

LET'S LOOK AT THE RECORD

*1960 Annual Report*

**VOCATIONAL AGRICULTURE  
FARM MANAGEMENT PROGRAM**

**NORTHWESTERN MINNESOTA**

**REPORT NO. 6**

**AREA VOCATIONAL TECHNICAL SCHOOL**

**THIEF RIVER FALLS, MINNESOTA**

**In Cooperation With**

**VOCATIONAL DIVISION, MINNESOTA DEPARTMENT OF  
EDUCATION AND AGRICULTURAL EDUCATION DEPT.**

**UNIVERSITY OF MINNESOTA**

**March 1961**

# 1960 REPORT OF THE FARM MANAGEMENT PROGRAM FOR VOCATIONAL AGRICULTURE IN NORTHWESTERN MINNESOTA

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## LETS GET ACQUAINTED

The Thief River Falls Area Vocational-Technical School in cooperation with the Minnesota Department of Education and the Agricultural Education Department of the University of Minnesota is conducting a farm management program. The program was initiated in 1955 and is available to farmers who are enrolled in adult or young farmer classes in the public schools of a twelve county area. This is the only farm management program in Northwestern Minnesota which stresses farm records as a basis for evaluating the farming operation.

This report is published annually to provide agriculture teachers and farmers with farm record analysis, information which will be helpful to them in studying farming operations. The report is set up to show each cooperating farmer, individual figures for his farm, as well as averages for all farms, the top twenty per cent and the bottom twenty per cent in earnings. The report presents each farmer with figures showing his earnings, increase or decrease in net worth, financial standing and a number of efficiency factors on his various enterprises.

The analysis of the records and the preparation of the reports for Northwestern Minnesota are done under the direction of Fred Sorensen of the Area Vocational-Technical School at Thief River Falls. Clerical assistants for this project were Mrs. Arlene Mrkonich and Mrs. Phyllis Moun. Mrs. Shirley McMahon assisted with the preparation of the report.

The Farm Management Program is supervised locally by Marshall Hankerson, Superintendent of Education and Arnt Aune, Director of the Area Vocational-Technical School, Thief River Falls, Minnesota. Mr. G. R. Cochran of the State Department of Education, Dr. Milo Peterson of the University Department of Agricultural Education, and Dr. T. R. Nodland of the Agricultural Economics Department have been available as consultants.

This report deals with farmers enrolled in nine schools in Northwestern Minnesota. It also includes one record from the Roseau County agent. The following tabulation shows the number of 1960 farm records submitted and the names of the instructors and county agent:

<u>School</u>	<u>No. of Records</u>	<u>Instructor</u>
Goodridge	8	Larry Foley
Greenbush	11	Clifford Sisler
Karlstad	3	Dean Syverson
Kennedy	1	Einar Palm
Lancaster	6	Richard Steinhaus
Middle River	1	John Brummond
Plummer	2	Thomas Hasset
Thief River Falls	22	Ted Kusmak
		Fred Sorensen
Warroad	2	Glen Bergan
Roseau County	<u>1</u>	William Provance
	57	(county agent)

The records kept included farm inventories, cash receipts and expenses, feed consumed by the various classes of livestock, family living secured from the farm, household and personal expenses and receipts and the operators liabilities and assets other than farm capital.

#### INVESTMENT IN FARMING?

The capital investment per farm varied from \$4,254 to \$83,923. The average investment for all farms included in this report and for the twelve high and the twelve low in operator's labor earnings is shown on Table 1.

#### FARM EARNINGS

Operator's earnings is a measure of the relative financial success of a farmer as compared with other farmers and represents the returns above all farm expenses and a charge for the use of farm capital.

There are two methods of computing operator's earnings. Table 2 shows the earnings statement on a cash basis and Table 3 shows the earnings on an enterprise or accrual basis. The principle difference in the two statements is the method of handling the net increase or decrease in the value of farm capital. In the cash statement the net increase or decrease in farm capital is entered as one item. In the enterprise statement, the net change in the inventory has been included in each enterprise in order to compute "total returns and net increases", or "total expenses and net decreases" by enterprises.

#### RETURNS TO CAPITAL

The return to capital and family labor represents the amount available to the operator for living expense, payment on indebtedness and savings. These figures are found on Table 5.

What is the capital investment picture in our farm business?

Table 1. Summary of Farm Inventories, 1960

Items	Your farm		Average of 57 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	<u>160 + 29 a soil Bank Hay</u>		497	
Size of business (work units)*	<u>347</u>		374	
Dairy and dual purpose cows	<u>4025</u>	<u>4375</u>	\$ 2050	\$ 2228
Other dairy and dual purpose cattle	<u>2125</u>	<u>2030</u>	1205	1363
Beef cattle (incl. feeders)			2145	2559
Hogs			179	202
Sheep (including feeders)			859	1002
Poultry (including turkeys)			97	166
Productive livestock	<u>6150</u>	<u>6405</u>	6535	7520
Horses			31	38
Honey			33	70
Crop, seed and feed	<u>1140</u>	<u>1317</u>	2977	3487
Auto & truck (farm share)	<u>253</u>	<u>263</u>	968	959
Tractor & motors	<u>543</u>	<u>355</u>	1743	1521
Crop and general machinery	<u>1730</u>	<u>1402</u>	3004	2868
Livestock equipment	<u>451</u>	<u>352</u>	430	449
Machinery and equipment (total)	<u>2975.60</u>	<u>2371.40</u>	6145	5797
Land	<u>2735</u>	<u>2735</u>	9103	9265
Buildings, fences, etc.	<u>5628.10</u>	<u>5511.45</u>	4345	4697
Total farm capital	<u>18628.70</u>	<u>18339.85</u>	\$29169	\$30874

Items	12 most profitable farms		12 least profitable farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	608		505	
Size of business (work units)*	474		345	
Dairy & dual purpose cows	\$ 1894	\$ 2087	\$ 1975	\$ 1924
Other dairy & dual purp. cattle	1305	1005	1102	866
Beef cattle (incl. feeders)	4081	4768	1738	2128
Hogs	239	350	48	101
Sheep (including feeders)	1604	1653	898	912
Poultry (including turkeys)	241	429	33	103
Total productive livestock	9364	10292	5794	6034
Horses	24	20	15	23
Honey	150	322	---	---
Crop, seed, and feed	4894	5538	2594	2977
Auto & truck (farm share)	937	992	1228	1131
Tractors & motors	2231	1952	2068	1787
Crop & general machinery	3136	3280	3596	3093
Livestock equipment	515	726	541	462
Total machinery & equipment	6819	6950	7433	6473
Land	10461	10506	12707	12707
Buildings, fences, etc.	5765	5805	5223	5115
Total farm capital	\$37477	\$39433	\$33766	\$33329

\* See Page 8 for an explanation of "work units".

Table 2. Summary of Farm Earnings (Cash Statement), 1960

Items	Your farm	Average of 57 farms	12 most prof farms	12 least prof. farms
<b>FARM RECEIPTS</b> Here's where the money came from.				
Dairy and dual-purpose cattle	\$1315.03	\$ 986	\$ 1135	\$ 1057
Dairy products	8299.75	2962	3754	2728
Beef cattle (including feeders)		1770	2158	1232
Hogs		483	530	99
Sheep and wool (including feeders)		786	1293	772
Horses		4	5	---
Honey		137	630	---
Poultry (including turkeys)		1047	4733	18
Eggs		511	835	182
Soil bank		272	227	438
Small grain	450.52	3134	3950	2827
Other crops		167	198	302
Mach. & equip. sold & gas tax refund	118.00	335	196	258
Income from work off the farm	12.00	373	629	397
Miscellaneous	225.85	241	415	202
(1) Total farm sales	10421.15	13208	20688	10512
(2) Increase in farm capital		1704	1956	---
(3) Family living from the farm	439.50	337	367	207
(4) Total farm receipts (1)+(2)+(3)	10860.65	\$15249	\$23011	\$10719
<b>FARM EXPENSES</b> Here's where the money went.				
Dairy & dual-purpose cattle bought	\$	325	82	258
Beef cattle bought (incl. feeders)		988	844	695
Hogs bought		38	8	43
Sheep bought (including feeders)		222	28	14
Horses bought		8	---	10
Bees bought		51	232	---
Poultry bought (including turkeys)		210	845	34
Misc. livestock expense	625.87	304	597	202
Feed bought	2525.98	1460	3440	529
Fertilizers	1228.95	504	492	471
Other crop expense	204.10	694	1001	554
Custom work hired	926.14	431	636	380
Gas, oil & grease bought (farm share)	476.82	1058	1199	1188
Rep. of mechanical power (farm share)	352.14	447	485	420
Repair and upkeep of real estate	6.18	118	187	120
Repair and upkeep of crop & gen. mach.	86.78	287	376	281
Repair and upkeep of livestock equip.	34.82	67	78	57
Wages of hired labor	71.50	437	769	406
Electricity expense (farm share)	340.55	191	236	180
Real estate & pers. prop. taxes	220.85	519	554	657
General farm expense	180.69	173	239	140
(5) Total cash operating expense	7301.37	8532	12328	6639
(6) Cap. purchases-mech. power (f.s.)	76.50	456	539	459
(7) Cap. purchases-crop & gen. mach.		575	913	288
(8) Cap. purchases-livestock equip.		122	397	37
(9) Cap. purchases-bldgs. & fencing	245.56	894	512	235
(10) Total farm purchases (5) to (9)	7623.43	10579	14689	7658
(11) Decrease in farm capital	288.85	---	---	437
(12) Interest on farm capital	924.21	1500	1923	1677
(13) Unpaid family labor		409	739	507
(14) Board furnished hired labor		130	233	94
(15) Total farm expenses (10)-(14)	8836.49	12618	17584	10373
(16) Labor earnings (4) - (15)	2024.16	\$ 2631	\$ 5427	\$ 346

What is the value produced by each enterprise?

Table 3. Summary of Farm Earnings (Enterprise Statement) 1960\*

Items	Your farm	Average of 57 farms	12 most prof. farms	12 least prof. farms
<b>RETURNS AND NET INCREASES</b>				
Dairy and dual-purpose cows	\$8359.19	2991	\$ 3886	\$ 2643
Other dairy & dual-purpose cattle	2094.69	1252	1068	817
Beef breedingherd	_____	657	1683	876
Feeder cattle	_____	563	384	---
Hogs	_____	514	675	136
Sheep-farm flock	_____	608	1320	772
Sheep-feeders	_____	101	----	----
Turkeys	_____	1035	4717	----
Chickens	_____	408	210	256
All productive livestock	10453.88	8129	13943	5500
Value of feed fed to livestock	4864.35	4383	7545	2988
Return over feed from livestock	5589.53	3746	6398	2512
Crops, seed and feed	1368.24	5768	7615	5377
Income from labor off the farm	3.00	165	215	189
Agricultural conservation payments	_____	151	169	131
Bees	_____	124	570	---
Miscellaneous	_____	90	245	70
(1) Total returns & net increases	_____	10044	15212	8279
<b>EXPENSES AND NET DECREASES</b>				
Horses	\$ _____	\$ -1	\$ -1	\$ 2
Truck	_____	307	299	387
Auto (farm share)	_____	464	430	483
Tractor	_____	1069	1216	1135
Elec. & gas engine exp. (farm share)	_____	192	237	180
Hired power	_____	229	331	197
Total power	_____	2260	2512	2384
Crop and general machinery	_____	990	1118	1115
Livestock equipment	_____	161	270	148
Buildings, fencing, and tiling	_____	381	614	463
Misc. productive livestock expense	_____	304	597	202
Labor	_____	1125	1960	1146
Real estate taxes	_____	357	316	482
Personal property tax	_____	162	237	176
Insurance	_____	64	112	56
General farm	_____	109	127	84
Interest on farm capital	_____	1500	1923	1677
(2) Total expenses & net decreases	\$ _____	\$7413	\$9785	\$7933
(3) Operator's earnings (1) - (2)	\$ _____	\$2631	\$5427	\$ 346

\*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 earnings are the same as those on page 4.

What is the value of farm products used in the house?

The family living from the farm is the estimated value of the farm products used in the house and shelter furnished the farmer and his family by the farm. It is a part of the income of the farm and a part of the expenses of operating the household even though cash transactions are not involved. The omission of the farm produce used in the home results in an incomplete record of both farm income and personal expense.

The value of the family living as shown in Table 4 amounts to 2.1 per cent of the total farm receipts on these farms. The values used are shown in Table 23. If these products had been purchased, the amount paid out would have been considerably higher as the figures used were conservative.

Table 4. Family living from the farm, 1960

Items	Your farm	Average of 57 farms	Your farm	Average of 57 farms
Number of persons in family	_____	4.3		
Adult equivalent - family	_____	3.1		
Lamb & mutton	_____	16 lbs.	\$ _____	\$ 2
Whole milk	_____	926 qts.	_____	64
Skim milk	_____	100 qts.	_____	2
Cream	_____	77 pts.	_____	16
Beef	_____	600 lbs.	_____	125
Hogs	_____	225 lbs.	_____	40
Poultry	_____	99 lbs.	_____	15
Eggs	_____	44 doz.	_____	13
Farm made butter	_____	3 lbs.	_____	2
Vegetables, fruits, potatoes, & fuel	_____		_____	58
Total			\$ _____	\$ 337

#### HOUSEHOLD AND PERSONAL EXPENSES AND RECEIPTS

Household and personal accounts are important if the family is to manage its financial affairs wisely. The household and personal expenses and receipts are presented in Table 5. These farmers spent an average of \$236 per month for family living in addition to the food, fuel and housing furnished by the farm.



How much did we spend for living?

Table 5. Household and Personal Expenses for Those Farms which kept Complete Accounts of These Expenses, 1960

Items	Your farm	Average of 33 farms	12 most prof. farms	12 least prof. farms
Number of persons - family	_____	4.3	6.1	4.3
Number of adult equivalent-family	_____	3.1	4.2	3.2
Food and meals bought	\$ _____	\$ 854	\$1068	\$ 691
Operating and supplies	_____	217	370	223
Furnishings and equipment	_____	282	422	278
Clothing and clothing material	_____	307	341	364
Personal care, personal spending	_____	66	67	56
Education, recreation and development	_____	190	127	521
Gifts and special events	_____	98	75	131
Medical care and health insurance	_____	368	405	523
Church, welfare	_____	157	344	128
Personal share of auto & truck exp.	_____	136	186	161
Operator's share of upkeep on dwelling	_____	47	38	14
Household share of elec. & tel. expense	_____	107	118	113
Total Cash Living Expense	\$ _____	\$2829	\$3561	\$3203
H.H. & Personal share of new auto	_____	109	47	206
New dwelling	_____	168	463	217
Taxes and other deductions	_____	4	-	1
Life insurance	_____	111	121	135
Other savings and investments	_____	84	119	-
Total H.H. & Personal Cash Exp.	\$ _____	\$3305	\$4311	\$3762
Total family living from the farm	_____	344	390	298
Total Cash Expense & Perquisites	\$ _____	\$3649	\$4701	\$4060
Receipts:				
Return to capital and family labor	\$ _____	\$4045	\$6912	\$1849
Income from investments	_____	51	344	31
Sale of outside investments	_____	2	13	-
Other personal income	_____	408	-	272

#### NET WORTH

A net worth statement includes a listing of all the assets and liabilities as of a given date. The difference between the farmer's total assets and his liabilities is his net worth. A net worth statement is presented in Table 6. Both the farm and personal assets and liabilities are included.

The difference between the operator's net worth at the beginning and at the end of the year shows the gain in net worth. It represents the financial progress that has been made during the year.

How much did we save of what we earned?

Table 6. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities, 1960

Items	Your farm		52 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm			497	
Total farm capital			29,317	\$31,299
Stocks and bonds			514	657
Life insurance			313	324
Accounts receivable			3	73
Shares in marketing organizations			318	376
Outside real estate			25	11
Cash on hand and in bank			470	641
Household goods and clothing			1,771	1,880
Personal share of auto & truck			306	323
Dwelling			2,321	2,658
Total non-farm assets			6,041	6,943
TOTAL ASSETS			\$35,358	\$38,242
Federal Land Bank mortgage			752	856
FHA real estate mortgage			821	776
Other mortgage on land operated			1,705	1,892
Loans on other real estate			96	79
Production Credit Association			775	958
FHA Chattel mortgage			266	205
Other chattel mortgages			3,188	3,760
Notes payable			1,141	1,305
Accounts payable			496	741
TOTAL LIABILITIES			9,240	10,572
Farmer's Net Worth			\$26,118	\$27,670
Gain or decrease in net worth			--	+\$ 1,552

#### 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 an average efficiency. The number of work units for each class of livestock and each acre of crop are presented in Table 7. Days of work off the farm for pay are not included in work unit computations in this report.

Table 7. Number of Work Units for each Class of Livestock & Each Acre of Crop

Item	No. of work units	Item	No. of work units
Dairy & dual-purpose cows	10.0 per cow	Small grain	.5 per acre
Other dairy & du.-pur. cattle	3.5 per an. unit*	Corn husked	.7 per acre
Beef breeding herd	3.5 per an. unit*	Corn, silage	1.0 per acre
Feeder cattle	.25 per 100 lbs.	Corn, fodder	1.0 per acre
Sheep - farm flock	1.5 per an. unit*	Alfalfa hay	.6 per acre
Sheep - feeders	.3 per 100 lbs.	Other hay crops	.4 per acre
Hogs	.2 per 100 lbs.	Legume seed	1.0 per acre
Hens	20.0 per 100 hens	Grass silage	.6 per acre
Potatoes	3.8 per acre		

\* Animal unit represents one dairy cow or bull, two other dairy cattle, 1 1/4 beef cows or bull, 1 feeder steer or heifer, 3-1/3 other beef cattle, 7 sheep, 14 lambs, 2 1/2 hogs, 5 pigs, 50 hens or 1,100 pounds of turkeys produced.

## RANGE IN EARNINGS

Every study of farm earnings shows a wide variation in earnings among farmers in a given year (Figure 1). The average operator's earnings of those farmers ranking in the upper 20 per cent of the range according to earnings was \$5427 and of those in the lower 20 per cent was \$346. This is a range of \$5081 between the average earnings of these two groups. Some of the causes for these differences in earnings, such as weather, may be beyond the control of the individual farmer. Other factors are within his control. The more important management factors affecting earnings are as follows: These factors vary from year to year in their relative influence on earnings. 1/

1. Crop Yields
2. Choice of Crops
3. Returns from Livestock
4. Amount of Livestock
5. Size of Business
6. Work Units per Worker
7. Control over Expenses

Operator's  
Earnings

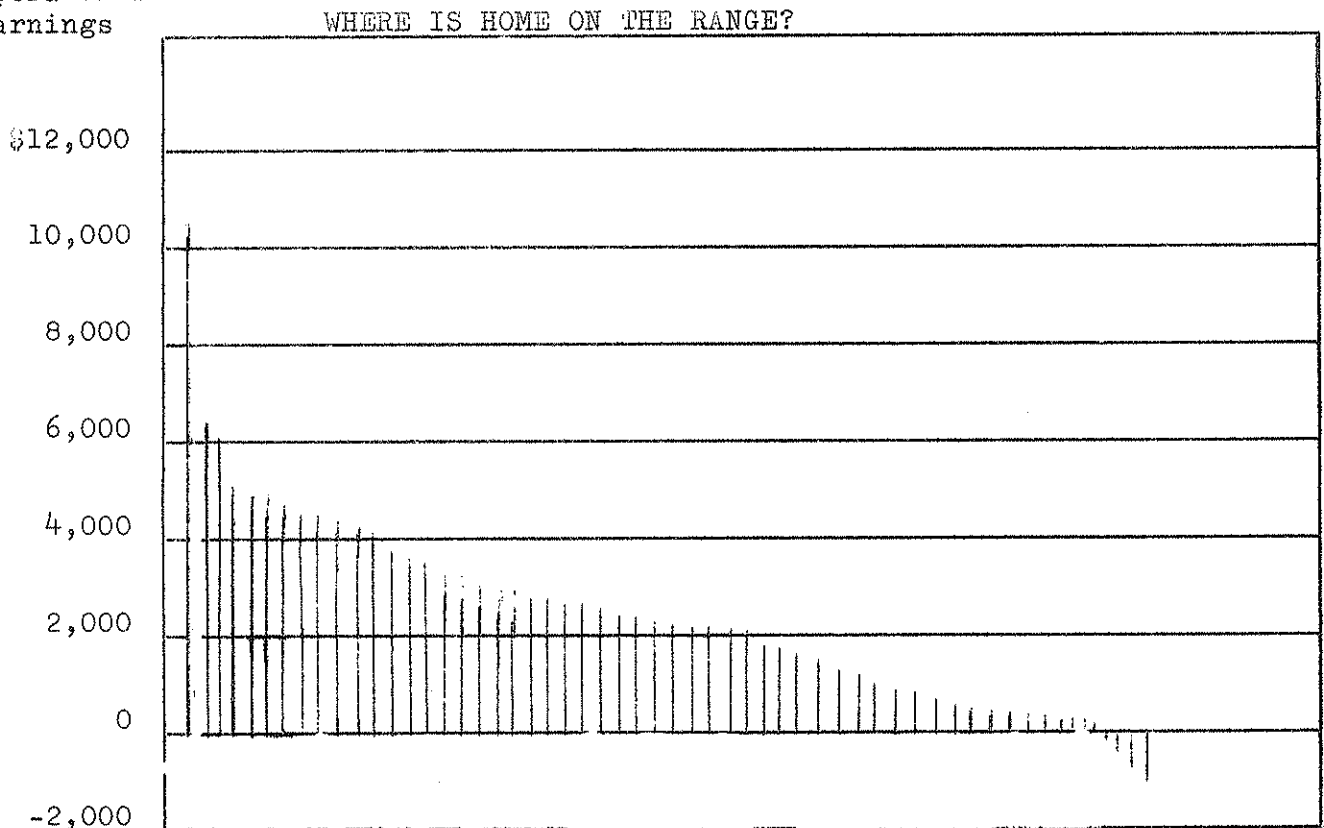


Fig. 1 Range in operator's earnings  
Each line represents the earnings of one farmer

1/ See Pond, G. A. "Why Farm Earnings Vary". Minn. Agri. Expt. Sta. Bul. 386, June, 1945  
Nodland, T. R. and Pond, G. A. "Some Factors Affecting the Earnings of Farmers in Southwestern Minnesota". Univ. of Minn., Dept. of Ag. Econ., Report No. 219, November, 1954.

Table 8. Measures of Farm Organization and Management Efficiency, 1960

Measures used in chart on page 11	Your farm	Average of 57 farms	12 most prof. farms	12 least prof. farms
Operator's earnings	\$ _____	\$ 2631	\$ 5427	\$ 346
(1) Crop yields*	_____	100	100	98
(2) Percent tillable land in high return crops**	_____	41.9	41.4	40.8
(3) Return for \$100 feed to productive livestock***	_____	100	108	93
(4) Productive livestock units per 100 acres****	_____	10.7	10.6	8.3
(5) Size of business - work units	_____	374	475	345
(6) Work units per worker	_____	257	259	242
(7) Power, machinery, equipment and building expense per work unit	\$ _____	\$10.12	\$9.52	\$11.91
Items related to some of the above measures:				
Number of animal units (4)	_____	46.2	58.0	43.4
Work units on crops (5)	_____	155	196	158
Work units on productive livestock (5)	_____	216	265	187
Work units from other productive work (5)	_____	3	14	---
Number of family workers (6)	_____	1.3	1.5	1.3
Number of hired workers (6)	_____	.2	.3	.1
Total number of workers (6)	_____	1.5	1.8	1.4
Power expenses per work unit (7)	\$ _____	6.02	5.30	6.91
Crop Mach. expense per work unit (7)	\$ _____	2.65	2.36	3.23
Livestock equipment expense per work unit (7)	\$ _____	.43	.57	.43
Buildings and fencing expense per work unit (7)	\$ _____	1.02	1.29	1.34
Index of return for \$100 feed from: (3)				
Dairy cattle (see pages 15, 16, & 17)	_____	100	91	90
Beef cattle-breeding herd (page 20)	_____	100	66	113
Hogs (see page 21)	_____	100	119	109
Sheep (see page 18)	_____	100	107	99
Chickens (see page 19)	_____	100	87	75
Feeder cattle (see page 20)	_____	100	137	--
Turkeys	_____	100	100	--

\* Given as percentage of the average

\*\* Crops are marked in Table 9 as (A), (B), (C), and (D). All of the acres in (A) crops, one half of acres in (B) crops, and one fourth of the 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 10, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for the 57 farms included in this summary are located between the dotted lines across the center of this page.

Labor earn- ings	Crop yields	High return crops	Return from pro- ductive livestock	Pr. L.S. units per 100 A.	Work units per worker	Work units per worker	Pow., Mach. eq., & bldgs exp. per work unit
6,500	140	56	156	44	600	420	\$2.00
6,000	135	54	149	40	570	400	3.00
5,500	130	52	142	36	540	380	4.00
5,000	125	50	135	32	510	360	5.00
4,500	120	48	128	28	480	340	6.00
4,000	115	46	121	24	450	320	7.00
3,500	110	44	114	20	420	300	8.00
3,000	105	42	107	16	390	280	9.00
2,500	100	40	100	12	360	260	10.00
2,000	95	38	93	8	330	240	11.00
1,500	90	36	86	4	300	220	12.00
1,000	85	34	79	0	270	200	13.00
500	80	32	72		240	180	14.00
0	75	30	65		210	160	15.00
- 500	70	28	58		180	140	16.00
-1,000	65	26	51		150	120	17.00
-1,500	60	24	44		120	100	18.00

Table 9. Distribution of Acres in Farm, 1960

Crop	Crop ratings*	Your farm	Average of 57 farms
Flax	B	_____	13.8
Barley	B	_____	22.5
Wheat	A	_____	24.2
Oats & Oats Mixtures	B	_____	94.9
Rye, millet	C	_____	1.5
Peas	A	_____	.1
Total Small Grain		_____	157.0
Sugar beets	A	_____	.7
Corn grain	B	_____	.5
Corn fodder	C	_____	.2
Corn silage	B	_____	10.8
Total Cultivated Crops		_____	12.2
Alfalfa and alfalfa mixture	B	_____	51.1
Alfalfa Seed	B	_____	1.1
Red or alsike clover hay	B	_____	3.5
Red or alsike clover seed	B	_____	2.4
Sweet clover hay	C	_____	.2
Sweet clover seed	C	_____	4.3
Other legumes and legume mixture hay	C	_____	24.6
Brome or timothy grass seed	C	_____	7.8
Brome or timothy hay	C	_____	3.9
Wild hay	D	_____	8.5
Annual hay	D	_____	1.0
Oats & Peas	B	_____	3.0
Total tillable land in hay		_____	111.4
Alfalfa pasture	B	_____	2.6
Other legumes and mixtures	B	_____	4.5
Soil Bank	B	_____	32.2
Other tillable pasture	D	_____	39.7
Total tillable land in pasture		_____	79.0
Tillable land not cropped	D	_____	25.8
Total Tillable Land		_____	385.4
Wild hay		_____	5.4
Non-tillable pasture		_____	35.6
Timber (not pastured)		_____	34.7
Roads and waste		_____	26.2
Farmstead		_____	9.4
Total Acres in Farm		_____	496.7
Percent land tillable		_____	78.
Percent tillable land in high return crops		_____	40.7

\* The crops are classified as A, B, C, or D crops on the basis of their average net returns per acre. Alfalfa was dropped to a B crop in this area in 1960 because of its low net return per acre over the past three years as determined on page 26 of this summary. As a result the percent tillable land in high return crops is somewhat lower than in previous years.

Table 10. Crop Yields Per Acre, 1960

Crop	Your farm	No. of cases	Average of farms growing each crop
Flax, bu.	_____	22	10.8
Barley, bu.	_____	26	31.1
Wheat, bu.	_____	44	29.3
Oats, bu.	_____	54	53.8
Rye, bu.	_____	4	12.5
Peas, bu.	_____	1	25.0
Sugar beets, tons	_____	1	8.5
Corn grain, bu.	_____	3	54.2
Corn fodder, tons	_____	1	1.3
Corn silage, tons	_____	31	6.6
Alfalfa hay, tons	_____	44	1.6
Alfalfa seed	_____	3	60.2
Red or alsike clover hay, tons	_____	9	1.3
Red or alsike clover seed, lbs.	_____	10	141.2
Sweet clover hay, tons	_____	1	----
Sweet clover seed	_____	6	251.4
Other leg. & leg. mix. hay, tons	_____	24	1.2
Brome or timothy seed	_____	11	167.3
Brome or timothy hay, tons	_____	6	1.1
Wild hay, tons	_____	8	.8
Annual hay, tons	_____	5	1.4
Oats and oats mix. silage	_____	8	3.7

#### POWER AND MACHINERY EXPENSE

Power and machinery expense per crop acre is an indication of the economy with which capital is invested in these items. The crop acres per farm ranged from 89 to 830 with an average of 280, (Table 11. The expenses are high on the farms with a small acreage. In some cases, low expenses for labor might be offset by high power and equipment costs. The farmer is interested in operating at the lowest cost for power, machinery and labor combined.

Table 11. Power and Machinery Expenses Per Crop Acre, 1960

Items	Your farm	Average of 57 farms	12 most prof. farms	12 least prof. farms
Crop acres per farm	_____	276	350	279
Tractor expense per crop acre	_____	\$3.87	\$3.47	\$4.07
Crop & gen. mach. exp. per crop acre	_____	3.59	3.20	3.99

#### AMOUNT OF LIVESTOCK

The farmers cooperating in this study are predominantly livestock farmers. 52% of these farmers maintained dairy cattle, 23% poultry, 39% raised sheep, 25% kept beef cattle, 41% raised one or more hogs, 21% raised feeder cattle, and 4% raised turkeys.

Table 12. Amount of Livestock, 1960

	Your farm	Average of 57 farms	12 most prof. farms	12 least prof. farms
Number of milk cows	_____	11.6	12.0	10.3
Number of other dairy cattle	_____	15.0	13.9	12.0
Number of beef cattle (inc. feeders)	_____	17.8	28.8	20.9
Number of ewes	_____	32.0	56.0	38.0
Number of hens	_____	86	55	52
Litters of pigs raised	_____	2	6.0	.4
Pounds of hogs produced	_____	2756	2552	727

### TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

The total "return over feed costs" for each class of livestock is shown in Table 13. This differs from the "return over feed" shown in the enterprise statement in that it is the total for each class of livestock instead of a return "per head", "per unit" or "per 100 pounds". These data indicate the relative importance of different classes of livestock as a source of income and as a market for feed. The total return is the same as the returns and net increases shown on page 5. The value of milk consumed by calves is included in the total returns from dairy or dual purpose cows and in the total feed cost for other dairy or other dual purpose cattle. The value of milk consumed by calves is not included in either the total returns or the feed cost of "all dairy" or "all dual purpose" cattle. The return over feed is not a net return, but rather the amount available from the gross income, after paying the feed bill, to cover the outlay for hired labor, power, equipment, taxes, insurance, interest and veterinary bills and to provide a return for the use of family labor and capital.

Table 13. Total Feed Costs & Returns From Your Livestock Enterprises, 1960

	Dairy or Dual Purpose Cattle			Beef breeding
	Cows	Other	All	
Total returns	_____	_____	_____	_____
Total feed cost	_____	_____	_____	_____
Total return over feed	_____	_____	_____	_____
	Feeder cattle	Hogs	Farm flock of sheep	Chickens
Total returns	_____	_____	_____	_____
Total feed cost	_____	_____	_____	_____
Total return over feed	_____	_____	_____	_____

Feed is the largest single item of cost for all classes of livestock. However, the proportion of the total cost represented by feed varies considerably between classes of livestock. Feed makes up approximately 45 per cent of the total cost of maintaining dairy cattle and poultry, 50 per cent in the case of a farm flock of sheep, and 75 to 90 per cent for hogs, feeder cattle, and feeder lambs. Consequently, it is necessary to secure a relatively higher return over feed from dairy cattle and poultry than from the other livestock enterprises in order to be able to cover all the costs other than feed.



# DAIRY AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value of feeds and returns from dairy cattle are presented in Tables 14, 16, & 17. The return over feed cost per cow varied from \$2.68 to \$304.22 among the 35 herds covered by this study. Some of the important factors that affected the return over feed were:

1. Rate of production (pounds butterfat per cow)
2. Price received from butterfat
3. Feeding efficiency
4. Quality of ration
5. Economy of ration (Feed cost per pound butterfat)

Table 14. Factors of Cost and Returns from Dairy Cows, 1960

Items	Your farm	Average of 35 farms	9 farms highest in butterfat per cow	9 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	331	414	216
Price rec. per lb. B.F. sold (cream)	_____	\$ .62	\$ .62	\$ .62
Price rec. per lb. B.F. sold (milk)	_____	.90	.94	.76
Feed per cow, lbs.:				
Corn	_____	241	290	403
Small grain	_____	2559	3078	1763
Commercial feeds	_____	466	768	134
Legume hay	_____	6225	6323	6012
Other hay	_____	950	316	1855
Fodder and stover	_____	101	---	589
Total concentrates	_____	3266	4136	2300
Total dry roughages	_____	7276	6639	8456
Silage	_____	6173	7181	3180
Feed cost per cow:				
Concentrates	\$ _____	\$ 64.73	\$ 80.50	\$ 42.23
Roughages	_____	55.69	56.83	48.33
Pasture	_____	7.57	6.70	8.73
TOTAL FEED COSTS	_____	\$127.99	\$144.03	\$ 99.29
Value of produce per cow:				
Butterfat sales	\$ _____	\$273.49	\$365.39	\$141.77
Dairy produce used in house	_____	6.57	6.02	10.18
Milk to livestock	_____	9.17	9.28	14.97
Net increase in value of cows	_____	-11.31	-7.12	.29
TOTAL VALUE PRODUCED	\$ _____	\$277.92	\$373.57	\$167.21
RETURNS ABOVE FEED COST PER COW	\$ _____	\$149.93	\$229.54	\$ 67.92
RETURNS FOR \$100 OF FEED	\$ _____	\$ 217	\$ 259	\$ 168
Feed cost per lb. B.F. (cents)	\$ _____	\$ .39	\$ .36	\$ .46
Number of cows	_____	17.0	21.7	11.3

# DAIRY AND DUAL PURPOSE CATTLE

In Table 14 the costs and returns are compared on the basis of level of production. Table 15 shows the same dairy herds compared on the basis of how the product is marketed. (Five herds in Table 14 sold both milk and cream and are omitted from the averages in Table 15.

Table 15. Factors of Cost and Returns from Dairy Cows, 1960

Items	Your Farm	Grade A Average of 9 farms	Grade B Average of 12 farms	Cream Average of 9 farms
Pounds of butterfat per cow	_____	375	320	268
Price rec. per lb. B.F. sold	_____	.98	.81	.62
Feed per cow, lbs.:				
Corn	_____	320	323	56
Small grain	_____	2467	2707	2574
Commercial feeds	_____	775	281	90
Legume hay	_____	6273	6273	6762
Other hay	_____	121	1675	1654
Fodder and stover	_____	-	-	716
Total concentrates	_____	3602	3311	2720
Total dry roughages	_____	6394	7948	9132
Silage	_____	8037	3344	3055
Feed cost per cow:				
Concentrates	\$ _____	\$73.82	\$64.97	\$49.36
Roughages	_____	59.57	49.19	55.96
Pasture	_____	7.42	7.68	8.17
TOTAL FEED COSTS	\$ _____	\$140.81	\$121.84	\$113.49
Value of produce per cow:				
Butterfat sales	\$ _____	\$358.02	\$246.55	\$148.98
Dairy produce used in house	_____	5.68	5.64	12.83
Milk to livestock	_____	2.70	6.09	27.36
Net increase in value of cows	_____	-25.38	-1.45	4.78
TOTAL VALUE PRODUCED	\$ _____	\$341.02	\$256.83	\$193.95
RETURNS ABOVE FEED COST PER COW	\$ _____	\$200.21	\$134.99	\$ 80.46
RETURNS FOR \$100 OF FEED	\$ _____	\$ 242	\$ 211	\$ 171
Feed cost per lb. B.F. (cents)	\$ _____	\$ .38	\$ .38	\$ .42
Number of cows	_____	27.5	15.4	9.3

Table 16. Feed Costs & Returns from Other Dairy & Dual Purpose Cattle, 1960

Items	Your farm	Average of 35 farms	9 farms highest in butterfat per cow	9 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	560	660	466
Hay and fodder	_____	3160	3245	2500
Silage	_____	1663	3205	554
Skim milk	_____	316	176	622
Whole milk	_____	221	534	110
Feed cost per head:				
Concentrates	\$ _____	\$ 13.49	\$ 16.55	\$ 9.09
Roughages	_____	17.92	26.35	12.78
Milk	_____	5.97	7.09	9.84
Pasture	_____	3.24	2.85	4.52
TOTAL FEED COSTS PER HEAD	_____	\$ 40.62	\$ 52.84	\$36.23
Net inc. in value of other cattle	_____	82.72	76.96	69.91
RETURNS ABOVE FEED COST PER HEAD	_____	42.10	24.12	33.68
RETURN FOR \$100 OF FEED	\$ _____	\$ 204	\$ 146	\$ 193
Number of head of other cattle	_____	22.9	24.6	15.2

Table 17. Feed Costs and Returns from All Dairy & Dual Purpose Cattle, 1960

Items	Your farm	Average of 35 farms	9 farms highest in butterfat per cow	9 farms lowest in butterfat per cow
Feeds per animal unit, lbs:				
Concentrates	_____	2360	3117	1747
Hay and fodder	_____	6918	6584	6698
Silage	_____	5025	6899	2342
TOTAL FEED COSTS PER ANIMAL UNIT	\$ _____	\$104.44	\$124.81	\$ 81.44
Value of produce per animal unit:				
Dairy products	\$ _____	\$167.22	\$236.95	\$ 90.65
Net inc. in val. of dairy cattle	_____	57.32	51.13	53.92
TOTAL VALUE PRODUCED	\$ _____	\$224.54	\$288.08	\$144.57
RETURNS ABOVE FEED PER ANIMAL UNIT	\$ _____	\$120.10	\$163.27	\$ 63.13
RETURNS FOR \$100 OF FEED	\$ _____	\$ 215	\$ 231	\$ 178
Animal units of cattle	_____	28.5	34.1	18.9

Table 18. Feed Costs and Returns from Farm Flock of Sheep, 1960

Items	Your farm	Average of 21 farms
Feeds per head, * lbs.		
Concentrates	_____	106
Legume hay	_____	566
Other hay	_____	140
Silage	_____	185
Feed cost per head:		
Concentrates	\$ _____	\$ 2.02
Roughages	_____	4.35
Pasture	_____	1.41
TOTAL FEED COSTS	\$ _____	\$ 7.78
Value of produce per head:		
Wool	\$ _____	\$ 3.95
Net increase in value of sheep	_____	9.48
TOTAL VALUE PRODUCED	\$ _____	\$13.43
RETURNS ABOVE FEED COST PER HEAD	\$ _____	\$ 5.65
RETURNS FOR \$100 OF FEED	\$ _____	\$ 173
Price per cwt. of lambs sold	\$ _____	\$18.05
Price per lb. of wool sold (cents)	_____	50.4
Pounds of wool per sheep sheared	_____	8.9
Number of ewes kept for lambing	_____	84
Per cent lamb crop**	_____	115%
Per cent death loss**	_____	11.6%
Pounds of sheep produced	_____	7657

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

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

# CHICKENS

Twenty-three per cent of the farmers cooperating in this analysis kept chickens.

Some of the important factors that affected the return over feed were:

1. Quantity of feed required per hen
2. Price received per dozen eggs sold
3. Eggs laid per hen
4. Percentage death loss of hens

Table 19. Feed Costs and Returns from Chickens, 1960\*

Items	Your farm	Average of 13 farms ,
Feed per hen, lbs.:		
Grain	_____	69
Commercial feeds	_____	61
Total concentrates	_____	130
Milk	_____	---
TOTAL FEED COST PER HEN	\$ _____	\$3.13
Value of Produce per Hen:		
Eggs sold and used in house	\$ _____	\$4.57
Net inc. in value of chickens	\$ _____	.26
TOTAL VALUE PRODUCED	\$ _____	\$4.83
RETURNS ABOVE FEED COST PER HEN	\$ _____	\$1.70
RETURNS FOR \$100 OF FEED	\$ _____	\$1.54
Price rec'd per doz. eggs sold (cents)	\$ _____	\$ .29
Eggs laid per hen	_____	188
Ave. no. of hens on farm during year	_____	313
Percent death loss of hens	_____	11%

\* Includes feeds and returns from laying flock and rearing flock.

Table 20. Feed Costs and Returns from Feeder Cattle, 1960

Items	Your farm	Average of 7 farms
Feed per cwt. beef produced, lbs.:		
Corn	_____	35
Small grain	_____	397
Commercial feeds	_____	79
Legume hay	_____	487
Other hay	_____	20
Total concentrates	_____	511
Total hay and fodder	_____	507
Silage	_____	251
Feed cost per cwt. beef produced:		
Concentrates	\$ _____	\$ 8.60
Roughages	_____	3.67
Pasture	_____	1.14
TOTAL FEED COSTS	_____	\$ 13.41
Net increase in value of feeders	\$ _____	\$ 19.26
Returns above feed per cwt. beef produced	_____	5.85
Returns for \$100 feed	_____	144
Price paid per cwt. beef bot.	_____	22.79
Price rec'd for feeders sold	_____	23.42
Number of animal units	_____	35.1
Pounds of beef produced	_____	18372

Table 21. Feed Costs and Returns from Beef Cattle, 1960

Items	Your farm	Average of 12 farms
Feeds per animal unit, lbs.:		
Concentrates	_____	312
Legume hay	_____	7581
Other hay	_____	742
Silage	_____	4032
Feed Cost per animal unit:		
Concentrates	\$ _____	\$ 5.81
Roughages	_____	43.68
Pasture	_____	8.04
TOTAL FEED COSTS	\$ _____	\$ 57.53
Value of produce per animal unit:		
Dairy products	\$ _____	\$ .56
Net increase in value of animals	_____	94.89
TOTAL VALUE PRODUCED	\$ _____	\$ 95.45
RETURNS ABOVE FEED COST PER ANIMAL UNIT	\$ _____	\$ 37.92
RETURNS FOR \$100 OF FEED	\$ _____	\$ 166
Number of animal units in the herd	_____	30.7

Raising hogs is a minor livestock enterprise on most farms in Northwestern Minnesota. The hog enterprise in this area varies in size from raising one or two for home butchering to the raising of a number of litters per year.

Table 22. Feed costs and returns from Hogs, 1960

Items	Your farm	Average of 21 farms	Producers of over 7000# hogs
Feed per cwt. of hogs produced, lbs.:			
Corn	_____	28	31
Small grain	_____	382	344
Commercial feeds	_____	73	91
Total concentrates	_____	483	466
Skim milk	_____	57	31
Feed cost per cwt. hogs produced:			
Concentrates	\$ _____	\$10.03	\$10.11
Skim milk	_____	.43	.23
Pasture	_____	.33	.42
TOTAL FEED COST	\$ _____	\$10.79	\$10.76
Net increase in val. per cwt. hogs prod.	\$ _____	\$18.81	\$19.31
RETURNS ABOVE FEED COST PER CWT.			
HOGS PRODUCED	\$ _____	\$ 8.02	\$ 8.55
RETURNS FOR \$100 FEED	\$ _____	\$ 174	\$ 179
Price received per cwt. hogs sold	\$ _____	\$17.38	\$18.05
No. of spring litters raised	_____	3.2	6.4
No. of fall litters raised	_____	3.0	5.6
Total no. of litters raised	_____	6.2	12.0
No. of pigs born per litter	_____	9.5	9.6
No. of pigs weaned per litter	_____	8.0	8.1
Pounds of hogs produced	_____	7217	12553

Table 23. Average Prices of Feed, and Produce used in Home, 1960

Feed Prices

Farm Grown Grains

Oats	\$ .54 per bu.
Barley	.78 per bu.
Wheat	1.85 per bu.
Wheat & Oats	1.20 per bu.
Rye	.85 per bu.

Hay

Alfalfa-Brome	\$12.00 per ton
Red Clover	10.00 per ton
Wild Hay	6.00 per ton
Sweet Clover	9.00 per ton
Brome	8.00 per ton

Other Roughages

Corn silage	\$4.50 per ton
Grass silage	4.50 per ton
Oats & oats mix silage	\$4.50 per ton

Milk for Feed

Whole milk	\$ 3.25 per cwt.
Skim milk	.76 per cwt.

Pasture

\$1.75 an animal unit per month

Home Produce

Milk	7¢ per quart
Cream	20¢ per pint
Poultry (live)	9¢ per pound
Beef (live)	25¢ per pound
Hogs (live)	17¢ per pound
Eggs	30¢ per dozen

Unpaid family labor	\$ 5.00 per day
Board for hired labor	\$ 2.50 per day unless otherwise specified



# LABOR EARNINGS CORRELATED WITH EXCELLED 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 livestock, (4) amount of livestock, (5) size of business, (6) work accomplishments per worker, and (7) control over expenses. The combined or cumulative influence of these seven management factors on earnings is shown in Table 24. The farmer's earnings are determined to a considerable extent by his accomplishments in these seven factors.

Table 24.



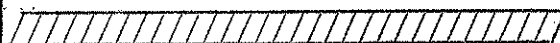
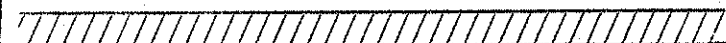
No. of factors in which farmers excelled	No. of farms	0	1000	2000	3000	4000	5000	
1 or 2	17							\$1830
3 or 4	27							2527
5 or 6	9							3948
7	2							\$4952

Table 24 indicates that it will be worth while for each co-operator to study carefully his ranking on pages 10 and 11 and learn his standing in respect to each of the above factors and the elements of strength and weakness in his farm business.

Table 25. Summary of Farm Earnings by Years

Years	1956	1957	1958	1959	1960
Number of Farms	60	54	52	53	57
<b>FARM RECEIPTS</b>					
Dairy and dual-purpose cattle	\$ 833	\$ 936	\$ 1311	\$ 1265	\$ 986
Dairy products	2606	2992	3093	2603	2962
Beef cattle (including feeders)	282	350	565	1033	1770
Hogs	298	343	609	713	483
Sheep and wool (including feeders)	262	279	274	528	786
Horses	1	7	2	8	4
Poultry (including turkeys)	226	226	24	1095	1047
Eggs	271	252	388	408	511
Honey sold	70	74	90	159	137
Corn (includes soil bank in 1959+'60)	14	62	1	207	276
Small grain	3318	2405	2741	2859	3134
Other crops	485	94	155	223	163
Mach. & equip. sold & gas tax refund	229	386	160	277	335
Pulp sold	173	26	-	-	-
Income from work off the farm	278	238	314	254	373
Miscellaneous	268	264	534	321	241
(1) Total farm sales	9614	8934	10261	11951	13208
(2) Increase in farm capital	535	-	1355	1979	1704
(3) Family living from the farm	284	250	286	314	337
(4) Total farm receipts (1)+(2)+(3)	10433	9184	11902	14244	15249
<b>FARM EXPENSES</b>					
Dairy and dual-purpose cattle bought	380	169	228	394	325
Beef cattle bought (incl. feeders)	22	27	478	575	988
Hogs bought	16	58	73	46	38
Sheep bought (including feeders)	21	16	76	173	222
Horses bought	4	2	3	44	8
Bees bought	29	52	56	35	51
Poultry bought (including turkeys)	61	76	39	214	210
Misc. livestock expense	195	202	228	226	304
Feed bought	696	800	896	1619	1460
Fertilizers	295	238	398	472	504
Other crop expense	573	550	461	604	694
Custom work hired	390	268	341	372	431
Gas, oil and grease bought (f.s.)	800	826	860	828	1058
Rep. of mechanical power (f.s.)	313	315	338	388	447
Repair and upkeep of real estate	86	130	107	112	118
Repair and upkeep of crop & gen. mach.	220	208	232	214	287
Repair and upkeep of livestock equip.	47	52	52	60	67
Wages of hired labor	444	538	549	392	437
Electricity expense (farm share)	137	164	164	174	191
Real estate & pers. property taxes	345	382	403	435	519
General farm expense	164	123	130	132	173
(5) Total cash operating expense	5238	5196	6112	7509	8532
(6) Cap. purchases-mech. power (f.s.)	421	596	505	616	456
(7) Cap. purchases-crop & gen. mach.	863	411	456	530	575
(8) Cap. purchases-livestock equip.	61	235	65	133	122
(9) Cap. purchases-bldgs. & fencing	254	959	454	1323	894
(10) Total farm purchases (5) to (9)	6837	7397	7592	10111	10579
(11) Decrease in farm capital	-	200	-	-	-
(12) Interest on farm capital	1234	1269	1249	1287	1500
(13) Unpaid family labor	199	123	272	222	409
(14) Board furnished hired labor	72	121	117	109	130
(15) Total farm expenses (10) - (14)	8342	9110	9230	11729	12618
(16) Labor earnings (4) - (15)	2091	74	2672	2515	2631
(17) Net cash income (1) - (10)	\$2777	\$1537	\$2669	\$1840	\$2629

# WHICH ARE MY HIGH RETURN CROPS?

The following summary is in attempt to show net return per acre from each crop. The costs charged against each crop are based on: (1) The power and machinery costs, and (2) the other costs as listed in the farm account book. Power and machinery costs include gas, oil, repairs, custom work hired and depreciation. Other costs include such items as purchased seed fertilizer, chemicals, twine, seed treatment etc. The net per acre represents return to land and labor. Not all records were detailed enough in the expense sections to be included in these averages.

Table 26. Costs and Returns to Crops

Crop	Yield per A.	Price	Gross Inc per acre	Power, Mach exp. per A.	Other exp per acre	Total exp per acre	Net per acre
Oats	53.8	\$ .54	\$29.05	\$7.41	\$4.31	\$11.72	\$17.33
Barley	31.1	.78	24.26	7.70	7.20	14.90	9.36
Flax	10.8	2.55	27.54	7.68	3.93	11.61	15.93
Wheat	29.3	1.85	54.21	7.70	7.59	15.29	38.92
Alfalfa hay	1.6	12.00	19.20	9.21	4.52	13.73	5.47
Corn silage	6.6	4.50	29.70	15.37	5.78	21.15	8.55

Which crop returned the highest net per acre on my farm? \_\_\_\_\_

What per cent of my tillable land was in this crop? \_\_\_\_\_

Which of my crops are above average in net per acre? \_\_\_\_\_

Which of my crops are below average? \_\_\_\_\_ Why? \_\_\_\_\_