

*1958 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, 1959**

## FOREWORD

This report completes the third year of our farm income study for Northeast Minnesota. Although the farms in this area are small and the farm income is low in comparison to other areas of Minnesota, farming is still an important part of the economy and the sole livelihood for many farm families.

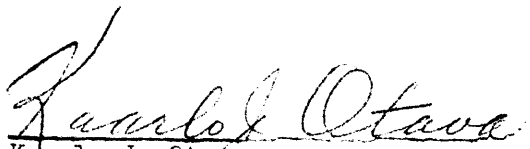
The objective of this farm income study is to gain an insight on problems peculiar to the area. The study is being made with farmers keeping adequate and detailed records of their farm operation.

As this program continues farmers will become more adept in keeping farm records, the analysis work becomes easier and the results become more definite. Several conclusions can now be noted. One of which I would like to mention. The report shows that a small portion of the farm income is obtained from the sale of forest products. Farm participants in this program have indicated their interest in developing their farm wood-lot if there is some assurance of a market. Farm wood-lot management and increased forest products sales could greatly subsidize farm income in Northeast Minnesota.

Field work for Iron Range Resources and Rehabilitation was done by August Neubauer with offices in the St. Louis County Court House, Virginia, Minnesota, and under the supervision of Hyrom S. Sorenson, Assistant Commissioner of Iron Range Resources and Rehabilitation.

We wish to give special recognition to Mr. Leo Keskinen, Vocational Agriculture Instructor at the Duluth Area Vocational Technical School, for the direction and supervision in the preparation of the summary report and also for his work on the analysis of the farm records.

Vocational Agriculture Instructors, County Agents, Instructors of Veterans Agriculture and County Rural Development Agents have given freely of their time to insure the success of this program.

  
Kaarlo J. Otava  
Commissioner

1958 REPORT OF THE VOCATIONAL AGRICULTURE FARM MANAGEMENT  
PROGRAM IN NORTHEASTERN MINNESOTA

Leo Keskinen  
Duluth Area Vocational School

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## INTRODUCTION

The main purposes of the program of farm analysis are: (1) to give assistance to instructors and county agents in the mechanics of farm record supervision, (2) to assist instructors, county agents, and cooperating farmers in farm accounting techniques, (3) to aid individual farmers in the study of their farm business through analysis reports, and (4) to provide case study materials that can be used by farmers and farm groups to study farm management problems.

The report and analysis of records were completed under the direction of Leo Keskinen, Vocational Agriculture Instructor, Duluth Area Vocational-Technical School. Clerical assistants were: Mrs. Nellie Hopper, Mrs. Ruby Naslund, Mrs. Louise Kirpach, and Mrs. Ruby Kobus. Directing in a supervisory capacity were: Alvin T. Stolen, Superintendent of Duluth Public Schools; George Campaigne, Director of the Duluth Area Vocational-Technical School; G. R. Cochran, State Supervisor of Agricultural Education; and S. K. Wick, Director of the Vocational Division, State Department of Education. Promotional and other assistance was provided by Milo Peterson, Head Professor of Agricultural Education, University of Minnesota. Acknowledgement is also made of the excellent professional assistance rendered by Truman Nodland of the Institute of Agriculture, University of Minnesota.

Special acknowledgement is made for the direction, interest, and financial assistance provided by the Iron Range Resources and Rehabilitation Commission with Kaarlo Otava, Commissioner, and Hyrom Sorenson, Assistant Commissioner. Field work and contacts with cooperators has been capably handled by August Neubauer, IRRRC Field Man. The IRRRC grant has financed the cost of the entire analysis project with the exception of several cooperators from an area not under IRRRC jurisdiction. These farmers (Todd County) have paid a set fee to cover their part of the analysis. The area covered by this report is outlined on the map inside of the front cover.

Special mention and thanks are due also to the Printing Classes of the Duluth Public Schools for their part in the publication of this report.

Agriculture Instructors submitting 1958 records for analysis were:

<u>SCHOOL</u>	<u>INSTRUCTOR</u>	<u>SCHOOL</u>	<u>INSTRUCTOR</u>
Alango	Leo Wilenius	Meadowlands	Raymond White
Barnum	Robert Johnson	Moose Lake *	Sherrill Robinson
Blackduck	Raymond Collen	Northome	Clayton Bray
Bemidji	Dalton Seeling	Park Rapids	Robert Underwood
Clarissa	Elmer Fragott	Pillager	Martin Klingenberg
Cook	Anthony Grebenc	Sebeku	Delbert Harrington
Embarrass	Ed Takala	Staples	William Guelker
Esko	Don Gustafson	Verndale	Einard Waisanen
Hinckley	Richard Mitton	Willow River	Erwin Pracher
Littlefork	Wilho Kemp	* Veterans' Ag Instructor	

County Agricultural Agents and Rural Development Agents submitting records were:

<u>COUNTY</u>	<u>AGENT</u>
Carlton	Dave Radford
Clearwater	Arnold Heikkila
Hubbard	John Eix
Itasca	George Saksa
Lake of the Woods	Otto Lee
West St. Louis	J. O. Jacobson

The above cooperating centers submitted records from eleven 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:

Beltrami	7	Koochiching	16
Carlton	13	Lake of the Woods	3
Cass	11	Pine	7
Clearwater	3	St. Louis	11
Hubbard	16	Todd *	5
Itasca	5	Wadena	4
		Total	101
		* Not IRRRC Area	

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 \$2420 to \$67769. 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 other than that of the operator.

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.

A portion of the farm income in Northeastern Minnesota is obtained from the sale of forestry products. Twenty-six farms out of the 101 represented in this report indicated some form of forestry income ranging from a low of \$18 to a high of \$2893 per farm. The average forestry income per farm (average of all 101 farms) amounted to \$285.73, or 2.8% of total farm income received. Forestry income is included as farm income in this report.

## NON-FARM INCOME

Numerous Northeastern Minnesota farmers, in addition to their farm income, are earning additional income by employment 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, 55 farms of the 101 did show outside income in addition to farm labor earnings ranging from a low of \$5 to a high of \$5312 per farm involved. For those cooperators who showed non-farm income, the average non-farm income per farm (55 farms) was \$1365, or 8.2% of total income received by this group. This non-farm income is not included in this report as farm labor earnings.

TABLE 1. SUMMARY OF FARM INVENTORIES, 1958

Items	Your farm		Average 101 farms	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	_____		289	
Size of business (work units)	_____		351	
Dairy and dual purpose cows	_____	_____	\$ 2423.97	2560.69
Other dairy & dual purpose cattle	_____	_____	1146.00	1290.86
Beef cattle (incl.feeders)	_____	_____	431.20	451.65
Hogs	_____	_____	416.46	513.55
Sheep (including feeders)	_____	_____	104.34	126.54
Poultry	_____	_____	15.96	13.63
Productive livestock (total)	_____	_____	4537.93	4956.92
Horses	_____	_____	19.00	15.26
Crop, seed and feed	_____	_____	1859.44	1994.54
Power machinery (farm share)	_____	_____	2157.80	2024.96
Crop and general machinery	_____	_____	2194.42	2263.13
Livestock equipment	_____	_____	1015.86	993.78
Machinery and equipment (total)	_____	_____	5368.08	5281.87
Miscellaneous	_____	_____	-	-
Land	_____	_____	4753.98	4875.73
Buildings, fences, etc.	_____	_____	4129.60	4364.37
Total farm capital	_____	_____	20668.03	21488.69

Items	34 most profitable		34 least profitable	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Size of farm (acres)	309		264	
Size of business (work units)	401		292	
Dairy and dual purpose cows	\$ 3009.80	3165.68	1978.35	2009.74
Other dairy & dual purpose cattle	1601.96	1716.88	838.08	928.48
Beef cattle (incl.feeders)	645.33	880.08	510.02	322.40
Hogs	642.64	912.62	136.52	185.65
Sheep (incl. feeders)	16.80	60.20	87.00	89.64
Poultry	23.36	15.09	14.33	15.68
Productive livestock (total)	5939.89	6750.55	3564.30	3551.59
Horses	20.00	20.00	21.84	13.36
Crop, seed and feed	2199.70	2549.06	1619.78	1626.38
Power machinery (farm share)	2332.58	2209.90	2215.66	2066.38
Crop and general machinery	2687.57	2859.38	2228.54	2086.30
Livestock equipment	1176.95	1214.98	798.46	726.83
Machinery & equipment (total)	6247.10	6284.26	5242.66	4879.51
Miscellaneous	-	-	-	-
Land	5418.64	5515.43	4056.05	4176.69
Buildings, fences, etc.	5527.93	5960.58	3522.50	3669.03
Total farm capital	25353.26	27079.90	18027.13	17916.56

TABLE II. SUMMARY OF FARM EARNINGS (CASH STATEMENT), 1958

Items	Your farm	Average of 101 farms	34 most profitable farms	34 least profitable farms
<b>FARM RECEIPTS</b>				
Dairy and dual-purpose cattle		\$ 1369.54	\$ 1735.29	\$ 1164.17
Dairy products		4830.53	6455.75	3388.84
Beef cattle (incl. feeders)		234.36	278.48	297.03
Hogs		1118.18	1784.05	325.05
Sheep and wool (incl. feeders)		89.56	24.61	98.85
Horses		10.00	5.60	13.40
Poultry		16.48	23.85	22.97
Eggs		51.85	69.43	62.31
Bees		.54	-	-
Corn and small grain		158.88	94.92	144.96
Other crops		203.90	459.82	95.34
Forestry Products		285.73	296.40	298.64
Mach. & eq. sold & gas tax refund		190.71	125.14	264.13
Income from work off the farm		304.19	250.41	261.55
Miscellaneous		122.66	205.28	85.46
(1) Total farm sales		8987.11	11809.03	6522.70
(2) Increase in farm capital		820.66	1726.64	-
(3) Family living from the farm		385.48	489.97	317.41
(4) Total farm receipts (1)+(2)+(3)		10193.25	14025.64	6840.11
<b>FARM EXPENSES</b>				
Dairy & dual-purpose cattle bought		214.04	141.06	195.44
Beef cattle bought (incl. feeders)		31.05	89.90	-
Hogs bought		63.75	17.66	35.19
Sheep bought (incl. feeders)		16.22	43.40	-
Horses bought		3.31	4.82	5.00
Poultry bought		6.11	8.03	6.74
Bees		.33	-	-
Misc. livestock expense		186.16	219.12	183.37
Feed bought		1141.04	1554.33	822.68
Fertilizer		224.74	348.43	113.16
Other crop expenses		311.56	434.51	183.32
Custom work hired		485.36	619.90	390.99
Gas, oil & grease bought (farm sh.)		592.71	677.25	494.77
Repair of mech. power (farm share)		280.45	273.84	254.60
Repair & upkeep of real estate		84.13	126.29	67.95
Repair & upkeep crop & gen. mach.		154.91	187.66	128.33
Repair & upkeep livestock equip.		61.92	64.53	56.99
Wages of hired labor		252.85	325.94	242.37
Electricity expense (farm share)		175.41	219.91	141.27
Real estate & pers. property taxes		261.62	294.62	232.39
General farm expense		115.46	123.49	102.66
(5) total cash operating expense		4663.16	5774.68	3657.22
(6) Cap. pur. mech. power (farm share)		340.34	261.72	395.12
(7) " " Crop & gen. mach.		506.96	681.42	336.89
(8) " " livestock equip.		97.14	185.86	25.27
(9) " " bldgs. & fencing		601.61	856.20	472.80
(10) Total farm purch. (5) to (9)		6209.21	7759.88	4887.30
(11) Decrease in farm capital		-	-	110.57
(12) Interest on farm capital		1062.79	1301.88	932.79
(13) Unpaid family labor		457.79	391.74	510.32
(14) Board furnished hired labor		44.23	41.04	53.10
(15) Total farm exp. (10) to (14)		7774.02	9494.54	6494.08
(16) Labor earnings (4) - (15)		2419.23	4531.10	346.03



TABLE III. SUMMARY OF FARM EARNINGS (ENTERPRISE STATEMENT) 1958

Items	Your farm	Average of 101 farms	34 most profitable farms	34 least profitable farms
<u>RETURNS AND NET INCREASES</u>				
Dairy and dual-purpose cows		\$ 5328.22	\$ 7120.08	\$ 3785.40
Other dairy & dual purpose cattle		1297.26	1613.10	982.59
Beef breeding herd		189.19	303.64	119.75
Feeder cattle		51.70	130.39	22.63
Hogs		1181.97	2084.28	358.42
Sheep - farm flock		96.13	25.80	102.01
Chickens		88.00	110.82	104.55
All productive livestock		8232.48	11388.11	5475.35
Value of feed fed to livestock		3511.33	4451.29	2719.24
Return over feed from livestock		4721.15	6936.82	2756.11
Crop seed, and feed		2574.35	3300.32	2110.64
Income from labor off the farm		303.85	250.41	261.56
Agricultural conservation payments		45.57	58.29	39.26
Miscellaneous		77.19	146.99	46.19
(1) Total returns & net increases		7722.11	10692.83	5213.76
<u>EXPENSES AND NET DECREASES</u>				
Horses		2.36	1.08	13.91
Truck		271.19	223.55	342.61
Auto		269.08	266.27	243.93
Tractor		729.91	845.36	599.79
Elec. & gas engine exp. (farm sh)		109.55	152.00	77.26
Hired power		485.36	619.90	390.99
Total power		1867.45	2108.16	1668.49
Crop and general machinery		570.99	702.29	561.56
Livestock equipment		171.77	196.17	145.69
Buildings, fencing & tiling		311.78	457.28	234.99
Misc. productive livestock exp.		186.16	219.12	183.37
Labor		754.87	758.72	805.78
Real estate taxes		162.58	187.23	137.95
Personal property taxes		99.04	107.39	94.44
Insurance		49.25	51.64	49.87
General farm		66.21	71.85	52.79
Interest on farm capital		1062.79	1301.88	932.79
(2) Total expenses & net decreases		5302.89	6161.73	4867.73
(3) Operator's earnings (1)-(2)		2419.22	4531.10	346.03

\* 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 3.6 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, 1958

Items	Your farm	Avg. 53 Farms	Your Farm	Avg. 53 Farms
Adult equiv. - family	_____	2 8		
- Others	_____	-		
Whole milk	_____	1280 qts.	_____	\$109
Skim milk	_____	29 qts.	_____	5
Cream	_____	51 pts.	_____	13
Butter	_____	3 lbs.	_____	1
Beef	_____	398 lbs.	_____	106
Hogs	_____	164 lbs.	_____	28
Lamb and Mutton	_____	-	_____	-
Poultry	_____	70 lbs.	_____	23
Eggs	_____	25 doz.	_____	8
Potatoes	_____	7 bus.	_____	10
Vegetables and fruit	_____	-	_____	54
Farm Fuel	_____	-	_____	43
				<u>\$400</u>

\*53 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 \$187 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, 1958

Items	Your farm	Average of 53 farms	18 most profitable farms	18 least profitable farms
Number of persons - family	_____	3.9	5.0	2.8
Number of adult equiv. - family	_____	2.8	3.3	2.2
other *	_____	-	-	-
Food and meals bought	_____	731.99	865.16	601.92
Operating and supplies	_____	145.54	157.63	128.06
Furnishings and equipment	_____	230.44	321.83	168.03
Clothing and clothing materials	_____	218.64	266.58	187.74
Personal care, personal spending	_____	51.32	48.88	53.12
Education, recreation & development	_____	140.71	205.38	91.43
Gifts and special events	_____	90.27	98.70	70.60
Medical care and health insurance	_____	287.27	304.62	239.51
Church, welfare	_____	67.24	98.25	61.98
Personal share of auto expense	_____	123.15	111.39	136.31
Operator's share upkeep on dwelling	_____	67.55	27.68	79.30
Household share of electric exp.	_____	94.39	109.92	87.65
Total cash living expense	_____	2248.50	2616.02	1905.66
H.H. & pers. share of new auto	_____	52.03	77.28	4.33
New dwelling	_____	95.66	93.95	173.33
Taxes and other deductions	_____	85.88	56.83	124.12
Life insurance	_____	90.13	120.74	86.48
Other savings and investments	_____	102.77	257.34	27.47
Total household & pers. cash exp.	_____	2674.98	3222.16	2321.39
Total family living from the farm	_____	402.44	518.01	290.93
Total cash exp. & perquisites	_____	3077.42	3740.17	2612.32
Receipts:				
Return to capital & family labor	_____	7529.30	5960.25	1972.15
Miscellaneous income	_____	17.11	1.00	45.85
Income from investments	_____	651.14	436.75	1023.00

\* 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, 1958

Items	Your farm		101 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	_____	_____	289	
Owned	_____	_____	251	
Rented	_____	_____	38	
Total farm capital	_____	_____	20668.03	21488.69
Stocks and bonds	_____	_____	102.07	125.47
Life insurance	_____	_____	238.52	277.80
Accounts receivable	_____	_____	4.92	42.93
Shares in mktng. organizations	_____	_____	59.24	68.46
Outside real estate	_____	_____	162.36	162.36
Total outside investments	_____	_____	561.11	677.02
Cash on hand and in bank	_____	_____	459.05	538.53
Other H.H. & personal assets	_____	_____	1570.38	1649.71
Dwelling	_____	_____	2798.11	2787.54
Total non-farm assets	_____	_____	5388.65	5652.80
TOTAL ASSETS	_____	_____	26056.68	27141.49
Federal Land Bank Mortgage	_____	_____	811.00	783.42
Other mortgage on farm operated	_____	_____	1731.43	1584.31
Loans on other real estate	_____	_____	-	27.03
P. C. A. loans	_____	_____	-	78.66
Chattel mortgage	_____	_____	1271.36	1058.78
Notes payable	_____	_____	821.47	721.47
Accounts payable	_____	_____	512.46	594.63
TOTAL LIABILITIES	_____	_____	5147.72	4848.30
Farmers' net worth	_____	_____	20908.96	22293.19
Gain in net worth	_____	_____		1384.23

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 \$4531 and of those in the lower third was \$346. This is a range of \$4185 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

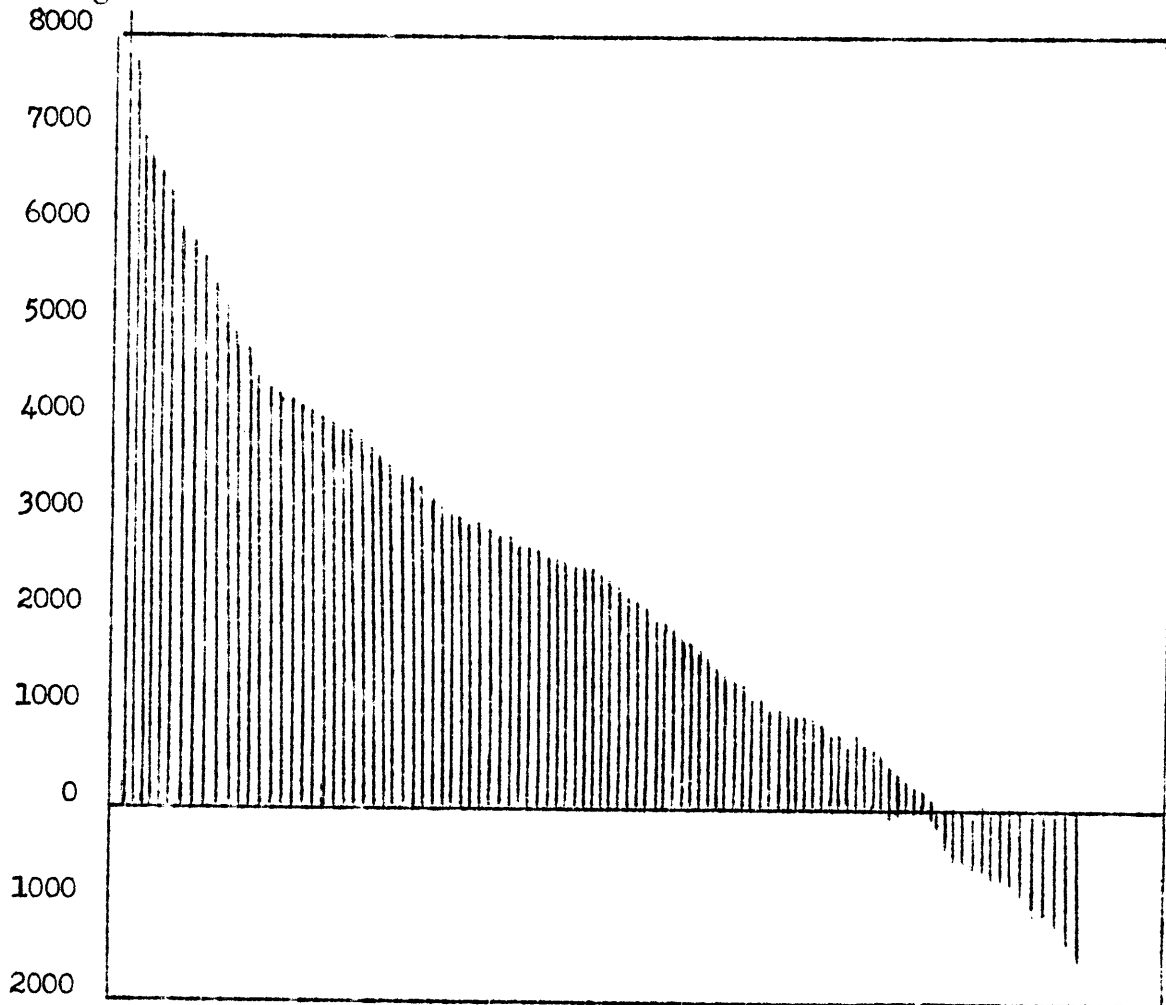


Fig. 1. Range in operator's earnings. Each line represents the earnings of one farmer.

1/ See Pond, G. A. "Why Farm Earnings Vary". Minn. Agri.Expt.Sta.Bul. 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, 1½ beef cows or bull, 1 feeder steer or heifer, 3 1/3 other beef cattle, 7 sheep, 14 lambs, 2½ hogs, 5 pigs, 50 hens, or 1,100 lbs. of turkeys produced.

TABLE VIII. MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY, 1958

Measures used in chart on page 13	Your farm	Average of 101 farms	34 most profitable farms	34 least profitable farms
Operator's labor earnings	_____	\$ 2419	\$ 4531	\$ 346
(1) Crop Yields *	_____	100	109	99
(2) % till. land in high return crops **	_____	35.8	37.4	38.2
(3) Ret. per \$100 feed to prod. livestock ***	_____	100	114	83
(4) Prod. livestock units per 100 acres ****	_____	18.6	19.7	18.3
(5) Size of business - work units	_____	351	401	292
(6) Work units per worker	_____	245	261	216
(7) Power, mach., equip., & bldg. expense per work unit	_____	9.25	9.52	10.03

Items related to some of the above measures:

(3) Index of return for \$100 feed from:				
Dairy cattle (see pp 18-19)	_____	100	104	81
Beef cattle-breeding herd (p20)	_____	100	106	46
Hogs (see page 17)	_____	100	105	90
Sheep-farm flock (see p 20)	_____	100	134	59
Chickens (see page 21)	_____	100	127	122
(4) Number of animal units	_____	33.6	41.5	25.8
(5) Work units on crops	_____	104	124	85
Work units on prod. livestock	_____	217	252	179
Other work units	_____	30	25	28
(6) Number of family workers	_____	1.3	1.4	1.3
Number of hired workers	_____	.1	.2	.1
Total number of workers	_____	1.4	1.6	1.4
(7) Power expense per work unit	_____	5.94	5.84	6.49
Crop mach. expense per work unit	_____	1.87	2.03	2.14
Livestock equip. exp. per work unit	_____	.51	.50	.58
Bldg. & fencing exp. per work unit	_____	.93	1.15	.82

\* 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 tillable 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 101 farms included in this summary are located between the dotted lines across the center of the page.

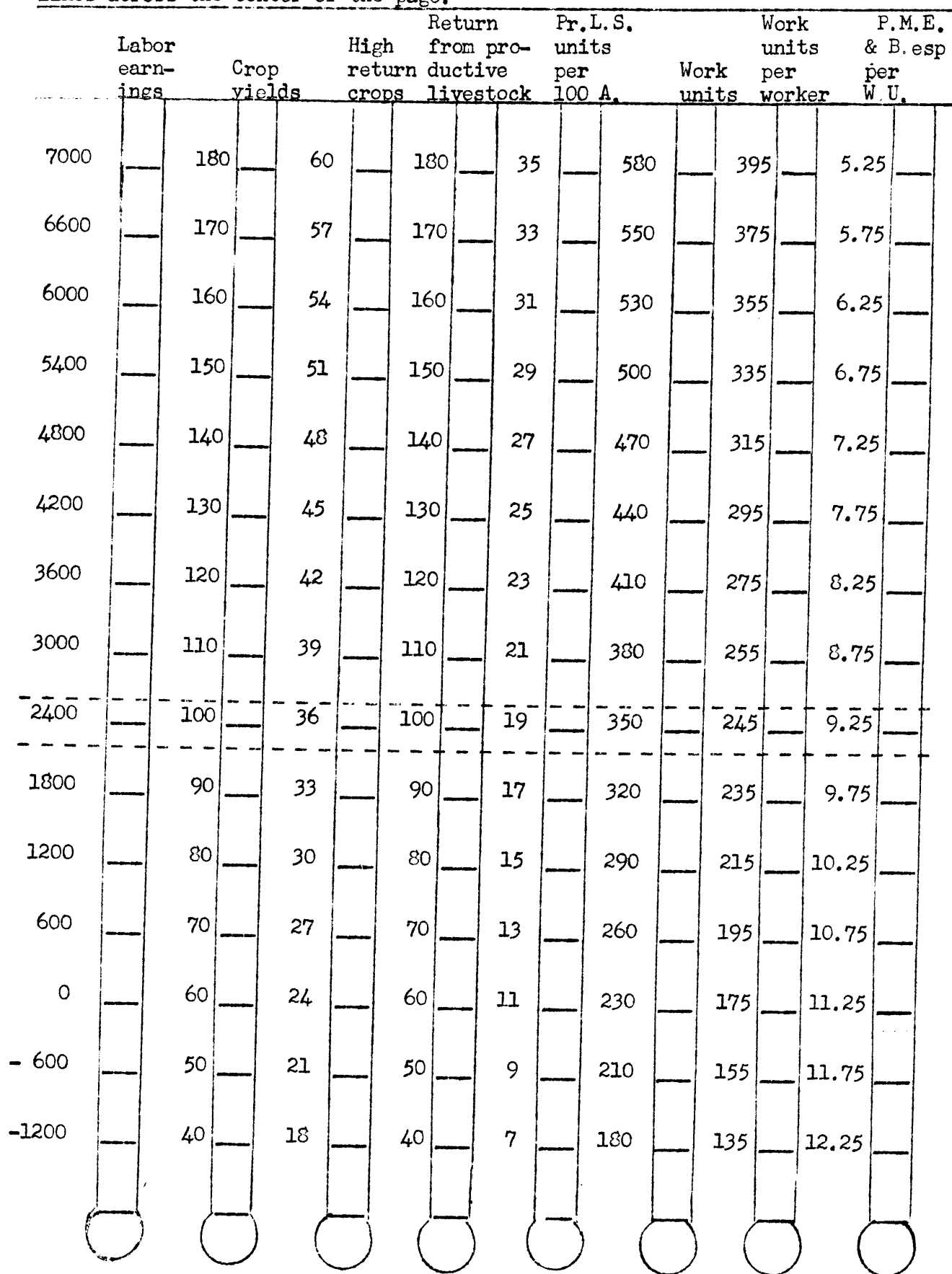




TABLE IX. DISTRIBUTION OF ACRES IN FARM, 1958

	Crop Ratings	Your farm	Average of 101 farms
Flax	B	_____	1.3
Barley	C	_____	.5
Oat & oat mixtures	C	_____	22.5
Oat silage	C	_____	2.4
Wheat	C	_____	.6
Rye	D	_____	.6
Soybeans	C	_____	<u>1.1</u>
Total small grain		_____	29.0
Garden - Seed Potatoes	A	_____	-
Potatoes	B	_____	1.1
Corn and sorghum silage	C	_____	11.8
Corn grain	D	_____	13.1
Corn fodder	D	_____	<u>1.1</u>
Total cultivated crops		_____	27.1
Alfalfa and mixtures	A	_____	28.7
Other legumes and mixtures	B	_____	15.8
Grass silage	C	_____	3.0
Legumes for seed	B	_____	1.9
Timothy and/or brome	D	_____	3.7
Other annual hay	D	_____	12.5
Wild hay on tillable land	D	_____	<u>.9</u>
Total tillable land in hay		_____	66.5
Alfalfa & alfalfa mixture pasture	A	_____	.4
Other legume & mixture pasture	C	_____	.7
Other tillable pasture	D	_____	<u>14.5</u>
Total tillable pasture		_____	15.6
Tillable land not cropped	D	_____	7.6
Soil bank	A	_____	<u>1.0</u>
TOTAL TILLABLE LAND		_____	146.8
Wild hay - non-tillable		_____	4.3
Non-tillable pasture		_____	55.8
Timber (not pastured)		_____	57.5
Roads and waste		_____	20.2
Farmstead		_____	<u>4.7</u>
TOTAL ACRES IN FARM		_____	289.3
Per cent of land tillable		_____	51.5
Per cent of land in high return crops		_____	35.8

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

TABLE X CROP YIELDS PER ACRE, 1958

Crop	Your farm	Average of farms growing each crop
Flax, bu.	_____	11.5
Barley, bu.	_____	55.7
Wheat, bu.	_____	30.4
Oats, bu.	_____	50.4
Rye, bu.	_____	16.6
Oat silage, ton	_____	7.7
Potatoes, bu.	_____	159.7
Corn and sorghum silage, ton	_____	4.7
Corn fodder, ton	_____	3.4
Corn grain, bu.	_____	25.5
Legumes for seed, lbs.	_____	139.4
Soybeans, bu.	_____	8.2
Alfalfa hay, ton	_____	1.7
Other legumes & mixtures, ton	_____	1.4
Timothy or brome, ton	_____	1.3
Other annual hay, ton	_____	1.2
Wild hay	_____	.9
Grass silage, ton	_____	4.7

#### 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, 1958

	Your farm	Avg. of 101 farms	34 most prof. farms	34 least prof. farms
Crop acres per farm	_____	142	164	113
Tractor & horse exp. per crop acre	_____	\$5.83	\$5.83	\$5.85
Crop & gen.mach.exp.per crop acre	_____	4.65	5.05	5.16

#### AMOUNT OF LIVESTOCK

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

TABLE XII. AMOUNT OF LIVESTOCK, 1958

	Your farm	Avg. of 101 farms	34 most prof. farms	34 least prof. farms
Number of milk cows	_____	16.8	19.2	14.1
Number of other dairy cattle	_____	17.4	20.9	13.8
Number of beef cattle	_____	2.8	3.4	3.2
Number of sheep	_____	7.5	1.7	7.5
Number of hens	_____	13.2	15.0	14.1
Litters of pigs raised	_____	6.1	11.0	1.8
Pounds of hogs produced	_____	4702	7678	1788

# 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.

	Dairy or dual purpose cattle			
	Cows	Other	All	Beef
Total returns	_____	_____	_____	_____
Total feed cost	_____	_____	_____	_____
Total return over feed	_____	_____	_____	_____
	Hogs	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 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 produces varied from 83 cents for those farmers in the lower one-third in feeding efficiency to a return of \$17.23 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, 1958

Items	Your farm	Avg. of 40 farms	13 farms highest in ret. above feed	13 farms lowest returns above
Feed per cwt. hogs produced, lbs.				
Corn		240	192	271
Small grains		227	391	151
Commercial feeds		84	60	73
Total concentrates		551	643	495
Skim milk & buttermilk		218	199	604
Silage & Alfalfa		9	17	-
Feed cost per cwt. hogs produced.				
Concentrates (inc. Alfalfa and silage)	\$	\$10 71	\$8.77	\$12.04
Skim milk & buttermilk	\$	1.95	.92	3.47
Pasture	\$	.28	21	.27
TOTAL FEED COSTS	\$	12.94	9.90	15.78
Net increase in val. per cwt. hogs produced		23.27	27.13	16.61
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	\$	10.33	17.23	.83
RETURNS FOR \$100 OF FEED	\$	\$197	\$276	\$113
Price received per cwt. hogs sold.	\$	24.79	27.58	18.51
No. of spring litters raised		8	11	5
No. of fall litters raised		5	8	2
Total no. of litters raised		13	19	7
No. of pigs born per litter		7 7	9.5	6 0
No. of pigs weaned per litter		6.5	8 0	4.5
Pounds of hogs produced		9929	11527	8741

#### 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 \$46 to \$367 among the 91 herds covered by this study. Some of the important factors that affected the return over feed were:

1. Rate of production (pounds butterfat & milk produced per cow)
2. Price received for butterfat
3. Feeding efficiency
4. Economy of ration (Feed cost per pound butterfat)

TABLE XV. FACTORS OF COSTS AND RETURNS FROM DAIRY COWS, 1958

Items	Your farm	Average of 89 farms	30 farms highest in butterfat per cow	30 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	306	378	229
Price rec. per lb. B.F.sold (cents)	_____	.91	.94	.87
Feed per cow, lbs.:				
Corn	_____	706	750	380
Small grain	_____	1010	1070	865
Commercial feeds	_____	950	1710	394
Legume hay	_____	4199	3776	4778
Other hay	_____	2605	3194	2431
Fodder and Stover	_____	34	99	-
Total concentrates, lbs.	_____	2666	3530	1639
Total dry roughage, lbs.	_____	6838	7069	7209
Silage	_____	5894	5558	-
Feed cost per cow:				
Concentrates	_____	\$56.66	\$70.21	\$33.94
Roughages	_____	65.60	66.42	64.00
Pasture	_____	6.78	7.27	6.67
TOTAL FEED COST	_____	\$129.04	\$143.90	\$104.61
Value of produce per cow:				
Butterfat sales	_____	263.84	\$343.75	\$177.63
Dairy produce used in house	_____	8.24	8.95	9.53
Milk fed to livestock	_____	11.08	8.40	13.94
Net increases in value of cows	_____	14.46	16.05	10.71
	_____	\$297.62	\$377.15	\$211.81
RETURNS ABOVE FEED COST PER COW	_____	\$168.58	\$233.25	\$107.20
RETURNS FOR \$100 SPENT FOR FEED	_____	\$241	\$272	\$221
Feed cost per lb.B.F.(¢)	_____	43	39	47
Number of cows*	_____	18.3	22.0	15.8

\*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, 1958

Items	Your Farm	Average of 91 Farms	30 farms highest in butter-fat per cow	30 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	403	479	319
Hay and fodder	_____	2585	3314	2205
Silage	_____	1671	1546	1340
Milk	_____	410	372	510
Feed cost per head:				
Concentrates	_____	\$10.34	\$12.43	\$6.47
Roughages	_____	22.78	26.35	19.23
Milk	_____	7.51	6.18	6.81
Pasture	_____	3.40	3.49	3.51
TOTAL FEED COST PER HEAD		\$44.03	\$48.45	\$36.02
Net increase in value of other cattle	_____	\$78.26	\$88.31	\$66.14
RETURNS ABOVE FEED COST PER HEAD	_____	\$34.23	\$39.86	\$30.12
RETURNS FOR \$100 OF FEED	_____	\$199	\$209	\$203
Number of head of other cattle	_____	18.9	18.2	22.3

TABLE XVII. FEED COSTS AND RETURNS FROM ALL DAIRY AND DUAL PURPOSE CATTLE 1958

Feeds per animal unit, lbs.				
Concentrates	_____	2038	2788	1208
Hay and fodder	_____	6125	6671	5695
Silage	_____	4893	4775	4002
TOTAL FEED COSTS PER ANIMAL UNIT	_____	\$111.50	\$125.51	\$92.64
Value of produce per animal unit:				
Dairy products	_____	\$189.10	\$252.24	\$127.42
Net increase in value	_____	59.37	60.74	55.72
TOTAL VALUE PRODUCED	_____	\$248.47	\$312.98	\$183.14
RETURNS ABOVE FEED PER ANIMAL UNIT	_____	\$136.97	\$187.47	\$ 90.50
RETURNS FOR \$100 OF FEED	_____	235	260	220
Animal units of cattle	_____	27.6	30.8	27.2

TABLE XVIII. FEED COST AND RETURNS FROM BEEF BREEDING HERD, 1958

Items	Your farm	Average of 9 farms
Beef breeding herd: No. of farms		9
Feeds per animal unit, lbs.		
Concentrates	_____	387
Legume hay	_____	2128
Other hay	_____	2797
Silage	_____	7059
Whole Milk	_____	5
Feed cost per animal unit:		
Concentrates:	\$ _____	\$10.54
Roughages	_____	57.02
Pasture	_____	7.94
Milk	_____	.03
TOTAL FEED COSTS	\$ _____	\$75.53
Value of produce per animal unit:		
Dairy products	\$ _____	\$ 1.38
Net increase in value of animals	_____	141.20
TOTAL VALUE PRODUCED	\$ _____	\$142.58
RETURNS ABOVE FEED COST PER ANIMAL UNITS	\$ _____	\$67.05
RETURNS FOR \$100 OF FEED	\$ _____	\$196
Number of animal units in the herd	_____	13.4

TABLE XIX. FEED COST AND RETURNS FROM SHEEP, 1958

Items	Your farm	Average of 12 farms
Feeds per head, *lbs.:		
Concentrates	_____	55
Legume hay	_____	147
Other hay	_____	270
Silage	_____	135
Fodder	_____	9
Feed cost per head:		
Concentrates	\$ _____	\$1.03
Roughages	\$ _____	3.90
Pasture	\$ _____	4.49
TOTAL FEED COSTS	_____	\$9.42
Value of produce per head:		
Wool	_____	\$3.26
Net increase in value of sheep	_____	10.52
TOTAL VALUE PRODUCED	_____	13.78
RETURNS ABOVE FEED COST PER HEAD	_____	\$4.35
RETURNS FOR \$100 OF FEED	_____	\$179
Number of head of sheep *		56 4

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

# CHICKENS

Sixteen farmers raising chickens submitted reports with enough detail for analysis. Information on chicks raised, death loss, and pounds produced was too incomplete to be included in the averages. Table XX shows the averages for the sixteen farmers.

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, 1958\*

Items	Your farm	Avg. of 16 farms	5 farms highest return over feed	5 farms in/lowest in ret. over feed
Feed per hen, lbs.				
Grain		90	56	84
Commercial feeds		64	37	86
Total concentrates		154	93	170
Milk		13	-	-
TOTAL FEED COST PER HEN		\$4.30	\$2.86	\$5.14
Value of produce per hen:				
Eggs sold and used in home		\$4.34	\$3.57	\$4.50
Net increase in value of chickens		\$1.92	\$2.32	.89
TOTAL VALUE PRODUCED		\$6.26	\$5.89	\$5.39
RETURNS ABOVE FEED COST PER HEN		\$1.96	\$3.03	.25
RETURNS FOR \$100 OF FEED		\$190	\$298	\$93
Price rec'd per doz. eggs sold (cents)		.33	.30	.35
Eggs laid per hen		170	165	177
Average number of hens during yr.		69	56	73


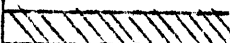
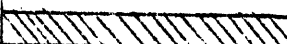
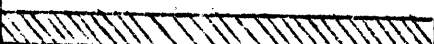
\*Includes feeds and returns from laying flock and rearing flock.



### LABOR EARNINGS CORRELATED WITH EXCELLED FACTORS

The thermometer chart on page 13 shows seven major management factors that influence farm earnings 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 units per worker, and 7. control over expenses. The combined effect of these management factors as related to farm earnings is shown below. Attention is called to the fact that farmers exceeding the average in most of the seven management factors are also those reporting the highest labor earnings.

TABLE XXI

No. of factors in which farmers excelled	No. of farms	Average Labor Earnings				
		0	1000	3000	5000	
0 or 1	17					\$ 674
2 or 3	39					1625
4 or 5	31					2845
6 or 7	12					4561