UNIVERSITY OF MINNESOTA
Department of Agriculture
and the
United States Department of Agriculture
Bureau of Agricultural Economics
Cooperating

-- 0 --

Report of a Farm Management Survey of 120 Dairy Farms in Kanabec, Mille Lacs, and Pine Counties

-- 0 --

Name: _____

Mimeographed Report No. 80
Division of Agricultural Economics
University Farm
St. Paul, Minnesota
December, 1936

Report of a Farm Management Survey of 120 Dairy Farms in Mille Lacs, Kanabec, and Pine Counties

Prepared by W. P. Ranney and G. A. Pond

INDEX

INTRODUCTION

The Division of Agricultural Economics of the University of Minnesota in cooperation with the United States Department of Agriculture made a survey of 120 dairy farms in east central Minnesota the past summer.(1) In addition to information covering the receipts and expenses of the farm, considerable data covering crop and livestock organization, 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 neighbros 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 130 dairy farms in southeastern Minnesota. An analysis of the farm businesses for those 130 farms, in a manner similar to that used in this report, is presented in Mimeographed Report No. 79

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 Agricultural 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 Walter Boekke and Max McMillan. 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 south central part of Kanabec County, the southeastern part of MilleLacs County and the southwestern corner of Pine County. The location of the farms by townships is as follows:

Kanabec County		Mille Lacs County		Pine County	
Township	No. of farms	Township	No. of farms	Township	No. of farms
Brunswick	17	Bogus Brook	32	Royalton	39
Arthur	14	Borgholm	10	Rock Creek	1
Comfort	5				
Grass Lake	2				

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, principally through farmer owned cooperative creameries specializing in the manufacture of high quality butter. The skimmilk is retained on the farm and fed to the cows, calves, hogs and poultry. On many farms much of the skimmilk is wasted as the supply is greater than can be used to advantage in feeding the livestock on hand.

The principal crops grown are corn, oats, barley, and hay. These crops are raised primarily as livestock feed. Potatoes are grown to a limited extent as a cash crop.

This report shows that the receipts from the sales of dairy products constituted over half of the average cash income of the 120 farmers included in this report. These farms are fairly typical of the system of dairy farming prevailing in east central 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.

The soil on these farms varies from a sandy loam to a clay loam, with the former predominating. There are small areas of peat and sand on some farms. Applications of lime are in general unnecessary in order to grow alfalfa and sweet clover.

The land varies from level to slightly rolling. Most of these farms were originally covered with timber. There is a small amount of timber and stumps remaining to be cleared on a few farms. Likewise, stone removal would increase the tillable acreage on a number of farms.

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 4 to 6 are presented financial summaries of the years business, showing the average results for the 120 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 7 to 19 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 INVESTED IN FARM BUSINESS

The average size of the farms in this report is 111 acres. The average farm inventory was $6107. This does not include the value of the house in which the operator lived, which amounted to $1793. In 1935, 33 per cent of the average farm inventory consisted of land, 36 per cent of permanent improvements, 1 per cent of feeds and supplies, 12 per cent of machinery and equipment, and 18 per cent of livestock, of which one-half or an average of $571 was the average inventory value of milk cows.

RETURNS TO OPERATORS FOR THEIR LABOR AND MANAGEMENT

The average cash receipts per farm was $1310. In addition, farm produce to the value of $226 was consumed by the farm family and there was an average inventory increase of $155 per farm. The total average receipts per farm is the sum of these three items, $1691. The average total expenses per farm, $635, includes $608 cash expenses and an estimated allowance of $27 for board of hired labor. The difference between the total income and total expense figure is $1656. 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, $305, for the services of capital, there remains $751 for the services of the farmer and his family. The average value of family labor used, if computed at hired man's wages, was $354. The average operator's labor earnings are the family earnings less their allowance of $354, or $397. 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 120 farms	24 most profitable farms	24 least profitable farms
Size of farm (acres)	____	111	148	98
Size of business(days of prod.work) (1)	____	367	561	290
Average farm inventory (without house)	____	$6107	$8713	$5433
Land	____	2008	3147	1815
Farm improvements	____	2188	2786	2115
Machinery & equipment (total)	____	713	991	552
Gen. machinery & equipment	____	446	616	385
Tractor	____	83	114	57
Truck	____	13	62	0
Auto (farm share)	____	127	157	101
Electrical equipment (farm share)	____	44	42	9
Feeds and seed	____	58	104	25
Horses (total)	____	294	421	263
Horses	____	276	392	250
Colts	____	18	29	13
Productive livestock (total)	____	846	1264	663
Cows	____	571	831	453
Other cattle	____	161	240	117
Hogs	____	51	99	29
Sheep	____	9	20	22
Poultry	____	54	74	42

(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 or business.

The number of days of productive work for each animal and each acre of crops, computed from labor data secured on detailed accounting routes conducted in Polk and Pine counties, is listed as follows:

Item	Per	No. of days of productive work	Item	Per	No. of days of productive work
Cows	Cow	18.5	Small grain	Acre	1.3
Other cattle	Animal unit*	7.2	Corn (husked)	"	2.6
Sheep	Animal unit*	3.0	Corn (fodder)	"	2.3
Poultry	100 hens	30.0	Corn (silage)	"	3.1
Hogs	100 lbs. hogs produced	.9	Sunflower silage	"	3.6
			Summer fallow	"	1.6
Alfalfa	Acre	1.75	Potatoes	"	6.0
Tame hay	"	.8	Rutabagas	"	9.0
Wild hay	"	.6	Cabbages	"	10.0
Small grain hay	"	1.3	Beans	"	3.0
Hay (seed crops)	"	1.0			

*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 120 farms	24 most profitable farms	24 least profitable farms
CASH EXPENSES				
Tractor (new & exp.)	$____	$ 22	$ 40	$ 7
Truck (new & exp.)	____	7	33	0
Auto (new & exp.) (farm share)	____	73	94	59
Electricity (new & exp.) (farm share)	____	8	9	3
Machinery and equipment (new)	____	41	69	19
Machinery and equipment (exp.)	____	25	43	18
Buildings, fences, tiling (new)	____	18	46	17
Buildings, fences, tiling (exp.)	____	32	45	27
Hired labor	____	47	95	38
Feed for livestock	____	90	150	69
Other expense for livestock	____	10	15	12
Horses bought	____	31	42	34
Cows bought	____	11	8	1
Other cattle bought	____	6	8	1
Hogs bought	____	10	13	8
Sheep bought	____	1	3	0
Poultry bought	____	9	13	4
Crop (seed, twine, spray)	____	66	94	51
Taxes and insurance	____	95	127	84
General farm	____	6	8	5
(1) Total cash expense	____	608	955	457
(2) Decrease in farm inventory	____	-	-	-
(3) Board for hired labor	____	27	62	19
(4) Total expense (sum of (1)(2) &(3))	____	635	1017	476
CASH RECEIPTS				
Horses	____	9	25	0
Cows	____	38	75	20
Dairy products	____	718	1110	482
Other cattle	____	96	158	66
Hogs	____	98	228	48
Sheep	____	10	26	19
Poultry	____	37	52	27
Eggs	____	162	256	109
Small grain	____	28	52	8
Corn	____	0	1	0
Hay	____	6	8	1
Root crops	____	32	101	9
Other crops	____	2	7	2
Miscellaneous	____	15	49	3
Income from work off the farm	____	54	151	48
A.A.A. adjustment payments	____	5	14	6
(5) Total cash receipts	____	1,310	2,313	848
(6) Increase in farm inventory	____	155	401	14
(7) Farm produce used in house	____	226	273	201
(8) Total receipts (sum of (5) & (6))	____	1,691	2,987	1,063
Total expenses (4)	____	635	1,017	476
(9) Ret. to cap. & fam. labor (8)minus(4)	____	1,056	1,970	587
(10) Interest on farm inventory	____	305	436	272
(11) Family labor earnings (9)minus(10)	____	751	1,534	315
(12) Unpaid family labor	____	354	413	490
(13) Oper. labor earnings (11)minus (12)	____	397	1,121	-175

Summary of Farm Earnings (A)

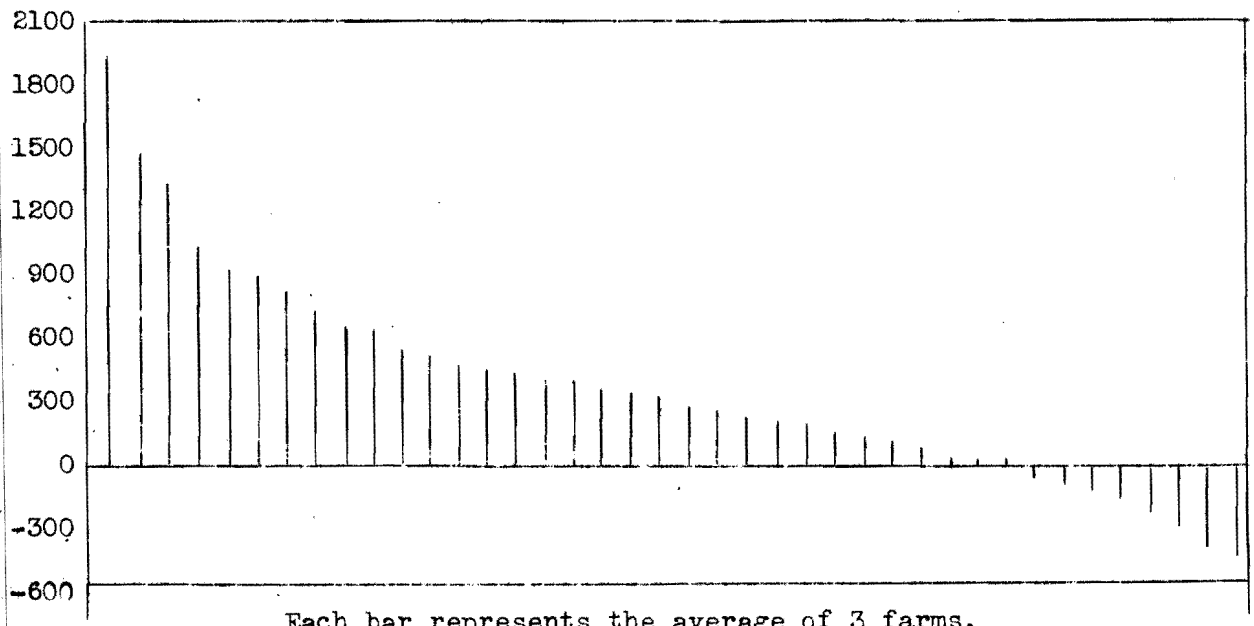
Items	Your farm	Average of 120 farms	24 most profitable farms	24 least profitable farms
EXPENSES AND NET DECREASES				
Total power	$	$ 256	$ 328	$ 216
Hired		33	40	32
Tractor		32	59	20
Truck		6	25	0
Auto (farm share)		97	115	82
Elec. plant or current (farm share)		18	18	5
Horses		70	71	77
General machinery and equipment		88	127	71
Buildings, fencing, tiling		97	130	96
Productive livestock misc. expense		8	14	7
Crop		32	50	22
Real estate taxes		69	92	59
Personal property tax		9	13	8
Insurance		17	22	17
General farm		6	8	5
Hired labor & board, & unpaid family labor		428	570	547
Interest on farm inventory		305	436	272
(1) Total		$1,315	$1,790	$1,320
RETURNS AND NET INCREASES				
All productive livestock		1,564	2,559	1,073
Cows		961	1,497	654
Other cattle		205	340	151
Hogs		155	347	78
Sheep		10	24	20
Chickens		233	351	170
Crops, feed, vegetables, and fuel		88	184	15
A.A.A. adjustment payment		5	14	6
Miscellaneous		1	3	3
Income from work off the farm		54	151	48
(2) Total		1,712	2,911	1,145
Total expenses (1)		1,315	1,790	1,320
(3) Oper. labor earnings (2) minus (1)		397	1,121	-175

(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 5.

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 $33 per month for their labor and management, or a total for the year of $397. The most significant fact in these statements, however, is the wide range in earnings -- from $1987 to a loss of $498, or a range of $2485. The following diagram illustrates this fact:

Chart 1. Range of Earnings



Each bar represents the average of 3 farms.

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

Lbs. butterfat per cow Group	Average	No. of farms	Average Earnings
Below 210	180	25	$220
210 to 289	251	68	398
290 and above	320	27	557

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 Earnings

Returns above feed cost per animal unit of prod. livestock other than cows Group	Average	No. of Farms	Average Earnings
Below $30	$17	25	$265
$30 to 79	56	67	378
80 and above	103	28	559

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.

Productive livestock units per 100A		No. of	Average
Group	Average	farms	Earnings
Below 12.0	8.9	30	$244
12.0 to 17.9	14.7	62	440
18.0 and above	21.1	28	464

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

Per cent crop yields were of the average for all the 120 farms		No. of	Average
Group	Average	farms	Earnings
Below 85	70	24	$187
85 to 114	100	70	382
115 and above	125	26	630

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 Use of Legumes to Farm Earnings

Per cent of tillable land in legume hay and pasture*		No. of	Average
Group	Average	farms	Earnings
Below 8.0	3.0	25	$275
8.0 to 24.9	15.9	64	432
25.0 and above	31.9	28	439

* In calculating this percentage, acreage in alfalfa hay and pasture, and sweet clover pasture were counted in full, but only half of acreage in other legumes were counted.

It is quite important to have the very best pasture crop so as to reduce grain and roughage feeding as much as possible. Also, as hay is bulky, necessitating high freight charges, if shipped in, it is important to raise all the hay needed and purchase concentrates, if necessary to supplement it.

There are also differences in the amount of feed produced per acre, in the value of that feed, and in the effect on soil fertility, among different hay crops. Legumes furnish more protein, which is an expensive feed to buy, and also add nitrogen to the soil. Among the legumes, alfalfa and sweet clover pasture, where they can be grown successfully, yield more nutrients per acre than other legumes. There is considerable variation in the adaptibility of these crops, and it is important for each farmer to determine the kind of crops best adapted to his farm, those that

will give the highest net returns, taking into consideration livestock feed requirements, the value of the crop as a feed, yields per acre, the development of a good crop rotation, and expenses of production.

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

Days of Productive Work Group	Average	No. of farms	Average Earnings
Below 250	204	29	$ 97
250 to 449	350	66	346
450 and above	602	25	880

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

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

Days of productive work per worker Group	Average	No. of Farms	Average Earnings
Below 150	118	26	$ 29
150 to 249	192	65	372
250 and above	293	29	782

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 years' 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 of Farm Earnings.*

Expense per day of productive work Group	Average	No. of farms	Average Earnings
$1.50 and above	$1.85	26	$267
.90 to $1.49	1.19	69	376
Below .90	.69	25	590

*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 farm-

ers 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
7	5	____	xxxxxxxxxxxxxxxxxxxxx	$1087
6	14	____	xxxxxxxxxxxxxxxx	871
5	33	____	xxxxxxxxxx	541
4	24	____	xxxxxx	322
3	20	____	xxxx	203
2	19	____	xx	72
1	5	____	xxxx	-183
0	1	____	xxxxxx	-275

The array in Table 9 indicates that it will be worth while for each cooperator to study carefully his ranking on pages 11 and 12, 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 12		Your farm	Average of 120 Farms	24 most profitable farms	24 least profitable farms
Operator's Labor Earnings		$____	$397	$1,121	$-175
(1) Pounds of butterfat per cow		____	252	263	224
(2) Return over feed (pr.lvst. other than cows)*	$	____	$58.00	$76.00	$47.00
(3) Productive livestock units per 100 acres		____	14.7	15.6	14.3
(4) Crop yields**		____	100	108	93
(5) % of tillable land in legumes***		____	16.6	19.5	15.6
(6) Size of business--days of productive work		____	367	561	290
(7) Days of productive work per worker		____	201	266	140
(8) Power and eq.expense per day of prod. work	$	____	$1.22	$1.03	$1.36
Measures and items related to some of the above measures:					
(2) Return over feed per head other cattle	$	____	$16.00	$21.00	$12.00
Return over feed per 100 lbs. hogs produced		____	2.55	3.37	3.59
Return over feed per hen		____	1.27	1.53	.92
Return over feed per head sheep		____	3.71	3.49	2.60
(6) Days of productive work on crops		____	100	159	75
Days of productive work on prod. livestock		____	253	364	203
Days of other productive work		____	14	38	12
(7) Total number of workers		____	1.9	2.2	2.1
Number of family workers		____	1.8	1.9	2.0
Number of hired workers		____	.1	.3	.1
(8) Power expense per day of productive work	$	____	$.71	$.58	$.76
Mach. & equip. exp. per day of prod. work		____	.23	.22	.25
Bldg. & fencing exp. per day of prod. work		____	.28	.23	.35

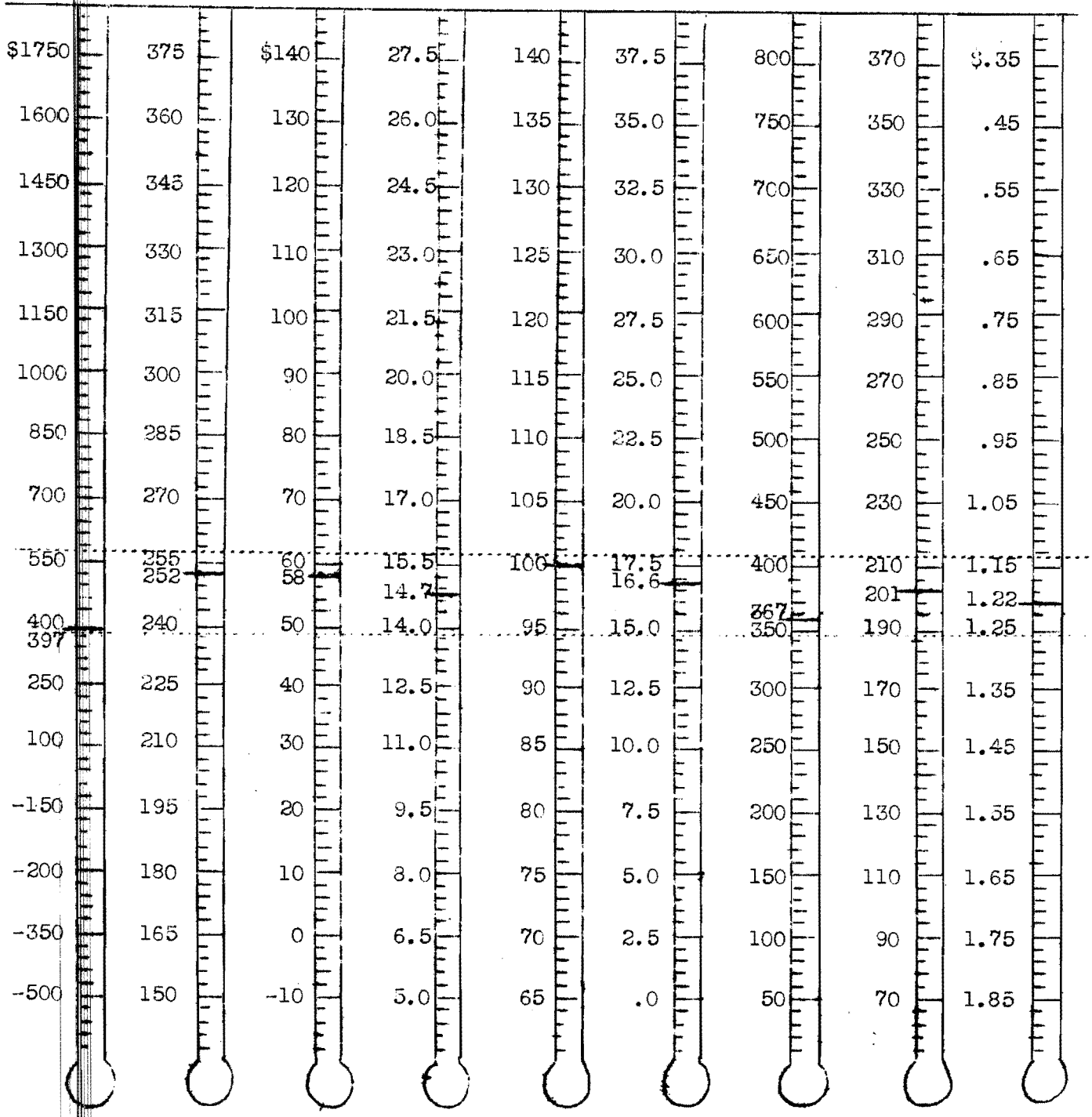
*Given as returns over feed cost per animal unit of productive livestock other than cows.

**Given as a percentage of the average.

***See footnote to Table 5, page 8.

Thermometer Chart

Using your figures from page 11, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for 120 farms included in this summary are located between the two dotted lines across the center of this page.



Distribution of Acres in Farm

Crop	No. of farms growing this crop	Your farm	Aver. of 120 farms	24 most profitable farms	24 least profitable farms
Winter wheat	3	____	.1	.1	0
Spring wheat	43	____	1.1	1.0	1.3
Oats	110	____	16.0	21.1	14.2
Barley	51	____	2.7	4.7	1.5
Rye	17	____	1.2	1.7	0
Wheat and oats	1	____	.1	0	0
Oats and barley	11	____	1.7	4.2	0
Millet	4	____	.1	.2	0
Total grain			23.0	33.0	17.0
Corn, grain	44	____	2.0	3.4	0
Corn, silage	77	____	7.0	12.7	5.7
Corn, fodder	62	____	3.7	3.7	4.8
Potatoes	87	____	2.5	4.4	1.6
Total cultivated crops			15.2	24.2	12.1
Alfalfa	93	____	7.9	14.3	5.6
Red clover	4	____	.1	.4	0
Other legumes & mix.(incl. 2.5 A. soybeans)	41	____	2.2	2.0	2.0
Timothy	8	____	.3	.5	0
Annual hay (millet,sudan grass, sm.grain, etc.)	37	____	1.9	2.1	1.1
Phalaris (non-tillable land)	8	____	.2	0	.4
Wild hay (non-tillable land)	73	____	4.9	6.5	3.3
Total hay			17.5	25.8	12.4
Total crop acreage			55.7	83.0	41.5
Sweet clover pasture	6	____	.5	.4	.3
Alfalfa pasture	2	____	.1	0	0
Miscellaneous legume pasture	6	____	1.0	.2	2.2
Other tillable pasture	48	____	8.1	9.0	14.6
Non-tillable pasture	103	____	35.0	42.6	28.8
Total pasture			44.7	52.2	45.9
Tillable land not cropped	12	____	.7	0	.8
Timber (not pastured)	3	____	.4	.4	0
Farmstead		____	9.7	12.4	9.6
Total acres in farm		____	111.2	148.0	97.8
% of land tillable		____	56	59	59
% of tillable land in high return crops		____	16.6	19.5	15.6

Yield of Crops

Yield of crops per acre	Your farm	Average 120 farms	24 most profitable farms	24 least profitable farms
Winter wheat, bu.	_____	25.2	35.6	--
Spring wheat, bu.	_____	14.7	13.5	12.3
Oats, bu.	_____	47.6	49.2	44.1
Barley, bu.	_____	29.0	33.6	25.9
Rye, bu.	_____	24.4	22.1	--
Wheat and oats, bu.	_____	50.0	--	--
Oats and barley, bu.	_____	47.1	55.6	--
Millet	_____	27.1	25.0	--
Corn, grain, bu.	_____	27.7	39.8	--
Corn, silage, tons	_____	7.4	7.8	6.7
Corn, fodder, tons	_____	2.8	2.6	2.9
Potatoes, bu.	_____	61.7	70.6	80.5
Alfalfa, tons	_____	2.8	2.7	2.4
Red clover, tons	_____	2.4	2.5	--
Clover and timothy, tons	_____	1.6	1.9	1.1
Timothy hay, tons	_____	1.6	1.6	--
Phalaris hay, tons	_____	1.9	--	2.5
Wild hay, tons	_____	1.4	1.3	1.4
Miscellaneous crops	_____	_____		
	_____	_____		

Some methods farmers use to increase their crop yields:

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

Summary of Amount of Livestock

	Your farm	Average 120 farms	24 most profitable farms	24 least profitable farms
Acres in farm	____	111	148	98
No. of horses	____	2.9	3.6	2.7
No. of colts	____	.3	.4	.2
No. of cows	____	10.1	14.3	8.2
No. of cows per worker:	____	5.6	6.7	3.9
Head of other cattle	____	6.4	8.9	5.1
Pounds of hogs produced	____	1,579	3,308	854
Head of sheep (2 lambs equal 1 head)	____	2.5	4.8	6.3
No. of hens	____	90.6	127.6	77.3
Total no. of prod. livestock animal units	____	15.4	22.3	12.8
% of tot. prod. lvst. units that are cows	____	67.0	65.5	64.9
% of tot. prod. lvst. units that are o. cattle	____	20.4	18.5	21.4
% of tot. prod. lvst. units that are hogs	____	4.5	7.0	2.8
% of tot. prod. lvst. units that are sheep	____	1.6	2.6	4.1
% of tot. prod. lvst. units that are hens	____	6.5	6.4	6.8
Number of farms with tractors		89	11	5
Number of farms without tractors		31	13	19

Distribution of Farm Produce Used in House

	Quantities		Values	
	Your farm	Average 120 farms	Your farm	Average 120 farms
Whole milk	____	1,126 qts.	$____	$ 33
Cream	____	385 pts.	____	38
Eggs	____	167 doz.	____	32
Poultry	____	39 head	____	11
Cattle	____	97 lbs.	____	5
Hogs	____	376 lbs.	____	34
Potatoes	____	34 bu.	____	7
Vegetables and fruit	____	--	____	33
Farm fuel	____	10 cds.	____	33
Total			$____	$226
Average value of farm dwelling	____		$____	$1,793

Factors of Cost and Returns in Dairy Production

Items	Your farm	Average 120 farms	24 farms highest in B.F. per cow	24 farms lowest in B. F. per cow
Pounds butterfat per cow	____	252	324	179
Feeds per cow, lbs.:				
Corn	____	29	54	34
Small grain	____	1040	1344	868
Com. feeds - under 25% protein	____	135	171	93
Com. feeds - over 25% protein	____	28	44	19
Skimmilk	____	424	593	515
Tame hay	____	972	755	1242
Alfalfa	____	2878	3469	1737
Wild hay	____	445	572	640
Corn fodder	____	2336	2194	3453
Silage	____	7508	8823	2986
Total concentrates	____	1232	1613	1014
Total dry roughage	____	6631	6990	7072
Total digestible nutrients	____	5392	6068	4703
Total digest. nutrients per lb. B.F.*	____	22.2	19.0	27.8
%protein in ration	____	12.8	13.1	12.0
% cows fresh - Sept. to Dec. inclusive	____	31	35	22
Feed cost per cow:				
Concentrates	$____	$12	$15	$10
Roughages	____	21	24	15
Pasture	____	2	3	3
TOTAL FEED COSTS	$____	$35	$42	$28
Value of produce per cow:				
B. F. sales	$____	$69	$92	$49
Dairy produce used in house	____	8	10	7
Milk to other livestock	____	13	12	12
Appreciation or depreciation	____	3	3	2
TOTAL VALUE OR PRODUCT	$____	$93	$117	$70
RETURNS ABOVE FEED COST PER COW	$____	$58	$ 75	$42
Price received per lb. B. F. sold:				
As manufacturing cream (cents)	____	31.9	32.0	33.2
Feed cost per lb. B. F.	____	14.5	13.1	16.4
Number of cows**	____	10.1	10.9	9.4
Hours of man labor per cow	____	233	251	235
Hours of horse work per cow	____	3	2	2
Miles of car or truck travel per cow	____	76	92	89

*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; no. of farms:		120	24	24
Feeds used per head, lbs.:				
Concentrates	____	30	119	6
Hay and fodder	____	1,318	896	2,448
Silage	____	1,205	1,256	1,036
Whole milk	____	720	594	1,163
Skimmilk	____	4,306	6,156	5,236
Feed cost per head:				
Concentrates	$____	$ --	$ 1	$--
Roughages	____	4	3	5
Milk	____	16	17	23
Pasture	____	1	1	1
TOTAL	$____	$21	$22	$29
RETURNS PER HEAD	$____	$37	$59	$26
RETURNS ABOVE FEED COST PER HEAD	$____	$16	$37	$-3
Lbs. of butterfat per cow	____	252	266	238
Number of head of young cattle	____	6.4	5.3	6.0
Sheep; no. of farms:		12	6	6
Feeds used per head,*lbs.:				
Concentrates	____	30	37	23
Tame hay	____	30	60	0
Alfalfa	____	29	17	42
Corn fodder and wild hay	____	184	24	345
Silage	____	123	200	46
Feed cost per head:				
Concentrates	$____	$.24	$.30	$.18
Roughages	____	.41	.37	.45
Pasture	____	.25	.40	.10
TOTAL	$____	$.90	$1.07	$.73
Value of production per head:				
Wool	$____	$1.25	$2.09	$.41
Mutton	____	3.36	4.88	1.84
TOTAL	$____	$4.61	$6.97	$2.25
RETURNS ABOVE FEED COST PER HEAD	$____	3.71	5.90	1.52
Price per lb. wool sold	$____	$ .28	$ .26	$.35
Value per lamb sold	____	7.15	7.90	6.40
% lamb crop	____	97	104	90
% death loss	____	3	3	3
No. of head of sheep*	____	25.0	17.9	32.2

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

Feed Costs and Returns for Hogs

Items	Your farm	Average 102 farms	20 farms highest in returns above feed	20 farms lowest in returns above feed
Lbs. of feed per 100 lbs. hogs produced:				
Corn	____	106	14	256
Small grain	____	222	158	381
Commercial grain feeds	____	3	2	0
Total grain and commercial feeds	____	331	174	637
Skimmilk	____	2381	979	5729
Cost of feed per 100 lbs. hogs produced:				
Grain and commercial feeds	$____	$3.44	$1.54	$7.16
Tankage and skimmilk	____	3.57	1.47	8.60
Pasture	____	.02	.01	.01
Total Feed Cost per 100 lbs. Hogs Prod.	$____	$7.03	$3.02	$15.77
RETURNS PER 100 LBS. HOGS PRODUCED	$____	9.58	11.18	8.52
RET. ABOVE FEED COST PER 100# HOGS PROD.	$____	2.55	8.16	-7.25
Price received per 100 lbs. hogs sold	$____	$6.89	$7.65	$4.69
Lbs. of hogs produced	____	1860	1796	839

Feed Costs and Returns for Poultry

Items	Your farm	Average 116 farms	23 farms highest in returns above feed per hen	23 farms lowest in returns above feed per hen
Lbs. of feed per hen:				
Concentrates	____	87	71	103
Skimmilk	____	133	130	101
Cost of feed per hen:				
Concentrates	$____	$1.04	$ .84	$1.31
Skimmilk	____	.21	.20	.17
TOTAL	$____	$1.25	$1.04	$1.48
Value of product per hen:				
Eggs sold and used in house	$____	$2.06	$2.90	$1.14
Poultry sold and used in house plus appreciation or less depreciation	____	.46	.74	.29
TOTAL	$____	$2.52	$3.64	$1.43
RETURNS ABOVE FEED COST PER HEN	$____	$1.27	$2.60	$-.05
Price received per doz. eggs sold (cents)	____	19.3	21.7	18.2
Eggs laid per hen	____	131	173	75
No. of hens	____	94	107	88

Feed Costs per Horse and Other Power Expense Items

Items	Your farm	Average	Most profitable farms	Least profitable farms
Number of farms:		120	24	24
Feed per horse,* lbs.:				
Grain	_____	1,377	1,628	1,315
Tame hay and alfalfa	_____	1,912	1,825	1,919
Wild hay and fodder	_____	2,545	2,076	3,206
Feed costs per horse:				
Grain	$_____	$ 11	$14	$11
Roughage	_____	8	7	8
Pasture	_____	3	3	3
Total	$_____	$ 22	$24	$22
Number of work horses	_____	2.9	3.6	2.7
Number of colts	_____	.3	.4	.2
Total acres in farm	_____	103	106	98
Crop acres per horse	_____	20	23	17
Tractor and horse exp. per crop acre	$____	$1.92	$1.62	$2.21
Farm power expense per day prod. work	____	.71	.58	.76

*Two colts equal one horse.