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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 crop-share and cash leases--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 crop-share and cash leases--Northern Minnesota)

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

INDEX

Introduction	1
Summary of Farm Earnings	3
Summary of Farm Perquisites	4
Summary of Household and Personal Expenses and Receipts	5
Summary of Inventories and Net Worth Statement	6
Effect of Farm Earnings on the Financial Progress	7
Effect of Well-Balanced Efficiency on Farm Earnings	7
Measures of Farm Organization and Management Efficiency	8
Thermometer Chart	9
Distribution of Acres in Farm	10
Crop Yields	11
Summary of Livestock	11

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 gave a share of the crop as rent and in most cases paid some cash rent in addition. 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	2	Itasca	3	Otter Tail	26
Anoka	1	Kanabec	8	Pennington	2
Becker	12	Kittson	2	Pine	1
Beltrami	3	Koochiching	5	Polk	10
Cass	6	Lake of the Woods	2	Red Lake	5
Clay	10	Mahnomen	5	Roseau	1
Clearwater	11	Marshall	3	Sherburne	3
Crow Wing	2	Mille Lacs	6	Todd	4
Douglas	8	Morrison	6	Wadena	8
Hubbard	5	Norman	1	Wilkin	10

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 reports 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 \$335. The lowest is \$-1224, and the highest is \$2478. 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 171 farmers included in this report, the average of 34 farmers highest in operator's labor earnings, and the average of 34 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 171 farms	34 Most profit. farms	34 Least profit. farms
Cash Farm Expenses					
<i>Operating</i>					
Tractor			\$ 12	\$ 12	\$ 24
Auto (farm share) and truck			49	50	45
General machinery and equipment			25	27	29
Machinery and horse work hired			0	0	0
Hired labor			25	37	26
Feed for livestock			127	116	130
Veterinary			1	-	2
Other expense for livestock			8	10	3
Seed			16	13	15
Fertilizer			0	0	0
Threshing			9	12	10
Twine			4	5	4
Other crop expense			8	10	8
Cash rent			51	56	67
Taxes			5	5	5
Insurance			4	6	5
Interest			6	9	1
General farm			5	5	11
Money loaned out*			3	5	-
Total cash farm oper. exp.			\$358	\$378	\$390
<i>Capital Goods</i>					
Tractor			\$ 1	\$ 0	\$ 1
Auto (farm share) and truck			16	20	15
General machinery and equipment			71	116	78
Horses			68	69	56
Cows			73	116	63
Other cattle			6	9	1
Hogs			9	10	4
Sheep			3	1	6
Poultry			10	16	13
Payments on debts (Rur. Rehab.)			94	112	101
Payments on debts (other)			81	65	78
Total cash farm capital payments			\$432	\$534	\$416
(1) Total cash farm expenses			\$790	\$912	\$806
(2) Decrease in net farm capital			-	-	113
(3) Board for hired labor			12	16	14
(4) Total farm expenses (to page 4)			\$802	\$928	\$933
<hr/>					
% actual expenses were of farm budget (Form RA-RR-14)		No. of Farms:	137 ^x	26 ^x	28 ^x
Total cash farm operating expenses			175%	89%	374%
Total cash farm capital payments			92%	88%	123%

*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 171 farms	34 Most profit. farms	34 Least profit. farms
Cash Farm Receipts					
Horses			\$ 8	\$ -	\$ 7
Cows			33	44	22
Dairy products			319	392	266
Other cattle			28	35	18
Hogs			66	78	55
Sheep			5	7	8
Wool			2	2	1
Poultry			25	32	26
Eggs			26	20	16
Small grain			28	47	22
Corn			1	0	-
Hay			11	8	21
Root crops			12	9	4
Other crops			15	33	19
Miscellaneous			13	16	8
Machinery and horses hired out			2	5	-
Income from work off the farm			119	167	92
AAA adjustment payments			17	19	27
Payments from old debts			5	5	9
Money borrowed (Rural Rehab.)			167	138	206
Money borrowed (elsewhere)*			93	135	110
(5) Total cash farm receipts			\$995	\$1242	\$937
(6) Increase in net farm capital			127	436	-
(7) Farm perquisites			255	282	237
(8) Total farm receipts (sum of (5), (6), & (7))			1377	1960	1174
(4) Total farm exp. (from page 3)			802	928	933
(9) Ret. to cap. & fam. labor (8) minus (4)			575	1032	241
(10) 5% interest on net farm capital			23	18	30
(11) Family labor earnings (9) minus (10)			552	1014	211
(12) Unpaid family labor			187	138	392
(13) Operator's labor earnings (11) minus (12)			365	876	-181

% actual total cash farm receipts were of the budget for cash farm receipts (Form RA-RR-14) 117% 144% 103%

Summary of Farm	Quantities				Value			
	Your farm	Average of 171 farms	34 Most profit. farms	34 Least profit. farms	Your farm	Aver. of 171 farms	34 Most profit. farms	34 Least profit. farms
Perquisites								
Whole milk, qts.		697	701	658	\$ 32	\$ 37	\$ 26	
Skim milk, qts.		34	38	73	-	-	1	
Cream, pts.		221	214	213	28	28	26	
Farm made butter, lbs.		71	75	105	24	28	35	
Eggs, doz.		73	72	64	15	14	12	
Poultry, number		21	21	18	8	8	7	
Cattle, lbs.		145	192	195	7	10	7	
Hogs, lbs.		276	294	281	26	27	25	
Sheep, lbs.		1	0	4	-	0	1	
Potatoes, bu.		20	26	18	16	16	14	
Vegetables & fruit		-	-	-	14	16	8	
Fuel, cds.		8	9	5	22	22	17	
House rental		-	-	-	63	76	58	
Total value of farm perquisites					\$255	\$282	\$237	

*Includes amount to offset credit purchases.

SUMMARY OF INVENTORIES AND NET WORTH STATEMENT

	Your Farm		Average of 171 farms	34 Most profitable farms	34 Least profit. farms
	Beginning Inventory	Ending Inventory			
Farm Inventories				(Ending Inventory)	
Machinery and equipment	_____	_____	\$ 278	\$ 284	\$ 374
Tractors	_____	_____	28	37	67
Trucks	_____	_____	5	5	5
Auto (farm share)	_____	_____	54	67	47
Gas engine	_____	_____	9	8	15
Electric equipment	_____	_____	1	1	5
Miscellaneous supplies	_____	_____	4	6	1
Feeds and seeds	_____	_____	98	168	57
Horses	_____	_____	334	324	373
Cows	_____	_____	389	423	412
Other cattle	_____	_____	109	129	117
Hogs	_____	_____	40	62	31
Sheep and wool	_____	_____	15	12	28
Poultry	_____	_____	32	38	33
Accounts and notes rec.	_____	_____	5	19	3
Other farm assets	_____	_____	8	2	4
(34) Total farm assets	_____	_____	\$1409	\$1585	\$1572
Farm Liabilities					
Chattel mtgs. & crop liens	_____	_____	\$ 93	\$ 158	\$ 177
Resettlement loans	_____	_____	712	798	806
Past due cash rent	_____	_____	11	12	7
Other debts	_____	_____	86	70	59
(35) Total farm liabilities	_____	_____	\$ 902	\$1038	\$1049
(36) Net farm capital (34) - (35)	_____	_____	\$ 507	\$ 547	\$ 523
Personal Assets					
Auto (personal share)	_____	_____	\$ 15	\$ 16	\$ 16
Cash on hand and in bank	_____	_____	35	41	10
Household goods	_____	_____	109	144	78
Cash surrender value of life ins.	_____	_____	18	61	0
Miscellaneous	_____	_____	8	11	18
(37) Total personal assets	_____	_____	\$ 185	\$ 273	\$ 122
(38) Total personal liabilities	_____	_____	47	43	65
(39) Total assets (34) plus (37)	_____	_____	\$1594	\$1858	\$1694
(40) Total liabilities (35) plus (38)	_____	_____	949	1081	1114
Farmer's net worth (39) minus (40)	_____	_____	\$ 645	\$ 777	\$ 580
Change in net worth during the year	_____	_____	\$+182	\$+443	\$-187
% R.R. loan is of total liabilities (end inventory)	_____	_____	77%	72%	79%
% Total liabilities are of total assets (end inventory)	_____	_____	61%	56%	70%
Age of proprietor, yrs.	_____	_____	37.3	34.5	43.5
Formal schooling of proprietor, yrs.	_____	_____	7.8	8.5	7.4

EFFECT OF FARM EARNINGS ON FINANCIAL PROGRESS ON THESE FARMS

The data on page 6 indicate that the 34 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 34 most profitable farms was \$876, and for the 34 least profitable farms \$-181. The difference between the averages of these two groups was \$1057. 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 48 farmers who excelled in 5 or more of the 8 factors had earnings of \$349 above the average of 46 farmers who did not excel in more than 2 factors.

CHART I. Relation of Earnings to Number of Factors in which Farmer is Above 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
5 or more	48	_____	XXXXXXXXXXXXXXXXXXXXXXX	\$580
3 or 4	77	_____	XXXXXXXXXXXX	311
2 or less	46	_____	XXXXXXXXXX	231

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	Average of 171 farms	34 Most profit. farms	34 Least profit. farms
Operator's labor earnings			\$365	\$876	\$-181
(1) Pounds of butterfat per cow			171	184	152
(2) Ret. per a.u. (pr. lvst. other than cows)*			\$ 77	\$ 89	\$ 64
(3) Pr. lvst. units per 100 acres			7.2	6.9	6.0
(4) Crop yields**			100	127	75
(5) % of tillable land in high ret. crops***			17%	20%	13%
(6) Size of business--days of pr. work****			350	397	395
(7) Days of prod. work per worker			251	290	215
(8) Power & eq. exp. per day of prod. work*****			\$.52	\$.41	\$.61

Other related measures

Gross returns per cow			\$ 62.12	\$ 69.56	\$ 53.35
" " " head of other cattle			26.71	27.30	24.40
" " " litter pigs raised			69.76	96.51	57.81
" " " cwt. hogs produced			9.08	9.42	9.03
" " " head of sheep			5.66	3.85	6.34
" " " hen			2.13	2.39	1.64
Number of pigs raised per litter			6.3	7.0	5.8
" " eggs laid per hen			79	75	81
Number of cows per worker			5.1	5.6	4.0
Crop acres per horse			34.4	39.4	38.6
Power exp. per day of prod. work			\$.30	\$.21	\$.36
Machinery exp. " " " " "			.22	.20	.25
Days of productive work on crops			143	157	195
" " " " " prod. lvst.			167	182	169
" " other " " "			40	58	31
Number of workers, total			1.4	1.4	1.9
" " " , family			1.3	1.3	1.8
" " " , hired			.1	.1	.1

*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.

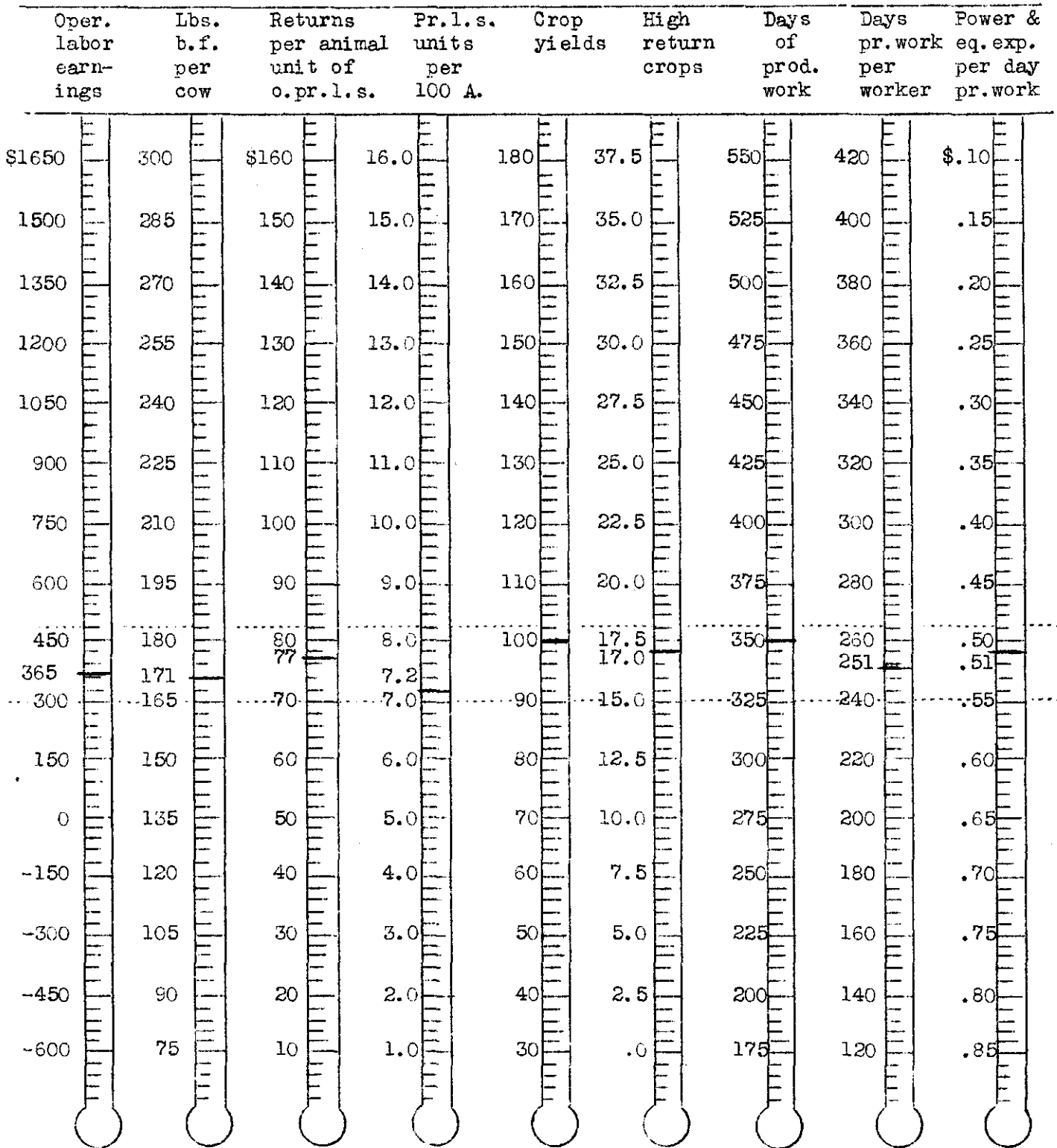
***High return crops include legumes (hay, seed and pasture), potatoes and truck crops.

****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 is 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; 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 171 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 171 farms	34 Most profit. farms	34 Least profit. farms
Winter wheat	15	_____	_____	3.0	3.7	3.3
Spring wheat	55	_____	_____	8.2	10.8	10.5
Oats	83	_____	_____	18.0	18.1	28.8
Barley	78	_____	_____	9.7	14.4	10.5
Rye	22	_____	_____	2.3	.7	1.5
Flax	27	_____	_____	3.9	6.8	5.3
Wheat and oats	5	_____	_____	.9	.0	2.7
Oats and barley	2	_____	_____	.3	.0	.0
Miscellaneous	3	_____	_____	.1	.0	.1
Total grain and peas				46.4	54.5	62.7
Corn, grain	19	_____	_____	2.8	2.9	4.9
Corn, silage	12	_____	_____	1.2	2.7	1.0
Corn, fodder	78	_____	_____	6.8	5.0	6.9
Potatoes	94	_____	_____	1.6	1.7	1.1
Miscellaneous	5	_____	_____	.4	1.3	.2
Total cultivated crops				12.8	13.6	14.1
Alfalfa	48	_____	_____	4.1	6.7	5.3
Red clover	7	_____	_____	1.0	.0	.9
Other legumes & mix.	26	_____	_____	3.0	2.6	2.3
Timothy	21	_____	_____	3.0	2.3	3.9
Annual hay	78	_____	_____	12.0	10.5	10.2
Miscellaneous hays & seed crops	16	_____	_____	1.4	3.8	.6
Phalaris (non-tillable land)	1	_____	_____	.2	.0	.0
Wild hay (non-tillable land)	89	_____	_____	27.7	23.4	39.0
Total hay				52.4	49.3	62.2
Total crop acreage				111.6	117.4	139.0
Sweet clover pasture		_____	_____	.6	.9	1.6
Alfalfa pasture		_____	_____	-	.0	.0
Other tillable pasture		_____	_____	1.8	3.1	3.2
Non-tillable pasture		_____	_____	44.9	40.6	57.3
Total pasture				47.3	44.6	62.1
Tillable land not cropped		_____	_____	4.3	4.4	10.5
Timber (not pastured)		_____	_____	10.7	12.9	15.2
Roads and waste		_____	_____	9.5	9.0	8.8
Farmstead		_____	_____	3.8	3.9	4.1
Total acres in farm				187.2	192.2	239.7
% of tillable land in high return crops				17%	20%	13%

CROP YIELDS

Yield of Crops per Acre	Your budget (RA-RR-14)	Your farm	Average of 171 farms	34 Most profitable farms	34 Least profitable farms
Winter wheat, bu.	_____	_____	5.3	3.7	9.1
Spring wheat, bu.	_____	_____	5.1	6.2	4.4
Oats, bu.	_____	_____	7.1	9.6	5.3
Barley, bu.	_____	_____	4.6	6.4	4.1
Rye, bu.	_____	_____	4.4	4.6	7.1
Flax, bu.	_____	_____	1.9	2.3	1.6
Wheat and oats, bu.	_____	_____	7.2	-	9.5
Oats and barley, bu.	_____	_____	3.3	-	-
Corn, grain, bu.	_____	_____	6.3	5.8	3.8
Corn, silage, tons	_____	_____	2.3	2.5	2.2
Corn, fodder, tons	_____	_____	1.7	1.6	1.6
Potatoes, bu.	_____	_____	30.0	28.4	19.1
Alfalfa, tons	_____	_____	.9	1.1	.6
Red clover, tons	_____	_____	1.3	-	1.6
Clover and timothy, tons	_____	_____	1.1	.4	.3
Timothy, tons	_____	_____	.9	.6	.7
Wild hay, tons	_____	_____	.9	.9	.7
Annual hay, tons	_____	_____	.6	.4	.6
Alfalfa seed, lbs.	_____	_____	105.3	81.6	84.5
Clover seed, lbs.	_____	_____	127.5	98.9	231.7
Miscellaneous	_____	_____			

SUMMARY OF LIVESTOCK

Number of horses	_____	3.2	3.1	3.9
" " colts	_____	.2	.2	.3
" " cows	_____	7.0	7.5	7.1
Head of other cattle	_____	4.7	5.3	5.1
Litters of pigs raised	_____	1.2	1.2	1.2
Pounds of hogs produced	_____	1012	1304	846
Head of sheep (2 lambs equal 1 head)	_____	1.8	1.5	2.8
Number of hens	_____	33	33	31
Total a.u. of productive livestock	_____	10.8	11.8	11.2
% of total that are cows	_____	65.7%	65.3%	65.0%
% " " " " other cattle	_____	22.3%	23.3%	22.3%
% " " " " hogs	_____	6.7%	7.0%	6.5%
% " " " " sheep	_____	2.1%	1.6%	2.9%
% " " " " hens	_____	3.2%	2.8%	3.3%

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--cash-crops and cash leases--Southern Minnesota
- No. 91, Owner-operated farms--Northern Minnesota
- No. 92, Tenant-operated farms--cash leases--Northern Minnesota
- No. 94, A general and comprehensive summary and analysis of all the records included in the above reports.