

Report
of a
Farm Management Survey
of
130 Dairy Farms
in
Freeborn, Steele, and Waseca
Counties

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Report of a Farm Management Survey of 130 Dairy Farms in
Freeborn, Steele and Waseca Counties

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INTRODUCTION

The Division of Agricultural Economics of the University of Minnesota in cooperation with the United States Department of Agriculture made a survey of 130 dairy farms in southeastern Minnesota the past summer. In addition to information covering the receipts and expenses of the farm, considerable data covering crop and livestock organization, livestock feeds, labor expended on the dairy herd, crop and livestock practices, building and machinery equipment, and soil conservation needs and practices were obtained. These records covered the year ending April 30, 1936. This report is designed primarily for the purpose of presenting some of the results of this study for the benefit of the farmers who so generously gave of their time at a very busy season of the year. In the reports sent to these farmers each individual's figures are written into the column headed "your farm". For each item the averages for the entire group and for the most successful and the least successful farmers are given. This should enable each individual cooperating in this study to see how he compares with his neighbors in the success with which he operates the various parts of his farm business, as well as, to indicate some of the factors accounting for his success or his failure to achieve it. Additional reports of other phases of this survey study will appear at later dates.

1/ A similar survey was made on 120 dairy farms in east central Minnesota. Mimeographed Report No. 80 presents an analysis of the farm businesses for those 120 farms in a manner similar to that used in this report.

This report closely parallels in form the annual reports of the South-eastern Minnesota Farm Management Service. Since most of the information was obtained by interview rather than from records the authors do not claim the same degree of accuracy or completeness that characterizes the reports just mentioned. Cream receipts, since they were taken from the creamery records are accurate. The accuracy of other items are limited by the farmers' memory and the skill of the interviewer in asking questions. A simple practical system of accurately supervised farm records is available to farmers in this area for a very nominal fee. Some of the farmers included in this survey are already getting this service. It is suggested that any others interested get in touch with their county agent or with the Division of Agricultural Extension, University Farm, St. Paul.

This survey is a part of the general study of interregional competition in dairying, which is under the supervision of Sherman Johnson of the Bureau of Agricultural Economics at Washington, D. C. The collection of the data and analysis of the records are under the direction of G. A. Pond and W. P. Ranney of the Division of Agricultural Economics, University of Minnesota. The data were collected by the following agents representing both the United States Department of Agriculture and the University of Minnesota: Raymond Burkholder, Clarence Hemming, Raymond W. Palmby, and Harold Peterson. B. R. Hurt of the United States Department of Agriculture assisted in checking the records.

Hearty support and assistance were rendered by the county agricultural agents W. M. Lawson, C. F. Murphy, and G. A. Strobel. The Agricultural Extension Division of the University of Minnesota is cooperating in the publication and distribution of this report.

LOCATION OF AREA

The farms surveyed are located in the northwestern corner of Freeborn County, the southwestern corner of Steele County, and the southeastern corner of Waseca County. The location of the farms by townships is as follows:

<u>Freeborn County</u>		<u>Steele County</u>		<u>Waseca County</u>	
Township	No. of farms	Township	No. of farms	Township	No. of farms
Freeborn	28	Lemond	23	New Richland	21
Carlston	11	Berlin	19	Otisco	13
Manchester	3			Wilton	7
				Byron	3

TYPE OF FARMING

The farms included in this survey are livestock farms on which dairy cattle are the principal source of income. The butterfat is sold as cream for manufacture into butter, through farmer owned cooperative creameries specializing in the manufacture of high quality butter. The skim milk is retained on the farm and fed to hogs and poultry. These two classes of livestock are also an important source of income.

The principal crops grown are corn, oats, barley, and hay. These crops are raised primarily as livestock feed although a seasonal surplus may be sold. Wheat, flax, sweet corn, sugar beets and potatoes are grown to a limited extent as cash crops.

This report shows that the receipts from the sales of dairy products constituted over one-fourth, and the receipts from hog sales (not including A.A.A. adjustment payments) over one-fourth of the average cash income of the 130 farmers included in this report. These farms are fairly typical of the system of dairy farming prevailing in southeastern Minnesota.

CLIMATE, SOIL, AND TOPOGRAPHY

On account of the severe drouth of 1934, the supply of feed on these farms on May 1, 1935 was below normal. Weather conditions and crop yields in 1935, however, were approximately normal.

A rich black clay loam predominates on these farms. There is a little peat and sandy loam on a few farms. Applications of lime are unnecessary in order to grow alfalfa and sweet clover.

Some of the farms are level, all tillable, and well drained, but most of them are gently rolling with some land too rough or too wet to cultivate.

ANALYSIS OF THE FARM BUSINESS

The main purpose of the farm business analysis is to present each farmer's data and information in such a way that he can compare it with that secured on other farms. Thereby he is enabled to study his efficiency in various enterprises and to organize his farm on a more profitable basis. For the latter purpose, it was necessary for all of the farmers, tenants as well as owner-operators to include the whole farm business in order that the results would be on a comparative basis. The earnings as shown in this report are computed as if each farm was owned by its operator.

On pages 5 to 7 are presented financial summaries of the year's business, showing the average results for the 130 farms, the average results for the highest one-fifth of the farms in respect to Operator's Labor Earnings, and likewise for the lowest one-fifth.

The data on pages 8 to 20 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. Each farm is an individual problem and has its particular advantages and limitations in respect to natural resources and markets. However, there are certain general factors related to financial success on these farms.

CAPITAL INVESTMENT IN FARM BUSINESS

The average size of the farms in this report is 156 acres. The average farm inventory was \$13,734. This does not include the value of the house in which the operator lived, which amounted to \$2,106. In 1935, 53 percent of the average farm inventory consisted of land, 21 percent of permanent improvements, 2 per cent of feeds and supplies, 9 per cent of machinery and equipment, and 15 per cent of livestock, of which over one-third of an average of \$765 was the average inventory value of milk cows.

RETURNS TO OPERATORS FOR THEIR LABOR AND MANAGEMENT

The average cash receipts per farm were \$3,040. In addition, farm produce to the value of \$256 was consumed by the farm family and there was an average inventory increase of \$520 per farm. The total average receipts per farm is the sum of

these three items, \$3,816. The average total expense per farm, \$1,364, includes \$1,293 cash expenses and an estimated allowance of \$71 for board of hired labor. The difference between the total income and total expense figure is \$2,452. 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, \$687, for the services of capital, there remains \$1,765 for the services of the farmer and his family. The average value of family labor used, if computed at hired man's wages, was \$298. The average operator's labor earnings are the family earnings less their allowance of \$298, or \$1,467. 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.

Summary of Farm Inventories

Items	Your farm	Average of 130 farms	26 most profitable farms	26 least profitable farms
Size of farm (acres)	_____	156	214	138
Size of business(days of prod.work((1)	_____	540	760	426
Average farm inventory (without house)	_____	\$13734	\$17761	\$11674
Land	_____	7259	9421	6353
Farm improvements	_____	2931	3253	2631
Machinery & equipment (total)	_____	1239	1736	958
Gen. machinery & equipment	_____	743	979	549
Tractor	_____	240	404	182
Truck	_____	22	69	11
Auto (farm share)	_____	183	219	163
Electrical equipment (farm share)	_____	51	65	53
Feeds and seed	_____	\$261	\$516	\$158
Horses (total)	_____	531	680	470
Horses	_____	478	621	416
Colts	_____	53	59	54
Productive livestock (total)	_____	\$1513	\$2155	\$1104
Cows	_____	765	997	614
Other cattle	_____	308	525	182
Hogs	_____	299	464	187
Sheep	_____	31	51	29
Poultry	_____	110	118	92

(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 labor data presented in Minnesota Technical Bulletin 44, "A Study of Dairy Farm Organization in Southeastern Minnesota", is listed as follows:

Item	Per	Number of days of prod. work:	Item	Per	Number of days of prod. work
Cows	Cow	16.6	Small grain and flax	Acre	1.0
Other cattle	Animal unit*	7.6	Corn (husked)	"	2.1
Sheep	Animal unit*	2.7	Corn (silage)	"	2.6
Poultry	100 hens	20.1	Corn (fodder)	"	1.8
Hogs	100 lbs. pork produced	.55	Corn (hogged)	"	1.25
Alfalfa	Acre	1.5	Potatoes	"	6.4
Tame and wild hay	"	.6			

*Animal unit represents one cow, one bull, two head of young cattle, seven head of sheep, fourteen lambs, 2100 lbs. of hogs produced, or 100 hens.

Summary of Farm Earnings

Items	Your farm	Average of 130 farms	26 most profitable farms	26 least profitable farms
CASH EXPENSES				
Tractor (new & exp.)	\$ _____	121	341	44
Truck (new & exp.)	_____	14	43	11
Auto (new & exp.) (farm share)	_____	99	132	77
Electricity (new & exp.) (farm share)	_____	16	28	5
Machinery and equipment (new)	_____	89	206	22
Machinery and equipment (exp.)	_____	31	46	23
Bldgs., fences, tiling (new)	_____	84	61	95
Bldgs., fences, tiling (exp.)	_____	75	98	60
Hired labor	_____	140	243	113
Feed for livestock	_____	134	241	80
Other expenses for livestock	_____	24	35	19
Horses bought	_____	30	85	30
Cows bought	_____	19	43	5
Other cattle bought	_____	57	130	30
Hogs bought	_____	26	41	7
Sheep bought	_____	4	2	4
Poultry bought	_____	22	31	10
Crop (seed, twine, spray)	_____	106	158	81
Taxes and insurance	_____	191	269	167
General farm	_____	11	17	6
(1) Total cash expense	\$ _____	1293	2250	889
(2) Decrease in farm inventory	_____	-	-	-
(3) Board for hired labor	_____	71	109	57
(4) Total expense (sum of (1),(2)&(3))	_____	1364	2359	946
CASH RECEIPTS				
Horses	\$ _____	48	89	32
Cows	_____	133	201	75
Dairy products	_____	872	1178	516
Other cattle	_____	232	337	121
Hogs	_____	824	1544	464
Sheep	_____	29	59	20
Poultry	_____	122	155	95
Eggs	_____	225	329	162
Small grain	_____	138	298	91
Corn	_____	58	72	95
Hay	_____	8	14	5
Root crops	_____	21	63	14
Other crops	_____	22	50	14
Miscellaneous	_____	51	148	22
Income from work off the farm	_____	66	154	23
AAA adjustment payments	_____	191	365	113
(5) Total cash receipts	\$ _____	3040	5056	1862
(6) Increase in farm inventory	_____	520	1216	107
(7) Farm produce used in house	_____	256	318	197
(8) Total receipts (sum of (5),(6)&(7))	_____	3816	6590	2166
Total expenses (4)	_____	1364	2359	946
(9) Ret. to cap.&fam.labor(8) minus(4)	_____	2452	4231	1220
(10) Interest on farm inventory	_____	687	888	584
(11) Family labor earnings(9) minus(10)	_____	1765	3343	636
(12) Unpaid family labor	_____	298	263	295
(13) Operator's labor earnings	_____			
(11) minus (12)	_____	1467	3080	341

Summary of Farm Earnings (A)

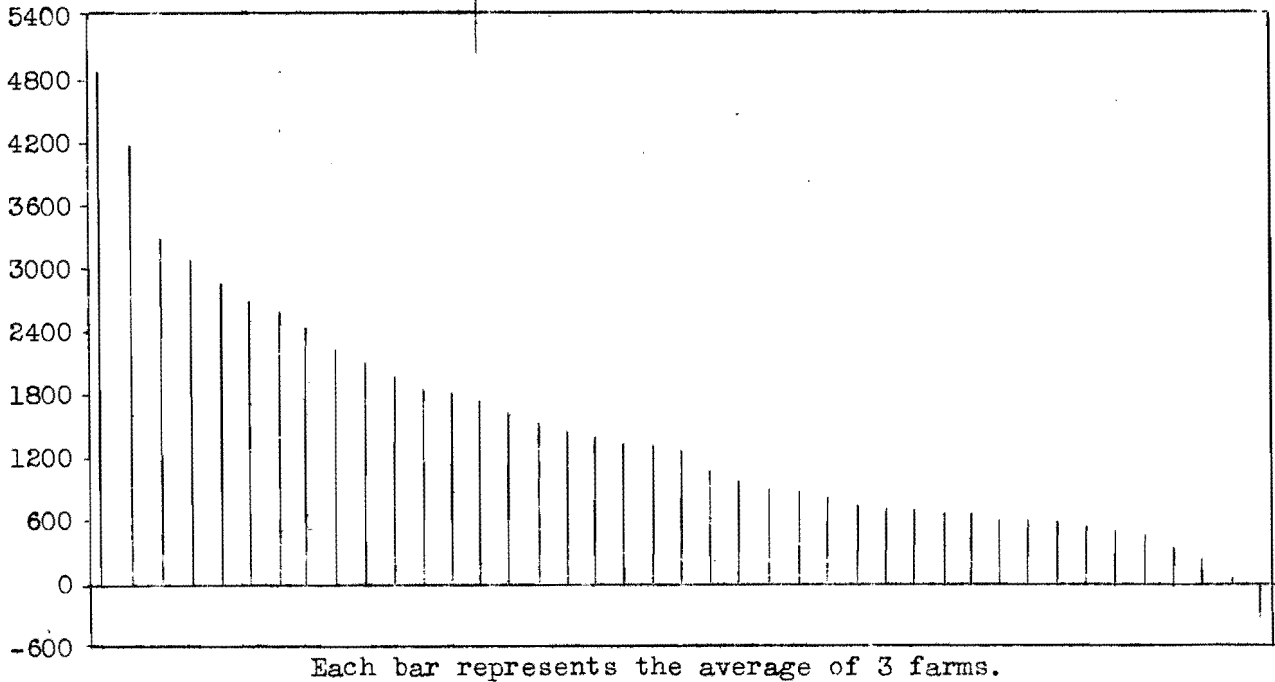
Items	Your farm	Average of 130 farms	26 most profitable farms	26 least profitable farms
<u>EXPENSES AND NET DECREASES</u>				
Total power	\$ _____	\$474	\$668	\$426
Hired	_____	48	56	41
Tractor	_____	102	186	73
Truck	_____	14	31	12
Auto (farm share)	_____	122	125	113
Elec. plant or current (farm share)	_____	26	45	16
Horses	_____	162	225	171
General machinery and equipment	_____	118	148	89
Buildings, fencing, tiling	_____	149	165	142
Productive livestock misc. expense	_____	20	30	15
Crop	_____	63	114	48
Real estate taxes	_____	150	221	130
Personal property tax	_____	18	23	15
Insurance	_____	23	25	22
General farm	_____	11	17	6
Hired labor & board, & unpaid family labor	_____	509	615	465
Interest on farm inventory	_____	687	888	584
(1) Total	_____	2225	2914	1942
<u>RETURNS AND NET INCREASES</u>				
All productive livestock	_____	2,920	4,574	1,777
Cows	_____	1,169	1,569	728
Other cattle	_____	396	698	226
Hogs	_____	949	1,719	529
Sheep	_____	28	63	14
Chickens	_____	378	525	280
Crops, feed, vegetables, and fuel	_____	508	900	368
AAA adjustment payments	_____	191	365	113
Miscellaneous	_____	1	1	0
Income from work off the farm	_____	72	154	25
(2) Total	_____	3,692	5,994	2,283
Total expenses (1)	_____	2,225	2,914	1,942
(3) Oper. labor earnings (2) minus (1)	_____	1,467	3,080	341

(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.

Analyzing the Reasons for Differences in Operator's Earnings

The financial statements on the preceding pages show that on the average the farmers included in this study obtained about \$122 per month for their labor and management, or a total for the year of \$1467. The most significant fact in these statements, however, is the wide range in earnings - from \$4807 to a loss of \$513, or a range of \$5320. The following diagram illustrates this fact:

Chart 1. Range of Earnings



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 survey indicate that there are several very definite factors that enable some farmers to make substantial earnings, 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.

Group	Lbs. butterfat per cow Average	No. of Farms	Average Earnings
Below 180	153	31	\$ 978
180 - 249	217	68	1504
250 and above	283	31	1877

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 From Other Productive Livestock to Farm Earnings

Group	Returns above feed cost per animal unit of prod. livestock other than cows Average	No. of farms	Average Earnings
Below \$ 45	\$ 24	30	\$ 847
45 - 89	68	71	1517
90 and above	110	29	1988

These farmers 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. High returns per dollar invested in these animals usually accompanies greater profits from the livestock. This means another addition to the farm earnings.

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

<u>Productive livestock units per 100A.</u>	<u>No. of Farms</u>	<u>Average Earnings</u>
Below 15.0	40	\$1240
15.0 to 19.9	55	1436
20.0 and above	35	1777

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 manure 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.

<u>Per cent crop yields were of the average for all the 130 farms</u>		<u>No. of Farms</u>	<u>Average Earnings</u>
<u>Group</u>	<u>Average</u>		
Below 85	78	21	\$ 975
85 - 114	99	84	1427
115 and above	121	25	2017

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.

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

<u>Per cent of tillable land in high return crops*</u>		<u>No. of Farms</u>	<u>Average Earnings</u>
<u>Group</u>	<u>Average</u>		
Below 30.0	23.8	26	\$ 887
30.0 to 41.9	35.8	70	1602
42.0 and above	45.7	34	1635

* Crops are marked on page 14 as (A), (B), (C), (D). All of 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.

Taking into consideration average crop yields and average prices for crops raised over a period of years it has been found that there are considerable variations in the net returns from crops. This constitutes the basis for the classification of crops into (A), (B), (C) and (D) groups as on page 14 .

It is possible that for certain farms some of the crops should be classified differently. Moreover, the local market situation, or particular conditions of soil, topography, or labor may make it impossible or inadvisable to raise certain crops. However, as shown in Table 5, it is apparent that each farmer can well afford to put as large acreage as possible of his tillable acres in crops that are more profitable, keeping in mind the following suggestions when making selections: the particular purpose of the various crops; the needs of livestock; the effects of the cropping system on future crop yields; its effect on distribution of labor and power requirements throuth the year, and the probable future trends in sale values of the various crops.

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

Days of productive work		No. of	Average
Group	Average	farms	Earnings
Below 400	308	31	\$ 849
400 to 649	536	70	1272
650 and above	799	29	2600

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		No. of	Average
Group	Average	Farms	Earnings
Below 220	184	35	\$ 844
220 - 319	270	65	1351
320 and above	364	30	2446

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		No. of	Average
Group	Average	Farms	Earnings
\$1.70 and above	\$2.09	28	\$ 959
1.05 to \$1.69	1.34	72	1533
Below \$1.05	.86	30	1785

* Includes building, fencing, machinery, and horse expenses and value of feed fed to horses.

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 more	13	_____	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	\$2701
Six	17	_____	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	2493
Five	30	_____	XXXXXXXXXXXXXXXXXXXX	1633
Four	20	_____	XXXXXXXXXXXXXXXXXXXX	1267
Three	26	_____	XXXXXXXXXXXX	1047
Two or less	24	_____	XXXXX	489

The array in Table 9 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 130 farms	26 most profit- able Farms	26 least profit- able farms
Operator's Labor Earnings	\$ _____	\$1467	\$3080	\$341
(1) Pounds of butterfat per cow	_____	217	234	164
(2) Return over feed (pr.livst. other than cows)	\$ _____	\$87.00	\$88.00	\$47.00
(3) Productive livestock units per 100 acres	_____	17.7	18.4	15.8
(4) Crop yields**	_____	100	104	94
(5) % of tillable land in high return crops***	_____	36.0	40.3	32.8
(6) Size of business--days of productive work	_____	540	760	426
(7) Days of productive work per worker	_____	268	344	227
(8) Power and eq. expense per day of prod. work	\$ _____	\$1.39	\$1.27	\$1.57

Measures and items related to some of the above measures:

(2) Return over feed per head other cattle	\$ _____	\$19.	\$24.	\$15.
Return over feed per 100 lbs. hogs produced	_____	3.19	5.11	1.06
Return over feed per hen	_____	1.58	1.84	1.38
Return over feed per head sheep	_____	3.39	4.43	1.45
(6) Days of productive work on crops	_____	160	234	133
Days of productive work on prod. livestock	_____	362	488	287
Days of other productive work	_____	18	38	6
(7) Total number of workers	_____	2.0	2.2	1.9
Number of family workers	_____	1.6	1.6	1.6
Number of hired workers	_____	.4	.6	.3
(8) Power expense per day of productive work	\$ _____	.88	.85	1.02
Mach. & equip. exp. per day of prod. work	_____	.22	.20	.21
Bldg. & fencing exp. per day of prod. work	_____	.29	.22	.34

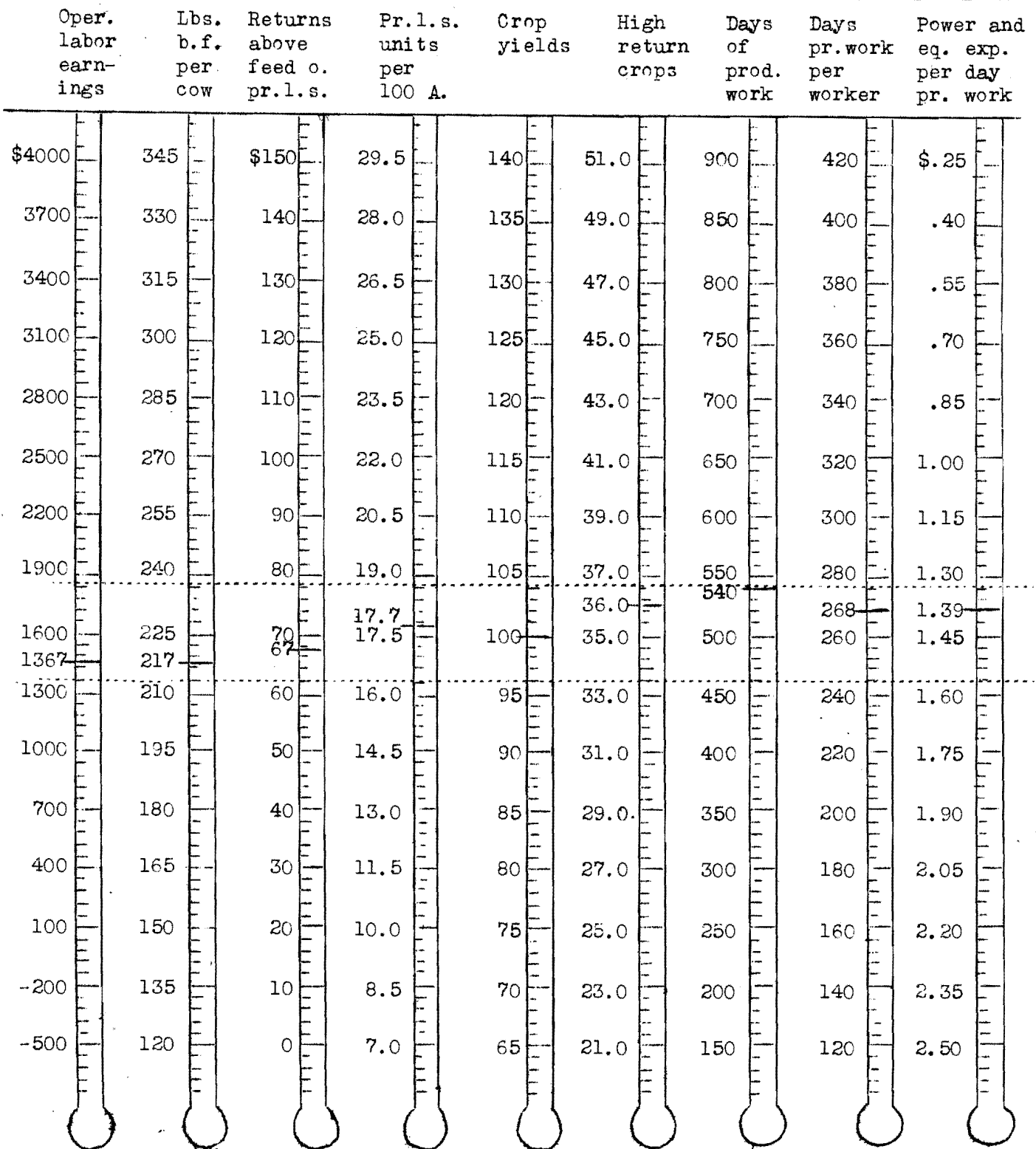
*Given as returns over feed cost per animal unit of productive livestock other than cows.

**Given as a percentage of the average.

***Crops are marked on page 14 as (A), (B), (C), (D). All of 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.

Thermometer Chart

Using your figures from page 12, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for 130 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 12)	No. of farms growing this crop	Your Farm	Aver. of 130 farms	26 most profit- able farms	26 least profit- able farms
Winter wheat	(B) 12	_____	1.1	3.2	.5
Spring wheat	(C) 25	_____	1.4	3.0	1.6
Oats	(D) 60	_____	13.4	14.8	16.2
Barley	(B) 56	_____	6.6	11.5	3.3
Rye	(D) 12	_____	.5	.7	.6
Flax	(B) 18	_____	1.7	5.2	.2
Wheat and oats	(C) 25	_____	5.5	13.2	3.5
Oats and barley	(C) 75	_____	19.6	24.5	15.0
Miscellaneous (includes 1.1A of soy beans)	(C) 24	_____	1.3	2.8	.5
Total grain and peas			51.1	78.9	41.4
Corn, grain	(B) 130	_____	28.1	37.3	25.6
Corn, silage	(C) 94	_____	6.7	9.5	4.3
Corn, fodder	(D) 36	_____	1.6	2.0	1.1
Sweet corn	(B) 9	_____	.8	2.6	.0
Sugar beets	(A) 1	_____	.1	.0	.5
Potatoes	(A) 25	_____	.5	1.3	.3
Total cultivated crops			37.8	52.7	31.8
Alfalfa	(A) 117	_____	10.4	15.6	7.5
Red clover	(B) 9	_____	.5	.8	.4
Other legumes & mix. (incl. 2.5 A. soybeans)	(C) 19	_____	.9	.7	1.7
Soy beans	(C) 26	_____	1.1	1.2	.8
Timothy	(D) 3	_____	.1	.2	.1
Annual hay (millet, sudan grass, sm. grain, etc.)	(D) 14	_____	.6	.0	.8
Miscellaneous hays and seed crops	(C) 3	_____	.2	.0	.8
Phalaris (non-tillable land)	19	_____	.9	1.2	.7
Wild hay (non-tillable land)	87	_____	8.9	10.6	10.5
Total hay			23.6	30.3	23.3
Total crop acreage			112.5	161.9	96.5
Sweet clover pasture-	(B) 38	_____	3.0	4.0	2.7
Alfalfa pasture	(A) 15	_____	.6	.6	1.3
Red clover or rape pasture (hogs)	(B) 2	_____	.1	.0	.0
Miscellaneous legume pasture	(C) 5	_____	.4	.7	.3
Other tillable pasture	(D) 60	_____	8.5	5.6	11.6
Non-tillable pasture	89	_____	19.3	28.0	13.6
Total pasture			31.9	38.9	29.5
Tillable land not cropped	13	_____	.6	1.0	1.4
Timber (not pastured)	9	_____	.6	.1	2.4
Roads and waste		_____			
Farmstead		_____	10.5	11.8	8.5
Total acres in farm			156.1	213.7	138.3
% of land tillable			75	76	75.4
% of tillable land in high return crops			36.0	40.3	32.8

Yield of Crops

Yield of crops per acre	Your farm	Average 130 farms	26 most profitable farms	26 least profitable farms
Winter wheat, bu.	_____	23.2	25.1	15.0
Spring wheat, bu.	_____	14.6	11.6	18.7
Oats, bu.	_____	50.3	52.0	45.1
Barley, bu.	_____	34.5	35.3	33.3
Rye, bu.	_____	24.2	30.9	30.0
Flax, bu.	_____	7.8	8.9	1.8
Wheat and oats, bu.	_____	36.3	35.6	29.5
Oats and barley, bu.	_____	48.0	51.0	43.3
Buckwheat	_____	13.0	--	8.3
Field peas	_____	16.3	--	--
Soy beans, bu.	_____	17.8	16.1	18.4
Corn, grain, bu.	_____	51.0	53.1	50.4
Corn, silage, tons	_____	9.2	8.9	8.9
Corn, fodder, tons	_____	3.8	4.5	3.4
Sweet corn, tons	_____	2.6	2.3	--
Sugar beets, tons	_____	8.0	--	8.0
Potatoes, bu	_____	84.9	107.2	64.4
Alfalfa, tons	_____	3.2	3.3	2.8
Red clover, tons	_____	1.6	2.0	.8
Clover and timothy, tons	_____	2.1	2.9	2.4
Soybean hay, tons	_____	2.2	1.8	3.0
Timothy hay, tons	_____	1.3	1.0	1.0
Phalaris hay, tons	_____	2.7	1.9	3.0
Wild hay, tons	_____	1.3	1.3	1.4
Miscellaneous crops	_____	_____	_____	_____

Some methods farmers use to increase their crop yields:

1. Tile, if necessary.
2. Plow under legumes--grow sweet clover in small grains on high lime soil--lime for alfalfa, if necessary.
3. Test out commercial fertilizers on strips of land to see if they pay.
4. Utilize manure effectively.
5. Use rotated legume pastures.
6. Raise and feed hogs on these pastures and hog down corn.
7. Grow recommended varieties of crops.
8. Use best tested seed available.
9. Prepare seed-bed thoroly and timely.

Summary of Amount of Livestock

	Your farm	Average 130 farms	26 most profitable farms	26 least profitable farms
Acres in farm	_____	156	214	138
No. of horses	_____	4.7	5.9	4.3
No. of colts	_____	.8	1.0	1.0
No. of cows	_____	13.9	17.2	12.0
No. of cows per worker	_____	6.9	7.8	6.2
Head of other cattle	_____	10.1	15.2	7.1
Pounds of hogs produced	_____	10623	18523	6666
Head of sheep (2 lambs equal 1 head)	_____	6.9	12.3	6.0
No. of hens	_____	156.1	188.0	128.0
Total no. of prod. livestock animal units	_____	27.0	37.3	21.0
% of tot. prod. lvst. units that are cows	_____	53.6	47.1	57.0
% of tot. prod. lvst. units that are o.cattle	_____	18.4	19.9	16.9
% of tot. prod. lvst. units that are hogs	_____	18.6	23.9	15.9
% of tot. prod. lvst. units that are sheep	_____ +	2.9	3.7	2.8
% of tot. prod. lvst. units that are hens	_____	6.5	5.4	7.4
Number of farms with tractors		43	20	16
Number of farms without tractors		35	6	10

Distribution of Farm Produce Used in House

	Quantities		Values	
	Your farm	Average 130 farms	Your farm	Average 130 farms
Whole milk	_____	1376 qts.	\$ _____	\$ 39
Cream	_____	482 pts.	_____	46
Farm made butter	_____	2 lbs.	_____	1
Eggs	_____	188 doz.	_____	32
Poultry	_____	34 head	_____	15
Cattle	_____	143 lbs.	_____	9
Hogs	_____	507 lbs.	_____	46
Potatoes	_____	31 bu.	_____	11
Vegetables and fruit	_____	-	_____	45
Farm fuel	_____	3 cds.	_____	12
Total			\$ _____	\$256
Average value of farm dwelling	_____		\$ _____	\$2106

Factors of Cost and Returns in Dairy Production

Items	Your farm	Average 130 farms	26 farms highest in B.F. per cow	26 farms lowest in B. F. per cow
Pounds butterfat per cow	_____	217	288	148
Feeds per cow, lbs.:				
Corn	_____	688	837	825
Small grain	_____	1566	1714	1470
Com. feeds - under 25% protein	_____	59	112	12
Com. feeds - over 25% protein	_____	50	132	9
Tame hay	_____	678	208	1023
Alfalfa	_____	3212	3246	3212
Wild hay	_____	326	195	371
Corn fodder	_____	909	1632	948
Silage	_____	6316	7955	4636
Total concentrates	_____	2363	2795	2316
Total dry roughage	_____	5125	5281	5564
Total digestible nutrients	_____	5433	6225	5282
Total digest. nutrients per lb. B.F.*	_____	26.2	21.8	36.4
% cows fresh - Sept. to Dec. inclusive	_____	62.	71.	50.
Feed cost per cow:				
Concentrates	\$ _____	\$22	\$27	\$21
Roughages	_____	19	20	18
Pasture	_____	5	5	4
TOTAL FEED COSTS	\$ _____	\$46	\$52	\$43
Value of produce per cow:				
B.F. sales	\$ _____	\$63	\$86	\$40
Dairy produce used in house	_____	7	7	7
Milk to other livestock	_____	13	15	9
Appreciation or depreciation	_____	2	2	4
TOTAL VALUE OF PRODUCT	\$ _____	\$85	\$110	\$60
RETURNS ABOVE FEED COST PER COW	\$ _____	\$39	\$ 58	\$17
Price received per lb. B.F. sold:				
As manufacturing cream (cents)	_____	33.7	34.0	33.3
Feed cost per lb. B.F. (cents)	_____	21.9	18.1	29.7
Number of cows**	_____	13.9	12.5	13.5
Hours of man labor on dairy herd, per cow		176	203	178
Hours of horse work on dairy herd, per cow		4	5	5
Miles travelled by car or truck hauling cream, per cow		61	66	67

*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 Dairy Cattle

Items	Your farm	Average of 121 farms	24 Farms highest in returns above feed per head	24 Farms lowest in returns above feed per head
Feeds used per head, lbs.:				
Concentrates	_____	240	116	585
Hay and fodder	_____	1344	1564	1395
Silage	_____	1364	838	1780
Whole milk	_____	1206	1304	2897
Skimmilk	_____	2206	2662	2306
Feed cost per head:				
Concentrates	\$ _____	\$ 2	\$ 1	\$ 5
Roughages	_____	5	4	5
Milk	_____	19	21	40
Pasture	_____	1	1	1
TOTAL	\$ _____	\$27	\$27	\$51
RETURNS PER HEAD	\$ _____	\$46	\$75	\$47
RETURNS ABOVE FEED COST PER HEAD	\$ _____	\$19	\$48	\$-4
Number of head of young cattle	_____	9.0	5.6	9.5

Feed Costs and Returns for Beef Cattle

Items	Your farm	Average 15 farms	5 farms highest in returns above feed	5 farms lowest in returns above feed
Feeds used per 100 lbs. beef produced:				
Concentrates	_____	453	330	703
Hay and fodder	_____	280	112	486
Silage	_____	367	244	534
Whole milk	_____	20	18	12
Skimmilk	_____	238	242	259
Feed cost per 100 lbs. beef produced:				
Concentrates	\$ _____	\$4.47	\$3.28	\$6.96
Roughages	_____	.98	.57	1.56
Milk	_____	.63	.63	.55
Pasture	_____	.24	.21	.41
TOTAL	\$ _____	\$5.32	\$4.69	\$9.48
RETURNS PER 100# BEEF PRODUCED	\$ _____	\$8.02	\$10.06	\$3.00
RETURNS ABOVE FEED COST PER 100# BEEF PROD.	\$ _____	\$1.70	\$5.37	\$-2.84
Pounds of beef produced	_____	11,425	5,970	13,194

Feed Costs and Returns for Sheep

Items	Your farm	Average 26 farms	8 farms highest in returns above feed	8 farms lowest in returns above feed
Feeds used per head,* lbs.:				
Concentrates	_____	31	1	29
Tame hay	_____	22	16	30
Alfalfa	_____	108	52	136
Corn fodder and wild hay	_____	67	21	105
Silage	_____	132	100	204
Feed cost per head:				
Concentrates	\$ _____	\$.28	\$.02	\$.23
Roughages	_____	.58	.31	.81
Pasture	_____	.48	.71	.49
TOTAL	\$ _____	\$1.34	\$1.04	\$1.53
Value of production per head:				
Wool	\$ _____	\$1.26	\$1.80	\$.93
Mutton	_____	3.47	0.31	.93
TOTAL	\$ _____	\$4.73	\$8.17	\$1.83
RETURNS ABOVE FEED COST PER HEAD	\$ _____	3.39	7.13	.33
Price per lb. wool sold	\$ _____	\$.25	\$.26	\$.20
Value per lamb sold	_____	\$7.83	\$7.71	\$8.00
% lamb crop	_____	90	125	63
% death loss	_____	5	0	6
No. of head of sheep*	_____	34.1	20.6	33.0

*Two lambs under 6 months of age considered as one head.

Feed Costs and Returns for Hogs

Items	Your farm	Average 125 farms	25 farms highest in returns above feed	25 farms lowest in returns above feed
Lbs. of feed per 100 lbs. hogs produced:				
Corn	_____	370	200	650
Small grain	_____	123	82	174
Commercial grain feeds	_____	4	4	1
Total grain and commercial feeds	_____	497	286	825
Tankage	_____	2	1	3
Skimmilk	_____	502	337	789
Cost of feed per 100 lbs. hogs produced:				
Grain and commercial feeds	\$ _____	\$4.78	\$2.73	\$7.94
Tankage and skimmilk	_____	.81	.54	1.26
Pasture	_____	.12	.00	.20
Total Feed Cost per 100 lbs. Hogs Prod.	\$ _____	\$5.71	\$3.23	\$9.40
RETURNS PER 100 LBS HOGS PRODUCED	\$ _____	\$8.90	\$9.75	\$8.15
RET-ABOVE FEED COST PER 100# HOGS PROD.	\$ _____	\$3.19	\$6.42	\$1.25
Price received per 100 lbs. hogs sold	\$ _____	\$8.75	\$0.48	\$8.44
Lbs. of hogs produced	_____	10,959	15,569	6,552

Feed Costs and Returns for Poultry

Items	Your farm	Average 130 farms	26 farms highest in returns above feed per hen	26 farms lowest in returns above feed per hen
Lbs. of feed per hen:				
Concentrates	_____	71	71	90
Skimmilk	_____	51	53	53
Cost of feed per hen:				
Concentrates	\$ _____	\$.78	\$.81	\$1.05
Skimmilk	_____	.07	.08	.08
TOTAL	\$ _____	\$.85	\$.89	\$1.13
Value of product per hen:				
Eggs sold and used in house	\$ _____	\$1.62	\$2.58	\$.99
Poultry sold and used in house plus appreciation or less depreciation	_____	.81	1.39	.44
TOTAL	\$ _____	\$2.43	\$3.97	\$1.43
RETURNS ABOVE FEED COST PER HEN	\$ _____	\$1.58	\$3.08	\$.30
Price received per doz. eggs sold (cents)	_____	17.8	18.7	17.6
Eggs laid per hen	_____	110	107	69
No. of hens	_____	156	136	119

Feed Costs per Horse and Other Power Expense Items

	Your farm	Average	Most profitable farms	Least profitable farms
Number of farms:		130	26	26
Feed per horse,* lbs.:				
Grain	_____	2,764	2,830	2,751
Tame hay and alfalfa	_____	1,533	1,764	1,742
Wild hay and fodder	_____	2,519	2,570	2,188
Feed costs per horse:				
Grain	\$ _____	\$.25	\$.26	\$.24
Roughage	_____	7	8	8
Pasture	_____	3	3	3
TOTAL	\$ _____	\$.35	\$.37	\$.35
Number of work horses	_____	4.7	5.9	4.3
Number of colts	_____	.8	1.0	1.0
Total acres in farm	_____	156	214	138
Crop acres per horse	_____	25	28	24
Tractor and horse exp. per crop acre	\$ _____	\$2.34	\$2.62	\$2.61
Farm power expense per day prod. work	_____	.88	.63	1.03

*Two colts equal one horse.