

*1961 Annual Report*

# **FARM MANAGEMENT PROGRAM NORTHEASTERN MINNESOTA**

**Iron Range Resources and Rehabilitation  
Commission**

**In Cooperation with**

**Minnesota Department of Education  
Vocational Division**

**and**

**University of Minnesota  
Institute of Agriculture**

**and**

**Area Vocational – Technical School  
Duluth, Minnesota**

**April, 1962**

1961 REPORT OF THE VOCATIONAL AGRICULTURE FARM MANAGEMENT  
PROGRAM IN NORTHEASTERN MINNESOTA

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## INTRODUCTION

The Duluth Area Vocational Technical School, in cooperation with the University of Minnesota and the Vocational Division of the Minnesota State Department of Education, is charged with the responsibility for operation and maintenance of the Vocational Agriculture Farm Management Program in Northeastern Minnesota. This 1961 report represents the sixth annual report for the area.

The main purposes of the program of farm record analysis are: (1) To provide case study materials that can be used by farmers and farm groups in the study of farm management problems, (2) To aid individual farmers in the study of their farm business through analysis reports, (3) To provide information related to the adaptability and success of various farm enterprises in the area, (4) To provide a basis for determining the possibilities of encouraging or discouraging new agricultural enterprises for the area, (5) To secure information on farm management practices that tend to increase farm income, and (6) To provide a profile of agricultural production and income in the area.

The report and analysis of records were completed under the direction of Leo Keskinen, Area Voc Ag Coordinator at the Duluth Area Vocational Technical School. Clerical assistance was provided by Mrs. Nellie Hopper and Mrs. Ruby Naslund. Financial assistance has been obtained from Iron Range Resources and Rehabilitation Commission.

Directing locally in a supervisory capacity were: Mr. Alvin T. Stolen, Superintendent of Duluth Public Schools and Mr. George Campaigne, Director of the Duluth Area Vocational Technical School.

Cooperating agencies were represented by: Mr. G. R. Cochran, Mr. Wm. Knaack, and Mr. S. K. Wick, of the Vocational Division, State Dept. of Education, and Dr. Milo J. Peterson and Dr. Paul Marvin of the Agricultural Education Department of the University of Minnesota. Special acknowledgment is made of the excellent professional assistance rendered by Dr. Truman Nodland of the University Agricultural Economics Department.

We are thankful for and indebted to the Iron Range Resources and Rehabilitation for their interest and financial assistance in the farm management program. We wish to express also, our appreciation to Mr. Harald Berg, Printing Instructor, Duluth Public Schools, and to his class for their help in the publishing of this report.

This report deals with farmers enrolled in adult programs of schools shown below. Forty-seven records were submitted for analysis with averages of forty-two farms included in this report.

1961 records for analysis were received from:

Clayton Bray, Vo Ag Inst. Northome  
Ray Collen, Vo Ag Inst. Blackduck  
Bill Guelker, Vo Ag Inst. Staples  
Wilho Kemp, Vo Ag Inst. Little Fork  
Donald Larsen, Vo Ag Inst. Meadowlands  
Erwin Prachar, Vo Ag Inst. Willow River  
Dalton Seeling, Vo Ag Inst. Bemidji  
Ed Takala, Vo Ag Inst. Embarrass  
Bob Underwood, Vo Ag Inst. Park Rapids  
Dave Radford, Carlton Co. Rural Development Agent  
Glen Smith, Crow Wing Co. Agent  
Arnold Heikkila, Hubbard Co. Agent

The cooperating centers submitted records from ten counties for analysis with some centers having participating farmers in more than one county. The number of farm records submitted from each county is shown below:

Becker	2	Hubbard	7
Beltrami	3	Koochiching	11
Carlton	4	Pine	3
Cass	2	St. Louis	2
Crow Wing	1	Todd	12
		TOTAL	<u>47</u>

The records submitted included farm inventories, cash receipts, and expenses. Also included were feed consumed by the various classes of livestock, family living 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 \$7073 to \$60175. The average investment for all farms included in this report and for the one-third high and the one-third low in operators' labor earnings is shown in Table I.

#### FARM EARNINGS

Operators' earnings are a measure of 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 and family labor.

There are two methods of computing labor earnings. Table II shows the earnings statement on a cash basis while Table III shows the earnings on an enterprise or accrual basis. The principal difference in the two statements is in the method of handling the net increase or decrease in 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.

#### FORESTRY INCOME

A portion of the farm income in Northeastern Minnesota is obtained from the sale of forestry products. Twelve farms out of those represented in this report indicated some form of forestry income ranging from a low of \$30 to a high of \$2089 per farm. Forestry income is included as farm income in this report.

#### NON-FARM INCOME

Numerous Northeastern Minnesota farmers, in addition to their regular farm income are earning additional income in full or part time work not related to farming. Records submitted for this report cannot be considered as completely reliable in respect to non-farm income as this entry can be frequently omitted from the farm account books. However, twenty-four farms in this report showed outside income ranging from a low of \$50 to a high of \$5326 per farm involved. Non-farm income is not included in this report as farm labor earnings.

TABLE I. SUMMARY OF FARM INVENTORIES, 1961

Items	Your farm		Average of 42 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	<u>326</u>		265	
Size of business (work units)	<u>116</u>		323	
Dairy and dual purpose cows			\$ 2722	\$ 2719
Other dairy & dual purpose cattle			1307	1615
Beef cattle (incl. feeders)	<u>1260</u>	<u>1600</u>	225	421
Hogs	<u>4036.30</u>	<u>2122.40</u>	765	631
Sheep (incl. feeders)			102	73
Poultry			13	11
PRODUCTIVE LIVESTOCK (TOTAL)	<u>5296.30</u>	<u>3722.40</u>	\$ 5134	\$ 5470
Horses			-	-
Crop, seed and feed	<u>654.75</u>	<u>624</u>	1931	1919
Power machinery (farm share)	<u>897.50</u>	<u>731.90</u>	1757	1991
Crop and general machinery	<u>683.64</u>	<u>1182.64</u>	2256	2275
Livestock equipment	<u>2509.9</u>	<u>2452.3</u>	790	777
MACHINERY AND EQUIPMENT (TOTAL)	<u>1832.13</u>	<u>2159.77</u>	\$ 4803	\$ 5043
Miscellaneous			-	-
Land	<u>5000</u>	<u>5000</u>	4556	4662
Buildings, fences, etc.	<u>2649.07</u>	<u>2531.23</u>	4481	4784
TOTAL FARM CAPITAL	<u>15432.25</u>	<u>14037.90</u>	\$ 20905	\$ 21878

Items	14 most profitable		14 least profitable	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	260		277	
Size of business (work units)	366		256	
Dairy and dual purpose cows	\$ 2771	\$ 2863	\$ 2397	\$ 2233
Other dairy & dual purpose cows	1120	1502	827	1136
Beef cattle (incl. feeders)	268	423	387	710
Hogs	725	457	662	511
Sheep (incl. feeders)	80	29	96	61
Poultry	12	9	2	2
PRODUCTIVE LIVESTOCK (TOTAL)	\$ 4976	\$ 5283	\$ 4371	\$ 4653
Horses	-	-	-	-
Crop, seed and feed	2051	2595	1169	854
Power machinery (farm share)	1529	1735	2180	2404
Crop and general machinery	2553	2631	2019	2214
Livestock equipment	6620	629	596	673
MACHINERY AND EQUIPMENT	\$ 4744	\$ 4995	\$ 4795	\$ 5291
Miscellaneous	-	-	-	-
Land	4337	4562	4965	4971
Buildings, fences, etc.	4842	4805	3475	4597
TOTAL FARM CAPITAL	\$ 20950	\$ 22240	\$ 18775	\$ 20366

TABLE II. SUMMARY OF FARM EARNINGS (CASH STATEMENT), 1961

Items	Your farm	Average of 42 farms	14 most profitable farms	14 least profitable farms
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cattle		\$ 977	\$ 961	\$ 738
Dairy products		5068	6188	3444
Beef cattle (incl. feeders)		79	151	80
Hogs	<u>6142.82</u>	1673	1347	1573
Sheep and wool (incl. feeders)		84	36	117
Horses		-	-	-
Poultry		3	-	-
Eggs		37	18	-
Corn and small grain	<u>340.38</u>	174	343	74
Other crops		62	133	7
Forestry products		180	287	75
Mach. & equip. sold & gas tax refund	<u>178.55</u>	169	226	87
Income from work off the farm		202	201	238
Miscellaneous	<u>854.40</u>	291	420	261
(1) Total farm sales	<u>7476.13</u>	\$ 8999	\$ 10311	\$ 6694
(2) Increase in farm capital		973	1290	1591
(3) Family living from the farm	<u>33</u>	425	436	397
(4) Total farm receipts (1)+(2)+(3)	<u>7549.13</u>	\$ 10397	\$ 12037	\$ 8682
<b>FARM EXPENSES</b>				
Dairy & dual-purpose cattle bought		101	181	109
Beef cattle bought (incl. feeders)		112	79	247
Hogs bought	<u>65</u>	45	28	69
Sheep bought (incl. feeders)		3	-	-
Horses bought		-	-	-
Poultry bought		6	4	2
Misc. livestock expense	<u>197.54</u>	241	198	221
Feed bought	<u>2185.80</u>	1468	1199	1393
Fertilizer	<u>629.50</u>	274	438	231
Other crop expenses	<u>325.05</u>	253	298	226
Custom work hired	<u>84.83</u>	557	639	311
Gas, oil & grease bought (farm share)	<u>610.56</u>	585	600	583
Repair of mech. power (farm share)	<u>802.63</u>	308	255	342
Repair & upkeep of real estate	<u>278.64</u>	126	135	138
Repair & upkeep crop & gen. mach.	<u>272.53</u>	180	185	160
Repair & upkeep livestock equip.	<u>42.24</u>	72	91	49
Wages of hired labor	<u>13</u>	348	252	239
Electricity expense (farm share)	<u>189.15</u>	217	202	170
Real estate & pers. property taxes	<u>214.45</u>	315	320	288
General farm expense	<u>188.59</u>	181	182	145
(5) total cash operating expense	<u>6156.01</u>	\$ 5392	\$ 5286	\$ 4923
(6) Cap. purch. mech. power (farm share)	<u>118</u>	664	558	686
(7) " " crop & gen. mach.	<u>931</u>	454	645	548
(8) " " livestock equipment	<u>85</u>	112	93	170
(9) " " bldgs. & fencing		714	468	1344
(10) Total farm purch. (5) to (9)	<u>7284.61</u>	\$ 7336	\$ 7050	\$ 7671
(11) Decrease in farm capital	<u>1394.35</u>	-	-	-
(12) Interest on farm capital	<u>736.15</u>	1070	1080	976
(13) Unpaid family labor	<u>280</u>	282	157	444
(14) Board furnished hired labor		80	20	71
(15) Total farm exp. (10) to (14)	<u>2695.11</u>	8768	8307	9162
(16) Labor earnings (4) - (15)	<u>2185.98</u>	\$ 1629	\$ 3730	\$ -480

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TABLE III. SUMMARY OF FARM EXPENSES (ENTERPRISE STATEMENT), 1961

Items	Your farm	Average of 42 farms	14 most profitable farms	14 least profitable farms
<u>RETURNS AND NET INCREASES</u>				
Dairy and dual-purpose cows	_____	\$ 5335	\$ 6625	\$ 3570
Other dairy & dual purpose cattle	_____	1302	1225	987
Beef breeding herd	<u>340--</u>	120	178	171
Feeder cattle	_____	-	-	-
Hogs	<u>4196.92</u>	1540	1104	1396
Sheep - farm flock	_____	55	- 15	88
Chickens	_____	58	36	25
ALL PRODUCTIVE LIVESTOCK	<u>4536.92</u>	\$ 8410	\$ 9153	\$ 6237
Value of feed fed to livestock	<u>3585.85</u>	4025	4037	2954
Return over feed fed to livestock	<u>951.07</u>	4385	5116	3283
Crop, seed and feed	<u>665.13</u>	2439	3407	913
Income from labor off the farm	_____	117	160	102
Agricultural conserv. payments	<u>854.40</u>	224	240	253
Miscellaneous	_____	67	180	8
(1) Total returns & net increases	<u>4420.60</u>	\$ 7232	\$ 9103	\$ 4559
<u>EXPENSES AND NET DECREASES</u>				
Horses	_____	-	-	-
Truck	<u>119.45</u>	\$ 211	\$ 192	\$ 200
Auto	<u>343.38</u>	305	255	306
Tractor	<u>1195.36</u>	774	749	832
Elec. & gas engine exp. (farm share)	<u>44.22</u>	137	79	114
Hired power	<u>84.83</u>	557	639	311
TOTAL POWER	<u>1787.24</u>	1984	\$ 1914	\$ 1763
Crop and general machinery	<u>709.53</u>	505	613	394
Livestock equipment	<u>133.50</u>	199	222	143
Buildings, fencing & tiling	<u>395.98</u>	398	415	355
Misc. productive livestock expense	<u>172.54</u>	241	198	221
Labor	<u>293.00</u>	710	429	754
Real estate taxes	<u>184.70</u>	199	200	190
Personal property taxes	<u>29.75</u>	116	120	98
Insurance	<u>87.88</u>	74	55	64
General farm	<u>100.71</u>	107	127	81
Interest on farm capital	<u>736.75</u>	1070	1080	976
(2) Total expenses & net decreases	<u>4656.58</u>	\$ 5603	\$ 5373	\$ 5039
(3) LABOR EARNINGS (1) - (2)	<u>2185.98</u>	1629	\$ 3730	\$ - 480

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 5.



# FAMILY LIVING FROM THE FARM

The family living from the farm is the estimated value of the farm produce 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 expense 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 IV amounts to 5.0 per cent of the total farm receipts on those farms. The values assigned are a conservative market price on the farm. If these products had been purchased, the amount paid out would have been considerably higher.

TABLE IV. FAMILY LIVING FROM THE FARM, 1961

Items	Your farm	Average of 28 farms	Your farm	Average of 28 farms
Adult equiv. - family	<u>4.4</u>	3.4		
- others	<u>—</u>	.6		
Whole milk	_____	1218 qts.	_____	\$ 73
Skim milk	_____	86 qts.	_____	2
Cream	_____	37 pts.	_____	9
Butter	_____	—	_____	—
Beef	_____	685 lbs.	_____	126
Hogs	<u>185</u>	257 lbs.	<u>33.00</u>	43
Lamb and mutton	_____	21 lbs.	<u>7</u>	3
Poultry	_____	53 lbs.	_____	19
Eggs	_____	14 doz.	_____	7
Potatoes	_____	2 bus.	_____	5
Vegetables and fruit	_____		_____	69
Farm fuel	_____		_____	58
TOTAL			<u>33</u>	\$ 414

Twenty-eight farmers reported complete records on family living from the farm.

# 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 V. These farmers spent an average of \$209 per month for family living in addition to the food, fuel and housing furnished by the farm.

TABLE V. HOUSEHOLD AND PERSONAL EXPENSES FOR THOSE FARMS WHICH KEPT COMPLETE ACCOUNTS OF THESE EXPENSES, 1961

Items	Your farm	Average of 23 farms	8 most profitable farms	8 least profitable farms
Number of persons - family	<u>6</u>	4.7	5.3	4.2
Number of adult equiv. - family	<u>4.4</u>	3.4	3.7	3.3
other *	<u>—</u>	.1	.1	.1
Food and meals bought	_____	\$ 811	\$ 733	\$ 823
Operating and supplies	_____	145	145	107
Furnishings and equipment	_____	145	193	112
Clothing and clothing materials	_____	238	237	174
Personal care, personal spending	_____	66	28	54
Education, recreation & development	_____	107	120	73
Gifts and special events	_____	94	101	51
Medical care & health insurance	_____	282	344	250
Church, welfare	_____	88	146	91
Personal share of auto expense	<u>395.07</u>	111	82	133
Operator's share upkeep on dwelling	_____	19	2	9
Household share of electric expense	<u>182.58</u>	108	85	109
TOTAL CASH LIVING EXPENSE	_____	\$ 2214	\$ 2216	\$ 1986
H. H. & pers. share of new auto	_____	151	76	351
New dwelling	_____	—	—	—
Taxes and other deductions	<u>246.24</u>	56	86	27
Life insurance	_____	58	31	81
Other savings and investments	_____	24	42	3
TOTAL HOUSEHOLD & PERS. CASH EXP.	_____	\$ 2503	\$ 2451	\$ 2448
Total family living from the farm	<u>33 --</u>	414	401	541
TOTAL CASH EXP. & PERQUISITES	_____	\$ 2917	\$ 2852	\$ 2989
Receipts:				
Return to Capital & family labor	<u>1607.61</u>	\$ 2590	\$ 3866	\$ 1371
Income from investments	_____	—	—	—
Miscellaneous income	_____	860	159	2035

\* 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 VI. 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 VI. NET WORTH STATEMENT FOR THOSE FARMERS WHO KEPT A COMPLETE RECORD OF ALL ASSETS AND LIABILITIES, 1961

Items	Your farm		26 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	<u>320</u>	<u>      </u>	263	
Owned	<u>320</u>	<u>      </u>	211	
Rented	<u>      </u>	<u>      </u>	52	
Total farm capital	<u>15432.25</u>	<u>14037.90</u>	\$ 21565	\$ 22670
Stocks and bonds	<u>      </u>	<u>      </u>	212	247
Life insurance	<u>2000. —</u>	<u>2000. —</u>	577	609
Accounts receivable	<u>      </u>	<u>      </u>	—	—
Shares in mktg. organizations	<u>      </u>	<u>      </u>	197	222
Outside real estate	<u>      </u>	<u>      </u>	—	36
Total outside investments	<u>      </u>	<u>      </u>	\$ 986	\$ 1114
Cash on hand and in bank	<u>      </u>	<u>      </u>	704	612
Other H. H. & personal assets	<u>2600 —</u>	<u>2480 —</u>	1451	1607
Dwelling	<u>      </u>	<u>      </u>	2471	2390
Total non-farm assets	<u>4600 —</u>	<u>4480 —</u>	\$ 5612	\$ 5723
TOTAL ASSETS	<u>20,032.25</u>	<u>18517.90</u>	\$ 27177	\$ 28393
Federal Land Bank Mortgage	<u>6531.50</u>	<u>9875.14</u>	\$ 718	\$ 1039
Other mortgage on farm operated	<u>3890 —</u>	<u>3455.00</u>	1944	1921
Loans on other real estate	<u>      </u>	<u>      </u>	—	—
P. C. A. Loans	<u>      </u>	<u>      </u>	—	—
Chattel mortgage	<u>      </u>	<u>      </u>	1663	1736
Notes payable	<u>      </u>	<u>      </u>	1244	1109
Accounts payable	<u>2546.87</u>	<u>260 —</u>	483	332
TOTAL LIABILITIES	<u>12968.37</u>	<u>13590.14</u>	\$ 6052	\$ 6137
Farmer's net worth	<u>7063.88</u>	<u>4927.76</u>	\$ 21125	\$ 22256
Gain in net worth		<u>2136.12</u>		\$ 1131

The return to capital and family labor represents the amount available to the operator for living expenses, payment on indebtedness, and savings.

#### RANGE IN EARNINGS

Every study of farm earnings shows a wide variation in earnings among farmers in a given year. The average operator's earnings of farmers ranking in the upper third of the range according to earnings was \$3730 and of those in the lower third was \$-480. This is a range of \$4210 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

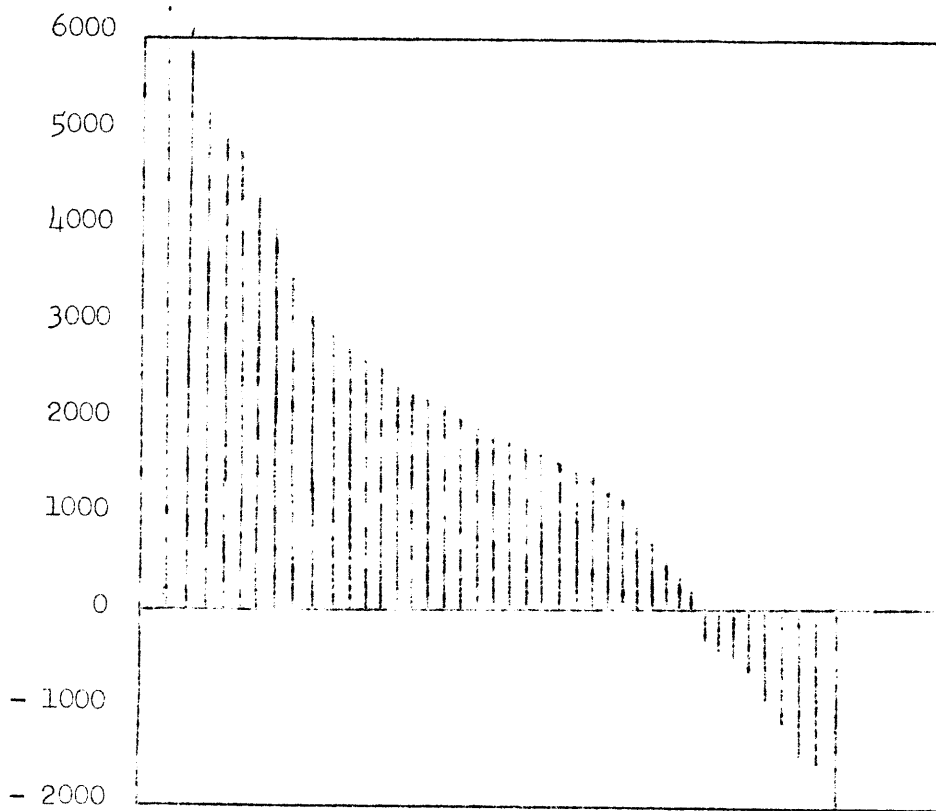


Fig. 1. Range in operator's earnings. Each line represents the earnings of one farmer.

1/ See Pond, G. A. "Why Farm Earnings Vary". Minn. Agri. Expt. Sta. Dul. 386, June, 1945

# 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, 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 VII below.

TABLE VII. NUMBER OF WORK UNITS FOR EACH CLASS OF LIVESTOCK AND CROP ACRE

Item	No. of Work Units
Dairy and dual purpose cows	10.0 per cow
Other dairy and dual purpose cattle	3.5 per animal unit *
Beef Breeding herd	3.5 per animal unit *
Feeder cattle	.25 per cwt.
Sheep - farm flock	1.5 per animal unit *
Sheep - feeders	.3 per cwt.
Hogs	.2 per cwt.
Turkeys	.5 per cwt.
Hens	20.0 per 100 hens
Canning peas	.5 per acre
Soybeans for grain	.5 per acre
Potatoes	4.0 per acre
Small grain	.5 per acre
Sugar beets	1.5 per acre
Sweet corn	.7 per acre
Corn, husked	.7 per acre
Corn, hogged	.4 per acre
Corn, shredded	1.5 per acre
Corn silage	1.0 per acre
Corn fodder	1.0 per acre
Silage, other than corn	1.0 per acre
Alfalfa hay	.6 per acre
Soybean hay	.8 per acre
Other hay crops	.4 per acre

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

TABLE VIII. MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY, 1961

Measures used in chart on page 13	Your farm	Average of 42 farms	14 most profitable farms	14 least profitable farms
Operator's labor earnings	<u>2,185.95</u>	\$ 1629	\$ 3730	\$ -480
(1) Crop yields *	<u>97</u>	100	110	89
(2) % till. land in high ret. crops **	<u>23.0</u>	43.2	46.3	38.9
(3) Ret. per \$100 feed to productive livestock ***	<u>70</u>	\$ 100	\$ 106	\$ 96
(4) Prod. livestock units per 100 acres ****	<u>17.5</u>	22.6	22.9	19.4
(5) Size of business - work units	<u>116</u>	323	366	256
(6) Work units per worker	<u>96</u>	235	276	193
(7) Power, mach., equip., & bldg. expense per work unit	<u>26.09</u>	\$10.15	\$ 8.42	\$ 11.53

Items related to some of the above measures:

(3) Index of return for \$100 feed from:				
Dairy cattle (see pp 18-19)		\$ 100	\$ 104	\$ 95
Beef cattle-breeding herd (see p 20)	<u>43</u>	100	147	77
Hogs (see page 17)	<u>76</u>	100	104	106
Sheep-farm flock (see p 20)		100	-	-
Chickens (see page 21)		100	111	-
(4) Number of animal units	<u>37.7</u>	37.3	38.5	30.4
(5) Work units on crops	<u>37</u>	86	108	64
Work units on prod. livestock	<u>79</u>	225	242	182
Other work units		12	16	10
(6) Number of family workers	<u>1.2</u>	1.3	1.2	1.2
Number of hired worders		.1	.1	.1
Total number of workers	<u>1.2</u>	1.4	1.3	1.3
(7) Power expense per work unit	<u>15.40</u>	\$ 6.58	\$ 5.33	\$ 7.53
Crop mach. exp. per work unit	<u>6.12</u>	1.67	1.53	1.78
Livestock equip. exp. per work unit	<u>1.16</u>	.60	.52	.60
Bldg. & fencing exp. per work unit	<u>3.41</u>	1.30	1.04	1.62

\* Given as a percentage of the average.

\*\* Crops are marked in Table IX 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 till. land in high return crops.

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

\*\*\*\* Acres in timber not pastured, roads, waste and farmstead 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 farms included in this summary are located between the dotted lines across the center of the page.

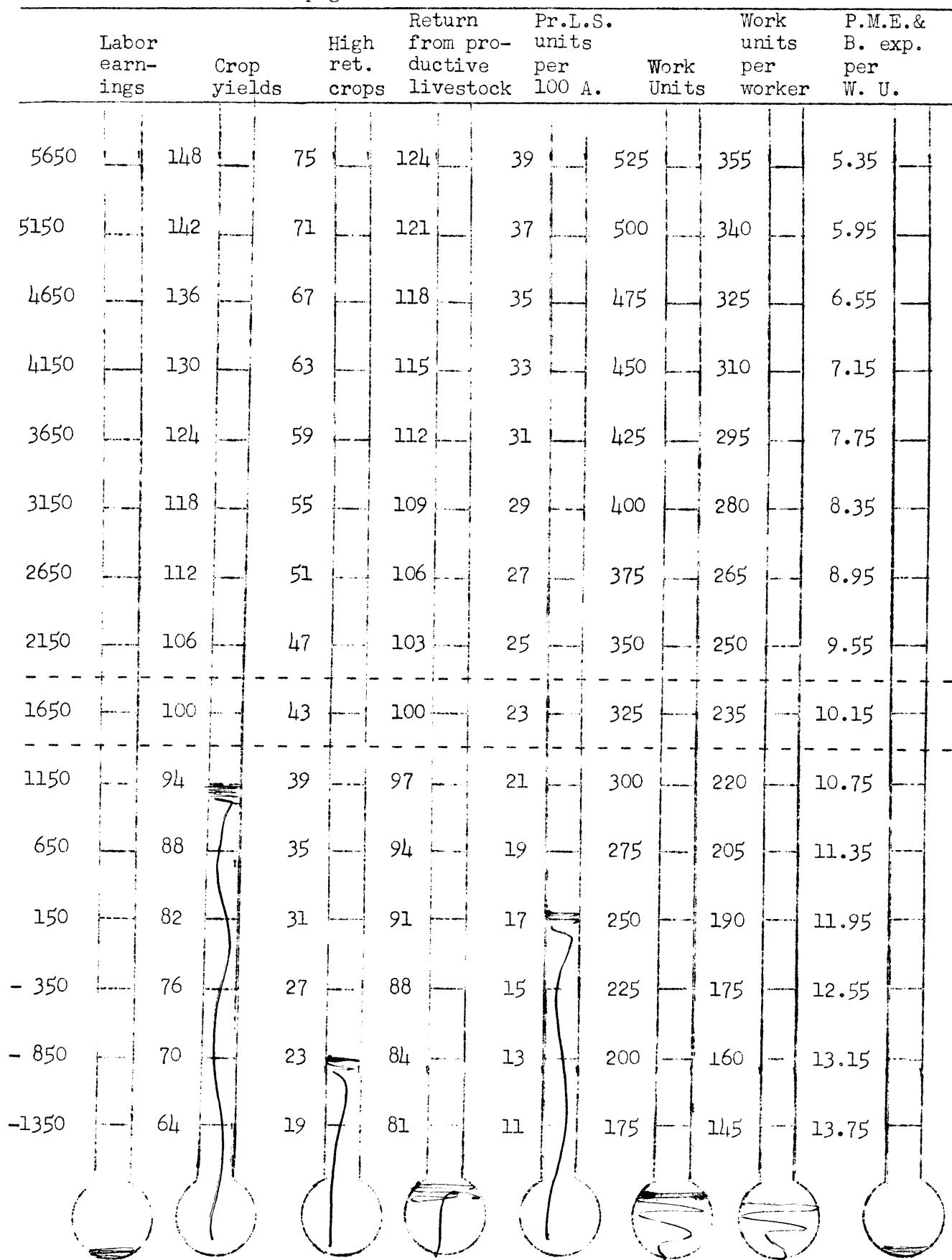


TABLE IX. DISTRIBUTION OF ACRES IN FARM, 1961

Items	Crop * Ratings	Your farm	Average 42 farms
Soybeans	C	<u>12</u>	.5
Flax	C	<u>      </u>	.7
Barley	C	<u>      </u>	1.5
Oats	C	<u>      </u>	16.1
Oat Silage	B	<u>      </u>	4.1
Wheat	C	<u>      </u>	.3
Rye	D	<u>      </u>	.7
TOTAL SMALL GRAIN		<u>17</u>	23.9
Garden-Seed potatoes	A	<u>      </u>	-
Potatoes	B	<u>      </u>	.3
Corn and sorghum silage	B	<u>      </u>	11.2
Corn fodder	D	<u>      </u>	.1
Corn Grain	C & D **	<u>15</u>	10.0
Sorghum	D	<u>3</u>	.1
TOTAL CULTIVATED CROPS		<u>18</u>	21.7
Alfalfa and mixtures	A	<u>26</u>	31.1
Other legumes and mixtures	B	<u>      </u>	29.3
Legumes for seed	C	<u>      </u>	-
Timothy for seed	C	<u>      </u>	-
Timothy and/or brome hay	D	<u>      </u>	.9
Other annual hay	D	<u>      </u>	13.1
Wild hay on tillable land	D	<u>10</u>	1.0
Grass silage	B	<u>      </u>	-
Legume silage	B	<u>      </u>	.8
TOTAL TILLABLE LAND IN HAY		<u>30</u>	76.2
Alfalfa & alfalfa mixture pasture	A	<u>      </u>	2.1
Other legume & mixture pasture	B	<u>      </u>	.6
Other tillable pasture	D	<u>35</u>	12.0
TOTAL TILLABLE PASTURE		<u>35</u>	14.7
Soil bank	C	<u>38</u>	9.1
Tillable land not cropped	D	<u>25</u>	6.5
TOTAL TILLABLE LAND		<u>123</u>	152.1
Wild hay - non-tillable		<u>      </u>	3.7
Non-tillable pasture		<u>52</u>	32.5
Timber (not pastured)		<u>100</u>	58.1
Roads and waste		<u>      </u>	14.0
Farmstead		<u>2</u>	4.9
TOTAL ACRES IN FARM		<u>320</u>	265.3
Per cent of land tillable		<u>57.2</u>	57.3
Per cent of land in high return crops		<u>25.0</u>	43.2

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

\*\* Corn for grain rated a "C" crop for southern portion of area covered by this report and as a "D" crop for the northern area. % of tillable land in high return crops determined separately for southern and northern area.



TABLE X. CROP YIELDS PER ACRE, 1961

Crop	Your farm	Number growing	Average of farms growing each crop
Soybeans, bu.	<u>8.65</u>	1	8.0
Flax, bu.	_____	2	5.5
Barley, bu.	_____	4	20.8
Oats, bu.	_____	22	30.8
Oat silage, ton	_____	6	4.7
Wheat, bu.	_____	1	16.0
Rye, bu.	_____	1	23.2
Potatoes, bu.	_____	1	300.0
Corn silage, ton	_____	19	6.7
Corn fodder, ton	_____	1	3.3
Corn grain, bu.	<u>35.0</u>	15	53.2
Legume silage, ton	_____	2	2.1
Alfalfa hay, ton	<u>1.0</u>	23	1.3
Other legumes & mixtures, ton	_____	16	1.3
Legumes for seed, lbs.	_____	-	-
Timothy for seed, lbs.	_____	-	-
Timothy or brome hay, ton	_____	1	1.2
Other annual hay, ton	_____	4	.4
Wild hay, ton	<u>1.5</u>	2	.9
Oat hay, ton	_____	8	.9
Sorghum, bu.	<u>35.0</u>	1	35.0

#### POWER AND MACHINERY EXPENSES

Power and machinery expense per crop acre is an indication of the economy with which capital is invested in these items. Expenses are high on the farms with a small acreage. In some cases low expense for labor might be offset by higher equipment costs. The farmer is interested in operating at the lowest cost for power, machinery, and labor combined.

TABLE XI. POWER AND MACHINERY EXPENSES PER CROP ACRE, 1961

	Your farm	Avg. of 42 farms	14 most prof. farms	14 least prof.
Crop acres per farm	<u>163</u>	152	144	142
Tractor & horse exp. per crop acre	\$ <u>1.33</u>	\$ 5.67	\$ 5.07	\$ 6.66
Crop & gen. mach.exp. per crop acre	<u>4.35</u>	3.79	4.40	3.26

#### AMOUNT OF LIVESTOCK

A large proportion of the farmers maintained some dairy cattle with smaller number maintaining hogs and poultry.

TABLE XII. AMOUNT OF LIVESTOCK, 1961

	Your farm	Average 42 farms	14 most prof. farms	14 least prof. farms
Number of milk cows	_____	17.0	18.9	13.5
Number of other dairy cattle	_____	18.2	19.7	12.8
Number of beef cattle	_____	2.8	3.3	4.7
Number of sheep	_____	6.9	4.7	6.2
Number of hens	_____	13	11	-
Litters of pigs raised	<u>34</u>	12.9	9.6	1.1
Pounds of hogs produced	<u>282.19</u>	6589	4691	6846

# TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

The total "return over feed costs" for each class of livestock is shown in Table XIII. 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 lbs." 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 p. 6. 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 XIII. TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES, 1961

	Dairy or dual purpose cattle			Beef Breeding
	Cows	Other	All	
Total returns	_____	_____	_____	346.39
Total feed cost	_____	_____	_____	711.30
Total return over feed	_____	_____	_____	371.96
	Hogs	Sheep	Chickens	
Total returns	4196.92	_____	_____	_____
Total feed cost	2933.95	_____	_____	_____
Total return over feed	1262.97	_____	_____	_____

Feed is the largest single item of cost for all classes of livestock. However, the proportion of the total cost represented by feed varies between classes of livestock. Feed makes up approximately 45 per cent of the total costs of maintaining dairy cattle and poultry, 50 per cent for 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.

## HOGS

The return over feed cost per cwt. of hogs produced varied from \$6.71 for those farmers in the lower one-third in feeding efficiency to a return of \$21.67 for those in the highest one-third. Responsible factors affecting return over feed were:

1. Quantity of feed required to produce 100 pounds of pork.
2. Price received.
3. Number of pigs born per litter.
4. Number of pigs weaned per litter.

TABLE XIV. FEED COSTS AND RETURNS FROM HOGS, 1961

Items	Your farm	Avg. of 23 farms	8 farms highest in return above feed	8 farms lowest in return above feed
Feed per cwt. hogs produced, lbs.				
Corn	<u>335</u>	239	322	259
Small grains	<u>42</u>	257	463	125
Commercial feeds	<u>60</u>	94	63	91
TOTAL CONCENTRATES	<u>442</u>	590	848	475
Skim milk & buttermilk		114	267	-
Alfalfa & silage		37	44	55
Feed cost per cwt. hogs produced:				
Concentrates (incl. alf. & silage)	\$ <u>10.42</u>	\$ 14.33	\$ 18.92	\$ 11.51
Skim milk & buttermilk		.62	1.45	-
Pasture		.11	.21	.04
TOTAL FEED COSTS	\$ <u>10.40</u>	\$ 15.06	\$ 20.58	\$ 11.55
Net increase in value per cwt. hogs produced	\$ <u>14.87</u>	\$ 28.15	\$ 42.25	\$ 18.26
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	\$ <u>4.47</u>	\$ 13.09	\$ 21.67	\$ 6.71
RETURNS FOR \$100 OF FEED	\$ <u>143</u>	\$ 186	\$ 205	\$ 158
Price received per cwt. hogs sold	\$ <u>19.19</u>	\$ 23.03	\$ 26.05	\$ 20.12
No. of spring litters raised	<u>24</u>	13.0	13.1	10.2
No. of fall litters raised	<u>10</u>	11.9	9.3	6.5
Total no. of litters raised	<u>34</u>	24.9	22.4	16.7
No. of pigs born per litter	<u>7.8</u>	9.5	10.5	8.7
No. of pigs weaned per litter	<u>7.4</u>	7.5	7.9	6.1
POUNDS OF HOGS PRODUCED	<u>282.79</u>	12402	8250	10970

#### DAIRY AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value in feeds and returns from dairy cattle are presented in Tables XV, XVI, and XVII. The statements include several herds which were classified as dual purpose cattle. The return over feed cost per cow varied from \$22 to \$297 among the herds covered by this study. Some of the important factors that affected the return over feed were:

1. Rate of production
2. Price received for butterfat
3. Feeding efficiency
4. Economy of ration
5. Quality of ration

TABLE XV. FACTORS OF COSTS AND RETURNS FROM DAIRY COWS, 1961

Items	Your farm	Average of 39 farms	13 farms highest in butterfat per cow	13 farms lowest in butterfat per cow
Pounds of milk per cow	_____	8309	9998	6292
Pounds of butterfat per cow	_____	315	384	239
Price rec.per lb. B. F. sold (cents)	_____	89.7	93.8	79.5
Feed per cow, lbs.:				
Corn	_____	614	890	263
Small grain	_____	794	1026	638
Commercial feeds	_____	773	867	379
Legume hay	_____	3488	3948	2961
Other hay	_____	2678	2258	3345
Fodder and stover	_____	38	109	-
Total concentrates, lbs.	_____	2181	2783	1280
Total dry roughage, lbs.	_____	6204	6315	6306
Silage	_____	6354	7680	4003
Feed cost per cow:				
Concentrates	\$ _____	\$ 53.52	\$ 66.51	\$ 28.70
Roughages	_____	70.39	78.05	60.96
Pasture	_____	6.51	5.62	6.86
TOTAL FEED COST	\$ _____	\$130.42	\$150.18	\$ 96.52
Value of produce per cow:				
Dairy Products	\$ _____	\$267.31	\$342.40	\$163.67
Dairy produce used in house	_____	8.69	3.66	16.65
Milk fed to livestock	_____	12.34	7.22	25.27
Net increase in value of cows	_____	-.38	6.32	-.63
TOTAL VALUE PRODUCED	\$ _____	\$287.96	\$359.60	\$204.96
RETURNS ABOVE FEED COST PER COW	\$ _____	\$157.54	\$209.42	\$108.44
RETURNS FOR \$100 SPENT FOR FEED	\$ _____	\$ 221	\$ 239	\$ 212
Feed cost per lb. B. F. (cents)	_____	41.4	39.2	40.1
Number of cows *	_____	18.8	23.3	12.4

\* All dairy cows which have at some time in the past freshened are included in the dairy herd, and affect the average number of cows used in computing this table. There is some variation in the number of months of dry period per cow, however, this variation is small for the majority of farms.

TABLE XVI. FEED COSTS AND RETURNS FROM OTHER DAIRY AND DUAL PURPOSE CATTLE, 1961

Items	Your farm	Average of 39 farms	13 farms highest in butterfat per cow	13 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	403	415	141
Hay and fodder	_____	2471	2872	2113
Silage	_____	2222	2364	2003
Milk	_____	355	294	707
Feed cost per head:				
Concentrates	\$ _____	\$ 11.78	\$ 12.11	\$ 3.67
Roughages	_____	26.48	30.49	21.95
Milk	_____	6.67	7.57	9.53
Pasture	_____	2.81	2.50	3.31
TOTAL FEED COST PER HEAD	_____	\$ 47.74	\$ 52.67	\$ 38.46
Net increase in value of other cattle	_____	\$ 75.36	\$ 77.04	\$ 67.47
RETURNS ABOVE FEED COST PER HEAD	_____	\$ 27.62	\$ 24.37	\$ 29.01
RETURNS FOR \$100 OF FEED	_____	\$ 158	\$ 146	\$ 175
Number of head of other cattle	_____	20.8	22.5	15.4

TABLE XVII. FEED COSTS AND RETURNS FROM ALL DAIRY AND DUAL PURPOSE CATTLE, 1961

Feeds per animal unit, lbs.:				
Concentrates	_____	1788	2337	921
Hay and fodder	_____	5741	6504	5287
Silage	_____	6105	6889	4951
TOTAL FEED COSTS PER ANIMAL UNIT	\$ _____	\$113.68	\$ 132.40	\$ 81.64
Value of produce per animal unit:				
Dairy Products	_____	\$187.05	\$ 239.56	\$120.57
Net increase in value	_____	49.60	50.76	49.49
TOTAL VALUE PRODUCED	\$ _____	\$236.65	\$ 290.32	\$170.06
RETURNS ABOVE FEED PER ANIMAL UNIT	\$ _____	122.97	\$ 157.92	\$ 88.42
RETURNS FOR \$100 OF FEED	\$ _____	\$ 208	\$ 219	\$ 208
Animal units of cattle	_____	28.9	34.6	19.7

TABLE XVIII. FEED COST AND RETURNS FROM BEEF BREEDING HERD, 1961

Items	Your farm	Thief River Falls
Feeds per animal unit, lbs.:		
Concentrates	<u>587</u>	<u>546</u>
Legume hay	<u>9062</u>	<u>2330</u>
Other hay		<u>3750</u>
Silage		<u>2850</u>
Whole Milk		<u>12 lbs</u>
Feed cost per animal unit:		
Concentrates	<u>\$11.23</u>	<u>11.17</u>
Roughages	<u>90.62</u>	<u>36.61</u>
Pasture	<u>9.37</u>	<u>5.55</u>
Milk		<u>.09</u>
TOTAL FEED COST	<u>\$111.22</u>	<u>53.42</u>
Value of produce per animal unit:		
Dairy products	<u>\$</u>	<u>.95</u>
Net increase in value of animals	<u>53.12</u>	<u>113.77</u>
TOTAL VALUE PRODUCED	<u>\$53.12</u>	<u>114.72</u>
RETURNS ABOVE FEED COST PER ANIMAL UNIT	<u>\$58.10</u>	<u>61.30</u>
RETURNS FOR \$100 OF FEED	<u>\$48</u>	<u>215.00</u>
Number of animal units in the herd	<u>6.4</u>	<u>32.</u>

TABLE XIX. FEED COST AND RETURNS FROM SHEEP, 1961

Items	Your farm
Feeds per head, lbs. *	
Concentrates	
Legume hay	
Other hay	
Silage	
Fodder	
Feed cost per head:	
Concentrates	\$
Roughages	
Pasture	
TOTAL FEED COSTS	\$
Value of produce per head:	
Wool	\$
Net increase in value of sheep	\$
TOTAL VALUE PRODUCED	\$
RETURNS ABOVE FEED COST PER HEAD	\$
RETURNS FOR \$100 OF FEED	\$
Number of head of sheep *	

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

## CHICKENS

Records on poultry enterprises were received from only four farms. Some of the information was vague so averages were not prepared.

Ordinarily, some of the important factors that affect the return over feed are: 1. Quantity of feed required per hen 2. Price received per dozen eggs sold 3. Eggs laid per hen 4. Per cent of hens that are pullets 5. Percentage death loss of hens.

TABLE XX. FEED COSTS AND RETURNS FROM CHICKENS, 1961

Items	Your farm
Feed per hen, lbs.:	
Grain	_____
Commercial feeds	_____
TOTAL CONCENTRATES	_____
Milk	_____
TOTAL FEED COST PER HEN	\$ _____
Value of produce per hen:	
Eggs sold and used in house	\$ _____
Net increase in value of chickens	\$ _____
TOTAL VALUE PRODUCED	\$ _____
RETURNS ABOVE FEED COST PER HEN	\$ _____
RETURNS FOR \$100 OF FEED	\$ _____
Price rec'd. per doz. eggs sold (cents)	_____
Eggs laid per hen	_____
Average number of hens during year	_____

SUMMARY OF FARM EARNINGS 1957 - 1961

	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>
<u>FARM RECEIPTS</u>					
Dairy and dual-purpose cattle	\$ 971	\$ 1370	\$ 1322	\$ 1077	\$ 977
Dairy products	4470	4831	5106	4961	5068
Beef cattle (incl. feeders)	88	234	65	135	79
Hogs	495	1118	941	1117	1673
Sheep and wool (incl. feeders)	69	89	123	120	84
Horses	12	10	8	5	-
Poultry	10	16	12	6	3
Eggs	54	52	42	62	37
Corn and small grain	247	159	240	246	174
Other crops	243	204	121	136	62
Forestry products		286	232	219	180
Mach.& equip.sold & gas tax refund	177	191	156	155	169
Income from work off the farm	463	304	262	246	202
Miscellaneous	114	123	206	166	291
(1) Total farm sales	<u>7413</u>	<u>8987</u>	<u>8836</u>	<u>8651</u>	<u>8999</u>
(2) Increase in farm capital	713	821	682	1560	973
(3) Family living from the farm	355	385	348	445	425
(4) Total farm receipts (1)+(2)+(3)	\$ <u>8481</u>	\$ <u>10193</u>	\$ <u>9866</u>	\$ <u>10656</u>	\$ <u>10397</u>
<u>FARM EXPENSES</u>					
Dairy & dual-purpose cattle bought	240	214	283	109	101
Beef cattle bought (incl. feeders)	-	31	101	15	112
Hogs bought	62	64	35	40	45
Sheep bought (incl. feeders)	19	16	8	58	3
Horses bought	2	3	2	1	-
Poultry bought	7	6	10	8	6
Misc. livestock expense	159	186	229	260	241
Feed bought	876	1141	1305	1225	1468
Fertilizer	137	225	211	267	274
Other crop expenses	307	312	304	218	253
Custom work hired	403	485	526	522	557
Gas,oil & grease bought (farm share)	524	593	548	607	585
Repair of mech. power (farm share)	245	281	292	286	308
Repair & upkeep of real estate	92	84	104	47	126
Repair & upkeep crop & gen. mach.	153	155	163	195	180
Repair & upkeep livestock equip.	54	62	57	55	72
Wages of hired labor	223	253	265	485	348
Electricity expense (farm share)	156	175	208	197	217
Real estate & pers. property taxes	250	262	280	311	315
General farm expense	111	115	138	152	181
(5) Total cash operating expense	<u>4020</u>	<u>4663</u>	<u>5069</u>	<u>5058</u>	<u>5392</u>
(6) Cap.purch.mech.power (farm share)	450	340	501	534	664
(7) " " crop & gen. mach.	460	507	494	684	454
(8) " " livestock equip.	120	97	67	134	112
(9) " " bldgs. & fencing	303	602	461	559	714
(10) Total farm purch. (5) to (9)	<u>5353</u>	<u>6209</u>	<u>6592</u>	<u>6969</u>	<u>7336</u>
(11) Decrease in farm capital	-	-	-	-	-
(12) Interest on farm capital	959	1063	1104	1085	1070
(13) Unpaid family labor	236	458	413	177	282
(14) Board furnished hired labor	29	44	37	78	80
(15) Total farm exp. (10) to (14)	<u>6577</u>	<u>7774</u>	<u>8146</u>	<u>8309</u>	<u>8768</u>
(16) Labor earnings (4) - (15)	\$ 1904	\$ 2419	\$ 1720	\$ 2347	\$ 1629