

**1958 ANNUAL REPORT**

**VOCATIONAL AGRICULTURE  
FARM MANAGEMENT PROGRAM**

**NORTHWESTERN MINNESOTA**

**UNIVERSITY OF MINNESOTA  
INSTITUTE OF AGRICULTURE**

**and**

**MINNESOTA DEPARTMENT OF EDUCATION  
VOCATIONAL DIVISION**

**and**

**AREA VOCATIONAL TECHNICAL SCHOOL  
THIEF RIVER FALLS, MINNESOTA**

**Cooperating**

**MARCH 1959**

1958 REPORT OF THE FARM MANAGEMENT SERVICE FOR VOCATIONAL  
AGRICULTURE IN NORTHWESTERN MINNESOTA

ARNT AUNE

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## INTRODUCTION

The Department of Agricultural Education of the University of Minnesota, and the Thief River Falls Area Vocational-Technical School are cooperating with the Vocational Division, Minnesota Department of Education, in maintaining a farm management service. The service was initiated during 1955 and is available to farmers who are enrolled in adult or young farmer classes in the public schools.

The purpose of the project as far as the schools are concerned is (1) to give assistance to the instructors in the mechanics of keeping farm records and (2) to aid in the analysis of the farm business through the use of records as a basis for vocational guidance. The enrollment is on a voluntary basis insofar as the number of schools participating and the number of farmers enrolled in the service.

The analysis of the records and the preparation of the reports for Northwestern Minnesota are done under the direction of Arnt Aune of the Area Vocational School at Thief River Falls. Clerical assistants for this project were Mrs. Joyce Peterson, Adeline Flatland, and Mrs. Gelene Peltier. Mrs. Viola Jaranson, office secretary, assisted with the program throughout the year.

The Farm Management Program is supervised locally by Irwin T. Mickelson, Superintendent of Schools and Stan Nelson, Director of the Area Vocational School. Special credit is due Mr. Nelson for his assistance in this analysis.

Cooperating agencies are G. R. Cochran and S. K. Wick of the State Department of Education and Dr. Milo Peterson of the University of Minnesota, Department of Agricultural Education. Dr. T. R. Nodland of the Agricultural Economics Department has been available as a consultant.

Each farmer pays an annual fee which covers a portion of the cost. For the farmers in the Thief River Falls area, a portion of the cost of the analysis was contributed by the Thief River Falls Chamber of Commerce. The Farmers Home Administration and J. P. Rosengren, local County Supervisor, cooperated by encouraging clients to participate in the service.

This report deals with farmers enrolled in 7 schools in Northwestern Minnesota. The following tabulation shows the number of 1958 farm records submitted and the names of the instructor:

<u>School</u>	<u>No. of records</u>	<u>Instructor</u>
Goodridge	3	Larry Foley
Kennedy	1	Einar Palm
Lancaster	5	Grant Johnson
Plummer	3	Vern Mortenson
Roseau	1	Joe Freeman
Thief River Falls	34	Ted Kusmak
		Jon Metusalem
		Arnt Aune
Warroad	<u>5</u>	Glen Bergan
TOTAL	52	

Three of the records were not complete enough to include in all the averages.

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.

#### FARM INVENTORIES

The capital investment per farm varied from \$3659 to \$64,428. 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 in 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.

Table 1. Summary of Farm Inventories, 1958

Items	Your farm		Average of 52 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)			429	
Size of business (work units)*			326	
Dairy and dual purpose cows			\$ 2101	\$ 2160
Other dairy & dual purpose cattle			1001	1079
Beef cattle (incl. feeders)			675	1274
Hogs			176	280
Sheep (including feeders)			240	320
Poultry (including turkeys)			87	134
Productive livestock			4280	5247
Horses			25	27
Crop, seed and feed			1884	2429
Auto & truck (farm share)			1069	971
Tractor & motors			1999	1910
Crop and general machinery			2968	2813
Livestock equipment			518	509
Machinery and equipment (total)			6554	6203
Land			7716	7883
Buildings, fences, etc.			3833	3858
Total farm capital			\$ 24,292	\$ 25,647

Items	12 most profitable farms		12 least profitable farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	553		415	
Size of business (work units)*	485		239	
Dairy & dual purpose cows	\$ 3050	\$ 3148	\$ 1463	\$ 1840
Other dairy & dual purpose cattle	1384	1465	1137	927
Beef cattle (incl. feeders)	1922	3620	330	315
Hogs	157	306	66	210
Sheep (including feeders)	340	496	213	373
Poultry (including turkeys)	67	53	38	262
Total Productive livestock	6920	9088	3247	3927
Horses	24	22	17	17
Crop, seed, and feed	3255	5033	1395	1225
Auto & truck, (farm share)	1517	1298	1002	864
Tractors & motors	2868	3091	1721	1601
Crop & general machinery	4742	4557	2356	2098
Livestock equipment	645	681	495	471
Total Machinery & equipment	9772	9627	5574	5034
Land	10687	10783	6595	7183
Buildings, fences, etc.	6375	6064	2470	2904
Total farm capital	\$ 37,033	\$ 40,617	\$ 19,298	\$ 20,290

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

Table 2. Summary of Farm Earnings (Cash Statement), 1958

Items	Your farm	Average of 52 farms	12 most profitable farms	12 least profitable farms
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cattle	\$ _____	\$ 1311	\$ 1395	\$ 887
Dairy products	_____	3093	5206	1574
Beef cattle (including feeders)	_____	565	1157	177
Hogs	_____	609	464	468
Sheep and wool (including feeders)	_____	274	237	207
Horses	_____	2	-	8
Poultry (including turkeys)	_____	24	7	29
Eggs	_____	388	259	311
Honey sold	_____	90	368	-
Corn	_____	1	2	-
Small grain	_____	2741	5533	1863
Other crops	_____	155	504	71
Mach. & equip. sold & gas tax refund	_____	160	258	145
Income from work off the farm	_____	314	377	159
Miscellaneous	_____	534	457	488
(1) Total farm sales	_____	10261	16224	6387
(2) Increase in farm capital	_____	1355	3584	992
(3) Family living from the farm	_____	286	330	243
(4) Total farm receipts (1)+(2)+(3)	_____	\$ 11,902	\$ 20,138	\$ 7,622
<b>FARM EXPENSES</b>				
Dairy & dual-purpose cattle bought	_____	228	67	388
Beef cattle bought (incl. feeders)	_____	478	1114	46
Hogs bought	_____	73	81	49
Sheep bought (including feeders)	_____	76	23	137
Horses bought	_____	3	-	-
Bees bought	_____	56	228	-
Poultry bought (including turkeys)	_____	39	17	92
Misc. livestock expense	_____	228	340	216
Feed bought	_____	896	1074	947
Fertilizers	_____	398	866	166
Other crop expense	_____	461	755	417
Custom work hired	_____	341	420	352
Gas, oil & grease bought (farm share)	_____	860	1204	766
Rep. of mechanical power (farm share)	_____	338	482	334
Repair and upkeep of real estate	_____	107	181	88
Repair and upkeep of crop & gen. mach.	_____	232	351	191
Repair and upkeep of livestock equip.	_____	52	100	33
Wages of hired labor	_____	549	1080	662
Electricity expense (farm share)	_____	164	240	114
Real estate & pers. prop. taxes	_____	403	555	292
General farm expense	_____	130	162	96
(5) Total cash operating expense	_____	6112	9340	5384
(6) Cap. purchases-mech. power (f.share)	_____	505	820	271
(7) Cap. purchases-crop & gen. mach.	_____	456	723	251
(8) Cap. purchases-livestock equipment	_____	65	147	25
(9) Cap. purchases-bldgs. & fencing, etc.	_____	454	125	1294
(10) Total farm purchases (5) to (9)	_____	7592	11155	7225
(11) Decrease in farm capital	_____	-	-	-
(12) Interest on farm capital	_____	1249	1941	990
(13) Unpaid family labor	_____	272	120	347
(14) Board furnished hired labor	_____	117	241	160
(15) Total farm expenses (10) - (14)	_____	9230	13457	8722
(16) Labor earnings (4) - (15)	_____	\$ 2672	\$ 6681	\$ -1100

Table 3. Summary of Farm Earnings (Enterprise Statement) 1958\*

Items	Your farm	Average of 52 farms	12 most profitable farms	12 least profitable farms
<u>RETURNS AND NET INCREASES</u>				
Dairy and dual-purpose cows	\$ _____	\$ 3453	\$ 5571	\$ 1697
Other dairy & dual-purpose cattle	_____	1118	1368	759
Beef breedingherd	_____	494	1269	116
Feeder cattle	_____	209	540	-
Hogs	_____	675	580	593
Sheep - farm flock	_____	279	370	230
Sheep - feeders	_____	-	-	-
Turkeys	_____	-	-	-
Chickens	_____	435	245	479
All productive livestock	_____	6663	9943	3874
Value of feed fed to livestock	_____	2912	4263	2253
Return over feed from livestock	_____	3751	5680	1621
Crops, seed and feed	_____	4568	9385	2477
Income from labor off the farm	_____	183	260	146
Agricultural conservation payments	_____	174	242	104
Soil Bank	_____	291	144	325
Miscellaneous	_____	90	155	59
(1) Total returns & net increases	_____	9057	15866	4732
<u>EXPENSES AND NET DECREASES</u>				
Horses	\$ _____	\$ 2	\$ 2	\$ +8
Truck	_____	265	301	313
Auto (farm share)	_____	309	375	240
Tractor	_____	1084	1539	926
Elec. & gas engine exp. (farm share)	_____	165	245	116
Hired Power	_____	193	220	190
Total Power	_____	2018	2682	1777
Crop and general machinery	_____	835	1279	736
Livestock equipment	_____	109	149	82
Buildings, fencing, and tiling	_____	360	499	355
Misc. productive livestock expense	_____	229	340	216
Labor	_____	1051	1578	1290
Real estate taxes	_____	278	342	205
Personal property tax	_____	125	213	86
Insurance	_____	46	83	29
General Farm	_____	85	79	66
Interest on farm capital	_____	1249	1941	990
(2) Total expenses & net decreases	_____	\$ 6385	\$ 9185	\$ 5832
(3) Operator's earnings (1) - (2)	_____	\$ 2672	\$ 6681	\$ -1100

\* 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.

# FAMILY LIVING FROM THE FARM

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 2.4 per cent of the total farm receipts on these farms. The values used are shown in Table 21. 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, 1958

Items	Your farm	Average of 40 farms	Your farm	Average of 40 farms
Adult equivalent - family	_____	3.0		
- other	_____	.5		
Lamb & mutton	_____	4 lbs.	\$ _____	1
Whole milk	_____	1074 qts.	_____	80
Skim milk	_____	121 qts.	_____	1
Cream	_____	112 pts.	_____	25
Beef	_____	612 lbs.	_____	126
Hogs	_____	211 lbs.	_____	41
Poultry	_____	39 lbs.	_____	7
Eggs	_____	37 doz.	_____	11
Vegetables and fruits	_____		_____	20
Fuel	_____		_____	7
Total			\$ _____	319

# 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 \$191 per month for family living in addition to the food, fuel and housing furnished by the farm.



Table 5. Household and Personal Expenses for Those Farms which kept Complete Accounts of These Expenses, 1958

Items	Your farm	Average of 40 farms	10 most profitable farms	10 least profitable farms
Number of persons - family		4.0	4.5	3.2
Number of adult equivalent - family		3.0	3.2	2.5
- other		.5	.5	.2
Food and meals bought	\$	\$ 716	\$ 790	\$ 611
Operating and supplies		186	199	126
Furnishings and equipment		198	300	96
Clothing and clothing material		242	314	148
Personal care, personal spending		74	71	100
Education, recreation and development		184	171	199
Gifts and special events		70	87	33
Medical care and health insurance		220	240	131
Church, welfare		110	160	36
Personal share of auto & truck expense		116	120	114
Operator's share of upkeep on dwelling		79	161	100
Household share of elec. & tel. expense		99	124	60
Total Cash living expense	\$	\$ 2294	\$ 2737	\$ 1754
Social Security		18	28	12
H. H. & Personal share of new auto		69	25	90
New dwelling		94	-	200
Taxes and other deductions		72	72	8
Life insurance		85	111	44
Other savings and investments		<del>499</del> 124	394	1533
Total H.H. and Personal Cash Expense	\$	\$ <del>3131</del> 2756	\$ 3367	\$ <del>3641</del> 2141
Total family living from the farm		319	374	227
Total Cash Expense and Perquisites	\$	\$ <del>3450</del> 3075	\$ 3741	\$ <del>3868</del> 2368
Receipts:				
Return to capital and family labor	\$	\$ 3612	\$ 6877	\$ 11
Income from investments		4	6	-
Sale of outside investments		-	-	-
Other personal income		726	493	1170

\* Hired help or others boarded

#### 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.

Table 6. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities, 1958

Items	Your farm		52 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm			429	
Total farm capital			\$24,292	\$25,647
Stocks and bonds			506	513
Life insurance			198	226
Accounts receivable			51	73
Shares in marketing organizations			185	201
Outside real estate			3	3
Cash on hand and in bank			623	537
Household goods and clothing			1211	1290
Personal share of auto & truck			374	349
Dwelling			1955	2006
Total non-farm assets			5106	5198
TOTAL ASSETS			\$29,398	\$30,845
Federal Land Bank mortgage			561	529
FHA Real Estate mortgage			309	341
Other mortgage on land operated			1533	1324
Loans on other real estate			408	654
Production Credit Association			401	416
FHA Chattel mortgage			175	86
Crop loans			110	193
Other chattel mortgages			836	898
Notes payable			1164	1359
Accounts payable			816	704
TOTAL LIABILITIES			6313	6504
Farmer's Net Worth			\$23,085	\$24,341
Gain or decrease in net worth				\$ +1256

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 25 per cent of the range according to earnings was \$6681 and of those in the lower 25 per cent was \$1100. This is a range of \$7781 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. Return from Livestock
4. Amount of Livestock
5. Size of Business
6. Work Units per Worker
7. Control over Expenses

Operator's  
Earnings

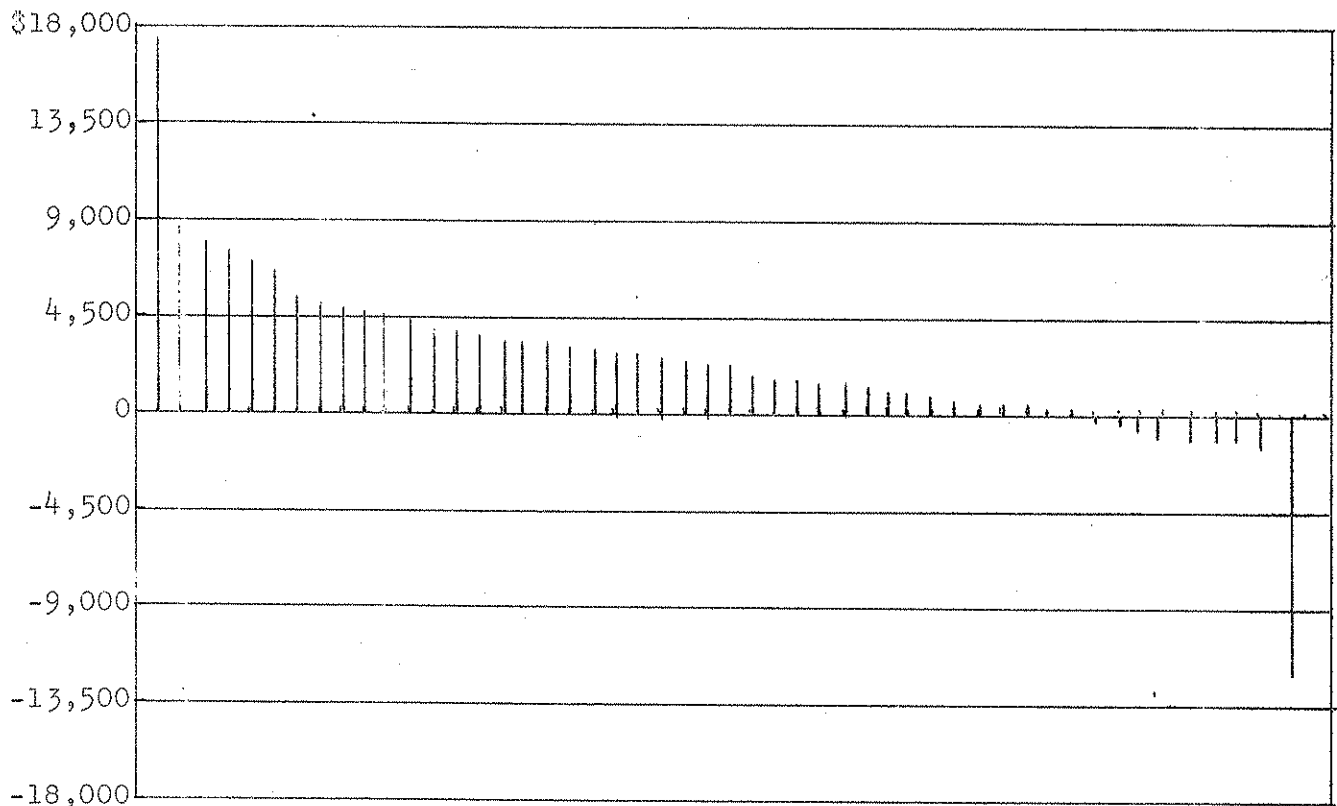


Fig. 1. Range in operator's earnings  
Each line represents the earning of one farmer

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, 1958

Measures used in chart on page 11	Your farm	Average of 52 farms	12 most profitable farms	12 least profitable farms
Operator's earnings	\$ _____	\$ 2672	\$ 6681	\$ -1100
(1) Crop yields*	_____	100	129	72
(2) Percent tillable land in high return crops**	_____	49	53	62
(3) Return for \$100 feed to productive livestock***	_____	100	93	89
(4) Productive livestock units per 100 acres****	_____	9.3	9.8	7.9
(5) Size of business - work units	_____	326	485	239
(6) Work units per worker	_____	217	280	162
(7) Power, machinery, equipment and building expense per work unit	\$ _____	\$10.20	\$ 9.49	\$12.34
Items related to some of the above measures:				
Number of animal units (4)	_____	33.1	49.6	24.3
Work units on crops (5)	_____	125	196	96
Work units on productive livestock (5)	_____	199	281	143
Number of family workers (6)	_____	1.2	1.2	1.3
Number of hired workers (6)	_____	.3	.5	.2
Total number of workers (6)	_____	1.5	1.7	1.5
Power expense per work unit (7)	\$ _____	6.19	5.52	7.43
Crop mach. expense per work unit (7)	\$ _____	2.56	2.63	3.08
Livestock equipment expense per work unit (7)	\$ _____	.34	.31	.34
Buildings and fencing expense per work unit (7)	\$ _____	1.11	1.03	1.49
		Average	Top 20%	Bottom 20%
Index of return for \$100 feed from:(3)				
Dairy cattle (see pages 15 & 16)	_____	100	105	96
Beef cattle-breeding herd (page 18)	_____	100	185	78
Hogs (see page 19)	_____	100	151	57
Sheep (see page 17)	_____	100	160	75
Chickens (see page 18)	_____	100	157	71

\* 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 52 farms included in this summary are located between the dotted lines across the center of this page.

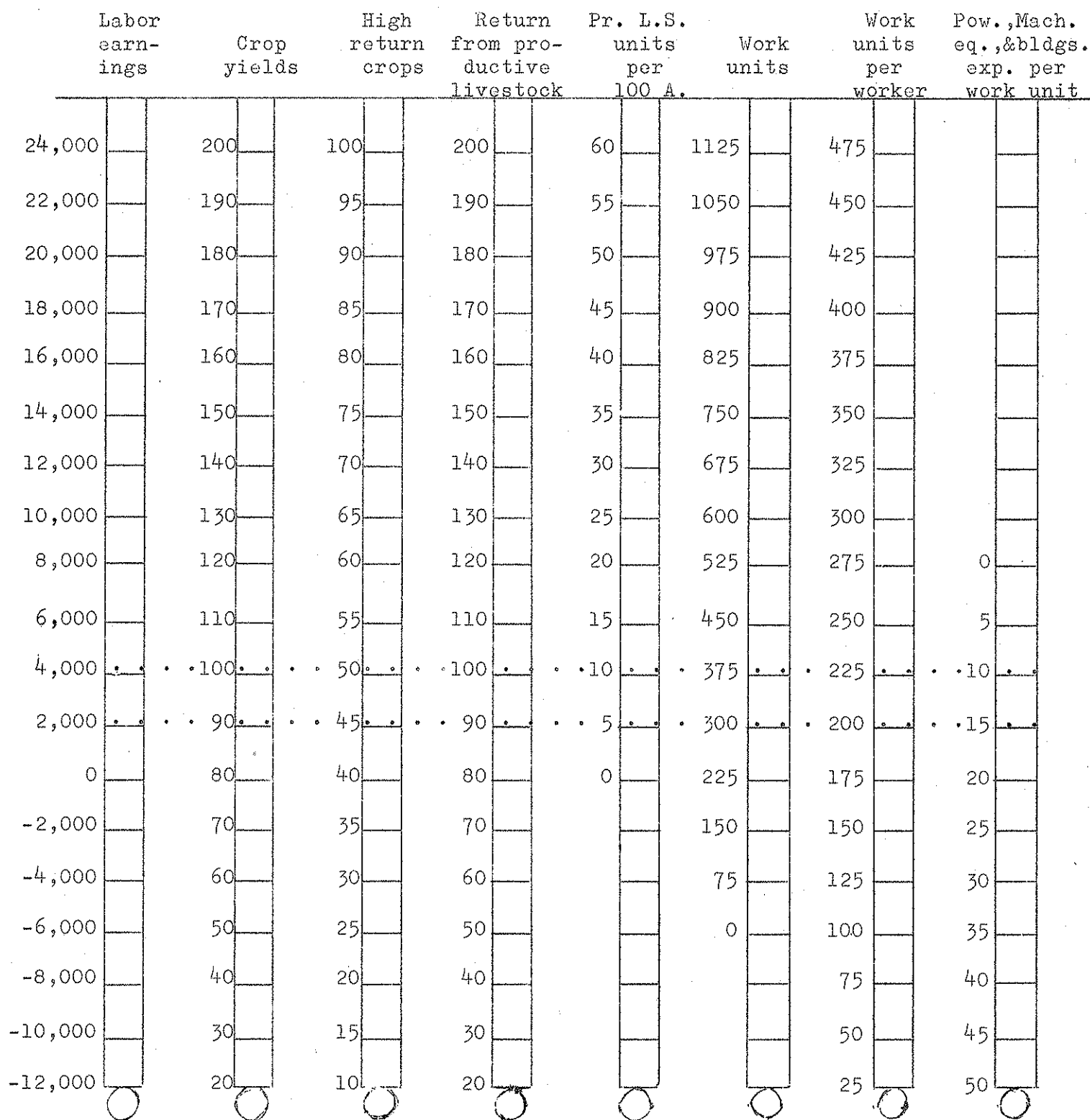


Table 9. Distribution of Acres in Farm, 1958

Crop	Crop ratings*	Your farm	Average of 52 farms
Flax	B	_____	27.8
Buckwheat	D	_____	.5
Barley	B	_____	30.5
Wheat	A	_____	13.9
Oats & Oats mixtures	B	_____	75.8
Rye, millet	C	_____	1.3
Total small grain		_____	<u>149.8</u>
Oats and oats mix silage	B	_____	2.9
Corn grain	B	_____	.1
Corn fodder	C	_____	.6
Corn silage	B	_____	* 9.9
Total cultivated crops		_____	<u>13.5</u>
Timothy seed	C	_____	2.3
Alfalfa and Alfalfa mixture	A	_____	33.5
Alfalfa seed	B	_____	-
Red or alsike clover hay	B	_____	5.8
Red or alsike clover seed	B	_____	4.3
Sweet clover seed	C	_____	-
Other legumes and legume mixture hay	C	_____	2.5
Brome grass seed	C	_____	1.3
Brome or timothy hay	C	_____	7.8
Wild hay	D	_____	7.0
Annual hay	D	_____	9.0
Total tillable land in hay		_____	<u>73.5</u>
Alfalfa pasture	A	_____	11.5
Other legumes and mixtures	B	_____	11.8
Soil Bank	B	_____	21.5
Other tillable pasture	D	_____	12.8
Total tillable land in pasture		_____	<u>57.6</u>
Tillable land not cropped	D	_____	26.1
Total Tillable Land		_____	<u>320.5</u>
Wild hay		_____	10.7
Non-tillable pasture		_____	25.3
Timber (not pastured)		_____	39.9
Roads and waste		_____	21.8
Farmstead		_____	10.8
Brush		_____	-
Total Acres in Farm		_____	<u>429.0</u>
Percent land tillable		_____	74.7
Percent tillable land in high return crops		_____	49.3

\* The crops are classified as A, B, C, or D crops on the basis of their average net returns per acre.

Table 10. Crop yields Per Acre, 1958

Crop	Your Farm	No. of Cases	Average of Farms growing each crop
Flax, bu.	_____	26	7.1
Barley, bu.	_____	30	34.6
Wheat, bu.	_____	25	35.3
Oats, bu.	_____	43	50.9
Rye, bu.	_____	1	18.7
Buckwheat, bu.	_____	2	27.3
Potatoes, bu.	_____	-	-
Corn grain, bu.	_____	1	35.0
Corn fodder, tons	_____	3	3.5
Corn silage, tons	_____	21	4.5
Alfalfa hay, tons	_____	27	1.3
Alfalfa seed, lbs.	_____	-	-
Red or alsike clover hay, tons	_____	8	.9
Red or alsike clover seed, lbs.	_____	4	219
Bluegrass seed, lbs.	_____	-	-
Sweetclover seed	_____	-	-
Other leg. & leg. mix. hay, tons	_____	3	1.2
Brome seed, lbs.	_____	4	122
Brome or timothy hay, tons	_____	9	.7
Wild hay, tons	_____	5	.4
Annual hay, tons	_____	7	1.2
Oats and oats mix. silage	_____	8	7.0
Timothy seed	_____	2	188

#### 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 40 to 597 with an average of 238, (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, 1958

Items	Your Farm	Average of 52 farms	12 most profitable farms	12 least profitable farms
Crop acres per farm	_____	238	352	180
Tractor expense per crop acre	_____	\$4.85	\$4.37	\$5.15
Crop & gen. mach. exp. per crop acre	_____	3.73	3.63	4.09

#### AMOUNT OF LIVESTOCK

The farmers cooperating in this study are predominantly livestock farmers. 69% of these farmers maintained dairy cattle, 24% poultry, 18% raised sheep, 12% kept beef cattle, and 37% raised one or more hogs.

Table 12. Amount of Livestock, 1958

	Your farm	Average of 52 farms	12 most profitable farms	12 least profitable farms
Number of milk cows	_____	13.0	19.1	9.0
Number of other dairy cattle	_____	14.1	19.0	12.0
Number of beef cattle (inc. feeders)	_____	7.6	20.3	2.0
Number of ewes	_____	13.6	17.3	13.6
Number of hens	_____	93.8	56.8	86.6
Litters of pigs raised	_____	4.4	-	11.0
Pounds of hogs produces	_____	3351	3561	3216

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, 1958

	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, 15, & 16. The return over feed cost per cow varied from -\$1.34 to \$313.38 among 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 for 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, 1958

Items	Your farm	Average of 35 farms	7 farms highest in butterfat per cow	7 farms lowest in butterfat per cow
Pounds of butterfat per cow		300	381	164
Price rec. per lb. B.F. sold (cream)	\$	.62	\$ .70	\$ .60
Price rec. per lb. B.F. sold (milk)	\$	.92	\$ .97	\$ .77
Feed per cow, lbs.:				
Corn		15	-	-
Small grain		2020	3068	1333
Commercial feeds		510	873	166
Legume hay		5840	5177	7577
Other hay		1801	927	4046
Fodder and stover		109	-	-
Total concentrates		2545	3941	1499
Total dry roughages		7750	6104	11623
Silage		3111	6062	258
Milk		12	-	-
Feed cost per cow:				
Concentrates	\$	51.54	\$ 81.53	\$ 26.11
Roughages		45.50	46.72	32.90
Pasture		7.00	7.00	7.00
Milk		.04	.16	-
TOTAL FEED COSTS		\$104.08	\$135.41	\$ 66.01
Value of produce per cow:				
Butterfat sales	\$	241.61	\$347.95	\$ 91.57
Dairy produce used in house		7.22	7.49	6.64
Milk to livestock		5.21	3.13	5.41
Net increase in value of cows		11.43	18.43	10.87
TOTAL VALUE PRODUCED	\$	\$265.47	\$377.00	\$114.49
RETURNS ABOVE FEED COST PER COW	\$	\$161.39	\$241.59	\$ 48.48
RETURNS FOR \$100 OF FEED	\$	\$ 255	\$ 278	\$ 173
Feed cost per lb. B.F. (cents)	\$	.35	\$ .36	\$ .40
Number of cows		17.1	20.6	11.1

Table 15. Feed Costs & Returns from Other Dairy & Dual Purpose Cattle, 1958

Items	Your farm	Average of 34 farms	7 farms highest in butterfat per cow	7 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	338	566	234
Hay and fodder	_____	3353	2851	5984
Silage	_____	1239	1996	119
Skim milk	_____	227	298	-
Whole milk	_____	86	59	121
Feed cost per head:				
Concentrates	\$ _____	\$ 10.50	\$ 18.12	\$ 4.64
Roughages	_____	18.90	18.31	19.85
Milk	_____	3.74	2.37	4.16
Pasture	_____	3.50	3.49	3.49
TOTAL FEED COSTS PER HEAD	\$ _____	\$ 36.64	\$ 42.29	\$ 32.14
Net inc. in value of other cattle	_____	77.79	79.96	101.80
RETURNS ABOVE FEED COST PER HEAD	_____	41.15	37.67	69.66
RETURNS FOR \$100 OF FEED	\$ _____	\$ 212	\$ 189	\$ 317
Number of head of other cattle	_____	19.0	22.9	14.4

Table 16. Feed Costs and Returns from All Dairy & Dual Purpose Cattle, 1958

Items	Your farm	Average of 35 farms	7 farms highest in butterfat per cow	7 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	_____	1897	2941	1093
Hay and fodder	_____	7370	5964	11764
Silage	_____	2913	533	250
TOTAL FEED COSTS PER ANIMAL UNIT	\$ _____	\$ 90.69	\$115.56	\$ 62.07
Value of produce per animal unit:				
Dairy products	\$ _____	\$161.38	\$228.78	\$ 59.50
Net inc. in val. of dairy cattle	_____	61.67	68.96	86.93
TOTAL VALUE PRODUCED	\$ _____	\$223.05	\$297.74	\$146.42
RETURNS ABOVE FEED PER ANIMAL UNIT	\$ _____	\$132.36	\$182.18	\$ 84.35
RETURNS FOR \$100 OF FEED	\$ _____	\$ 246	\$ 258	\$ 236
Animal units of cattle	_____	26.8	32.1	18.3

Table 17. Feed Costs and Returns from Farm Flock of Sheep, 1958

Items	Your Farm	Average of 9 Farms
Feeds per head,* lbs.		
Concentrates	_____	116
Legume hay	_____	522
Other hay	_____	156
Silage	_____	115
Fodder & stover	_____	8
Feed cost per head:		
Concentrates	\$ _____	\$ 2.05
Roughages	_____	3.19
Pasture	_____	1.23
TOTAL FEED COSTS	\$ _____	\$21.70 <i>6 27</i>
Value of produce per head:		
Wool	\$ _____	\$ 2.42
Net increase in value of sheep	_____	19.28
TOTAL VALUE PRODUCED	\$ _____	\$21.70
RETURNS ABOVE FEED COST PER HEAD	\$ _____	\$15.22
RETURNS FOR \$100 OF FEED	\$ _____	\$ 335
Price per cwt. of lambs sold	\$ _____	\$21.84
Price per lb. of wool sold (cents)	_____	37.0
Pounds of wool per sheep sheared	_____	7.4
Number of ewes kept for lambing	_____	49.8
Per cent lamb crop**	_____	120
Per cent death loss**	_____	5.2
Pounds of sheep produced	_____	5985
<p>* Two lambs under six months of age considered as one head.  ** Lambs which die during month of birth are not included.</p>		

#### CHICKENS

Twenty-four per cent of the farmers cooperating in this analysis kept some chickens. In most cases poultry is a very minor enterprise, providing eggs and poultry meat for family consumption plus a small additional amount of cash income.

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 18. Feed Costs and Returns from Chickens, 1958\*

Items	Your Farm	Average of 13 Farms
Feed per hen, lbs.:		
Grain	_____	66
Commercial feeds	_____	41
Total Concentrates	_____	107
Milk	_____	1
TOTAL FEED COST PER HEN	\$ _____	\$ 2.91
Value of Produce per hen:		
Eggs sold and used in house	\$ _____	\$ 3.97
Net inc. in value of chickens	\$ _____	.49
TOTAL VALUE PRODUCED	\$ _____	\$ 4.46
RETURNS ABOVE FEED COST PER HEN	\$ _____	\$ 1.55
RETURNS FOR \$100 OF FEED	\$ _____	\$ 153
Price rec'd per doz. eggs sold (cents)	\$ _____	\$ .29
Eggs laid per hen	_____	156
Ave. no. hens on farm during year	_____	311
Percent death loss of hens	_____	12%

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

Table 19. Feed costs and Returns from Beef Cattle, 1958

Items	Your Farm	Average of 6 Farms
Feeds per animal unit, lbs.:		
Concentrates	_____	254
Legume hay	_____	4563
Other hay	_____	1458
Silage	_____	6065
Skim milk	_____	28
Feed Cost per animal unit:		
Concentrates	\$ _____	\$ 4.29
Roughages	_____	28.47
Milk	_____	.10
Pasture	_____	7.00
TOTAL FEED COSTS	\$ _____	\$ 39.86
Value of produce per animal unit:		
Dairy Products	\$ _____	\$ 3.58
Net increase in value of animals	_____	130.84
TOTAL VALUE PRODUCED	_____	\$134.42
RETURNS ABOVE FEED COST PER ANIMAL UNIT	\$ _____	\$ 94.56
RETURNS FOR \$100 OF FEED	\$ _____	\$ 337
Number of cows and herd bulls	_____	19.4
Number of animal units in the herd	_____	23.1

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. In most cases the pigs were sold at time of weaning, keeping only two or three to be fed out to slaughter weights.

Table 20. Feed costs and returns from Hogs, 1958

Items	Your Farm	Average of 18 Farms
Feed per cwt. hogs produced, lbs.:		
Corn	_____	24
Small grain	_____	317
Commercial feeds	_____	80
Total concentrates	_____	421
Skim milk	_____	180
Feed cost per cwt. hogs produced:		
Concentrates	\$ _____	\$ 8.58
Skim milk	_____	.40
Pasture	_____	.49
TOTAL FEED COST	\$ _____	\$ 9.47
Net increase in val. per cwt. hogs prod.	\$ _____	\$18.55
RETURNS ABOVE FEED COST PER CWT.		
HOGS PRODUCED	\$ _____	\$ 9.08
RETURNS FOR \$100 FEED	\$ _____	\$ 195
Price received per cwt. hogs sold	\$ _____	\$ 21
No. of spring litters raised	_____	3.3
No. of fall litters raised	_____	2.7
Total no. of litters raised	_____	6.0
No. of pigs born per litter	_____	10.2
No. of pigs weaned per litter	_____	8.3
Pounds of hogs produced	_____	7648

Table 21. Average Prices of Feed, and Produce used in Home, 1958

Feed Prices

Farm Grown Grains

Oats \$ .50 per bu.  
Barley .80 per bu.  
Wheat 1.90 per bu.  
Wheat & oats 1.20 per bu.

Hay

Alfalfa-Brome \$12.00 per ton  
Red Clover 10.00 per ton  
Wild Hay 5.00 per ton

Other Roughages

Corn silage \$4.00 per ton  
Grass Silage 4.00 per ton  
Oats & oats mix silage \$5.00 per ton

Milk for Feed

Whole milk \$ 3.00 per cwt.  
Sikm milk .35 per cwt.

Pasture

\$1.75 an animal unit per month

Home Produce

Milk 7¢ per quart  
Cream 20¢ per quart  
Eggs 30¢ per dozen  
Poultry 12¢ per pound  
Beef 21¢ per pound  
Hogs 19¢ per pound

Unpaid family labor \$150 per month  
Board for hired labor 40 per month

# 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 22. The farmer's earnings are determined to a considerable extent by his accomplishments in these seven factors.

Table 22.





No. of factors in which farmers excelled	No. of farms	Average Labor Earnings			
		0	2000	4000	6000
0 or 1	12				\$ -400
2 or 3	14				2722
4 or 5	17				3890
6 or 7	6				5452

Table 22 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 23. Summary of Farm Earnings by Years

Years	1955	1956	1957	1958
Number of Farms	50	60	54	52
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cattle	\$ 613	\$ 833	\$ 936	\$ 1311
Dairy products	2305	2606	2992	3093
Beef cattle (including feeders)	361	282	350	565
Hogs	227	298	343	609
Sheep and wool (including feeders)	395	262	279	274
Horses	10	1	7	2
Poultry (including turkeys)	56	226	226	24
Eggs	417	271	252	388
Honey sold	41	70	74	90
Corn	1	14	62	1
Small grain	3202	3318	2405	2741
Other crops	22	485	94	155
Mach. & equip. sold & gas tax refund	172	229	386	160
Pulp sold	-	173	26	-
Income from work off the farm	179	278	238	314
Miscellaneous	214	268	264	534
(1) Total farm sales	8214	9614	8934	10261
(2) Increase in farm capital	370	535		1355
(3) Family living from the farm	277	284	250	286
(4) Total farm receipts (1)+(2)+(3)	8861	10433	9184	11902
<b>FARM EXPENSES</b>				
Dairy and dual-purpose cattle bought	188	380	169	228
Beef cattle bought (incl. feeders)	18	22	27	478
Hogs bought	12	16	58	73
Sheep bought (including feeders)	23	21	16	76
Horses bought	8	4	2	3
Bees bought	18	29	52	56
Poultry bought (including turkeys)	39	61	76	39
Misc. livestock expense	177	195	202	228
Feed bought	460	696	800	896
Fertilizers	334	295	238	398
Other crop expense	567	573	550	461
Custom work hired	327	390	268	341
Gas, oil and grease bought (farm share)	855	800	826	860
Rep. of mechanical power (farm share)	295	313	315	338
Repair and upkeep of real estate	116	86	130	107
Repair and upkeep of crop & gen. mach.	222	220	208	232
Repair & upkeep of livestock equipment	61	47	52	52
Wages of hired labor	398	444	538	549
Electricity expense (farm share)	152	137	164	164
Real estate & pers. property taxes	370	345	382	403
General farm expense	101	164	123	130
(5) Total cash operating expense	4742	5238	5196	6112
(6) Cap. purchases-mech. power (farm share)	635	421	596	505
(7) Cap. purchases-crop & gen. mach.	803	863	411	456
(8) Cap. purchases-livestock equipment	84	61	235	65
(9) Cap. purchases-bldgs. & fencing etc.	450	254	959	454
(10) Total farm purchases (5) to (9)	6713	6837	7397	7592
(11) Decrease in farm capital			200	
(12) Interest on farm capital	1303	1234	1269	1249
(13) Unpaid family labor	140	199	123	272
(14) Board furnished hired labor	76	72	121	117
(15) Total farm expenses (10) - (14)	8232	8342	9110	9230
(16) Labor earnings (4) - (15)	629	2091	74	2672
(17) Net cash income (1) - (10)	\$ 1501	\$ 2777	\$ 1537	\$ 2669