small grain yields somewhat less. A large reserve of soil moisture resulting from the heavy precipitation in 1938 made the drought somewhat less serious than would otherwise have been the case. High summer temperatures and heavy precipitation in August resulted in high corn yields.

Table 1. Monthly and Annual Precipitation

| | 1939 Precipitation | | | 30-Year mean, Caledonia |
|-----------------------------------|--------------------|----------------------|-------------------|-------------------------|
| | Gilmore Creek Area | Deer-Bear Creek Area | Beaver Creek Area | |
| | Inches | Inches | Inches | Inches |
| January | .50 | 1.11 | .77 | 1.08 |
| February | 1.40 | 1.36 | 2.10 | 1.02 |
| March | .40 | .60 | .37 | 1.71 |
| April | 2.50 | 1.96 | 1.98 | 2.88 |
| May | 1.80 | 1.56 | 1.15 | 4.18 |
| June | 4.90 | 3.68 | 2.28 | 4.81 |
| July | 1.60 | 1.98 | 1.22 | 3.78 |
| August | 5.50 | 4.62 | 6.45 | 3.44 |
| September | .60 | .80 | 1.05 | 3.92 |
| October | 1.10 | 1.26 | 1.50 | 2.57 |
| November | .30 | trace | .38 | 1.47 |
| December | .50 | .59 | .33 | 1.22 |
| Annual Total, 1939 | 21.10 | 19.52 | 19.58 | 32.08 |
| Deficit from 1935-1939 mean, 1939 | 10.06 | 12.25 | 9.38 | - |
| Annual total, 1938 | 45.60 | 37.78 | 43.21 | - |
| Annual total, 1937 | 27.80 | 26.51 | 23.52 | - |
| Annual total, 1936 | 26.10 | 24.98 | 27.94 | - |
| Annual total, 1935 | 35.20 | 33.27 | 30.54 | - |
| Mean annual, 1935-1939 | 31.16 | 31.77 | 28.96 | - |

Summary of Farm Inventories (Beginning of Year)

| Items | Your farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|--|-----------|---------------------|--------------------------|---------------------------|
| Size of farm (acres) | \$ _____ | 217 | 289 | 197 |
| Size of business (days of prod.work) (1) | _____ | 646 | 939 | 485 |
| Total farm inventory (without house) | _____ | \$15,441 | \$21,031 | \$12,692 |
| Land | _____ | 6,869 | 8,814 | 5,641 |
| Farm improvements | _____ | 3,253 | 4,197 | 2,686 |
| Machinery and equipment (total) | _____ | 1,627 | 2,508 | 1,421 |
| General machinery and equipment | _____ | 1,023 | 1,556 | 841 |
| Tractor | _____ | 350 | 606 | 305 |
| Truck | _____ | 62 | 64 | 72 |
| Auto (farm share) | _____ | 150 | 214 | 168 |
| Gas engine (farm share) | _____ | 12 | 15 | 7 |
| Electrical equipment (farm share) | _____ | 30 | 53 | 28 |
| Miscellaneous supplies | _____ | 24 | 58 | 17 |
| Feeds and seeds | _____ | 1,138 | 1,805 | 875 |
| Horses (total) | _____ | 431 | 557 | 369 |
| Horses | _____ | 357 | 450 | 321 |
| Colts | _____ | 74 | 107 | 48 |
| Productive livestock (total) | _____ | 2,099 | 3,092 | 1,683 |
| Cows | _____ | 794 | 945 | 658 |
| Other cattle | _____ | 654 | 946 | 586 |
| Hogs | _____ | 405 | 679 | 256 |
| Sheep | _____ | 150 | 366 | 105 |
| Poultry | _____ | 96 | 156 | 78 |

(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 | Acre | 2.1 |
| Other cattle | Animal unit* | 7.6 | : (husked) | | |
| Sheep | Animal unit* | 2.7 | :Corn for grain | Acre | 2.8 |
| Poultry | 100 hens | 20.1 | : (husk. & shred.) | | |
| 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 91 farms | 18 most profitable farms | 18 least profitable farms |
|--------------------------------------|-----------|---------------------|--------------------------|---------------------------|
| Total farm inventory (without house) | \$ | \$15,546 | \$21,576 | \$12,283 |
| Land | | 6,869 | 8,814 | 5,641 |
| Farm improvements | | 3,267 | 4,391 | 2,609 |
| Machinery and equipment (total) | | 1,704 | 2,767 | 1,323 |
| General machinery and equipment | | 1,043 | 1,702 | 804 |
| Tractor | | 404 | 640 | 276 |
| Truck | | 66 | 119 | 64 |
| Auto (farm share) | | 153 | 243 | 148 |
| Gas engine (farm share) | | 11 | 14 | 7 |
| Electrical equipment (farm share) | | 27 | 49 | 24 |
| Miscellaneous supplies | | 25 | 61 | 16 |
| Feeds and seeds | | 1,212 | 2,062 | 730 |
| Horses (total) | | 395 | 516 | 360 |
| Horses | | 324 | 407 | 314 |
| Colts | | 71 | 109 | 46 |
| Productive livestock (total) | | 2,074 | 2,965 | 1,604 |
| Cows | | 809 | 972 | 670 |
| Other cattle | | 683 | 975 | 518 |
| Hogs | | 356 | 558 | 237 |
| Sheep | | 130 | 314 | 89 |
| Poultry | | 96 | 146 | 90 |

Summary of Amount of Livestock

| Items | Your farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|--|-----------|---------------------|--------------------------|---------------------------|
| No. of horses | | 3.8 | 4.4 | 3.6 |
| No. of colts | | 1.0 | 1.6 | .5 |
| No. of cows | | 14.4 | 16.8 | 13.2 |
| No. of cows per worker | | 7.4 | 7.9 | 5.9 |
| Head of other cattle | | 21.1 | 27.5 | 19.0 |
| Litters of pigs raised | | 11.8 | 17.6 | 8.1 |
| Pounds of hogs produced | | 16534 | 25080 | 11540 |
| Head of sheep (2 lambs equal 1 head) | | 22.4 | 47.4 | 19.4 |
| No. of hens | | 101 | 104 | 98 |
| Total no. of prod. livestock animal units | | 37.1 | 51.1 | 31.7 |
| % of tot. prod. lvst. units that are cows | | 42.9 | 37.9 | 47.1 |
| % of tot. prod. lvst. units that are o. cattle | | 28.8 | 27.3 | 29.1 |
| % of tot. prod. lvst. units that are hogs | | 18.2 | 20.1 | 14.3 |
| % of tot. prod. lvst. units that are sheep | | 6.4 | 9.5 | 6.1 |
| % of tot. prod. lvst. units that are poultry | | 3.8 | 5.3 | 3.4 |
| Number of farms with tractors | | 66 | 16 | 10 |

Summary of Farm Earnings

| Items | Your Farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|---|-----------|---------------------|--------------------------|---------------------------|
| CASH EXPENSES | | | | |
| Tractor (new & exp.) | \$ _____ | \$204 | \$282 | \$ 58 |
| Truck (new & exp.) | _____ | 44 | 119 | 17 |
| Auto (new & exp.) (farm share) | _____ | 114 | 190 | 87 |
| Gas engine (new & exp.) (farm share) | _____ | 6 | 10 | 6 |
| Electricity (new & exp.) (farm share) | _____ | 5 | 9 | 4 |
| Machinery and equipment (new) | _____ | 129 | 284 | 59 |
| Machinery and equipment (exp.) | _____ | 35 | 74 | 23 |
| Buildings, fences, tiling (new) | _____ | 102 | 284 | 20 |
| Buildings, fences, tiling (exp.) | _____ | 36 | 56 | 48 |
| Hired labor | _____ | 183 | 376 | 113 |
| Feed for livestock | _____ | 287 | 562 | 189 |
| Other expense for livestock | _____ | 48 | 67 | 33 |
| Horses bought | _____ | 25 | 12 | 27 |
| Cows bought | _____ | 29 | 52 | 15 |
| Other cattle bought | _____ | 51 | 104 | 24 |
| Hogs bought | _____ | 45 | 54 | 24 |
| Sheep bought | _____ | 31 | 135 | 9 |
| Poultry bought | _____ | 25 | 37 | 17 |
| Crop (seed, twine, spray) | _____ | 147 | 255 | 92 |
| Taxes and insurance | _____ | 258 | 349 | 221 |
| General farm | _____ | 9 | 11 | 7 |
| (1) Total cash expense | _____ | 1,813 | 3,322 | 1,093 |
| (2) Decrease in farm inventory | _____ | - | - | 409 |
| (3) Board for hired labor | _____ | 81 | 134 | 58 |
| (4) Total expense (sum of (1),(2),&(3)) | _____ | 1,894 | 3,456 | 1,560 |
| CASH RECEIPTS | | | | |
| Horses | _____ | 48 | 60 | 9 |
| Cows | _____ | 168 | 193 | 162 |
| Dairy products | _____ | 629 | 909 | 489 |
| Other cattle | _____ | 439 | 684 | 326 |
| Hogs | _____ | 946 | 1,501 | 600 |
| Sheep | _____ | 152 | 410 | 115 |
| Poultry | _____ | 137 | 461 | 35 |
| Eggs | _____ | 138 | 155 | 136 |
| Small grain | _____ | 50 | 95 | 20 |
| Corn | _____ | 106 | 438 | 41 |
| Hay | _____ | 6 | 16 | 2 |
| Root crops | _____ | 3 | - | 7 |
| Other crops | _____ | 41 | 129 | 5 |
| Miscellaneous | _____ | 141 | 258 | 57 |
| Income from work off the farm | _____ | 166 | 375 | 39 |
| Agricultural Conservation payments | _____ | 230 | 345 | 146 |
| (5) Total cash receipts | _____ | 3,400 | 6,029 | 2,189 |
| (6) Increase in farm inventory | _____ | 105 | 545 | - |
| (7) Farm produce used in house | _____ | 270 | 328 | 238 |
| (8) Total receipts (sum of (5),(6)&(7)) | _____ | 3,775 | 6,902 | 2,427 |
| Total expenses (4) | _____ | 1,894 | 3,456 | 1,560 |
| (9) Ret. to cap. & fam. labor (8) - (4) | _____ | 1,881 | 3,446 | 867 |
| (10) Interest on farm inventory | _____ | 775 | 1,065 | 624 |
| (11) Family labor earnings (9) - (10) | _____ | 1,106 | 2,381 | 243 |
| (12) Unpaid family labor | _____ | 336 | 318 | 552 |
| (13) Oper. labor earnings (11) - (12) | _____ | 770 | 2,063 | -309 |

Summary of Farm Earnings (A)

| Items | Your farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|--|-----------|---------------------|--------------------------|---------------------------|
| <u>EXPENSES AND NET DECREASES</u> | | | | |
| Total power | \$ _____ | \$418 | \$543 | \$388 |
| Hired | _____ | 63 | 75 | 45 |
| Tractor | _____ | 101 | 150 | 83 |
| Truck | _____ | 25 | 45 | 18 |
| Auto (farm share) | _____ | 73 | 112 | 85 |
| Gas engine (farm share) | _____ | 6 | 11 | 7 |
| Elec. plant or current (farm share) | _____ | 8 | 13 | 7 |
| Horses | _____ | 142 | 137 | 143 |
| General machinery and equipment | _____ | 125 | 148 | 113 |
| Buildings, fencing, tiling | _____ | 125 | 145 | 147 |
| Productive livestock misc. expense | _____ | 19 | 33 | 11 |
| Crop | _____ | 109 | 208 | 69 |
| Real estate taxes | _____ | 207 | 282 | 177 |
| Personal property tax | _____ | 26 | 34 | 24 |
| Insurance | _____ | 25 | 33 | 20 |
| General farm | _____ | 9 | 11 | 7 |
| Hired labor & board, & unpaid fam. labor | _____ | 600 | 828 | 723 |
| Interest on farm inventory | _____ | 775 | 1,065 | 624 |
| (1) Total | _____ | 2,438 | 3,330 | 2,303 |
| <u>RETURNS AND NET INCREASES</u> | | | | |
| All productive livestock | \$ _____ | \$2,720 | \$4,178 | \$1,969 |
| Cows | _____ | 835 | 1,221 | 702 |
| Other cattle | _____ | 561 | 760 | 384 |
| Hogs | _____ | 388 | 1,368 | 589 |
| Sheep | _____ | 103 | 224 | 91 |
| Poultry | _____ | 283 | 605 | 203 |
| Crops, feed, vegetables and fuel | _____ | 86 | 486 | -168 |
| Agricultural Conservation payments | _____ | 230 | 345 | 146 |
| Miscellaneous | _____ | 6 | 9 | 8 |
| Income from work off the farm | _____ | 166 | 375 | 39 |
| (2) Total | _____ | 3,208 | 5,393 | 1,994 |
| Total expenses (1) | _____ | 2,438 | 3,330 | 2,303 |
| (3) Oper. labor earnings (2) - (1) | _____ | 770 | 2,063 | -309 |

(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 6.

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 eighteen most profitable farms was \$2,063, and for eighteen least profitable farms \$ -309. The difference between the averages for these two groups was \$2,372. 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 91 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 2. Relation of Dairy Production to Farm Earnings.

| Group | Lbs. butterfat per cow Average | No. of Farms | Average Earnings |
|---------------|-----------------------------------|-----------------|---------------------|
| Below 160 | 138 | 24 | \$326 |
| 160 to 219 | 189 | 46 | 738 |
| 220 and above | 248 | 21 | 1,348 |

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

| Group | Returns above feed per animal unit of prod. livestock other than cows Average | No. of Farms | Average Earnings |
|-------------------|---|-----------------|---------------------|
| Below \$15.00 | \$ 7 | 20 | \$351 |
| \$15.00 to 44.99 | 30 | 56 | 874 |
| \$45.00 and above | 56 | 15 | 940 |

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 4. Relation of Amount of Productive Livestock to Farm Earnings.

| Group | Productive livestock units per 100 A. Average | No. of Farms* | Average Earnings |
|----------------|--|------------------|---------------------|
| Below 16.0 | 13.8 | 15 | \$634 |
| 16.0 to 25.9 | 20.7 | 50 | 720 |
| 26.0 and above | 29.1 | 12 | 792 |

*Farms with more than 15 per cent of the total productive work units from work off the farm were not included.

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 5. Relation of Crop Yields to Farm Earnings.

| <u>Per cent crop yields were of the average for all the 91 farms</u> | | No. of | Average |
|--|---------|--------|----------|
| Group | Average | Farms | Earnings |
| Below 85 | 75 | 20 | \$570 |
| 85 to 114 | 99 | 55 | 764 |
| 115 and above | 134 | 16 | 1,040 |

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 6. Relation of Choice of Crops to Farm Earnings.

| <u>Per cent of tillable land in high return crops*</u> | | No. of | Average |
|--|---------|---------|----------|
| Group | Average | Farms** | Earnings |
| Below 31 | 25.8 | 23 | \$684 |
| 31 to 39 | 34.7 | 32 | 782 |
| 40 and above | 46.2 | 28 | 837 |

*Crops are marked on page 14 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 10 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 7. Relation of Size of Business (days of prod. work) to Farm Earnings.

| Days of productive work | | No. of Farms | Average Earnings. |
|-------------------------|---------|--------------|-------------------|
| Group | Average | | |
| Below 475 | 379 | 24 | \$270 |
| 475 to 774 | 595 | 43 | 626 |
| 775 and above | 1,006 | 24 | 1,527 |

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 8. Relation of Amount of Work Accomplished per Worker to Farm Earnings.

| Days of productive work per worker | | No. of Farms | Average Earnings |
|------------------------------------|---------|--------------|------------------|
| Group | Average | | |
| Below 250 | 197 | 22 | \$ 35 |
| 250 to 374 | 308 | 43 | 869 |
| 375 and above | 450 | 26 | 1,228 |

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

| Expense per day of productive work | | No. of Farms | Average Earnings |
|------------------------------------|---------|--------------|------------------|
| Group | Average | | |
| \$1.30 and above | \$1.53 | 22 | \$270 |
| \$.90 to \$1.29 | 1.09 | 41 | 626 |
| Below \$.90 | .74 | 28 | 1,374 |

*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 10.

Table 10. 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 |
|-------------------------------------|--------------|-----------|---|-----------------------------|
| Six or seven | 14 | _____ | xx | \$1,466 |
| Five | 17 | _____ | xx | 1,383 |
| Four | 19 | _____ | xxxxxxxxxxxxxxxxxxxxxxxxxxxx | 969 |
| Three | 22 | _____ | xxxxxxx | 385 |
| One or two | 19 | _____ x | | -44 |

The array in Table 10 indicates that it will be worth-while for each cooperator to study carefully his ranking on pages 12 and 13, 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 13. | Your farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|---|-----------|---------------------|--------------------------|---------------------------|
| Operator's Labor Earnings | \$ _____ | \$770 | \$2,063 | \$ -309 |
| (1) Pounds of butterfat per cow | _____ | 189 | 216 | 172 |
| (2) Return over feed (pr.lvst.other than cows)*\$ | _____ | \$29 | \$39 | \$19 |
| (3) Productive livestock units per 100 acres** | _____ | 20.0 | 19.9 | 20.3 |
| (4) Crop yields*** | _____ | 100 | 108 | 91 |
| (5) % of tillable land in high return crops**** | _____ | 35.6 | 34.5 | 38.2 |
| (6) Size of business--days of productive work | _____ | 646 | 939 | 485 |
| (7) Days of productive work per worker | _____ | 321 | 396 | 217 |
| (8) Power & eq. exp. per day of prod. work | \$ _____ | \$1.09 | \$.92 | \$1.33 |

Measures and items related to some of the above measures:

| | | | | |
|--|----------|---------|--------|--------|
| (2) Return over feed per head other cattle | \$ _____ | \$10.98 | \$9.84 | \$6.48 |
| Return over feed per 100 lbs. hogs prod. | _____ | 1.16 | 1.96 | .89 |
| Return over feed per hen | _____ | .73 | .72 | .91 |
| Return over feed per head sheep | _____ | 2.91 | 1.72 | 2.69 |
| (6) Days of productive work on crops | _____ | 149 | 232 | 113 |
| Days of productive work on prod. livestock | _____ | 442 | 582 | 359 |
| Days of other productive work | _____ | 55 | 125 | 13 |
| (7) Total number of workers | _____ | 2.1 | 2.4 | 2.3 |
| Number of family workers | _____ | 1.6 | 1.6 | 2.0 |
| Number of hired workers | _____ | .5 | .8 | .3 |
| (8) Power expense per day of productive work | \$ _____ | \$.69 | \$.58 | \$.81 |
| Mach. & eq. exp. per day of prod. work | _____ | .20 | .17 | .23 |
| Bldg. & fencing exp. per day of prod. work | _____ | .20 | .17 | .29 |

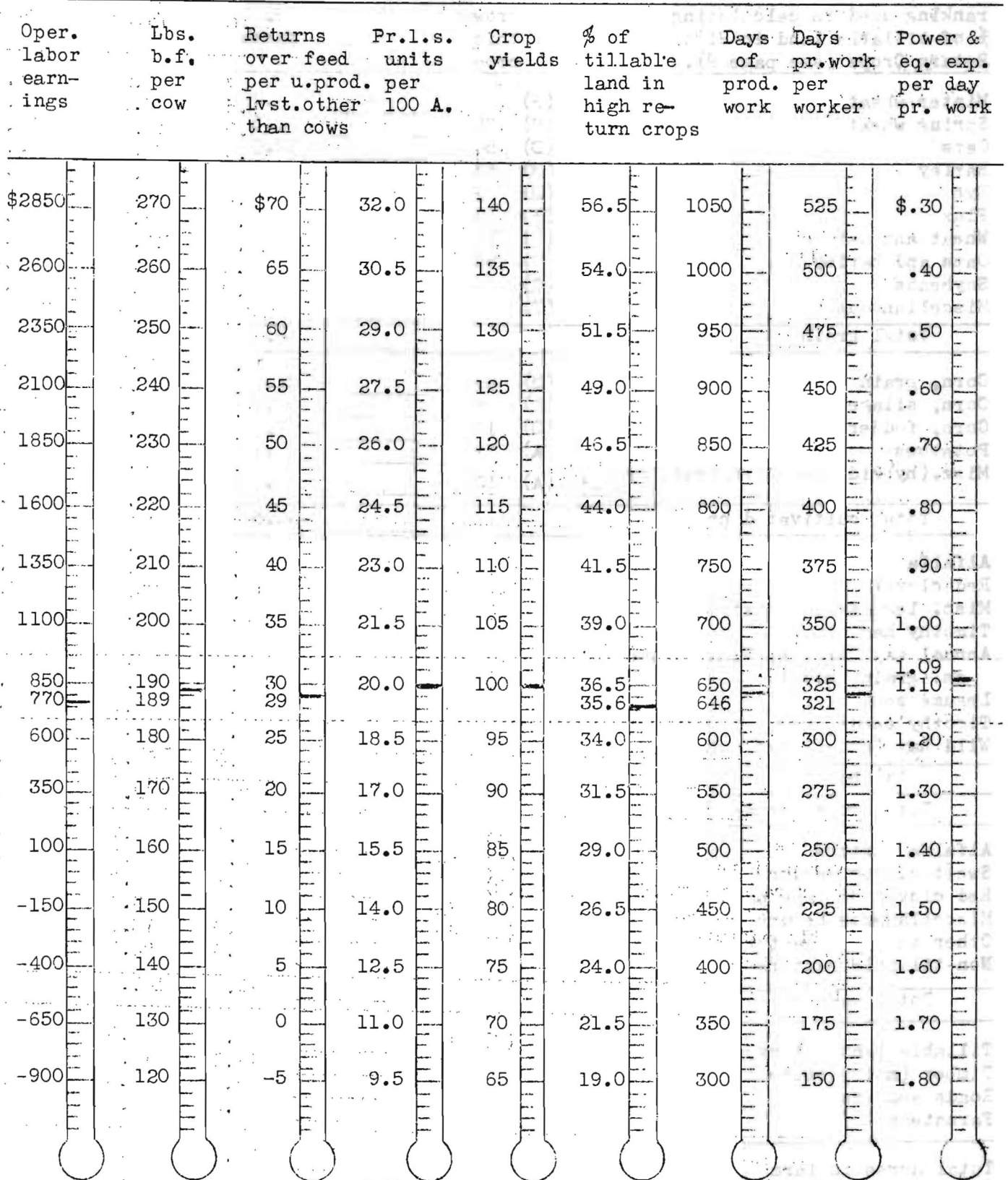
*Given as returns over feed cost per animal unit of productive livestock other than cows.

**Excluding acreage in protected woodlots.

***Given as a percentage of the average.

****Crops are marked on page 14 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 12, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for 91 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 9). | No. of farms growing this crop | Your farm | Aver. of 91 farms | 18 most profit- able farms | 18 least profit- able farms |
|---|--|--------------|----------------------------|-------------------------------------|--------------------------------------|
| Winter wheat | (B) 9 | _____ | .7 | .9 | 1.2 |
| Spring wheat | (C) 25 | _____ | 1.5 | 3.0 | .6 |
| Oats | (D) 56 | _____ | 12.0 | 16.8 | 12.3 |
| Barley | (B) 53 | _____ | 10.0 | 20.2 | 5.3 |
| Rye | (D) 3 | _____ | .2 | .5 | .0 |
| Flax | (B) 19 | _____ | 2.3 | 4.4 | .7 |
| Wheat and oats | (C) 15 | _____ | 2.3 | 5.7 | .3 |
| Oats and barley | (C) 50 | _____ | 12.6 | 13.1 | 8.0 |
| Soybeans | (C) 10 | _____ | 1.3 | 4.2 | .0 |
| Miscellaneous | (D) 3 | _____ | .2 | .4 | .1 |
| Total grain | | _____ | 43.1 | 69.2 | 28.5 |
| Corn, grain | (B) 89 | _____ | 21.1 | 29.2 | 15.1 |
| Corn, silage | (C) 65 | _____ | 6.3 | 7.4 | 4.7 |
| Corn, fodder | (D) 14 | _____ | 1.0 | 2.0 | .4 |
| Potatoes | (A) 37 | _____ | .4 | .2 | 1.0 |
| Misc.(hybrid seed corn, truck crops, etc.) | (A) 13 | _____ | .7 | 3.1 | .1 |
| Total cultivated crops | | _____ | 29.5 | 41.9 | 21.3 |
| Alfalfa | (A) 67 | _____ | 9.9 | 10.3 | 11.5 |
| Red clover | (B) 13 | _____ | 1.7 | .0 | 1.8 |
| Misc. legumes and mixtures | (C) 78 | _____ | 19.1 | 35.4 | 14.6 |
| Timothy hay | (D) 25 | _____ | 2.5 | 2.9 | 2.9 |
| Annual hay (millet, Sudan grass, sm. grain, etc.) | (D) 13 | _____ | .9 | .3 | .3 |
| Legume seed | (B) 3 | _____ | .1 | .0 | .0 |
| Timothy seed | (D) 2 | _____ | .5 | 2.1 | .0 |
| Wild hay (non-tillable land) | 6 | _____ | .3 | .0 | .3 |
| Total hay | | _____ | 35.0 | 51.0 | 31.4 |
| Total crop acreage | | _____ | 107.6 | 162.1 | 81.2 |
| Alfalfa pasture | (A) 13 | _____ | .7 | .7 | .1 |
| Sweet clover pasture | (B) 15 | _____ | 2.1 | .8 | 2.1 |
| Red clover or rape pasture (hogs) | (B) 6 | _____ | .8 | .2 | 2.9 |
| Miscellaneous legume pasture | (C) 31 | _____ | 5.4 | 3.7 | 5.8 |
| Other tillable pasture | (D) 40 | _____ | 9.0 | 13.0 | 6.6 |
| Non-tillable pasture | 88 | _____ | 61.4 | 83.0 | 66.7 |
| Total pasture | | _____ | 79.4 | 101.4 | 84.2 |
| Tillable land not cropped | (D) 15 | _____ | .8 | .0 | .3 |
| Timber (not pastured) | 61 | _____ | 19.5 | 13.6 | 23.4 |
| Roads and waste | | _____ | 5.0 | 5.3 | 4.1 |
| Farmstead | | _____ | 4.3 | 6.2 | 3.8 |
| Total acres in farm | | _____ | 216.6 | 288.6 | 197.0 |
| % of land tillable | | _____ | 30.1 | 61.6 | 55.0 |
| % of tillable land in high return crops | | _____ | 35.6 | 34.5 | 38.2 |

Yield of Crops per Acre

| Crop | Your farm | Average of 91 farms | 18 most profitable farms | 18 least profitable farms |
|----------------------|-----------|---------------------|--------------------------|---------------------------|
| Winter wheat, bu. | | 10.4 | 11.8 | 10.4 |
| Spring wheat, bu. | | 9.7 | 9.8 | 8.6 |
| Oats, bu. | | 32.2 | 35.0 | 29.9 |
| Barley, bu. | | 22.8 | 25.9 | 20.7 |
| Rye, bu. | | 14.8 | 12.0 | - |
| Flax, bu. | | 8.4 | 9.2 | 12.1 |
| Wheat and oats, bu. | | 30.5 | 33.6 | 16.5 |
| Oats and barley, bu. | | 31.0 | 35.9 | 30.5 |
| Soybeans, bu. | | 19.7 | 20.9 | - |
| Corn, grain, bu. | | 57.7 | 60.2 | 47.7 |
| Corn, silage, tons | | 9.2 | 9.9 | 8.0 |
| Corn, fodder, tons | | 3.2 | 3.3 | 3.6 |
| Potatoes, bu. | | 109.4 | 167.9 | 87.8 |
| Alfalfa hay, tons | | 1.5 | 1.9 | 1.7 |
| Red clover hay, tons | | 1.7 | - | 1.3 |
| Misc. legume, tons | | 1.5 | 1.7 | 1.3 |
| Timothy hay, tons | | 1.0 | .8 | .8 |
| Annual hay, tons | | 1.2 | 1.7 | 1.4 |
| Wild hay, tons | | 1.5 | - | 1.1 |

Feed Costs per Horse and Other Power Expense Items

| | Your farm | Average* of 89 farms | 18 most profitable farms | 18 least profitable farms |
|---------------------------------------|-----------|----------------------|--------------------------|---------------------------|
| Feed per horse,** bu.: | | | | |
| Grain | | 1,714 | 1,497 | 1,386 |
| Tame hay and alfalfa | | 3,713 | 3,831 | 4,251 |
| Wild hay and fodder | | 736 | 622 | 1,101 |
| Feed costs per horse: | | | | |
| Grain | \$ | \$13.82 | \$12.13 | \$11.43 |
| Roughage | | 11.24 | 11.61 | 13.81 |
| Pasture | | 3.25 | 3.25 | 3.67 |
| TOTAL | \$ | \$28.31 | \$26.99 | \$28.91 |
| Number of work horses | | 3.9 | 4.4 | 3.6 |
| Number of colts | | 1.0 | 1.6 | .5 |
| Total acres in farm | | 217.1 | 288.6 | 197.0 |
| Crop acres per horse | | 28.5 | 37.0 | 23.0 |
| Tractor and horse exp. per crop acre | \$ | \$2.56*** | \$1.98 | \$3.08 |
| Farm power exp. per day of prod. work | | .69*** | .58 | .81 |

*Two farms had no horses.

**Two colts equal one horse.

***Average of 91 farms.

Factors of Cost and Return in Dairy Production

| Items | Your farm | Average of 91 farms | 18 farms highest in B.F. per cow | 18 farms lowest in B.F. per cow |
|--|-----------|---------------------|----------------------------------|---------------------------------|
| COWS | | | | |
| Pounds of butterfat per cow | | 189 | 252 | 132 |
| Feeds per cow, lbs.: | | | | |
| Corn | | 411 | 687 | 169 |
| Small grain | | 597 | 888 | 408 |
| Com. feeds - under 25% protein | | 23 | 33 | 5 |
| Com. feeds - over 25% protein | | 48 | 86 | 12 |
| Tame hay | | 1,787 | 1,706 | 2,126 |
| Alfalfa | | 1,746 | 2,126 | 1,705 |
| Wild hay | | 101 | 132 | 27 |
| Corn fodder | | 506 | 430 | 329 |
| Silage | | 5,305 | 6,331 | 3,895 |
| Total concentrates | | 1,079 | 1,694 | 594 |
| Total dry roughage | | 4,140 | 4,394 | 4,187 |
| Total digestible nutrients | | 3,760 | 4,587 | 3,175 |
| Total digest. nutrients per lb. B.F.* | | 20.4 | 18.2 | 24.6 |
| % protein in ration | | 13.0 | 13.7 | 13.3 |
| % cows fresh - Sept. to Dec., incl. | | 40.2 | 56.6 | 19.8 |
| Feed cost per cow: | | | | |
| Concentrates | \$ | \$8.97 | \$14.23 | \$4.70 |
| Roughages | | 16.73 | 19.16 | 15.65 |
| Pasture | | 5.46 | 5.38 | 5.46 |
| TOTAL FEED COSTS | \$ | \$31.16 | \$38.77 | \$25.81 |
| Value of produce per cow: | | | | |
| Butterfat sales | \$ | \$42.64 | \$61.89 | \$28.54 |
| Dairy produce used in the house | | 5.28 | 4.79 | 4.02 |
| Milk to other livestock | | 11.21 | 13.33 | 8.94 |
| Appreciation or depreciation | | 1.85 | 1.92 | 3.35 |
| TOTAL VALUE OF PRODUCT | \$ | \$60.98 | \$81.93 | \$44.85 |
| RETURNS ABOVE FEED COST PER COW | \$ | \$29.82 | \$43.16 | \$19.04 |
| Price received per lb. B.F. sold: | | | | |
| As manufacturing cream (cents) | | 26.5 | 26.3 | 26.6 |
| As market milk and cream and cheese milk (cents) | | 46.4 | 62.4 | 57.2 |
| Feed cost per lb. B.F. (cents) | | 16.8 | 15.3 | 19.9 |
| Number of cows** | | 14.4 | 16.0 | 15.6 |

*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 | | 91 | 18 | 18 |
| Feeds used per head, lbs.: | | | | |
| Concentrates | | 317 | 320 | 382 |
| Hay and fodder | | 1,576 | 1,486 | 1,787 |
| Silage | | 1,578 | 1,359 | 2,179 |
| Whole milk | | 464 | 247 | 727 |
| Skim milk | | 1,149 | 1,073 | 1,270 |
| Feed cost per head: | | | | |
| Concentrates | \$ | \$2.55 | \$2.59 | \$3.05 |
| Roughages | | 5.67 | 5.13 | 7.06 |
| Milk | | 7.33 | 4.68 | 10.35 |
| Pasture | | 1.93 | 1.47 | 1.98 |
| TOTAL | \$ | \$17.48 | \$13.87 | \$22.44 |
| RETURNS PER HEAD | \$ | \$28.46 | \$36.24 | \$21.32 |
| RETURNS ABOVE FEED COST PER HEAD | \$ | \$10.98 | \$22.37 | \$-1.12 |
| Number of head of young cattle | | 21.1 | 21.0 | 23.2 |
| Sheep: number of farms | | | | |
| | | 34 | 7 | 7 |
| Feeds used per head,* lbs.: | | | | |
| Concentrates | | 48 | 45 | 87 |
| Tame hay | | 79 | 88 | 93 |
| Alfalfa | | 104 | 39 | 77 |
| Corn fodder and wild hay | | 81 | 29 | 67 |
| Silage | | 142 | 33 | 247 |
| Feed cost per head: | | | | |
| Concentrates | \$ | \$.37 | \$.34 | \$.68 |
| Roughages | | .82 | .44 | .85 |
| Pasture | | .84 | .76 | .90 |
| TOTAL | \$ | \$ 2.03 | \$ 1.54 | \$ 2.43 |
| Value of production per head: | | | | |
| Wool | \$ | \$1.52 | \$1.43 | \$1.45 |
| Mutton | | 3.42 | 5.40 | 1.66 |
| TOTAL | \$ | \$ 4.94 | \$ 6.83 | \$ 3.11 |
| RETURNS ABOVE FEED COST PER HEAD | \$ | \$ 2.91 | \$ 5.29 | \$.68 |
| Price per lb. wool sold (cents) | | 26.5 | 25.9 | 26.7 |
| Value per lamb sold | \$ | \$6.39 | \$6.80 | \$6.51 |
| % lamb crop | | 97 | 115 | 75 |
| % death loss | | 14 | 10 | 16 |
| No. of head of sheep | | 59.8 | 19.8 | 86.1 |

*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 89 18 18

Lbs. of feed per 100 lbs. hogs produced:

| | | | | |
|----------------------------------|-------|-----|-----|-----|
| Corn | _____ | 320 | 241 | 433 |
| Small grain | _____ | 132 | 89 | 173 |
| Commercial grain feeds | _____ | 8 | 8 | 4 |
| Total grain and commercial feeds | _____ | 460 | 338 | 610 |
| Tankage | _____ | 4 | 2 | 1 |
| Skim milk, buttermilk and whey | _____ | 312 | 272 | 483 |

Cost of feed per 100 lbs. hogs produced:

| | | | | |
|---|----------|--------|--------|--------|
| Grain and commercial feeds | \$ _____ | \$3.50 | \$2.58 | \$4.56 |
| Tankage, skim milk, buttermilk & whey | _____ | .50 | .48 | .68 |
| Pasture | _____ | .19 | .21 | .18 |
| Total Feed Cost per 100 lbs. Hogs Prod. | \$ _____ | \$4.19 | \$3.27 | \$5.42 |

RETURNS PER 100 LBS. HOGS PRODUCED \$5.35 \$5.99 \$4.82

RET. ABOVE FEED COST PER 100# HOGS PROD. \$1.16 \$2.72 \$-.60

Price received per 100# hogs sold \$6.15 \$6.55 \$5.95

| | | | | |
|-------------------------------------|-------|--------|--------|-------|
| Total no. of litters | _____ | 12.0 | 9.9 | 9.7 |
| Total no. of pigs weaned per litter | _____ | 6.1 | 7.1 | 4.9 |
| % of two-litter system | _____ | 42.5 | 45.9 | 43.3 |
| Pounds of hogs produced | _____ | 16,883 | 16,365 | 9,899 |

Poultry: number of farms 85 17 17

Lbs. of feed per hen:

| | | | | |
|--------------------------------|-------|-----|-----|-----|
| Concentrates | _____ | 106 | 108 | 116 |
| Skim milk, buttermilk and whey | _____ | 50 | 52 | 55 |

Cost of feed per hen:

| | | | | |
|--------------------------------|----------|--------|--------|--------|
| Concentrates | \$ _____ | \$1.05 | \$1.09 | \$1.10 |
| Skim milk, buttermilk and whey | _____ | .07 | .08 | .08 |
| TOTAL | \$ _____ | \$1.12 | \$1.17 | \$1.18 |

Value of product per hen:

| | | | | |
|---|----------|--------|--------|--------|
| Eggs sold and used in house | \$ _____ | \$1.38 | \$1.89 | \$.81 |
| Poultry sold and used in house plus appreciation or less depreciation | _____ | .47 | 1.26 | .14 |
| TOTAL | \$ _____ | \$1.85 | \$3.15 | \$.95 |

RETURNS ABOVE FEED COST PER HEN \$.73 \$1.98 \$-.23

| | | | | |
|---|-------|------|------|------|
| Price received per dozen eggs sold(cts.) | _____ | 14.5 | 15.3 | 13.7 |
| Eggs laid per hen | _____ | 115 | 149 | 72 |
| No. of hens | _____ | 107 | 116 | 83 |
| % of hens that are pullets(at end of yr.) | _____ | 57 | 64 | 57 |

Distribution of Farm Produce Used in House

| | Quantities | | | | Value | | | |
|--|------------|------------------|--------------------|---------------------|-----------|----------------|--------------------|---------------------|
| | Your farm | Average 91 farms | 18 most profitable | 18 least profitable | Your farm | Aver. 91 farms | 18 most profitable | 18 least profitable |
| Whole milk | | 999 qts. | 1,195 | 915 | \$ | \$27.45 | \$32.11 | \$26.26 |
| Skim milk | | 217 qts. | 660 | 41 | | .70 | 2.13 | .13 |
| Cream | | 360 pts. | 512 | 258 | | 30.80 | 42.95 | 22.29 |
| Farm-made butter | | 25 lbs. | 38 | 36 | | 7.26 | 11.27 | 10.36 |
| Eggs | | 166 doz. | 195 | 159 | | 23.15 | 27.05 | 22.12 |
| Poultry | | 25 head | 23 | 30 | | 11.03 | 10.17 | 13.50 |
| Cattle | | 335 lbs. | 360 | 315 | | 21.04 | 23.61 | 19.81 |
| Hogs | | 589 lbs. | 630 | 509 | | 36.74 | 40.78 | 32.11 |
| Sheep | | 14 lbs. | 0 | 4 | | .89 | 0 | .33 |
| Potatoes | | 24 bu. | 28 | 26 | | 12.28 | 14.78 | 13.32 |
| Vegetables & fruit | | - | - | - | | 49.66 | 63.24 | 34.92 |
| Farm fuel | | 11 cds. | 13 | 10 | | 49.09 | 59.67 | 42.83 |
| Total | | | | | \$ | \$270.09 | \$327.76 | \$237.98 |
| Average value of farm dwelling | | | | | \$ | \$1898 | \$2411 | \$1479 |
| Interest and depreciation on farm dwelling | | | | | | 132 | 161 | 98 |

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

| | Your farm | Average 50 farms | 10 most profitable | 10 least profitable |
|---|-----------|------------------|--------------------|---------------------|
| Number of persons, Family adult equivalent) Other* | | 3.6 .3 | 3.7 .5 | 3.2 .1 |
| Food and meals | \$ | \$194.21 | \$236.56 | \$164.92 |
| Operating and supplies | | 59.68 | 97.04 | 34.48 |
| Furnishing and equipment; house rep. | | 49.18 | 74.34 | 6.33 |
| Clothing and materials | | 87.83 | 127.17 | 54.65 |
| Health | | 48.56 | 77.56 | 37.23 |
| Development and recreation | | 42.46 | 59.41 | 22.12 |
| Personal care and personal spending | | 44.91 | 43.10 | 45.68 |
| New housing, life ins. and savings | | 89.65 | 141.96 | 49.15 |
| Personal share of auto expense | | 56.80 | 69.67 | 34.07 |
| Church, welfare and gifts | | 36.30 | 40.09 | 20.22 |
| Occasional events | | 6.28 | 2.94 | 21.34 |
| Total Household & Personal Cash. Exp. | \$ | \$715.86 | \$969.84 | \$490.19 |
| Food furnished by the farm | \$ | \$208.97 | \$275.79 | \$153.19 |
| Fuel furnished by the farm | | 44.43 | 51.65 | 35.79 |
| Interest and deprec. on farm dwelling | | 130.67 | 149.38 | 79.15 |
| Interest and deprec. on misc. items** | | 55.67 | 61.14 | 28.47 |
| Total Household and Personal Expenses | \$ | \$1155.60 | \$1507.80 | \$786.79 |

*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 | Houston County | Gilmore Creek Area |
|---|----------------------|----------------|--------------------|
| Number of farms | 25 | 60 | 6 |
| CASH EXPENSES | | | |
| Tractor (new & exp.) | \$187 | \$218 | \$127 |
| Truck (new & exp.) | 8 | 62 | 12 |
| Auto (new & exp.) (farm share) | 195 | 87 | 45 |
| Gas engine (new & exp.) (farm share) | 6 | 5 | 14 |
| Electricity (new & exp.) (farm share) | 4 | 6 | 2 |
| Machinery and equipment (new) | 136 | 135 | 39 |
| Machinery and equipment (exp.) | 56 | 28 | 23 |
| Buildings, fences, tiling (new) | 160 | 81 | 75 |
| Buildings, fences, tiling (exp.) | 39 | 38 | 10 |
| Hired labor | 237 | 175 | 30 |
| Feed for livestock | 287 | 310 | 61 |
| Other expense for livestock | 64 | 45 | 13 |
| Horses bought | 28 | 26 | 2 |
| Cows bought | 22 | 35 | 0 |
| Other cattle bought | 69 | 48 | 1 |
| Hogs bought | 58 | 44 | 1 |
| Sheep bought | 100 | 5 | 0 |
| Poultry bought | 20 | 27 | 31 |
| Crop (seed, twine, spray) | 192 | 137 | 57 |
| Taxes and insurance | 281 | 261 | 129 |
| General farm | 14 | 7 | 12 |
| (1) Total cash expense | 2163 | 1780 | 684 |
| (2) Decrease in farm inventory | - | - | - |
| (3) Board for hired labor | 108 | 76 | 15 |
| (4) Total expense (sum of (1), (2), & (3)) | 2271 | 1856 | 699 |
| CASH RECEIPTS | | | |
| Horses | 42 | 54 | 3 |
| Cows | 148 | 178 | 146 |
| Dairy products | 620 | 637 | 584 |
| Other cattle | 538 | 428 | 137 |
| Hogs | 997 | 1010 | 87 |
| Sheep | 409 | 61 | 0 |
| Poultry | 57 | 180 | 40 |
| Eggs | 198 | 104 | 231 |
| Small grain | 134 | 17 | 36 |
| Corn | 42 | 143 | 0 |
| Hay | 12 | 3 | 4 |
| Root crops | 2 | 2 | 23 |
| Other crops | 35 | 46 | 19 |
| Miscellaneous | 203 | 127 | 23 |
| Income from work off the farm | 138 | 194 | 2 |
| Agricultural Conservation payments | 294 | 214 | 131 |
| (5) Total cash receipts | 3869 | 3398 | 1466 |
| (6) Increase in farm inventory | 247 | 43 | 134 |
| (7) Farm produce used in house | 296 | 266 | 198 |
| (8) Total receipts (sum of (5) & (6)) | 4412 | 3707 | 1798 |
| Total expenses (4) | 2271 | 1856 | 699 |
| (9) Ret. to cap. & fam. labor (8) minus (4) | 2141 | 1851 | 1099 |
| (10) Interest on farm inventory | 895 | 745 | 570 |
| (11) Family labor earnings (9) minus (10) | 1246 | 1106 | 529 |
| (12) Unpaid family labor | 240 | 364 | 465 |
| (13) Oper. labor earnings (11) minus (12) | 1006 | 742 | 64 |

Distribution of Acres in Farm and Average Yields per Acre

| | Distribution of Acres : | | | Crop Yields | | |
|--|----------------------------|-------------------|-----------------------------|----------------------------|-------------------|--------------------------|
| | Deer-Bear Creek Area | Houston County | Gilmore: Creek Area : | Deer-Bear Creek Area | Houston County | Gilmore Creek Area |
| Winter wheat | 1.6 A. | .2 A. | 1.7 A.: | 13.6 bu. | 9.6 bu. | 7.3 bu. |
| Spring wheat | 3.7 | .7 | .3 : | 8.5 " | 11.7 " | - |
| Oats | 16.5 | 10.5 | 7.9 : | 35.3 " | 31.8 " | 26.2 " |
| Barley | 19.4 | 6.2 | 8.5 : | 20.4 " | 24.8 " | 16.8 " |
| Rye | .0 | .3 | .0 : | - | 14.8 " | - |
| Flax | 5.4 | 1.3 | .0 : | 7.5 " | 9.2 " | - |
| Oats and wheat | 3.6 | 1.8 | .9 : | 35.9 " | 30.6 " | 16.5 " |
| Oats and barley | 13.8 | 13.0 | 3.3 : | 26.2 " | 31.4 " | 41.1 " |
| Soybeans | 4.4 | .1 | .0 : | 21.7 " | 11.4 " | - |
| Miscellaneous | .3 | .1 | 1.4 : | - | - | - |
| Total grain | 68.7 | 34.2 | 24.0 : | | | |
| Corn, grain | 25.7 | 20.6 | 6.4 : | 51.9 " | 60.9 " | 60.1 " |
| Corn, silage | 8.9 | 5.2 | 5.3 : | 9.3 tons | 9.2 tons | 8.2 tons |
| Corn, fodder | 3.8 | .0 | .0 : | 3.2 " | - | - |
| Potatoes | .2 | .3 | 2.9 : | 109.2 bu. | 113.8 bu. | 94.3 bu. |
| Misc. (hybrid seed corn, truck crops, etc.) | .5 | .9 | .0 : | - | - | - |
| Total cultivated crops | 39.1 | 27.0 | 14.6 : | | | |
| Alfalfa | 9.0 | 9.5 | 17.1 : | 1.1 tons | 1.7 tons | 1.8 tons |
| Red clover | .4 | 2.4 | .0 : | 1.1 " | 1.8 " | - |
| Misc. legumes & mixtures | 29.4 | 15.4 | 13.4 : | 1.5 " | 1.5 " | 1.3 " |
| Timothy | 3.8 | 2.2 | .7 : | .8 " | 1.1 " | .5 " |
| Annual hay | 1.1 | .8 | .7 : | 1.3 " | 1.2 " | 1.7 " |
| Legume seed | .4 | .1 | .0 : | 173.7 lbs. | 166.7 lbs. | - |
| Timothy seed | 1.9 | .0 | .0 : | 137.4 " | - | - |
| Wild hay (non-tillable) | .5 | .2 | .0 : | 1.7 tons | 1.3 tons | - |
| Total hay and seed | 46.5 | 30.6 | 31.9 : | | | |
| Total crop acreage | 154.3 | 91.8 | 70.5 : | | | |
| Alfalfa pasture | .1 | 1.0 | .0 : | | | |
| Sweet clover pasture | 2.7 | 1.9 | 1.3 : | | | |
| Red clover | .0 | 1.2 | .0 : | | | |
| Misc. legume pasture | 6.1 | 5.5 | 2.0 : | | | |
| Other tillable pasture | 13.5 | 8.1 | .0 : | | | |
| Non-tillable pasture | 50.5 | 67.4 | 46.6 : | | | |
| Total pasture | 72.9 | 85.1 | 49.9 : | | | |
| Tillable land not cropped | .4 | .9 | .9 : | | | |
| Timber & brush (not pastured) | 13.2 | 21.3 | 28.5 : | | | |
| Roads and waste | 4.5 | 5.5 | 1.7 : | | | |
| Farmstead | 6.2 | 3.7 | 2.5 : | | | |
| Total acres in farm | 251.5 | 208.3 | 154.0 : | | | |
| Per cent of land tillable | 72.1 | 56.8 | 52.0 : | | | |

Measures of Farm Organization and Management Efficiency

| | Deer-Bear Creek Area | Houston County | Gilmore Creek Area |
|---|----------------------------|-------------------|--------------------------|
| Operator's labor earnings | \$1006 | \$742 | \$64 |
| Pounds of butterfat per cow | 202 | 185 | 182 |
| Returns over feed (prod. livestock other than cows) | \$29 | \$30 | \$23 |
| Productive livestock units per 100 acres | 18.3 | 20.5 | 21.1 |
| Crop yields | 95 | 104 | 91 |
| Per cent of tillable land in high return crops | 31.6% | 36.3% | 45.4% |
| Size of business - days of productive work | 707 | 642 | 435 |
| Days of productive work per worker | 351 | 317 | 239 |
| Power, machinery and building expense per day of productive work | \$1.11 | \$1.08 | \$1.08 |
| Returns over feed per head other cattle | \$12.36 | \$10.74 | \$7.68 |
| Returns over feed per 100 lbs. hogs produced | .92 | 1.31 | .68 |
| Returns over feed per hen | .67 | .77 | .60 |
| Returns over feed per head sheep | 2.81 | 3.02 | - |

Amount of Livestock

| | | | |
|---|-------|-------|------|
| No. of horses | 4.5 | 3.5 | 4.0 |
| No. of colts | 1.1 | 1.1 | .3 |
| No. of cows | 13.9 | 14.7 | 13.9 |
| No. of cows per worker | 7.2 | 7.4 | 7.8 |
| Head of other cattle | 23.3 | 21.0 | 13.0 |
| Litters of pigs raised | 12.4 | 12.6 | 2.5 |
| Pounds of hogs produced | 17334 | 17561 | 2929 |
| Head of sheep | 55.6 | 10.9 | .0 |
| No. of hens | 118 | 89 | 146 |
| Total number of productive livestock animal units | 42.4 | 36.2 | 23.5 |
| % of total prod. livestock units that were cows | 37.7 | 43.4 | 59.4 |
| % of total prod. livestock units that were other cattle | 28.1 | 29.0 | 29.6 |
| % of total prod. livestock units that were hogs | 16.7 | 20.1 | 5.0 |
| % of total prod. livestock units that were sheep | 14.2 | 3.8 | .0 |
| % of total prod. livestock units that were poultry | 3.3 | 3.7 | 6.0 |

Summary of Earnings by Years (see footnote, page 24)

| | 1935 | 1936 | 1937 | 1938 | 1939 |
|--|--------|--------|--------|--------|--------|
| No. of farms | 40 | 81 | 57 | 55 | 91 |
| CASH EXPENSES | | | | | |
| Tractor (new & expense) | \$ * | \$117 | \$166 | \$206 | \$204 |
| Truck (new & expense) | * | 42 | 76 | 40 | 44 |
| Auto (new & expense) (farm share) | 90 | 92 | 147 | 76 | 114 |
| Gas engine (new & expense) (farm share) | * | 5 | 12 | 6 | 6 |
| Electricity (new & expense) (farm share) | * | 9 | 9 | 8 | 5 |
| Machinery and equipment (new) | 132* | 139 | 180 | 124 | 129 |
| Machinery and equipment (expense) | 136* | 36 | 41 | 36 | 35 |
| Buildings, fences, tiling (new) | 152 | 96 | 128 | 55 | 102 |
| Buildings, fences, tiling (expense) | 28 | 39 | 37 | 40 | 36 |
| Hired labor | 162 | 167 | 217 | 196 | 183 |
| Feed for livestock | 184 | 271 | 369 | 253 | 287 |
| Other expense for livestock | 21 | 30 | 55 | 63 | 48 |
| Horses bought | 41 | 42 | 33 | 33 | 25 |
| Cows bought | 38 | 39 | 37 | 49 | 29 |
| Other cattle bought | 41 | 75 | 115 | 84 | 51 |
| Hogs bought | 31 | 51 | 42 | 32 | 45 |
| Sheep bought | 105 | 43 | 16 | 43 | 31 |
| Poultry bought | 27 | 30 | 19 | 18 | 25 |
| Crop | 99 | 108 | 141 | 145 | 147 |
| Taxes and insurance | 193 | 204 | 226 | 236 | 258 |
| General farm | 14 | 19 | 14 | 12 | 9 |
| (1) Total cash expense | \$1494 | \$1654 | \$2080 | \$1755 | \$1813 |
| (2) Decrease in farm inventory | - | - | - | - | - |
| (3) Board for hired labor | 38 | 87 | 95 | 78 | 81 |
| (4) Total expense (sum of (1), (2) & (3)) | 1582 | 1741 | 2175 | 1833 | 1894 |
| CASH RECEIPTS | | | | | |
| Horses | \$ 18 | \$ 25 | \$ 39 | \$ 54 | \$ 48 |
| Cows | 130 | 122 | 152 | 181 | 168 |
| Dairy products | 700 | 812 | 919 | 800 | 629 |
| Other cattle | 438 | 258 | 504 | 492 | 439 |
| Hogs | 474 | 802 | 920 | 890 | 946 |
| Sheep | 247 | 159 | 161 | 128 | 152 |
| Poultry | 106 | 142 | 122 | 58 | 137 |
| Eggs | 136 | 136 | 135 | 162 | 138 |
| Small grain | 149 | 183 | 113 | 51 | 50 |
| Corn | 4 | 8 | 20 | 7 | 106 |
| Hay | 13 | 16 | 20 | 21 | 6 |
| Root crops | 46 | 24 | 16 | 5 | 3 |
| Other crops | 38 | 62 | 31 | 16 | 41 |
| Miscellaneous | 69 | 115 | 189 | 142 | 141 |
| Income from work off the farm | 101 | 82 | 137 | 177 | 166 |
| Agricultural Conservation payments | 68 | 131 | 149 | 168 | 230 |
| (5) Total cash receipts | \$2737 | \$3077 | \$3627 | \$3352 | \$3400 |
| (6) Increase in farm inventory | 160 | 254 | 66 | 50 | 105 |
| (7) Farm produce used in house | 311 | 361 | 317 | 315 | 270 |
| (8) Total receipts (sum of (5), (6) & (7)) | 3208 | 3692 | 4010 | 3717 | 3775 |
| Total expenses (4) | 1582 | 1741 | 2175 | 1833 | 1894 |
| (9) Returns to cap. & fam. labor (8) minus (4) | 1626 | 1951 | 1835 | 1884 | 1881 |
| (10) Interest on farm inventory | 638 | 703 | 752 | 761 | 775 |
| (11) Family labor (9) minus (10) | 988 | 1248 | 1083 | 1123 | 1106 |
| (12) Unpaid family labor | 156 | 241 | 247 | 244 | 336 |
| (13) Operator's labor earnings (11) minus (12) | 832 | 1007 | 836 | 879 | 770 |

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

Summary of Miscellaneous Items by Years

| Miscellaneous items: | 1935 | 1936 | 1937 | 1938 | 1939 |
|--|-------|--------|--------|--------|--------|
| Acres in farm | 193.9 | 189.9 | 203.7 | 202.3 | 216.6 |
| Crop acres in farm | 106.2 | 100.7 | 108.7 | 110.9 | 107.6 |
| % of tillable land in high return crops | * | 36.7 | 41.7 | 40.3 | 35.6 |
| Yield per acre, corn (bu.) | 39.1 | 30.1 | 34.8 | 49.5 | 57.7 |
| Yield per acre, barley (bu.) | 20.8 | 18.1 | 23.9 | 26.6 | 22.8 |
| Yield per acre, oats (bu.) | 33.2 | 20.8 | 37.0 | 31.6 | 32.2 |
| Yield per acre, alfalfa (tons) | 3.2 | 1.8 | 2.0 | 2.4 | 1.5 |
| Productive livestock units per 100 A. | 14.9 | 17.6 | 17.9 | 20.1 | 20.0 |
| No. of days of productive work | 506 | 550 | 597 | 628 | 646 |
| No. of days of productive work per worker | 288 | 301 | 314 | 340 | 321 |
| Power & equipment exp. per day of prod. work | \$.76 | \$1.13 | \$1.10 | \$1.06 | \$1.09 |
| No. of work horses | 4.4 | 4.2 | 4.3 | 4.0 | 3.8 |
| No. of colts | .6 | .9 | .8 | 1.0 | 1.0 |
| No. of cows | 12.7 | 13.9 | 13.7 | 14.2 | 14.4 |
| No. of head of other cattle | 13.8 | 17.2 | 21.2 | 19.9 | 21.1 |
| No. of litters of pigs | 3.7 | 7.6 | 6.8 | 8.7 | 11.8 |
| Pounds of hogs produced | * | 8404 | 9950 | 12808 | 16534 |
| No. of head of sheep | 26.0 | 23.7 | 30.9 | 30.2 | 22.4 |
| No. of hens | 103 | 79 | 93 | 100 | 101 |
| Pounds of butterfat per cow | 190 | 178 | 192 | 200 | 189 |
| No. of pigs per litter | 6.3 | 5.6 | 6.8 | 6.7 | 6.1 |
| No. of eggs laid per hen | 95 | 102 | 114 | 118 | 115 |
| Price received per lb. of butterfat sold | \$.30 | \$.31 | \$.37 | \$.30 | \$.27 |
| Price received per cwt. hogs sold | * | 9.22 | 9.01 | 7.55 | 6.15 |
| Price received per dozen eggs sold | .21 | .18 | .18 | .18 | .15 |

*Information not available.

Footnote for page 23:

The financial statements differ in that the unpaid family labor rate was \$40 per month for 1935, \$43 in 1936, and \$45 in 1937 to 1939; and the board for hired labor was figured at \$15 per month in 1935, and \$18 per month in 1936 to 1939. These adjustments to meet changes in the price level should be considered in comparing 1939 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 and 1939 were for the period January first to December thirty-first.

Suggestions for Improvements