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UNIVERSITY OF MINNESOTA
Department of Agriculture
and
UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
and
Farm Security Administration
Cooperating

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Report

of the

FARM MANAGEMENT SERVICE

for

FARMER-BORROWERS

of

Rural Rehabilitation Division
of
The Farm Security Administration

For the Year
1936

(For tenant-operated farms with cash leases in Northern Minnesota)

Name: _____

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Division of Agricultural Economics
University Farm
St. Paul, Minnesota
October 1937

Report of the Farm Management Service for Farmer-Borrowers
of the Rural Rehabilitation Division

(For tenant-operated farms with cash leases in Northern Minnesota)

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

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INTRODUCTION

The analysis of the records and preparation of this report were under the direction of W. P. Ranney and G. A. Pond of the Division of Agricultural Economics, University of Minnesota. The records had been kept and closed under the general supervision of S. H. Rutford, former state director, and Lloyd I. Nelson, present state director, and the state personnel of the Rural Rehabilitation Division of the Farm Security Administration, with counsel and aid from S. B. Cleland and J. B. McNulty of the Division of Agricultural Extension, University of Minnesota. The above parties were aided in the closing and summarization of the records by the Division of Rural Sociology of the University of Minnesota and the Bureau of Agricultural Economics, United States Department of Agriculture.

The Rural Rehabilitation Division has made loans to several thousand farmers in Minnesota, who, on account of the recent depression and droughts, were having difficulty in obtaining and maintaining credit from other sources. Many of the farmers would not have been able to continue farming without the credit secured from Rural Rehabilitation. The latter organization has required their borrowers to keep a system of farm records as a means of helping them to increase their incomes and control their expenses in order that their debts may be liquidated. To further this purpose the Farm Security Administration arranged to have these records summarized and analyzed in order that they may be made more useful to these farmer-borrowers. The several divisions of the University of Minnesota mentioned previously and the Bureau of Agricultural Economics at Washington have cooperated in the summarization, analysis, and interpretation of these records, realizing that this is an opportunity to aid directly a large group of worthy farmers, and to obtain valuable information for research, teaching, and extension purposes, thereby being enabled to serve many farmers in this state.

Note: Completion of this project was made possible by workers supplied on Works Progress Administration Project Number 4841, Sub-Project Number 420B, and Federal Students' Work Project Number 41-100.

Sponsor: University of Minnesota.

The records included in this report were kept by tenant-operators who paid cash rent. These farms were located in the northern part of Minnesota in the following counties:

<u>County</u>	<u>No. of Farms</u>	<u>County</u>	<u>No. of Farms</u>	<u>County</u>	<u>No. of Farms</u>
Aitkin	6	Douglas	5	Morrison	4
Becker	6	Hubbard	2	Ottertail	3
Beltrami	2	Isanti	2	Pine	3
Benton	3	Itasca	1	Polk	5
Carlton	3	Kanabec	7	Roseau	5
Cass	5	Koochiching	2	Todd	5
Crow Wing	3	Marshall	1	Wadena	6
Clearwater	11	Mille Lacs	2		

Although the predominant type of farming is not the same in all of the above counties, the system of farming did not vary greatly among the farms included in this report. Every farmer sold some dairy products, mostly in the form of cream for manufacture into butter. A few farms had special whole milk or retail cream markets. On nearly every farm there were, besides the dairy cows, young dairy cattle, and a few hogs and chickens, and on some farms there were sheep. The proportion of total receipts that came from sales of livestock, and livestock products, varied from farm to farm. As all of these farms were affected by the severe drought of 1936, receipts from the sale of crops were much less than normal and purchases of feed above normal.

About 2,100 records were submitted by the borrowers of the Rural Rehabilitation Division in Minnesota. Of this number, 862 are included in the records similar to this one.* The other records were either too incomplete or did not represent a full year's record because the loans were obtained late in the year 1936. Only full twelve months' records are included in these reports. The majority were started March 1, 1936, but many started February first and April first, and a few on January first.

There are three phases of the analysis on the following pages: (1) The farm receipts, expenses, and earnings (only the operator's share is included); (2) The non-farm income and household and personal expenses; (3) The farmer's net worth and financial progress. All are somewhat interrelated, and dependent on each other. The data show that in all of these matters there are wide differences among farms. For example, the average operator's labor earnings for the farms in this report are \$414. The lowest is \$-348, and the highest is \$1186. There is a similar range for household and personal expenses, for net worth, and for financial progress (change in net worth).

The data have been compiled so as to show the average figures for all of the 92 farmers included in this report, the average of 18 farmers highest in operator's labor earnings, and the average of 18 farmers lowest in operator's labor earnings. Each farmer included herein received a report with his own figures copied in the "your farm" column, and his estimated budget also copied. He can compare his own figures with the averages of all farms and the most successful and least successful groups.

*See Footnote, page 11.

SUMMARY OF FARM EARNINGS

Items	Your budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Cash Farm Expenses					
Operating					
Tractor			\$ 7	\$ 18	\$ 1
Auto (farm share) and truck			47	52	47
General machinery and equipment			22	32	15
Machinery and horse work hired			0	0	0
Hired labor			19	22	19
Feed for livestock			153	179	189
Veterinary			1	0	1
Other expense for livestock			10	16	8
Seed			10	16	9
Fertilizer			0	0	0
Threshing			4	7	4
Twine			2	3	1
Other crop expense			7	13	7
Cash rent			91	100	99
Taxes			4	6	3
Insurance			3	4	3
Interest			4	5	5
General farm			4	9	2
Money loaned out*			23	4	1
Total cash farm operating expenses			\$411	\$486	\$414
Capital Goods					
Tractor			\$ 0	\$ 2	\$ 0
Auto (farm share) and truck			12	13	11
General machinery and equipment			49	74	37
Horses			34	73	15
Cows			45	48	42
Other cattle			3	5	2
Hogs			7	7	8
Sheep			4	4	6
Poultry			9	5	13
Payments on debts (Rur. Rehab.)			76	90	66
Payments on debts (other)			51	124	33
Total cash farm cap. payments			\$290	\$445	\$233
(1) Total cash farm expenses			\$701	\$931	\$647
(2) Decrease in net farm capital			-	-	-
(3) Board for hired labor			9	8	19
(4) Total farm expenses (to page 4)			\$710	\$939	\$666
			No. of Farms:		
% actual expenses were of farm budget (Form RA-RR-14)			66 ^x	13 ^x	11 ^x
Total cash farm operating expenses			131%	143%	158%
Total cash farm capital payments			69%	93%	37%

* Includes amount to offset credit sales, and amount of premiums paid on insurance for future years.

^xNumbers specify how many farms are included in these groups. Only those farms are included for which Forms RA-RR-14 were provided. These numbers of farms apply also for the following pages where "per cent of budget" is considered.

SUMMARY OF FARM EARNINGS (continued)

Items	Your budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Cash Farm Receipts					
Horses			\$ 5	\$ 7	\$ 1
Cows			24	23	46
Dairy products			320	392	258
Other cattle			27	32	19
Hogs			63	106	58
Sheep			15	37	16
Wool			4	8	4
Poultry			39	28	61
Eggs			49	26	55
Small grain			14	59	1
Corn			-	-	0
Hay			2	1	2
Root crops			10	20	2
Other crops			13	42	13
Miscellaneous			23	56	24
Machinery and horses hired out			4	9	0
Income from work off the farm			137	208	74
AAA adjustment payments			12	10	7
Payments from old debts			4	4	-
Money borrowed (Rural Rehab.)			31	22	2
Money borrowed (elsewhere)*			133	135	71
(5) Total cash farm receipts			\$929	\$1225	\$714
(6) Increase in net farm capital			142	466	25
(7) Farm perquisites			270	302	239
(8) Total farm receipts (sum of (5), (6), & (7))			1341	1993	978
(4) Total farm exp. (from page 3)			710	939	666
(9) Ret. to cap. & fam. labor (8) minus (4)			631	1054	312
(10) 5% interest on net farm capital			22	28	25
(11) Family labor earnings (9) minus (10)			609	1026	287
(12) Unpaid family labor			195	162	343
(13) Operator's labor earnings (11) minus (12)			414	864	-56
% actual total cash farm receipts were of the budget for cash farm receipts (Form RA-RR-14)			141%	141%	101%

Summary of Farm	Quantities				Values			
	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Perquisites								
Whole milk, qts.		707	912	620		\$ 32	\$ 42	\$ 26
Skim milk, qts.		62	0	21		1	0	-
Cream, pts.		232	240	240		31	32	30
Farm made butter, lbs.		61	68	42		21	24	15
Eggs, doz.		70	91	68		13	17	13
Poultry, number		19	17	21		8	6	10
Cattle, lbs.		96	86	92		6	4	5
Hogs, lbs.		232	367	153		22	33	18
Sheep, lbs.		2	0	0		-	0	0
Potatoes, bu.		22	33	19		18	19	17
Vegetables & fruit		-	-	-		16	18	8
Fuel, cds.		13	12	11		34	31	32
House rental		-	-	-		68	76	65
Total value of farm perquisites						\$270	\$302	\$239

*Includes amount to offset credit purchases.

SUMMARY OF HOUSEHOLD AND PERSONAL EXPENSES AND RECEIPTS

	Your budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
<u>Number of persons in family</u>					
Total number of persons in family			4.4	4.8	4.4
Total adult equiv. members of family			3.2	3.6	3.4
Total no. of other persons in h.h.			-	-	.1
Total adult equiv. of other pers. in h.h.			-	-	.1
<u>Cash Expenses (other than savings, etc.)</u>					
Food			\$184	\$192	\$186
Operating and supplies			21	28	15
Furnishings and equipment			24	35	18
Clothing and materials			55	64	55
Health			18	23	19
Development and recreation			15	26	7
Personal			14	20	8
Personal share of auto expense			14	15	7
Personal share of auto, new			4	4	3
Housing expense			2	1	-
(16) Total cash exp. (other than svgs., etc.)			\$351	\$408	\$318
% actual (16) of budget (RA-RR-14)			147%	172%	131%
<u>Non-cash items of expense</u>					
(17) Food furnished by the farm			\$168	\$195	\$142
(18) Fuel furnished by the farm			34	31	32
Interest and deprec. on auto (pers. share)			1	1	1
Rental value of house			68	76	65
(19) Total non-cash expenses			\$271	\$303	\$240
(20) Total expenses (16) + (19)			\$622	\$711	\$558
(21) Tot. exp. less board of hired labor (20) - (3)			\$613	\$703	\$539
<u>Other cash expenditures</u>					
Life insurance and savings			\$ 6	\$ 11	\$ 3
Payments on notes and old bills			16	21	8
(22) Total other cash expenditures			\$ 22	\$ 32	\$ 11
(23) Total cash exp. (16) + (22) + (1)			\$1074	\$1371	\$ 976
(24) Total of all exp. (20) + (22) + (1) + (2)			\$1345	\$1674	\$1216
<u>Household and personal cash receipts</u>					
(25) Grants, rel., old age asst., sol. bonus, sur. com.			\$ 77	\$ 39	\$ 89
Net income from outside investments			4	0	0
Gifts (inc. rec. from sons in CCC camps)			4	8	0
Misc. (sale of old clothes, furn., etc.)			2	7	3
Money borrowed (to offset cr. pur.)			6	4	9
(26) Total H. and Pers. cash receipts			\$ 93	\$ 58	\$ 101
(28) Total cash receipts (26) + (5)			\$1022	\$1283	\$ 815
(29) Total of all income (26) + (27) + (8)			1434	2051	1079
(30) Net cash receipts (28) minus (1)			321	352	168
(31) Net income (29) minus (4)			724	1112	413
(32) % Gov. asst. is of cash rec., % (29) of (30)			37%	58%	58%
(33) % Food and fuel is of H. and Pers. exp., % (17) + (18) is of (21)			32%	33%	33%

SUMMARY OF INVENTORIES AND NET WORTH STATEMENT

	Your Farm		Average	18 Most	18 Least
	Beginning	Ending	of 92	profitable	profitable
	Inventory	Inventory	farms	farms	farms
Farm Inventories					
Machinery and equipment			\$ 212	\$ 238	\$ 217
Tractors			23	84	15
Trucks			10	24	27
Auto (farm share)			42	36	49
Gas engine			7	19	3
Electric equipment			1	1	3
Miscellaneous supplies			6	15	3
Feeds and seeds			63	124	31
Horses			236	235	240
Cows			363	418	329
Other cattle			92	154	72
Hogs			25	40	20
Sheep and wool			25	62	16
Poultry			33	24	46
Accounts and notes rec.			22	1	1
Other farm assets			21	2	78
(34) Total farm assets			\$1181	\$1477	\$1150
Farm Liabilities					
Chattel mtgs. and crop liens			\$ 51	\$ 60	\$ 9
Rural Rehabilitation loans			568	547	637
Past due cash rent			17	16	15
Other debts			56	74	21
(35) Total farm liabilities			\$ 692	\$ 697	\$ 682
(36) Net farm capital (34) - (35)			\$ 489	\$ 780	\$ 468
Personal Assets					
Auto (personal share)			\$ 14	\$ 17	\$ 9
Cash on hand and in bank			38	11	1
Household goods			111	209	96
Cash surrender value of life insurance			22	0	0
Miscellaneous			10	1	0
(37) Total personal assets			\$ 195	\$ 238	\$ 106
(38) Total personal liabilities			33	47	53
(39) Total assets (34) + (37)			\$1376	\$1715	\$1256
(40) Total liabilities (35) + (38)			725	744	735
Farmer's net worth (39) - (40)			\$ 651	\$ 971	\$ 521
Change in net worth during the year					
% R.R. loan is of total liabilities (end inventory)			75%	68%	87%
% Total liabilities are of total assets			55%	43%	61%
Age of proprietor, yrs.					
Formal schooling of proprietor, yrs.			8	8	8

EFFECT OF FARM EARNINGS ON FINANCIAL PROGRESS ON THESE FARMS

The data on page 6 indicate that the 18 farmers highest in earnings managed to increase their net worth, while those with the lowest earnings were worth less at the end of the year than at the beginning. Hence, the wide range in operator's labor earnings has a great significance.

EFFECT OF WELL-BALANCED EFFICIENCY ON FARM EARNINGS

On page 4 it was shown that the average operator's labor earnings for the 18 most profitable farms was \$864, and for the 18 least profitable farms \$-56. The difference between the averages of these two groups was \$920. Some of the causes for these differences in earnings may be beyond the control of the farmer. It is significant, however, that the data in this report indicate that there are several factors which show definite relationship with operator's labor earnings and which suggest opportunities for increased earnings. The more important of these factors are the following:

1. Butterfat production per cow.
2. Returns from other productive livestock.
3. Productive livestock units per 100 acres.
4. Crop yields.
5. Percentage of tillable acres in high return crops.
6. Size of business.
7. Amount of work accomplished per worker.
8. Control of power and machinery expense.

Size of business tends to be a disadvantage to those who show a loss, for greater size is a factor serving to increase the loss. However, for those who excel in most of the other factors and received some return for their labor and management, the latter tends to be increased by size of business. Likewise, it is an advantage to have more livestock per hundred acres when the stock shows a profit and a disadvantage when it shows a loss. Hence, a high-balanced standing in the above eight factors is quite essential in order to secure the highest possible earnings.

In Chart I is shown the effect of the number of these eight factors in which the farmer excels on his labor earnings. The 27 farmers who excelled in 5 or more of the 8 factors had earnings of \$340 above the average of 23 farmers who did not excel in more than 2 factors.

<u>CHART I. Relation of Earnings to Number of Factors in which Farmer is Above Average</u>				
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
5 or more	27	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	\$579
3 or more	42	_____	xxxxxxxxxxxxxxxxxxxx	402
2 or less	23	_____	xxxxxxxxxx	239

The array in Chart I suggests that it will be worth-while for each cooperator to study carefully his ranking on pages 8 and 9, and learn through his standing in respect to each of the above factors the elements of strength and weakness in his farm business.

MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY

Measures used in chart on page 9.	Your budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Operator's labor earnings			\$414	\$864	\$-56
(1) Pounds of butterfat per cow			178	182	162
(2) Ret.per a.u.(pr. lvst.other than cows)*			\$ 81.88	\$71.50	\$ 82.53
(3) Pr. lvst. units per 100 acres			10.5	11.2	10.9
(4) Crop yields**			100	109	73
(5) % of tillable land in high ret.crops***			19%	22%	18%
(6) Size of business--days or pr. work****			281	353	245
(7) Days of prod. work per worker			207	262	152
(8) Power & eq.exp. per day of prod.work*****			\$.51	\$.59	\$.57

Other related measures

Gross returns per cow			\$ 64.36	\$ 68.11	\$ 56.01
" " " head of other cattle			28.07	23.88	22.71
" " " litter pigs raised			74.19	99.68	71.07
" " " cwt. hogs produced			9.04	9.79	8.90
" " " head of sheep			6.48	5.53	4.87
" " " hen			2.71	2.62	2.37
Number of pigs raised per litter			6.5	6.7	5.9
Number of eggs laid per hen			88	95	73
Number of cows per worker			5.0	6.0	3.8
Crop acres per horse			25.0	30.6	22.4
Power exp. per day of productive work			\$.30	\$.35	\$.40
Machinery exp. per day of " "			.21	.24	.17
Days of productive work on crops			71	78	71
" " " " " prod. lvst.			164	206	149
" " other productive work			46	69	25
Number of workers, total			1.4	1.4	1.7
" " " , family			1.4	1.4	1.7
" " " , hired			-	-	-

*Returns are calculated by subtracting beginning inventory and purchases from the sum of end inventory, sales of animals and their products, and value of home used animals and animal products. Animal unit represents one cow, one bull, two head of young cattle, seven sheep, fourteen lambs, five hogs, ten pigs, and one hundred hens.

**Given as a percentage of the average.

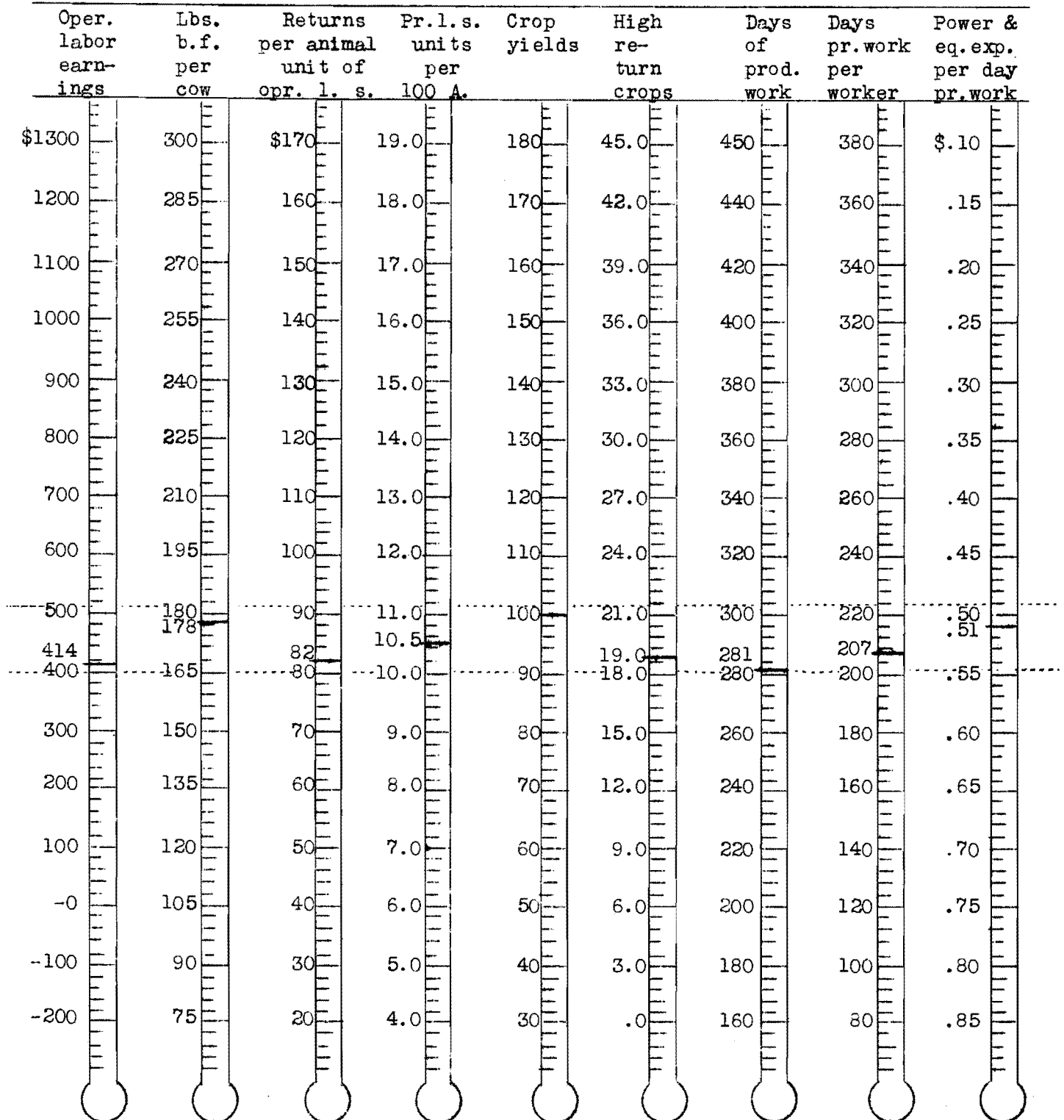
***High return crops include legumes (hay, seed, and pasture), potatoes, and truck crops.

****The total "days of productive work" for any one farm is a measure of size of that farm business. The average number of "ten-hour days" of man labor are as follows per animal unit: cows, 18.5; other cattle, 7.2; sheep, 3.0; hens, 30.0; per 100 lbs. hogs produced, .9; per acre of crops: alfalfa, 1.75; other hay and seed crops, 1.0; small grain, 1.3; corn husked, 2.6; corn silage, 3.1; corn fodder, 2.3; sweet corn, 8.0; potatoes, 6.0; truck crops, 10.0.

*****The expense for any one item, as machinery, is calculated by subtracting the sum of end inventory, sales, and hire from the sum of beginning inventory, purchases, repairs, fuel, and interest charge.

Thermometer Chart

Using your figures from page 8, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for 92 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 budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Wheat	16			1.7	4.3	.7
Oats	49			7.6	6.9	9.6
Barley	30			2.7	3.5	2.5
Rye	9			.8	.7	.7
Flax	11			1.4	5.3	.6
Miscellaneous	5			.3	.0	1.1
Total grain				14.5	20.7	15.2
Corn, grain	30			2.3	1.9	1.6
Corn, silage	2			.1	.0	.4
Corn, fodder	42			3.7	2.0	5.1
Potatoes	64			1.0	1.2	.7
Miscellaneous	24			.4	.3	.2
Total cultivated crops				7.5	5.4	8.0
Alfalfa	22			2.0	3.7	.9
Red clover	13			2.3	1.3	.9
Other legumes & mix.	12			1.9	3.6	3.4
Timothy	22			3.2	2.0	2.4
Annual hay	45			7.6	6.8	12.0
Miscellaneous hays and seed crops	10			1.1	2.1	.0
Phalaris (non-tillable land)	1			.1	.0	.5
Wild hay (non-tillable land)	58			16.8	18.0	14.4
Total hay				35.0	37.5	34.5
Total crop acreage				57.0	63.6	57.7
Tillable pasture				1.4	.6	1.9
Non-tillable pasture				40.4	49.2	36.7
Total pasture				41.8	49.8	38.6
Tillable land not cropped				.9	.8	1.3
Timber (not pastured)				12.0	9.6	11.6
Roads and waste				4.8	6.5	1.8
Farmstead				2.9	3.8	2.0
Total acres in farm				119.4	134.1	113.0
% of tillable land in high return crops				19%	22%	18%

CROP YIELDS

Yield of Crops per Acre	Your budget (RA-RR-14)	Your farm	Aver. of 92 farms	18 Most profit. farms	18 Least profit. farms
Wheat, bu.	_____	_____	6.7	8.5	7.9
Oats, bu.	_____	_____	8.5	7.4	7.5
Barley, bu.	_____	_____	7.1	11.6	5.2
Rye, bu.	_____	_____	4.5	-	5.3
Flax, bu.	_____	_____	2.5	2.0	6.0
Corn, grain, bu.	_____	_____	13.7	7.2	13.6
Corn, silage, tons	_____	_____	1.0	-	.4
Corn, fodder, tons	_____	_____	1.4	1.1	.6
Potatoes, bu.	_____	_____	34.1	32.2	34.0
Alfalfa, tons	_____	_____	1.5	1.5	1.2
Red clover, tons	_____	_____	.9	.8	.5
Clover and timothy, tons	_____	_____	1.3	1.9	.8
Timothy, tons	_____	_____	1.4	1.2	.8
Annual hay, tons	_____	_____	.7	.9	.6
Wild hay, tons	_____	_____	1.0	1.1	.7
Alfalfa seed, lbs.	_____	_____	83.9	82.4	-
Miscellaneous	_____	_____			

SUMMARY OF LIVESTOCK

Number of horses	_____	2.3	2.4	2.5
Number of colts	_____	.2	.4	.1
Number of cows	_____	6.7	7.9	6.1
Head of other cattle	_____	4.4	5.9	3.8
Litters of pigs raised	_____	.8	1.1	.7
Pounds of hogs produced	_____	922	1711	747
Head of sheep (2 lambs equal 1 head)	_____	3.9	9.6	2.6
Number of hens	_____	40	37	42.7
Total a.u. of productive livestock	_____	10.7	13.8	9.6
% of total that are cows	_____	64.0%	59.2%	64.6%
% of total that are other cattle	_____	21.7%	25.3%	21.3%
% of total that are hogs	_____	5.4%	5.5%	5.8%
% of total that are sheep	_____	4.0%	7.1%	3.7%
% of total that are hens	_____	4.9%	2.9%	4.6%

Footnote: The remainder of the records that were summarized are included in the following reports:

- No. 88, Owner-operated farms--Southern Minnesota
- No. 89, Tenant-operated farms--cash leases--Southern Minnesota
- No. 90, Tenant-operated farms--crop-share and cash leases--Southern Minnesota
- No. 91, Owner-operated farms--Northern Minnesota
- No. 93, Tenant-operated farms--crop-share and cash leases--Northern Minnesota
- No. 94, A general and comprehensive summary and analysis of all the records included in the above reports.