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UNIVERSITY OF MINNESOTA  
Department of Agriculture  
and the  
TENNESSEE VALLEY AUTHORITY  
and the  
County Extension Services of  
Becker, Kittson, Mahnomen, Marshall, Norman  
Pennington, Polk, Red Lake and Roseau Counties  
Cooperating

-0-

Annual Report  
of the  
Farm Management Service  
for T.V.A. Phosphate-Test  
Demonstration Cooperators  
in Northwestern Minnesota  
(March 1, 1946 to February 28, 1947)

-0--

Cooperator \_\_\_\_\_

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Division of Agricultural Economics  
University Farm  
St. Paul 1, Minnesota  
June 1947

SEVENTH ANNUAL REPORT OF THE FARM MANAGEMENT SERVICE  
FOR T.V.A. PHOSPHATE-TEST DEMONSTRATION COOPERATORS  
IN NORTHWESTERN MINNESOTA FOR THE YEAR 1946

Prepared by T. R. Nodland, G. A. Pond and L. O. Olson

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**INTRODUCTION**

The Division of Agricultural Economics and the Division of Agricultural Extension of the University of Minnesota, the Tennessee Valley Authority and the county extension services of several northwestern Minnesota counties are cooperating in a phosphate-test demonstration project and in a farm management service. This service is offered to a selected group of farmers who have agreed to demonstrate the value of phosphate fertilizer and who have also agreed to keep farm business records. The phosphate is provided by the TVA and the fieldman is provided by the TVA and the Agricultural Extension Service. Each farmer pays the freight and other miscellaneous expenses that may occur between the point of shipment and the farm on all the TVA phosphate furnished and \$10.00 per year to cover the summarization of the records and other miscellaneous expenses. The balance of the cost is defrayed by the University of Minnesota.

The analysis of the farm business record and the preparation of the reports are handled by the Division of Agricultural Economics under the direction of G. A. Pond and T. R. Nodland. The field organization is handled by the Division of Agricultural Extension with P. M. Burson in charge of this work. R. S. Harris was the fieldman on this project. County agricultural agents who cooperated in this project include Vernon Hoysler, Howard Grow, Lowell Johnson, K. N. Grimsrud, F. W. Forbes, O. A. Daellenbach, Ernest Palmer, Carl G. Ash, J. E. Roningen, E. T. Larwick, and Melvin Hole.

The following tabulation shows by counties the number of cooperators who completed records in 1946:

Becker	4	Marshall	8	Polk	10
Kittson	4	Norman	6	Red Lake	4
Mahnomen	5	Pennington	7	Roseau	6
				Total	54

The records kept by the cooperators include inventories at the beginning and end of the year, cash receipts and expenses, and a record of the farm produce used by the farm family. Complete household and personal records were also kept by 12 cooperators. Supplementary information was secured during the year regarding crop and livestock production practices.

Because the farmers included in this study are, in general, above the average in managerial ability and operate larger and more productive farms, they have returns materially higher than the average for this section of the state. There were, nevertheless, wide variations in the methods and practices followed by these men. It is reasonable to assume that similar variations occur among all farmers in the area. To the extent that this is true, this report should be of value to all farmers and to others interested in agriculture in that it illustrates how farm records may be used as a basis for making an analysis of a farm business and for improving the management of a farm.

Table 1. Monthly and Annual Precipitation

	Crookston		Angus		Roseau	
	Precipi-	Depart-	Precipi-	Depart-	Precipi-	Depart-
	ation	ture from	ation	ure from	ation	ure from
	Inches	Inches	Inches	Inches	Inches	Inches
January	0.45	-0.08	0.28	-0.13	0.31	-0.32
February	1.76	+1.21	0.55	+0.08	0.23	-0.34
March	0.92	+0.11	0.82	+0.19	0.40	-0.40
April	1.14	-0.49	0.26	-1.19	1.82	+0.34
May	2.21	-0.60	1.65	-0.60	1.63	-0.55
June	5.41	+2.06	5.73	+2.60	2.87	-0.16
July	1.24	-1.83	2.09	-0.94	1.66	-1.33
August	2.62	-0.12	2.16	-0.58	1.60	-1.00
September	3.22	+1.01	3.90	+2.00	3.50	+1.31
October	1.72	+0.19	1.58	+0.14	1.80	+0.32
November	0.52	-0.20	0.24	-0.52	0.79	-0.12
December	0.81	+0.13	0.20	-0.32	0.59	-0.01
1946 total	22.02	+1.39	19.46	+0.73	17.20	-2.26
1945 total	19.95	-0.68	19.07	+0.34	21.51	+2.05
1944 total	22.86	+2.23	24.06	+5.33	23.49	+4.03
1943 total	19.81	-0.82	18.77	+0.04	18.26	-1.20
1942 total	19.48	-1.15	19.83	+1.10	22.35	+2.89
1941 total	32.87	+12.24	27.01	+8.28	25.11	+5.65
1940 total	19.80	-0.83	18.75	+0.02	19.79	+0.33
Normal annual precipitation	20.63		18.73		19.46	

Table 2. Summary of Farm Inventories, 1946\*

Items	Your Farm		Average of 54 Farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)				
Size of business (work units)**				
Productive livestock (total)	\$	\$	\$ 2749	\$ 2972
Dairy and dual-purpose cows			943	1006
Other dairy & dual-purpose cattle			537	600
Beef cattle (incl. feeders)			469	627
Hogs			301	275
Sheep			358	312
Poultry (including turkeys)			141	152
Horses			207	168
Crop, seed, and feed			2479	3186
Machinery & equipment (total)			3336	3741
Power machinery (farm share)			1371	1463
Crop & general machinery (farm share)			1576	1885
Livestock equipment & supplies			389	393
Buildings, fences, etc.			4297	4395
Land			5835	5835
Total farm capital			18903	20297

	11 most profitable farms		11 least profitable farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	580		330	
Size of business (work units)**				
Productive livestock (total)	\$ 3460	\$ 3860	\$ 2917	\$ 2988
Dairy and dual-purpose cows	787	1052	956	1003
Other dairy & dual-purpose cattle	582	567	547	734
Beef cattle (including feeders)	1083	1313	354	397
Hogs	407	367	459	314
Sheep	447	379	462	378
Poultry (including turkeys)	154	182	139	162
Horses	186	164	254	191
Crop, seed, and feed	4568	6690	2921	2367
Machinery & equipment (total)	5858	6851	3027	3494
Power machinery (farm share)	2504	2468	1278	1452
Crop & general machinery	2779	3313	1370	1675
Livestock equipment & supplies	575	570	379	367
Buildings, fences, etc.	6046	5761	4096	4211
Land	9835	9835	4691	4691
Total farm capital	29953	32661	17906	17942

\*For the purpose of comparison, all the data shown in this report with the exception of Tables 5 and 6 are presented on a full-owner basis. The assets, expenses and receipts of the landlord were included in the records from rented farms.

\*\*See page 10 for an explanation of "work units".

Table 3. Summary of Farm Earnings (Cash Statement), 1945

Items	Your farm	Average of 54 farms	11 most profitable farms	11 least profitable farms
<b>FARM EXPENSES</b>				
Dairy and dual-purpose cows bought	\$ _____	\$ 77	\$ 27	\$ 111
Other dairy & du. pur. cattle bought	_____	87	73	241
Beef cattle bought (including feeders)	_____	117	156	88
Hogs bought	_____	61	102	35
Sheep bought	_____	16	51	20
Poultry bought (including turkeys)	_____	151	266	238
Horses bought	_____	10	10	13
Misc. livestock expense	_____	66	113	78
Misc. crop expenses	_____	477	1016	408
Feed bought	_____	668	1018	835
Custom work hired	_____	195	253	110
Mech. power mach. (farm share) (new)	_____	328	369	368
Mech. power mach. (farm share) (upkeep)	_____	248	361	153
Mech. power (f.share) (gas, oil, etc.)	_____	699	1135	729
Crop and general mach. (new)	_____	561	985	451
Crop and general mach. (upkeep)	_____	160	280	129
Livestock equipment (new)	_____	58	56	43
Livestock equipment (upkeep)	_____	31	56	49
Buildings and fencing (new)	_____	353	119	378
Buildings and fencing (upkeep)	_____	142	320	127
Hired labor	_____	658	1313	524
Taxes	_____	278	466	271
General farm and insurance	_____	76	121	62
(1) Total farm purchases	_____	5517	8666	5461
(2) Decrease in farm capital	_____	-	-	-
(3) Board furnished hired labor	_____	133	278	82
(4) Interest on farm capital	_____	980	1565	896
(5) Unpaid family labor	_____	619	336	882
(6) Total farm exp. (Sum of (1) to (5))	_____	7249	10845	7321
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cows	_____	339	176	339
Dairy products	_____	2185	2716	1877
Other dairy & dual-purpose cattle	_____	461	331	624
Beef cattle (including feeders)	_____	324	601	223
Hogs	_____	862	1749	657
Sheep and wool (including feeders)	_____	555	607	706
Poultry (including turkeys)	_____	838	1543	1239
Eggs	_____	416	533	298
Horses	_____	20	16	27
Potatoes	_____	428	1252	355
Small grain	_____	2479	5589	1120
Other crops	_____	437	817	322
Machinery & equip. sold	_____	236	496	161
Agricultural adjustment payments	_____	267	491	245
Income from work off the farm	_____	259	328	193
Misc.	_____	63	165	13
(7) Total farm sales	_____	10169	17410	8399
(8) Increase in farm capital	_____	1394	2708	36
(9) Family living from the farm	_____	689	840	633
(10) Total farm rec. (7) + (8) + (9)	_____	12252	20958	9068
(6) Total farm expenses	_____	7249	10845	7321
(11) Oper. labor earnings (10) - (6)	_____	5003	10113	1747

Table 4. Summary of Farm Earnings (Enterprise Statement), 1946\*

Items	Your farm	Average of 54 profitable farms	11 most profitable farms	11 least profitable farms
<b>EXPENSES AND NET DECREASES</b>				
Total power	\$ 1195	\$ 1740	\$ 1109	
Horses	135	120	173	
Tractor	610	892	594	
Truck	147	404	48	
Auto (farm share)	174	155	192	
Gas engine (farm share)	10	12	4	
Elec. plant or current (f. share)	37	46	53	
Hired power	82	111	45	
Crop and general machinery	333	528	242	
Livestock equipment	81	108	99	
Buildings, fencing and tiling	302	531	319	
Misc. productive livestock expense	66	113	78	
Labor	1487	2025	1530	
Real estate taxes	223	387	204	
Personal property tax	56	79	67	
Insurance	26	56	20	
General farm	50	65	43	
Interest on farm capital	980	1565	896	
(1) Total exp. and net decreases	4798	7197	4606	
<b>RETURNS AND NET INCREASES</b>				
All productive livestock	\$ 6187	\$ 8596	\$ 5729	
Dairy and dual-purpose cows	2530	2969	2187	
Other dairy & dual-purpose cattle	730	662	790	
Beef breeding herd	292	824	115	
Feeder cattle	80	3	179	
Hogs	873	1728	588	
Sheep - farm flock	494	490	603	
Turkeys and capons	645	1241	1003	
Chickens	543	679	374	
Crops, seed and feed	3072	7938	188	
Income from labor off the farm	171	175	108	
Agricultural conservation payments	267	491	245	
Miscellaneous	104	110	83	
(2) Total returns & net increases	9801	17310	6353	
(1) Total expenses & net decreases	4798	7197	4606	
(3) Oper. labor earnings (2) - (1)	5003	10113	1747	

\*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 in page 4.

Table 5. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities, 1946 (Operator's Share)

	Your farm		26 owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm			367	
Owned			367	
Rented			-	
Total farm capital			\$18844	\$19702
Accounts receivable			45	10
Stocks and bonds			1693	1897
Life insurance			451	476
Outside real estate			21	252
Other outside investments			67	82
Total outside investments			2232	2707
Cash on hand and in bank			882	1961
Other household and personal assets			1232	1336
Total cash, household and personal assets			2114	3297
<b>TOTAL ASSETS</b>			<b>23235</b>	<b>25716</b>
Federal Land Bank Mortgage			511	417
Other real estate mortgs.			1042	749
P.C.A. loans			-	-
Other chattel mortgages			229	171
Notes payable			475	456
Accounts payable			8	-
<b>TOTAL LIABILITIES</b>			<b>2265</b>	<b>1793</b>
Farmer's net worth			20970	23923
Gain in net worth				+2953

	23 part owners*	
	Jan. 1	Dec. 31
Total acres in farm	493	
Owned	316	
Rented	177	
Total farm capital	\$17465	\$19341
Accounts receivable	111	179
Stocks and bonds	2112	2495
Life insurance	556	597
Outside real estate	22	131
Other outside investments	99	123
Total outside investments	2789	3346
Cash on hand and in bank	1054	2090
Other household & personal assets	1055	1071
Total cash, household & personal assets	2109	3161
<b>TOTAL ASSETS</b>	<b>22474</b>	<b>26027</b>
Federal Land Bank mortgage	428	341
Other real estate mortgages	1163	583
P.C.A. loans	7	109
Other chattel mortgages	54	135
Notes payable	604	535
Accounts payable	6	27
<b>TOTAL LIABILITIES</b>	<b>2262</b>	<b>1730</b>
Farmer's net worth	20212	24297
Gain in net worth		+4085

\*4 rented for cash, 7 cash and crop share, and 12 crop share.

Table 6. Summary of Farm Earnings by Tenure, Operator's Share, 1946

	Your farm	26 owners	23 part- owners
<b>FARM EXPENSES</b>			
Dairy and dual-purpose cows bought	\$ 49	\$ 91	
Other dairy and dual-purpose cattle bought	109	64	
Beef cattle bought (including feeders)	113	148	
Hogs bought	49	63	
Sheep bought (including feeders)	29	1	
Poultry bought (including turkeys)	155	164	
Horses bought	17	3	
Misc. livestock expenses	69	68	
Misc. crop expenses	394	626	
Feed bought	661	745	
Custom work hired	199	189	
Mech. power mach. (farm share) (new)	353	325	
Mech. power mach. (farm share) (upkeep)	207	302	
Mech. power (farm share) (gas, oil, etc.)	645	813	
Crop and general mach. (new)	463	701	
Crop and general mach. (upkeep)	144	193	
Livestock equipment (new)	45	68	
Livestock equipment (upkeep)	39	29	
Buildings and fencing (new)	317	405	
Buildings and fencing (upkeep)	157	136	
Hired labor	625	780	
Taxes (real estate & personal property)	275	211	
General farm and insurance	76	85	
Cash rent	-	54	
Interest paid	99	89	
(1) Total farm purchases	5289	6353	
(2) Decrease in farm capital	-	-	
(3) Board furnished hired labor	132	149	
(4) Interest on farm capital	865	831	
(5) Unpaid family labor	373	487	
(6) Total farm exp. (Sum of (1) to (5))	6659	7820	
<b>FARM RECEIPTS</b>			
Dairy and dual-purpose cows	292	367	
Dairy products	2010	2414	
Other dairy and dual-purpose cattle	432	435	
Beef cattle (including feeders)	439	263	
Hogs	1038	674	
Sheep and wool (including feeders)	577	440	
Poultry (including turkeys)	956	857	
Eggs	395	432	
Horses	17	14	
Potatoes	655	265	
Small grain	2072	2710	
Other crops	252	537	
Machinery and equipment sold	258	236	
Agricultural adjustment payments	255	312	
Income from work off the farm	194	387	
Misc.	59	80	
(7) Total farm sales	9901	10423	
(8) Increase in farm capital	858	1876	
(9) Family living from the farm	685	713	
(10) Total farm receipts (7) + (8) + (9)	11444	13012	
(6) Total farm expenses	6659	7820	
(11) Operator's labor earnings (10) - (6)	4785	5192	
(12) Ret. cap. & family labor (4) + (5) + (11)	6023	6510	

Table 7. Household and Personal Expenses for  
Those Farms Which Kept Complete Accounts of These Expenses, 1946

Items	Your farm	Average	6 most	6 least
		of 12 farms	profitable farms	profitable farms
Number of persons - family		4.1	5.2	3.0
Number of adult equivalents - family - other*		3.0 .6	3.6 .4	2.5 .9
<b>EXPENSES</b>				
Food and meals bought		\$ 443	\$ 453	\$ 433
Operating and supplies		147	107	187
Clothing and clothing materials		301	352	250
Personal care, personal spending		83	119	48
Furnishings and equipment		115	135	95
Education, recreation and development		59	46	71
Medical care and health insurance		103	85	121
Church, welfare, gifts		122	135	109
Personal share of auto expense		79	76	81
Household share of elect. & gas eng. exp.		17	24	11
Household and personal share of new autos bought		19	33	6
Total		1438	1565	1412
Income tax		67	56	78
Life insurance		48	71	26
Investments		481	819	142
Total household and personal cash expenses		2084	2511	1658
Food furnished by the farm		430	466	393
Fuel furnished by the farm		26	43	9
House rented		120	124	116
Total household and personal expenses		2660	3144	2176
<b>RECEIPTS</b>				
Outside investments		601	622	579
Household and personal		16	-	32

\*Hired help or others boarded.

Table 8. Farm Produce Used in House and House Rental, 1946

Items	Aver-	11 most	11 least	Aver-	11 most	11 least
	age	profit-	profit-	age	profit-	profit-
	Your farm	of 54 farms	able farms	Your farm	of 54 farms	able farms
No. of adult equiv.						
Family	3.3	3.7	3.0			
Other*	.6	1.0	.3			
Whole milk	1175 qts.	2481	861	\$	\$ 76.09	\$ 165.71
Skim milk	728 qts.	260	784		4.47	1.56
Cream	365 pts.	244	294		79.31	59.02
Farm-made butter	6 lbs.	-	-		3.89	-
Cattle	579 lbs.	864	372		67.72	100.82
Hogs	529 lbs.	608	615		98.09	121.75
Sheep	13 lbs.	27	27		1.07	1.82
Poultry	103 lbs.	123	87		22.75	27.21
Eggs	152 doz.	158	112		51.48	54.08
Potatoes	21 bu.	23	23		23.70	25.80
Vegetables & fruits					92.76	127.27
Farm fuel	6 cds.	3	8		31.15	15.45
Rental val. of house					136.09	139.32
Total					\$688.58	\$839.81
						\$632.92

Table 9. Feed Costs for Horses and Misc. Power and Machinery Expense, 1946

Items	Average	9 most	11 least
	Your farm	of 52 farms*	profitable farms*
Feed per horse, ** lbs.:			
Grain		552	625
Hay		4798	4724
Feed costs per horse:			
Grain	\$	\$ 11.22	\$ 12.69
Roughage		19.19	18.90
Pasture		3.79	3.76
TOTAL FEED COSTS	\$	34.20	35.35
Number of work horses		3.2	2.9
Number of colts		.2	.9
Crop acres per farm		247.8	407.0
Tractor & horse exp. per crop acre	\$	\$ 3.27	\$ 2.74
Crop & gen. mach. exp. per crop acre	\$	1.43	1.49

\*One farmer did not have horses. The crop acres and expenses per crop acre are averages of 54 farms.

\*\*Two colts equal one horse.

#### EXPLANATION OF "WORK UNITS"

The total "work units" for any one farm is a measure of the size of that farm business. A work unit as used in this report is the average accomplishment of a farm worker in a ten-hour day working on crops and productive livestock at average efficiency or ten hours of work off the farm for pay. The number of work units for each class of livestock and each acre of crop are presented in Table 10.

Table 10. Number of Work Units for Each Class of Livestock  
and Each Acre of Crop

Item	No. of work units	Item	No. of work units
Dairy and dual-pur. cow	15.5 per cow	Small grain	.7 per acre
Other dairy & dual-purpose cattle	4.0 per an. unit*	Sugar beets	2.5 per acre
Beef breeding herd	4.3 per an. unit*	Seed potatoes	4.3 per acre
Feeder cattle	.3 per 100 lbs.	Other potatoes	3.8 per acre
Sheep - farm flock	2.2 per an. unit*	Corn, husked	1.3 per acre
Hogs	.3 per 100 lbs.	Corn, shredded	2.0 per acre
Turkeys	.7 per 100 lbs.	Corn silage	1.4 per acre
Hens	28.0 per 100 hens	Corn fodder	1.1 per acre
		Alfalfa hay	.8 per acre
		Other hay crops	.6 per acre
		Legume seed	1.0 per acre

\*Animal unit represents one cow, one bull, one feeder steer or heifer, two head of other cattle, seven head of sheep, fourteen lambs, five hogs, ten pigs, 100 hens or 1400 pounds of turkeys produced.

### CUMULATIVE EFFECT OF EXCELLING IN A NUMBER OF MANAGEMENT FACTORS

Studies of earnings of farmers in this area show that there are seven major management factors causing variations in earnings among farmers within a given year. These seven factors are (1) crop yields, (2) choice of crops, (3) returns from live-stock, (4) amount of livestock, (5) size of business, (6) work accomplishment per worker, and (7) control over expenses. The combined or cumulative influence of these seven management factors on earnings is shown in Table 11. The farmer's earnings are determined to a considerable extent by his accomplishments in these seven factors.

Table 11. Relation of Operator's Labor Earnings to the Number of Factors in which the Farm Is Above Average

No. of factors in which farm excels	No. of Your farms	The length of the shaded lines are in proportion to the average operator's labor earnings	Average operator's labor earnings
None or one	6	XXXXXX	\$3312
2 or 3	28	XXXXXXXXXXXXXX	5116
4 or 5	16	XXXXXXXXXXXXXX	5184
6 or 7	4	XXXXXX	6027

The array in Table 11 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.

Table 13. Measures of Farm Organization and Management Efficiency, 1946

Measures used in chart on page 13	Your farm	Average profit-	11 most able farms	11 least able farms
		of 54 farms	farms	farms
Operator's labor earnings	\$ _____	\$ 203	\$ 10113	\$ 1747
(1) Crop yields*	_____	100	99	100
(2) % of tillable land in high ret. crops**	_____	41.6	46.6	42.3
(3) Gross returns from prod. livestock***	_____	100	114	85
(4) Prod. livestock units per 100 acres****	_____	11.3	8.8	14.2
(5) Size of business - work units	_____	526	668	468
(6) Work units per worker	_____	263	304	223
(7) Power, mach., equip. & bldg. exp. per work unit \$ _____		\$ 3.68	\$ 4.33	\$ 3.87

Items related to some of the above measures:

(3) Index of gross returns from -				
Dairy cattle	_____	100	136	86
Dual-purpose cattle	_____	100	90	92
Beef cattle - breeding herd	_____	100	113	-
Beef cattle - feeders	_____	100	-	-
Hogs	_____	100	98	100
Sheep - farm flock	_____	100	104	86
Turkeys	_____	100	-	-
Chickens	_____	100	101	90
(5) Work units on crops	_____	186	301	140
Work units on productive livestock	_____	306	332	306
Other work units	_____	34	35	22
(6) Total number of workers	_____	2.0	2.2	2.1
Number of family workers	_____	1.5	1.3	1.7
Number of hired workers	_____	.5	.9	.4
(7) Power expense per work unit	\$ _____	\$ 2.31	\$ 2.57	\$ 2.41
Crop machinery expense per work unit	_____	.63	.77	.55
Livestock equip. expense per work unit	_____	.16	.17	.19
Bldgs. and fencing exp. per work unit	_____	.58	.82	.72

\*Given as a percentage of the average.

\*\*Crops are marked on page 14 as (A), (B), (C), and (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.

\*\*\*An index weighted by the animal units of livestock.

\*\*\*\*Acres in timber not pastured, roads, waste, and farmstead were not included.

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 the 54 farms included in this summary are located between the dotted lines across the center of this page.

Oper. labor earn- ings	Crop yields	High return crops	Return from pro- ductive livestock	Pr. l.s. per 100 A.	Work units per worker	Work units per work unit	Pow., mach., eq., & bldg. exp. per
\$9000	140	61.5	148	19.3	805	385	1.70
8500	135	59.0	142	18.3	770	370	1.95
8000	130	56.5	136	17.3	735	355	2.20
7500	125	54.0	130	16.3	700	340	2.45
7000	120	51.5	124	15.3	665	325	2.70
6500	115	49.0	118	14.3	630	310	2.95
6000	110	46.5	112	13.3	595	295	3.20
5500	105	44.0	106	12.3	560	280	3.45
5000	100	41.5	100	11.3	525	265	3.70
4500	95	39.0	94	10.3	490	250	3.95
4000	90	36.5	88	9.3	455	235	4.20
3500	85	34.0	82	8.3	420	220	4.45
3000	80	31.5	76	7.3	385	205	4.70
2500	75	29.0	70	6.3	350	190	4.95
2000	70	26.5	64	5.3	315	175	5.20
1500	65	24.0	58	4.3	280	160	5.45

**Table 14. Distribution of Acres in Farm, 1946**

Crop: (A), (B), (C), and (D) refer to ranking used in calculating % of tillable land in <u>High Return Crops (see page 12)</u>	No. growing crop	Your farm	Aver. of 54 farms	11 most able farms	11 least able farms	Average per farm growing each crop
Wheat (A)	46	_____	41.7	110.4	21.3	48.9
Flax (B)	21	_____	15.8	27.8	6.1	40.7
Barley (B)	42	_____	28.6	60.9	19.4	36.8
Oats (C)	52	_____	56.9	81.4	41.2	59.1
Rye, buckwheat, millet, field (D) peas and soybeans	13	_____	3.6	2.9	1.7	14.8
<b>Total small grain and peas</b>	<b>54</b>	<b>_____</b>	<b>146.6</b>	<b>283.4</b>	<b>89.7</b>	<b>146.6</b>
Seed potatoes, and garden (A)	3	_____	.5	-	.1	10.0
Other potatoes (B)	13	_____	2.9	5.7	3.2	11.8
Corn, grain (C)	22	_____	8.3	12.4	4.7	20.4
Corn silage (D)	33	_____	11.8	20.3	9.2	19.2
Corn fodder (D)	11	_____	2.8	-	1.6	13.8
<b>Total cultivated crops</b>	<b>45</b>	<b>_____</b>	<b>26.3</b>	<b>38.4</b>	<b>18.8</b>	<b>31.5</b>
Alfalfa hay and seed (hay A, seed B)	51	_____	30.9	33.4	31.9	32.7
Alsike clover hay or seed (hay B, seed C)	7	_____	2.5	4.3	1.3	18.8
Sweet clover hay (C)	9	_____	7.0	17.4	.9	42.2
Sweet clover seed (C)	12	_____	4.6	7.3	2.6	20.8
Mixed leg. & non-leg. for hay (C)	6	_____	3.3	10.0	2.8	29.7
Meadow fescue seed (C)	2	_____	1.1	-	-	30.0
Misc. hay and seed crops (D)	16	_____	5.7	8.9	2.1	19.1
Quack grass & wild hay on tillable land (D)	15	_____	13.4	3.9	18.6	48.3
<b>Total tillable land in hay</b>	<b>54</b>	<b>_____</b>	<b>68.5</b>	<b>85.2</b>	<b>60.2</b>	<b>68.5</b>
Alfalfa pasture (A)	7	_____	1.6	-	2.7	12.0
Mix, incl. alf., sw.clo., brome (B)	27	_____	17.7	27.0	19.1	35.5
Sweet clover pasture (C)	14	_____	11.4	27.6	9.5	43.9
Other tillable pasture (D)	22	_____	13.4	7.6	15.2	33.0
<b>Total tillable land in pasture</b>	<b>49</b>	<b>_____</b>	<b>44.1</b>	<b>60.2</b>	<b>46.5</b>	<b>48.6</b>
Tillable land not cropped (D)	37	_____	31.9	48.9	14.8	46.6
<b>Total tillable land</b>	<b>54</b>	<b>_____</b>	<b>317.4</b>	<b>516.1</b>	<b>230.0</b>	<b>317.4</b>
Wild hay (non-tillable)	19	_____	6.4	-	14.6	18.3
Non-tillable pasture	37	_____	36.2	23.1	37.5	52.8
Timber (not pastured)	28	_____	27.7	5.9	22.0	53.4
Roads and waste		_____	25.6	24.9	17.2	
Farmstead		_____	8.4	9.7	8.9	
<b>Total acres in farm</b>		<b>_____</b>	<b>421.7</b>	<b>579.7</b>	<b>330.2</b>	
% tillable land		_____	75.3	89.0	69.7	
% tillable land in high return crops		_____	41.6	46.6	42.3	

Table 15. Crop Yields per Acre, 1946

Crop	Your farm	Average of 54 farms	11 most profitable farms	11 least profitable farms
Wheat, bu.		20.5	21.3	16.2
Flax, bu.		7.1	6.3	"
Barley, bu.		29.4	30.6	29.2
Oats, bu.		36.0	32.4	35.3
Rye, bu.		17.8	-	-
Millet, bu.		8.6	-	-
Field peas, bu.		9.4	-	-
Potatoes, bu.		105.5	99.8	-
Corn, grain, bu.		25.7	18.0	22.9
Corn silage, tons		5.6	6.2	5.5
Corn fodder, tons		2.5	-	-
Alfalfa hay, tons		1.6	1.3	1.7
Alfalfa seed, lbs.		45	-	-
Alsike clover hay, tons		1.6	-	-
Alsike clover seed, lbs.		187	-	-
Sweet clover hay, tons		1.1	-	-
Sweet clover seed, lbs.		289	-	-
Mixed legume and non-legume hay, tons		1.2	-	-
Brome grass hay, tons		.8	-	-
Wild hay or quack grass on tillable land, tons		.7	.9	-
Wild hay on non-tillable land, tons		.2	-	.2

Table 16. Summary of Amount of Livestock, 1946

Items	Your farm	Average of 54 farms	11 most profitable farms	11 least profitable farms
No. of horses	_____	3.1	2.4	3.2
No. of colts	_____	.2	.7	.2
No. of dairy & dual-purpose cows	_____	12.4	10.7	12.5
Head of other dairy & dual-purpose cattle	_____	14.9	13.8	14.7
Head of cattle in beef breeding herd	_____	5.5	14.5	2.0
Litters of pigs	_____	2.7	4.8	1.7
Pounds of hogs produced	_____	3961	8055	2737
Head of sheep (2 lambs = 1 head)	_____	37.3	38.7	51.3
No. of hens	_____	101	111	83
Total no. of prod. lvsrk. animal units	_____	34.7	40.7	37.0
% of total that are:				
Dairy cows	_____	25.3	24.8	31.6
Other dairy cattle	_____	13.3	11.0	16.7
Dual-purpose cows	_____	14.6	7.2	10.1
Other dual-purpose cattle	_____	10.7	7.7	5.4
Beef cattle	_____	10.8	22.2	7.1
Hogs	_____	4.8	6.8	3.7
Sheep - farm flock	_____	13.6	10.6	17.7
Turkeys and capons	_____	3.4	5.8	5.1
Hens	_____	3.5	3.9	2.6

Table 17. Returns from Productive Livestock, 1946

Items	Your farm	Average of 54 farms	11 highest in livestock returns	11 lowest in livestock returns
<u>DAIRY CATTLE</u>				
No. of farms	_____	31	8	7
Gross returns per dairy cow	\$ _____	\$214.96	\$302.15	\$160.83
Pounds of butterfat per cow	_____	239	318	200
% fall freshening	_____	38	55	28
No. of heads of cows	_____	13.2	13.4	14.6
Gross ret. per head oth.dairy cattle	\$ _____	\$ 50.43	\$ 81.06	\$ 35.85
No. head of other dairy cattle	_____	13.5	10.8	17.6
Gross ret. per an.unit all da.cattle	\$ _____	\$168.49	\$248.43	\$120.01
No. of an. units all dairy cattle	_____	20.1	18.9	23.8
<u>DUAL-PURPOSE CATTLE</u>				
No. of farms	_____	20	2	3
Gross ret. per dual-purpose cow	\$ _____	\$180.13	-	\$146.25
Pounds of butterfat per cow	_____	195	-	152
% fall freshening	_____	44	-	31
No. of head of cows	_____	13.0	-	15.6
Gross ret. per head oth.du.pur.cattle	\$ _____	\$ 57.93	-	\$ 42.17
No. head oth. du.pur.cattle	_____	20.8	-	20.7
Gross ret. per an.unit all du.pur. cattle	\$ _____	\$148.06	-	\$117.61
No. of an. units all dual pur.cattle	_____	23.2	-	26.1
<u>PRICE REC'D PER LB. BUTTERFAT SOLD</u>				
All butterfat (cents)	_____	86.0	91.4	82.2
Manufacturing cream (cents)	_____	78.2	78.5	77.7
Retail milk or cream (cents)	_____	98.3	98.5	94.2

Table 17. Returns from Productive Livestock, 1946 (Cont.)

Item	Your farm	Average of 54 farms	11 highest in livestock returns	11 lowest in livestock returns
<b>BEEF BREEDING HERD</b>				
No. of farms		11	4	2
Gross returns per animal unit	\$	\$ 79.56	\$ 129.29	-
No. animal units		18.0	14.4	-
No. beef cows and bulls		8.7	8.1	-
<b>FEEDER CATTLE</b>				
No. of farms		5	0	2
Gross ret. per cwt. produced	\$	\$ 18.07	-	-
Lbs. of cattle produced		4976	-	-
Price rec'd. per cwt. sold	\$	\$ 22.45	-	-
Price paid per cwt. bought		17.64	-	-
<b>HOGS</b>				
No. of farms		33	8	5
Gross ret. per cwt. produced	\$	\$ 22.45	\$ 22.85	\$ 22.77
Lbs. hogs produced		6260	5100	6526
No. spring litters		4.2	3.1	4.2
No. fall litters		.2	.3	.4
Total no. litters raised		4.4	3.4	4.6
Pigs born per litter		8.8	8.7	8.8
Pigs weaned per litter		6.5	6.5	6.9
Price rec'd. per cwt. sold	\$	\$ 19.17	\$ 18.56	\$ 19.95
<b>SHEEP-FARM FLOCK</b>				
No. of farms		24	2	4
Gross ret. per head*	\$	\$ 13.93	-	\$ 8.42
No. head of sheep		84	-	115
No. ewes kept for lambing		61	-	79
% lamb crop**		101	-	99
% death loss**		7.6	-	10.3
Lbs. wool per sheep sheared		7.3	-	6.5
Price rec'd per lb. wool sold (cts.)		48.8	-	50.4
Price rec'd per cwt. lambs sold	\$	\$ 22.75	-	\$ 14.73
<b>CAPONS - No. of farms</b>				
Gross ret. per cwt. produced	\$	-	-	-
Lbs. capons produced		-	-	-
No. capons bought		-	-	-
Price rec'd per lbs. sold (cts.)		-	-	-
<b>TURKEYS</b>				
No. of farms		6	1	1
Gross ret. per cwt. produced	\$	\$ 29.78	-	-
Lbs. produced		17596	-	-
Price rec'd. per lb. sold (cts.)		33.9	-	-
Number of poult		1183	-	-
Price paid per poult purchased (cts.)		73.8	-	-
% death loss		24.9	-	-
Weight per bird sold, lbs.		18.3	-	-
<b>CHICKENS</b>				
No. of farms		43	10	9
Gross ret. per hen	\$	\$ 5.62	\$ 6.88	\$ 4.43
No. hens		122	118	133
Eggs per hen		159	150	142
Price rec'd. per doz. eggs sold (cts.)		33.5	34.3	31.9
No. chicks purchased		257	383	232
% of hens that were pullets		68	69	67

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

\*\*Lambs which die during month of birth are not included.

Table 18. Summary of Farm Earnings and Inventories by Years

Items	1940	1941	1942	1943	1944	1945	1946
No. of farms	98	96	79	72	67	54	54
Monthly charge for unpd. fam. lab.	\$ 40	\$ 45	\$ 55	\$ 70	\$ 80	\$ 85	\$ 105
Monthly charge for board to hired lab.	18	20	25	25	25	25	30
<u>FARM EXPENSES</u>							
Dairy and dual-purpose cattle bought	\$ 71	\$ 58	\$ 89	\$ 96	\$ 131	\$ 124	\$ 164
Beef cattle bought (incl. feeders)	9	18	83	62	26	67	117
Hogs bought	10	24	54	26	38	39	61
Sheep bought (including feeders)	31	22	36	42	38	14	16
Poultry bought (including turkeys)	24	40	66	112	160	148	151
Horses bought	20	19	17	5	15	6	10
Miscellaneous livestock expense	13	20	31	49	57	57	66
Miscellaneous crop expenses	149	150	265	346	396	388	477
Feed bought	138	187	380	684	480	566	668
Custom work hired	74	63	81	133	133	125	195
Power mach. (farm share) (new)	226	222	124	148	266	273	328
Power mach. (farm share) (upkeep)	330	387	462	583	659	793	947
Crop and general mach. (new)	195	261	165	135	341	415	561
Crop and general mach. (upkeep)	50	57	88	111	120	126	160
Livestock equipment (new)	29	51	60	53	64	83	58
Livestock equipment (upkeep)	5	8	17	27	25	26	31
Buildings and fencing (new)	154	167	208	178	107	579	353
Buildings and fencing (upkeep)	79	52	84	99	149	136	142
Hired labor	211	236	324	465	541	473	658
Taxes	193	196	200	210	217	249	278
General farm and insurance	29	44	56	54	61	78	76
(1) Total farm purchases	\$2,040	\$2,282	\$2,890	\$3,618	\$4,024	\$4,765	\$5,517
(2) Decrease in farm capital	-	-	-	-	-	-	-
(3) Board furnished hired labor	103	107	134	144	124	98	133
(4) Interest on farm capital	691	710	756	788	826	912	980
(5) Unpaid family labor	295	338	402	427	419	417	619
(6) Tot. farm exp. (Sum of (1) to (5))	\$3,129	\$3,437	\$4,182	\$4,977	\$5,393	\$6,192	\$7,249

Table 18. Summary of Farm Earnings and Inventories by Years (Cont'd.)

Items	1940	1941	1942	1943	1944	1945	1946
<u>FARM RECEIPTS</u>							
Dairy and dual-purpose cattle	\$ 325	\$ 409	\$ 576	\$ 612	\$ 653	\$ 720	\$ 800
Dairy products	610	864	1,054	1,197	1,201	1,646	2,185
Beef cattle (including feeders)	77	118	257	300	274	237	324
Hogs	166	333	750	987	647	696	862
Sheep and wool	222	242	327	340	332	392	555
Poultry (including turkeys)	173	245	451	573	660	802	838
Eggs	65	130	263	364	402	440	416
Horses	30	37	21	22	18	22	20
Potatoes	120	174	272	416	484	185	428
Small grain	560	625	1,150	1,194	1,645	1,490	2,479
Other crops	123	185	161	285	449	292	437
Machinery and equipment sold	116	115	56	138	142	213	236
Income from labor off the farm	116	125	99	105	131	165	171
Agricultural Adjustment payments	252	248	227	205	214	283	267
Miscellaneous	133	86	96	86	59	128	151
(7) Total farm sales	\$ 3,088	\$ 3,936	\$ 5,760	\$ 6,824	\$ 7,311	\$ 7,713	\$10,169
(8) Increase in farm capital	364	991	809	125	419	1,034	1,394
(9) Family living from farm	366	421	502	590	594	619	689
(10) Total farm receipts (7)+(8)+(9)	\$ 3,818	\$ 5,348	\$ 7,971	\$ 7,539	\$ 8,324	\$ 9,366	\$12,252
(6) Total farm expenses	3,129	3,437	4,182	4,977	5,393	6,192	7,249
(11) Oper. labor earnings (10)-(6)	689	1,911	2,889	2,562	2,931	3,174	5,003
<u>INVENTORIES</u>							
Productive livestock (total)	1,550	1,824	2,418	2,686	2,578	2,726	2,860
Dairy or dual purpose cattle	997	1,138	1,350	1,392	1,336	1,497	1,543
Beef cattle	175	205	375	443	453	416	548
Hogs	65	143	268	332	253	298	288
Sheep	270	278	336	395	408	379	335
Poultry	43	60	89	124	128	136	146
Horses	327	294	303	284	240	220	188
Crop, seed, and feed	923	1,120	1,393	1,618	1,904	2,272	2,833
Machinery and equip. (total)	2,188	2,345	2,522	2,546	2,699	3,180	3,538
Power mach. (farm share)	964	1,052	1,098	1,060	1,125	1,296	1,417
Crop and general mach.	1,046	1,098	1,188	1,194	1,246	1,494	1,730
Livestock equipment	178	195	236	292	328	390	391
Bldgs., fences, etc.	3,585	3,602	3,768	3,712	3,816	4,182	4,346
Land	5,248	5,024	4,714	4,918	5,274	5,656	5,835
Total farm capital	13,821	14,209	15,118	15,764	16,511	18,236	19,600

Table 19. Summary of Miscellaneous Items by Years

Items	1940	1941	1942	1943	1944	1945	1946
<u>MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFIC.</u>							
% tillable land in high return crops	34.9	37.6	38.3	41.5	43.7	39.2	41.6
Prod. livestock units per 100 A.	9.6	10.5	12.0	12.7	11.6	11.3	11.3
Work units	456	481	475	506	511	521	526
Work units per worker	219	238	236	247	256	274	263
Expenses per work unit	\$1.86	\$1.83	\$2.26	\$2.64	\$2.81	\$3.14	\$3.68
<u>GROSS RETURNS PER:</u>							
Dairy cow	\$68.90	\$95.93	\$114.92	\$128.95	\$133.53	\$170.29	\$214.96
Dual-purpose cow	61.95	80.71	105.72	110.33	112.73	139.51	180.13
Animal unit in beef-breeding herd	58.04	57.03	80.20	51.91	52.94	55.96	79.56
Head of sheep in farm flock	5.93	7.05	11.02	7.11	6.88	8.47	13.93
100 lbs. hogs produced	5.81	10.70	14.38	12.59	13.34	14.17	22.45
Hen	1.86	2.88	3.85	4.91	4.60	5.30	5.62
100 lbs. turkeys produced	15.34	20.84	31.77	30.08	30.27	30.78	29.78
<u>PRICE RECEIVED PER:</u>							
Lb. B.F. sold to creameries (cts.)	30.4	37.4	45.3	53.8	58.9	64.7	78.2
Lb. B.F. sold as whole milk (cts.)	-	41.8	54.0	67.4	82.2	82.3	98.3
100 lbs. lambs sold	\$8.12	\$9.88	\$13.31	\$11.54	\$11.84	\$13.48	\$22.75
100 lbs. hogs sold	\$5.32	\$9.67	\$13.52	\$13.05	\$12.68	\$14.15	\$19.17
Lb. wool sold (cts.)	28.9	40.0	41.3	43.7	45.5	46.2	48.8
Doz. eggs sold (cts.)	13.9	21.9	28.1	33.2	31.2	35.3	33.5
Lb. turkeys sold (cts.)	15.6	21.5	31.7	33.5	34.9	35.7	33.9
<u>MISC. LIVESTOCK INFORMATION</u>							
No. of work horses	4.0	3.6	3.7	3.6	3.4	3.4	3.1
No. of colts	.7	.8	.7	.7	.4	.4	.2
No. of dairy or dual-purpose cows	11.2	11.9	11.9	12.1	11.7	12.6	12.4
Head other dairy or dual-pur. cattle	13.2	14.4	15.8	16.1	16.2	15.4	14.9
Head in beef-breeding herd	3.1	3.6	4.3	6.1	5.8	4.4	5.5
Litters of pigs	2.3	2.6	4.0	5.8	2.9	3.6	2.7
Pounds of hogs produced	3,586	4,271	6,654	7,800	4,757	5,370	3,961
No. of hens	60	66	98	101	109	107	101
Head of sheep	38.8	37.4	38.4	43.7	47.6	46.0	37.3
Lbs. of butterfat per dairy cow	220	235	230	213	220	234	239
Lbs. of B.F. per dual-purpose cow	196	202	210	192	180	188	195
No. of pigs weaned per litter	7.2	7.3	7.3	6.8	7.2	6.8	6.5
% lamb crop	103	108	114	93	101	92	101
Pounds wool per sheep sheared	7.8	7.5	7.9	7.7	7.3	7.2	7.3
Eggs per hen	121	121	129	144	156	155	159

Table 19. Summary of Miscellaneous Items by Years (cont'd.)

Items	1940	1941	1942	1943	1944	1945	1946
<u>DISTRIBUTION OF ACRES PER FARM</u>							
Wheat	29.4	27.6	19.9	23.1	38.1	28.2	41.7
Flax	28.9	19.9	24.9	19.8	13.6	28.1	15.8
Barley	29.2	23.7	23.5	26.2	19.5	18.0	28.6
Oats	36.0	37.7	36.1	40.1	52.0	54.1	56.9
Misc. small grains	9.5	9.6	5.7	5.9	5.3	3.0	3.6
Total small grains	133.0	118.5	110.1	115.1	128.5	131.4	146.6
Potatoes	5.8	5.0	3.9	4.7	5.7	4.4	3.4
Other cult. crops	19.4	18.9	22.4	22.0	21.9	22.2	22.9
Total cult. crops	25.2	23.9	26.3	26.7	27.6	26.6	26.3
Alfalfa hay or seed	18.3	24.3	29.4	33.0	30.7	31.5	30.9
Sweet clov. hay or seed	21.9	31.5	11.2	10.4	9.9	12.0	11.6
Misc. hay and seed crops	21.2	20.7	19.6	24.0	30.8	31.9	26.0
Total hay and seed crops	61.4	76.5	60.2	67.4	71.4	75.4	68.5
Alf. or alf. mix. pasture	5.0	8.2	12.0	20.0	15.0	23.3	19.3
Sweet clover pasture	16.7	13.8	20.0	8.3	11.2	8.2	11.4
Other tillable pasture	17.1	13.4	11.9	13.4	18.2	13.0	13.4
Total tillable pasture	38.8	35.4	43.9	41.7	44.4	44.5	44.1
Tillable land not cropped	29.0	30.6	40.2	36.2	22.1	42.6	31.9
Total tillable land	287.4	284.9	280.7	287.1	294.0	320.5	317.4
Non-tillable land in wild hay	14.2	12.6	7.9	12.9	11.5	5.7	6.4
Non-tillable pasture	36.2	37.9	37.3	40.2	44.8	36.4	36.2
Timber, roads, waste, farmstead	59.3	54.8	69.9	51.6	52.6	59.4	61.7
Total acres per farm	397.1	390.2	395.8	391.8	402.9	422.0	421.7
<u>CROP YIELDS PER ACRE</u>							
Wheat, bu. (hard spring)	15.0	15.4	22.9	17.3	19.8	16.9	20.5
Flax, bu.	7.3	5	6.0	4.5	6.7	7.8	7.1
Barley, bu.	20.0	25.8	32.9	16.9	25.8	28.7	29.4
Oats, bu.	26.7	32.2	46.8	30.6	43.0	35.8	36.0
Potatoes, bu.	103.4	58.7	66.9	76.3	71.4	79.5	105.5
Corn, grain, bu.	28.3	34.5	24.7	32.4	38.5	22.4	25.7
Corn silage, tons	6.1	6.2	6.3	5.1	6.4	5.0	5.6
Alfalfa hay, tons	1.2	1.7	1.8	1.8	1.8	1.7	1.6
Sweet clover hay, tons	.7	1.0	1.4	1.2	1.1	1.4	1.1
Sweet clover seed, lbs.	285	118	258	211	228	177	289
Wild hay, tons	.8	.5	.6	.6	.6	.6	.4