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W.E. Hauber

1957 ANNUAL REPORT

VOCATIONAL AGRICULTURE FARM MANAGEMENT PROGRAM

NORTHWESTERN MINNESOTA

UNIVERSITY OF MINNESOTA
INSTITUTE OF AGRICULTURE

and

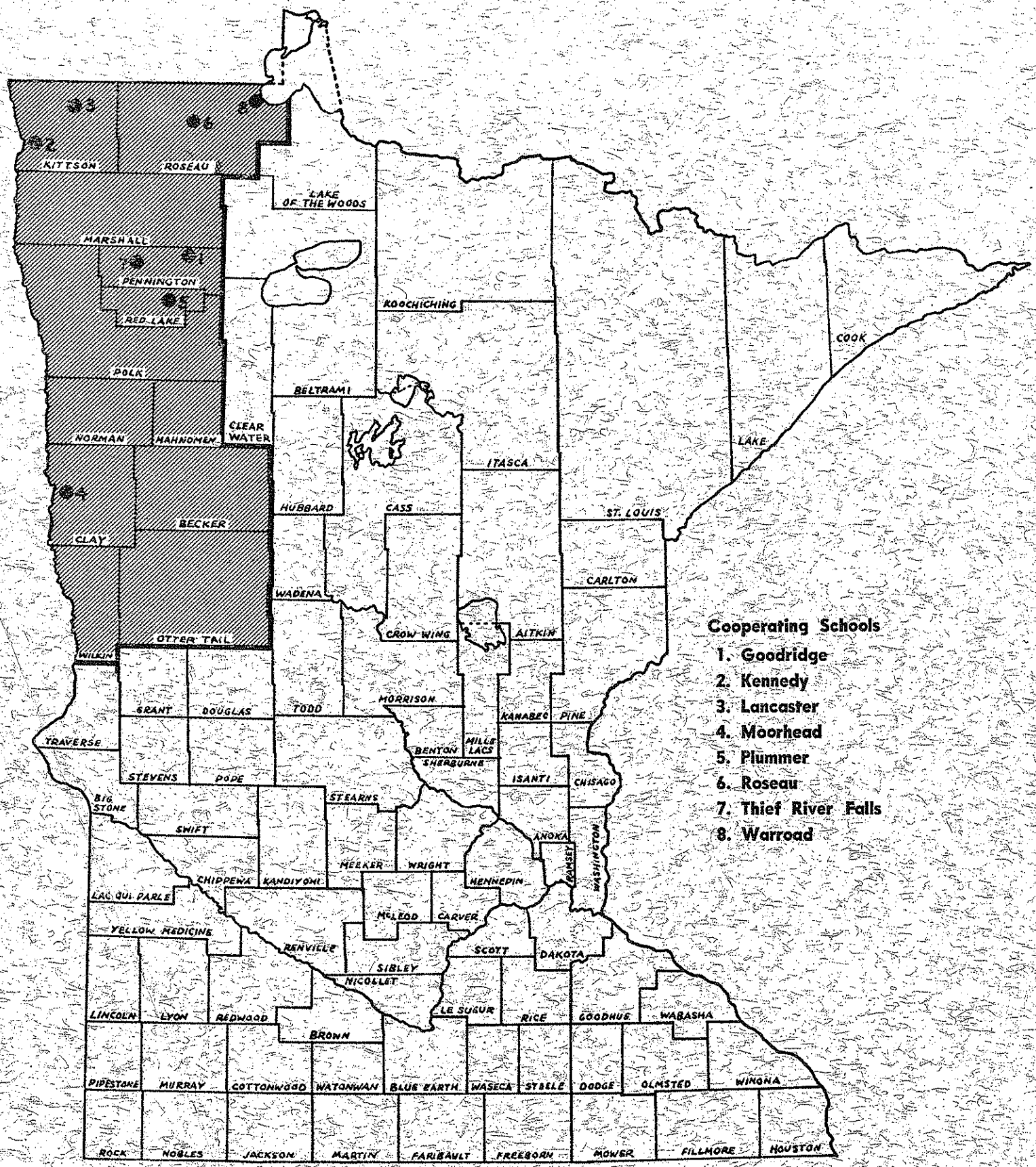
MINNESOTA DEPARTMENT OF EDUCATION
VOCATIONAL DIVISION

and

AREA VOCATIONAL TECHNICAL SCHOOL
THIEF RIVER FALLS, MINNESOTA

Cooperating

MARCH 1958


KITTSON
ROSEAU
LAKE OF THE WOODS
MARSHALL
PENNINGTON
RED LAKE
POLK
NORMAN
MAHNOMEN
CLEAR WATER
BELTRAMI
ROOCHICHING
COOK
LAKE
ITASCA
HUBBARD
CASS
ST. LOUIS
BECKER
CLAY
CARLTON
WADENA
CROW WING
AITKIN
OTTER TAIL
WILKIN
GRANT
DOUGLAS
TODD
MORRISON
KANABEC
PINE
TRAVERSE
BENTON
MILLE LACS
SHERBURNE
STEVENS
POPE
ISANTI
CHISAGO
BIG STONE
STEARNS
SWIFT
ANOKA
RAMSEY
WASHINGTON
MEEKER
WRIGHT
CHIPPEWA
KANDIYOHI
HENNEPIN
LAC QUI PARLE
McLEOD
CARVER
YELLOW MEDICINE
RENVILLE
SCOTT
DAKOTA
SIBLEY
NICOLLET
LE SUEUR
LINCOLN
LYON
REDWOOD
RICE
GOODHUE
WABASHA
BROWN
PIPESTONE
MURRAY
COTTONWOOD
WATONWAN
BLUE EARTH
WASECA
STEELE
DODGE
OLMSTED
WINONA
ROCK
NOBLES
JACKSON
MARTIN
FARIBAULT
FREEBORN
MOWER
FILLMORE
HOUSTON
Cooperating Schools
1. Goodridge
2. Kennedy
3. Lancaster
4. Moorhead
5. Plummer
6. Roseau
7. Thief River Falls
8. Warroad

1957 REPORT OF THE FARM MANAGEMENT SERVICE FOR VOCATIONAL AGRICULTURE IN NORTHWESTERN MINNESOTA

ARNT AUNE

INDEX

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. Hazel Maves, Adeline Flatland, Mrs. Pearl Larson 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.

Lauren Granger, through a grant of funds from the Hill Family Foundation, is employed as co-ordinator for the program in the state. Other 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 and Dr. G. A. Pond of the Agricultural Economics Department and E. H. Hartmans and H. G. Routhe of the Agricultural Extension Service have been available as consultants.

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 8 schools in Northwestern Minnesota. The following tabulation shows the number of 1957 farm records submitted and the names of the instructor:

School	No. of records	Instructor
Goodridge	4	Oscar Breiland
Kennedy	1	Einar Palm
Lancaster	2	Leslie Taylor
Moorhead	2	K. N. Grimsrud
Plummer	1	Vern Mortenson
Roseau	6	Joe Freeman
Thief River Falls	29	Ted Kusmak Jon Metusalem Arnt Aune
Warroad	9	Glen Bergan
TOTAL	54	

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 Captial investment per farm varied from $4390 to $61,730. 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 principal 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, 1957

Items	Your farm Jan. 1	Your farm Dec. 31	Average of 54 farms Jan. 1	Average of 54 farms Dec. 31
Size of farm (acres)	_____		389	
Size of business (work units)*	_____		379	
Dairy and dual purpose cows	_____	_____	$ 1925	$ 1846
Other dairy & dual purpose cattle	_____	_____	819	872
Beef cattle (incl. feeders)	_____	_____	530	600
Hogs	_____	_____	78	224
Sheep (including feeders)	_____	_____	286	289
Poultry (including turkeys)	_____	_____	66	92
Productive livestock	_____	_____	3706	3923
Horses	_____	_____	19	18
Crop, seed and feed	_____	_____	2534	1815
Auto & truck (farm share)	_____	_____	1053	1050
Tractor & motors	_____	_____	1870	1755
Crop and general machinery	_____	_____	3359	3197
Livestock equipment	_____	_____	326	504
Machinery and equipment (total)	_____	_____	6608	6506
Land	_____	_____	9260	9326
Buildings, fences, etc.	_____	_____	3300	3640
Total farm capital	_____	_____	$ 25,427	$ 25,228

Items	12 most profitable farms Jan. 1	12 most profitable farms Dec. 31	12 least profitable Jan. 1	12 least profitable Dec. 31
Size of farm (acres)	360		486	
Size of business (work units)*	402		360	
Dairy and dual purpose cows	$ 2286	$ 2425	$ 1760	$ 1522
Other dairy and dual purpose cattle	988	1138	987	995
Beef cattle (incl. feeders)	1074	1256	170	330
Hogs	23	466	121	90
Sheep (including feeders)	352	439	113	98
Poultry (including turkeys)	71	70	88	110
Total Productive livestock	4794	5795	3239	3145
Horses	44	29	11	9
Crop, seed, and feed	2543	1926	2637	1759
Auto & truck, (farm share)	697	765	1643	1568
Tractors and motors	1209	1071	2827	2655
Crop & general machinery	2116	1970	4151	4079
Livestock equipment	306	693	328	537
Total Machinery & equipment	4328	4499	8949	8839
Land	7413	7413	11040	10574
Buildings, fences, etc.	2814	3838	3522	3780
Total farm capital	$ 21,936	$ 23,500	$ 29,398	$ 28,106

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

Table 2. Summary of Farm Earnings (Cash Statement), 1957

Items	Your farm	Average of 54 farms	12 most profitable farms	12 least profitable farms
FARM RECEIPTS				
Dairy and dual-purpose cattle	$ _____	$ 936	$ 638	$ 1408
Dairy products	_____	2992	3667	2187
Beef cattle (including feeders)	_____	350	739	91
Hogs	_____	343	277	349
Sheep and wool (including feeders)	_____	279	250	149
Horses	_____	7	27	-
Poultry (including turkeys)	_____	226	25	23
Eggs	_____	252	319	281
Honey sold	_____	74	-	-
Corn	_____	~~770~~ 62	~~641~~ 237	~~1023~~ —
Small grain	_____	~~1542~~ 2405	~~1393~~ 2054	~~1731~~ 27
Other crops	_____	~~249~~ 94	~~335~~ 78	~~49~~ 32
Mach. & equip. sold & gas tax refund	_____	386	135	979
Pulp sold	_____	26	-	-
Income from work off the farm	_____	238	141	328
Miscellaneous	_____	264	207	188
(1) Total farm sales	_____	8934	8794	8787
(2) Increase in farm capital	_____	-	1562	-
(3) Familyliving from the farm	_____	250	259	233
(4) Total farm receipts (1)+(2)+(3)	_____	$ 9,184	$10,615	$ 9,020
FARM EXPENSES				
Dairy and dual-purpose cattle bought	_____	169	15	307
Beef cattle bought (incl. feeders)	_____	27	29	42
Hogs bought	_____	58	96	11
Sheep bought (including feeders)	_____	16	21	30
Horses bought	_____	2	-	-
Bees bought	_____	52	-	-
Poultry bought (including turkeys)	_____	76	25	43
Misc. livestock expense	_____	202	203	185
Feed bought	_____	800	658	680
Fertilizers	_____	238	186	399
Other crop expense	_____	550	429	614
Custom work hired	_____	268	281	292
Gas, oil and grease bought(farm share)	_____	826	719	901
Rep. of mechanical power (farm share)	_____	315	341	242
Repair and upkeep of real estate	_____	130	89	265
Repair & upkeep of crop & gen. mach.	_____	208	160	246
Repair & upkeep of livestock equip.	_____	52	55	69
Wages of hired labor	_____	538	521	857
Electricity expense (farm share)	_____	164	160	154
Real estate & pers. prop. taxes	_____	382	344	384
General farm expense	_____	123	100	148
(5) Total cash operating expense	_____	5196	4432	5869
(6) Cap. purchases-mech. power(f.share)	_____	596	426	662
(7) Cap. purchases-crop & gen. mach.	_____	411	297	531
(8) Cap. purchases-livestock equipment	_____	235	280	339
(9) Cap. purchases-bldgs. & fencing etc.	_____	959	1466	1120
(10) Total farm purchases (5) to (9)	_____	7397	6901	8521
(11) Decrease in farm capital	_____	200	-	1293
(12) Interest on farm capital	_____	1269	1136	1438
(13) Unpaid family labor	_____	123	97	177
(14) Board furnished hired labor	_____	121	71	280
(15) Total farm expenses (10) - (14)	_____	$ 9,110	$8,205	$11,709
(16) Labor earnings (4) - (15)	_____	$ 74	$2,410	- $ 2,689

Table 3. Summary of Farm Earnings (Enterprise Statement) 1957*

Items	Your farm	Average of 54 farms	12 most profitable farms	12 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual-purpose cows	_____	$ 3169	$ 3827	$ 2491
Other dairy & dual-purpose cattle	_____	753	943	713
Beef breedingherd	_____	369	765	223
Feeder cattle	_____	41	155	-
Hogs	_____	455	638	326
Sheep - farm flock	_____	265	316	104
Sheep - feeders	_____	-	-	-
Turkeys	_____	173	-	-
Chickens	_____	305	354	311
All productive livestock	_____	5530	6998	4168
Value of feed fed to livestock	_____	2886	3172	2614
Return over feed from livestock	_____	2644	3826	1554
Crops, seed and feed	_____	3154	3666	2883
Income from labor off the farm	_____	153	91	149
Bees	_____	25	-	-
Agricultural conservation payments	_____	193	159	120
Miscellaneous	_____	60	49	69
(1) Total returns & net increases	_____	6229	7791	4775
EXPENSES AND NET DECREASES				
Horses	_____	$ 13	$ 15	$ 13
Truck	_____	288	226	389
Auto (farm share)	_____	348	286	310
Tractor	_____	1005	903	1037
Elec. & gas engine exp.(farm share)	_____	159	137	159
Hired Power	_____	132	137	147
Total Power	_____	1945	1704	2055
Crop and general machinery	_____	785	626	837
Livestock equipmemt	_____	129	127	162
Buildings, fencing, and tiling	_____	439	350	837
Misc. productive livestock expense	_____	200	203	185
Labor	_____	883	791	1418
Real estate taxes	_____	255	242	258
Personal property tax	_____	127	102	126
Insurance	_____	54	43	47
General Farm	_____	69	57	101
Interest on farm capital	_____	1269	1136	1438
(2) Total expenses & net decreases	_____	$ 6155	$ 5381	$ 7464
(3) Operator's earnings (1) - (2)	_____	$ 74	$ 2410	- $ 2689

* 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, 1957

Items	Your farm	Average of 41 farms	Your farm	Average of 41 farms
Adult equivalent - family	_____	3.0		
- other	_____	.3		
Whole milk	_____	1125 qts.	$_____	$ 79
Skim milk	_____	81 qts.	_____	1
Cream	_____	95 pts.	_____	28
Beef	_____	422 lbs.	_____	75
Hogs	_____	135 lbs.	_____	29
Poultry	_____	71 lbs.	_____	12
Eggs.	_____	53 doz.	_____	15
Vegetables and fruits			_____	29
Fuel			_____	8
Total			$_____	$276

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 $175 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, 1957

Items	Your farm	Average of 41 farms	12 most profitable farms	12 least profitabl farms
Number of persons - family	_____	3.9	3.5	4.3
Number of adult equivalent - family	_____	3.0	2.8	3.1
other*	_____	.3	.1	.6
Food and meals bought	$ _____	$ 680	$ 679	$ 744
Operating and supplies	_____	185	196	166
Furnishings and equipment	_____	145	137	111
Clothing and clothing material	_____	206	248	204
Personal care, personal spending	_____	63	54	62
Education, recreation and development	_____	156	120	114
Gifts and special events	_____	94	90	141
Medical care and health insurance	_____	231	163	261
Church, welfare	_____	119	205	80
Personal share of auto & truck expense	_____	112	128	104
Operator's share of upkeep on dwelling	_____	13	23	8
Household share of elec. & tel. expense	_____	83	99	71
Total Cash living expense	$ _____	$ 2087	$ 2142	$ 2066
Social Security	_____	12	23	12
H. H. & Personal share of new auto	_____	129	69	376
New dwelling	_____	205	-	730
Taxes and other deductions	_____	8	10	-
Life insurance	_____	61	89	100
Other savings and investments	_____	494	14	405
Total H.H. and Personal Cash Expense	$ _____	$ 2996	$ 2347	$ 3689
Total family living from the farm	_____	263	258	261
Total Cash Expense and Perquisites	$ _____	$ 3259	$ 2605	$ 3950
Receipts:				
Return to capital and family labor	$ _____	$ 1846	$ 3270	$ 1395
Income from investments	_____	86	50	268
Sale of outside investments	_____	-	-	-
Other personal income	_____	1019	181	2410

* 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 progres: 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, 1957

Items	Your farm Jan. 1	Your farm Dec. 31	54 farms Jan. 1	54 farms Dec. 31
Total acres in farm	_____		389	
Total farm capital	_____	_____	$25,427	$25,228
Stocks and bonds	_____	_____	573	690
Life insurance	_____	_____	256	254
Accounts receivable	_____	_____	46	67
Shares in marketing organizations	_____	_____	433	498
Outside real estate	_____	_____	170	77
Cash on hand and in bank	_____	_____	1041	843
Household goods and clothing	_____	_____	1308	1366
Personal share of auto & truck	_____	_____	327	384
Dwelling	_____	_____	1753	1917
Total non-farm assets	_____	_____	5907	6096
TOTAL ASSETS	_____	_____	$31,334	$31,324
Federal Land Bank mortgage	_____	_____	663	633
FHA Real Estate mortgage	_____	_____	439	714
Other mortgage on land operated	_____	_____	1711	1757
Loans on other real estate	_____	_____	13	9
Production Credit Association	_____	_____	310	372
FHA Chattel mortgage	_____	_____	213	233
Crop loans	_____	_____	451	212
Other chattel mortgages	_____	_____	530	619
Notes payable	_____	_____	439	712
Accounts payable	_____	_____	1326	1360
TOTAL LIABILITIES	_____	_____	6,095	6,621
Farmer's Net Worth	_____	_____	$25,239	$24,703
Gain or decrease in net worth		_____		$ -536

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	.7 per acre
Other dairy & du. purp.cattle	3.5 per an. unit*	Corn husked	1.1 per acre
Beef breeding herd	3.5 per an. unit*	Corn, silage	1.7 per acre
Feeder cattle	.25 per 100 lbs.	Corn, fodder	1.0 per acre
Sheep - farm flock	1.5 per an. unit*	Alfalfa hay	.9 per acre
Sheep - feeders	.3 per 100 lbs.	Other hay crops	.6 per acre
Hogs	.2 per 100 lbs.	Legume seed	1.0 per acre
Hens	20.0 per 100 hens	Grass silage	1.0 per acre
Potatoes	3.8 per acre		

* Animal unit represents one dairy cow or bull, two other dairy cattle, 1¼ 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 $2410 and of those in the lower 25 per cent was -$2689. This is a range of $5099 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

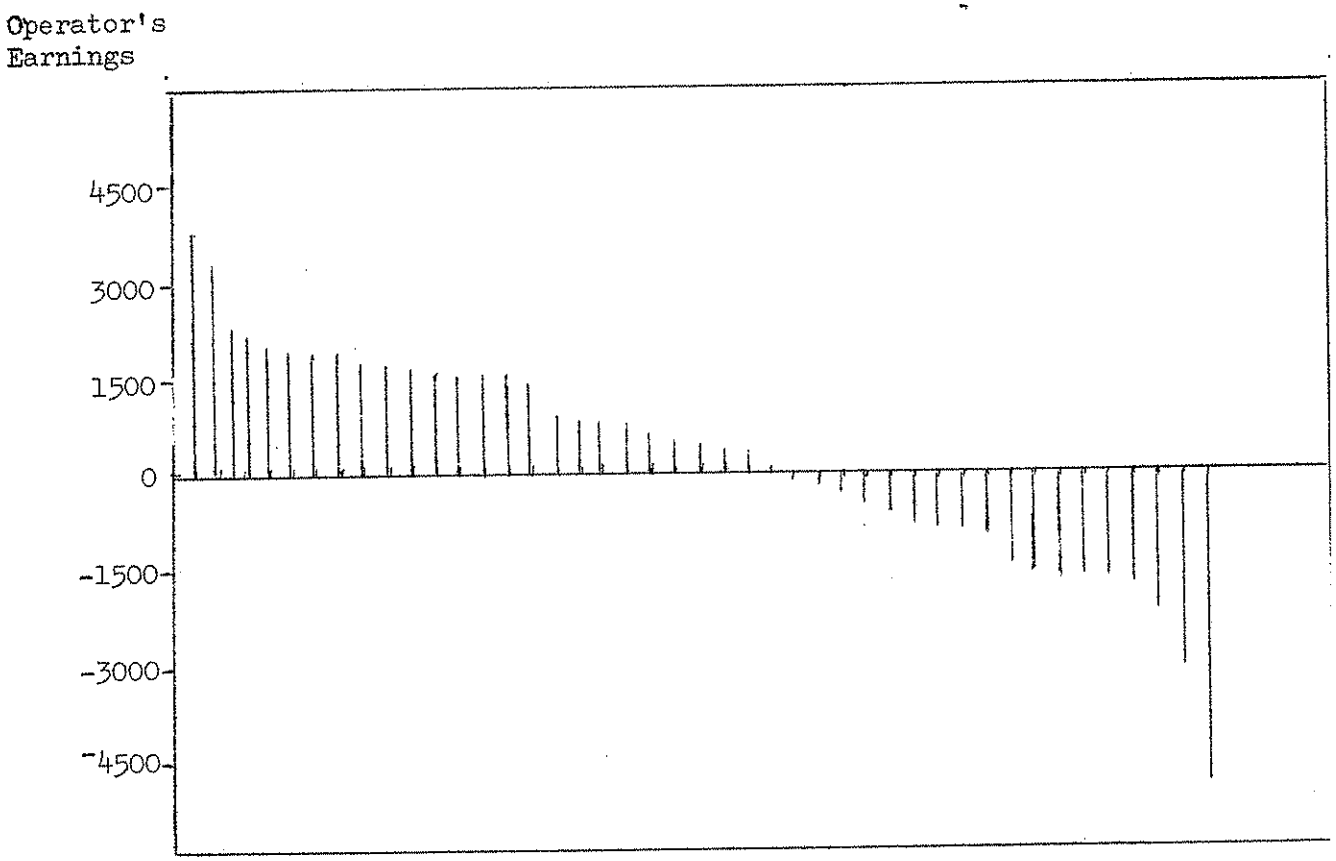


Fig. 1. Range in operator's earnings
Each line represents the earning of one farmer

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.

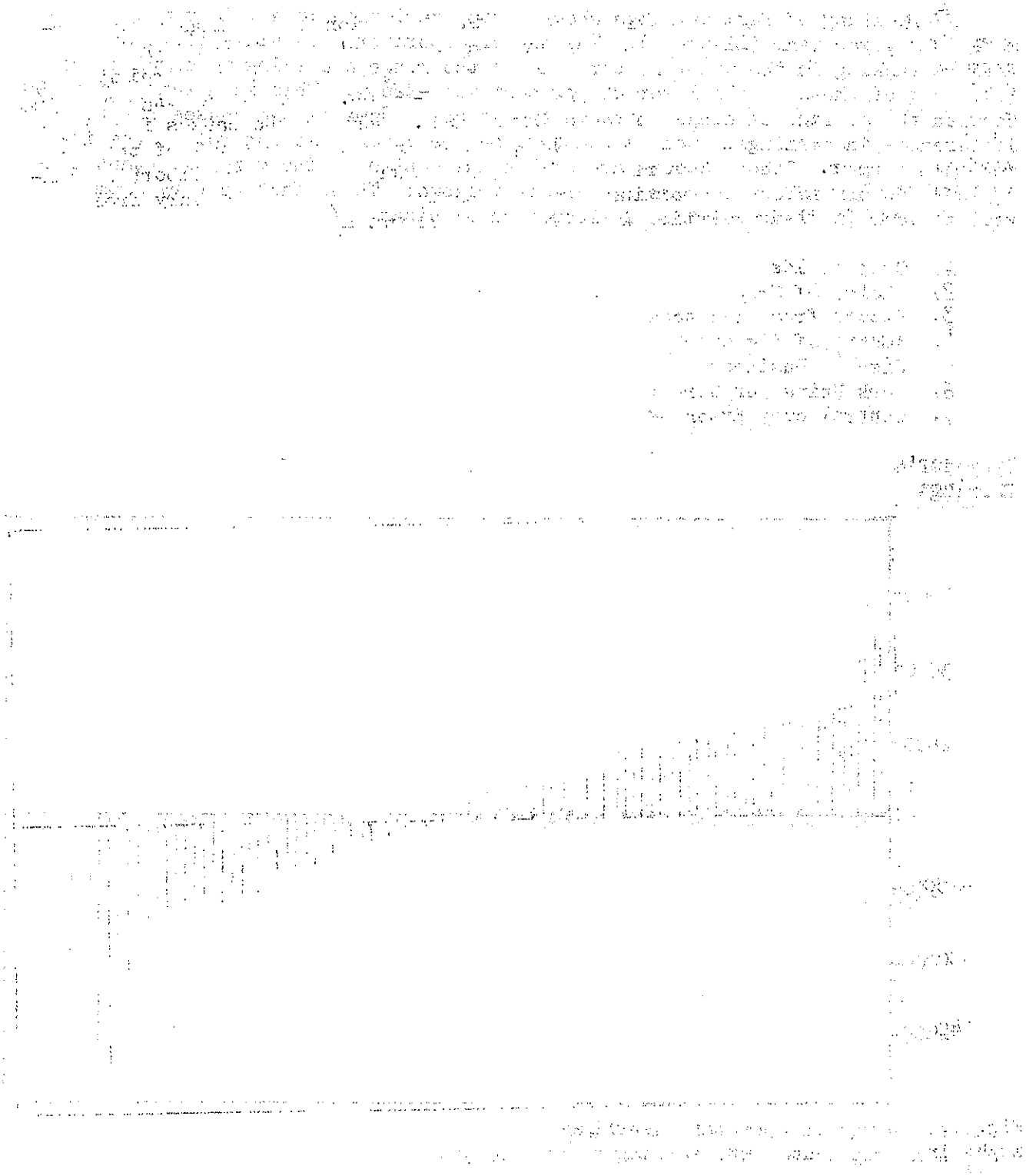


Table 8. Measures of Farm Organization and Management Efficiency, 1957

Measures used in chart on page 11	Your farm	Average of 54 farms	12 most profitable farms	12 least profitable farms
Operator's earnings	$_____	$ 74	$ 2410	-$ 2689
(1) Crop yields*	_____	100	101	76
(2) Per cent tillable land in high return crops**	_____	49	40	44
(3) Return for $100 feed to Productive Livestock ***	_____	100	113	86
(4) Productive livestock units per 100 A.****	_____	8.6	11.8	5.8
(5) Size of business - work units	_____	379	402	360
(6) Work units per worker	_____	274	305	224
(7) Power, machinery, equipment and building expense per work unit	$_____	$8.88	$6.98	$10.79
Items related to some of the above measures:				
(3) Index of return for $100 feed from:				
Dairy cattle (see pages 15 & 16)	_____	100	112	82
Beef cattle-breeding herd(p. 18)	_____	100	149	100
Hogs (see page 19)	_____	100	103	83
Chickens (see page 18)	_____	100	110	68
(4) Number of animal units	_____	28.1	36.4	23.5
(5) Work units on crops	_____	180	167	195
Work units on Productive Livestock	_____	191	234	165
(6) Number of family workers	_____	1.1	1.0	1.1
Number of hired workers	_____	.2	.3	.3
Total number of workers	_____	1.3	1.3	1.4
(7) Power expense per work unit	$_____	$5.14	$4.23	$5.70
Crop mach. expense per work unit	$_____	2.10	1.56	2.32
Livestock equipment expense per work unit	$_____	.34	.31	.45
Buildings and fencing expense per work unit	$_____	1.17	.87	2.32

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

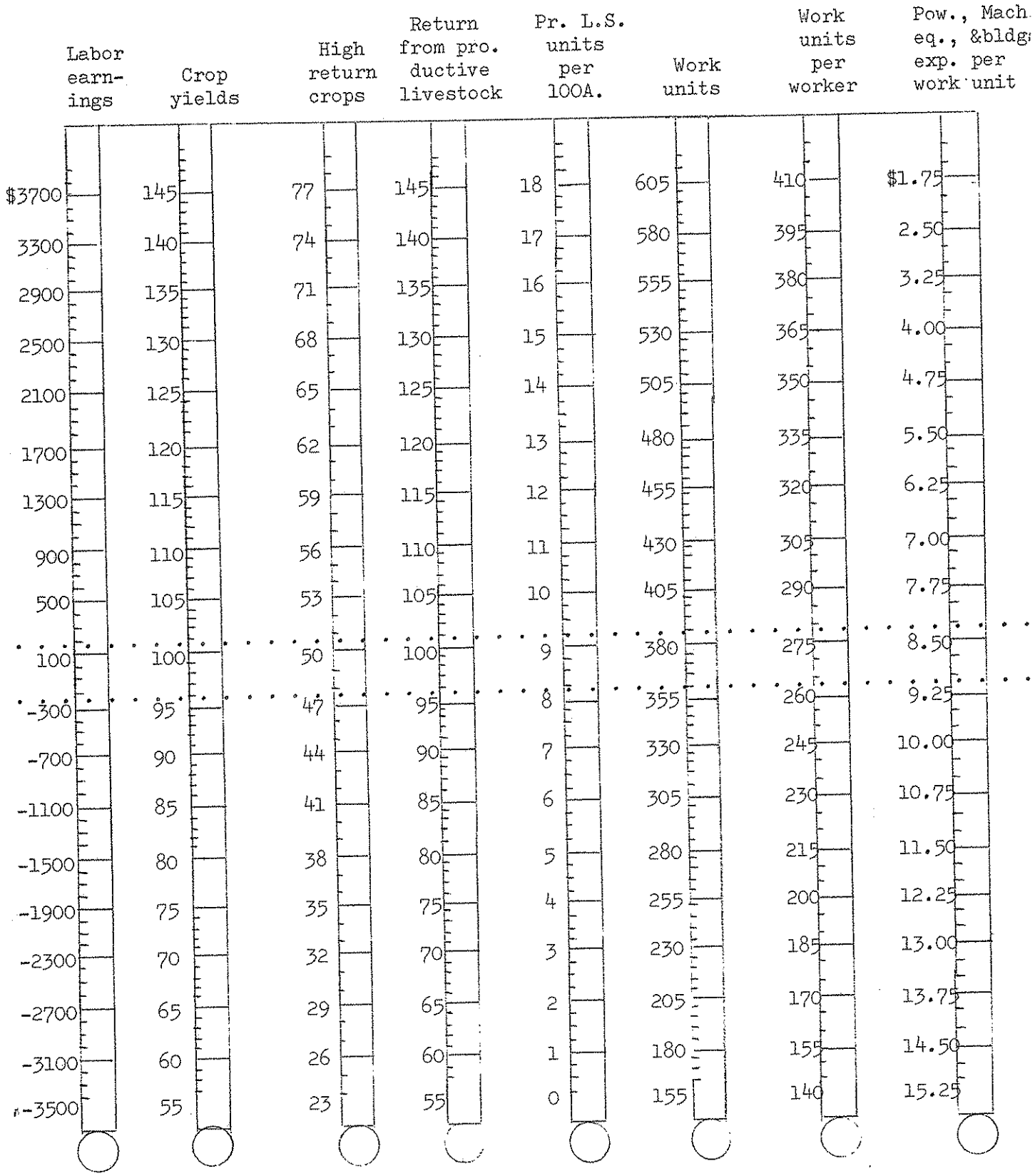


Table 9. Distribution of Acres in Farm, 1957

Crop	Crop ratings*	Your farm	Average of 54 farms
Flax	A	_____	46.3
Soybeans	A	_____	1.5
Barley	B	_____	17.6
Wheat	B	_____	23.1
Oats & oat mixtures	C	_____	67.0
Rye, millet	D	_____	1.3
Total small grain		_____	156.8
Potatoes	A	_____	.1
Corn grain	C	_____	2.0
Corn fodder	D	_____	3.3
Corn silage	C	_____	1.3
Total cultivated crops		_____	6.7
Grass silage	A	_____	.3
Alfalfa and Alfalfa mixture	A	_____	35.2
Alfalfa seed	B	_____	.1
Red or alsike clover hay	B	_____	4.6
Red or alsike clover seed	B	_____	3.4
Sweet clover seed	C	_____	.4
Other legumes and legume mixture hay	C	_____	5.7
Brome and timothy grass seed	C	_____	8.4
Brome or timothy hay	D	_____	18.4
Wild hay	D	_____	2.4
Annual hay	D	_____	.5
Total tillable land in hay		_____	79.4
Alfalfa pasture	A	_____	2.8
Other legumes and mixtures	C	_____	5.1
Other tillable pasture	D	_____	19.9
Total tillable land in pasture		_____	27.8
Tillable land not cropped	D	_____	40.0
Total Tillable land		_____	311.0
Wild hay		_____	6.8
Non-tillable pasture		_____	28.7
Timber (not pastured)		_____	12.4
Roads and waste		_____	13.9
Farmstead		_____	9.8
Brush		_____	6.5
Total acres in farm		_____	389.1
Percent land tillable		_____	79.0
Percent tillable land in high returncrops		_____	49.0

* 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, 1957

Crop	Your farm	Average of Farms growing each crop
Flax, bu.	_____	1.9
Barley, bu.	_____	13.9
Wheat, bu.	_____	14.2
Oats, bu.	_____	30.8
Rye, bu.	_____	17.9
Soybeans, bu.	_____	-
Potatoes, bu.	_____	-
Corn grain, bu.	_____	~~46.7~~ 22.
Corn fodder, tons	_____	1.0
Corn silage, tons	_____	6.0
Alfalfa hay, tons	_____	1.8
Alfalfa seed, lbs.	_____	-
Red or alsike clover hay, tons	_____	.5
Red or alsike clover seed, lbs.	_____	196
Bluegrass seed, lbs.	_____	-
Sweet clover seed, lbs.	_____	300
Other legumes and legume mixture hay, tons	_____	1.3
Brome and timothy seed, lbs.	_____	77
Brome or timothy hay, tons	_____	1.1
Wild hay, tons	_____	.7
Annual hay, tons	_____	.4
Grass silage, tons	_____	6.6

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 570 with an average of 245 (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, 1957

Items	Your Farm	Average of 54 farms	12 most profitable farms	12 least profitable farms
Crop acres per farm	_____	245	223	290
Tractor expense per crop acre	_____	$4.10	$4.05	$3.57
Crop & gen. mach. exp. per crop acre	_____	3.20	2.80	2.88

AMOUNT OF LIVESTOCK

The farmers cooperating in this study are predominantly livestock farmers. 86% of these farmers maintained dairy cattle, 45% poultry, 26% raised sheep, 15% kept beef cattle and 45% raised one or more hogs.

Table 12. Amount of Livestock, 1957

	Your farm	Average of 54 farms	12 most profitable farms	12 least profitable farms
Number of milk cows	_____	13.1	15.3	11.2
Number of other dairy cattle	_____	13.9	15.6	13.6
Number of beef cattle (incl.feeders)	_____	6.2	8.5	7.2
Number of ewes	_____	12.0	17.0	4.4
Number of hens	_____	60.4	70.0	60.0
Litters of pigs raised	_____	1.6	2.6	1.0
Pounds of hogs produced	_____	2179	3274	1044

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 dualpurpose 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, 1957

	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 $2.63 to $241.48 among the 40 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, 1957

Items	Your farm	Average of 40 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	284	339	207
Price rec. per lb. B.F. sold (cream)	$_____	$ .62	$ .63	$ .62
Price rec. per lb. B.F. sold (milk)	$_____	$ .90	$ .91	$ .82
Feed per cow, lbs.:				
Corn	_____	19	47	-
Small grain	_____	2039	2557	1593
Commercial feeds	_____	467	456	299
Legume hay	_____	5276	5402	4059
Other hay	_____	3124	2569	4154
Fodder and stover	_____	139	341	-
Total Concentrates	_____	2526	3061	1892
Total dry roughages	_____	8524	8313	8213
Silage	_____	3144	4784	1484
Milk	_____	35	85	-
Feed cost per cow:				
Concentrates	$_____	$ 48.27	$ 60.71	$ 31.73
Roughages	_____	55.96	58.19	48.42
Pasture	_____	7.00	7.00	7.00
Milk	_____	.11	.28	-
TOTAL FEED COSTS	_____	$111.34	$126.18	$ 87.15
Value of produce per cow:				
Butterfat sales	$_____	$233.55	$297.67	$140.50
Dairy produce used in house	_____	6.47	6.30	6.47
Milk to livestock	_____	2.76	3.17	-
Net increasein value of cows	_____	2.07	- 2.42	1.12
TOTAL VALUE PRODUCED	$_____	$244.85	$304.72	$148.09
RETURNS ABOVE FEED COST PER COW	$_____	$133.51	$178.54	$ 60.94
RETURNS FOR $100 OF FEED	$_____	$ 220	$ 241	$ 170
Feed cost per lb. B.F. (cents)	$_____	$ .39	$ .37	$ .42
Number of cows	_____	16.3	19.5	12.3

Table 15. Feed Costs & Returns from Other Dairy & Dual Purpose Cattle, 1957

Items	Your farm	Average of 40 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	348	398	143
Hay and fodder	_____	3360	2868	3691
Silage	_____	1048	1606	131
Skim milk	_____	213	269	-
Whole milk	_____	51	50	-
Feed cost per head:				
Concentrates	$_____	$ 9.03	$ 9.56	$ 3.29
Roughages	_____	21.86	20.15	20.87
Milk	_____	2.35	2.47	-
Pasture	_____	3.48	3.49	3.49
TOTAL FEED COSTS PER HEAD	$_____	$36.72	$35.67	$27.65
Net inc. in value of other cattle	_____	53.50	57.68	50.49
RETURNS ABOVE FEED COST PER HEAD	_____	16.78	22.01	22.84
RETURNS FOR $100 OF FEED	_____	$ 145	$ 161	$ 182
Number of head of other cattle	_____	16.4	18.5	11.3

Table 16. Feed Costs and Returns from All Dairy & Dual Purpose Cattle, 1957

Items	Your farm	Average of 40 farms	12 farms highest in butterfat per cow	12 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	_____	1929	2333	1384
Hay and fodder	_____	7941	7489	7875
Silage	_____	2806	4281	1142
TOTAL FEED COSTS PER ANIMAL UNIT	$_____	$97.31	$106.80	$76.73
Value of produce per animal unit:				
Dairy products	$_____	$162.04	$206.20	$100.99
Net inc. in val.of dairy cattle	_____	37.15	35.54	35.92
TOTAL VALUE PRODUCED	_____	$199.19	$241.74	$136.91
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	$101.88	$134.94	$ 60.18
RETURNS FOR $100 OF FEED	_____	$204	$ 226	$ 178
Animal units of cattle	_____	24.2	28.8	17.9

Table 17. Feed Costs and Returns from Farm Flock of Sheep, 1957

Items	Your farm	Average of 9 farms
Feeds per head,* lbs.		
Concentrates	_____	108
Legume hay	_____	522
Other hay	_____	76
Silage	_____	9
Feed cost per head:		
Concentrates	$_____	$ 1.89
Roughages	_____	3.52
Pasture	_____	1.15
TOTAL FEED COSTS	$_____	$ 6.56
Value of produce per head:		
Wool	$_____	$ 3.61
Net increase in value of sheep	_____	11.21
TOTAL VALUE PRODUCED	$_____	$14.82
RETURNS ABOVE FEED COST PER HEAD	$_____	$ 8.26
RETURNS FOR $100 OF FEED	$_____	$ 226
Price per cwt. of lambs sold	$_____	$20.27
Price per lb. of wool sold	_____	66.9
Pounds of wool per sheep sheared	_____	7.1
Number of ewes kept for lambing	_____	52.7
Per cent lamb crop**	_____	119
Per cent death loss**	_____	5.7
Pounds of sheep produced	_____	4896

* Two lambs under six months of age considered as one head.
** Lambs which die during month of birth are not included.

CHICKENS

Forty 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, 1957*

Items	Your farm	Average of 16 farms
Feed per hen, lbs.:		
Grain	_____	75
Commercial feeds	_____	40
Total Concentrates	_____	115
TOTAL FEED COST PER HEN	$_____	$ 2.86
Value of Produce per hen:		
Eggs sold and used in house	$_____	$ 3.63
Net inc. in value of chickens	$_____	.66
TOTAL VALUE PRODUCED	$_____	$ 4.29
RETURNS ABOVE FEED COST PER HEN	$_____	$ 1.43
RETURNS FOR $100 OF FEED	$_____	$ 149
Price rec'd. per doz. eggs sold (cents)	$_____	$ .28
Eggs laid per hen	_____	156
Ave. no. hens on farm during year	_____	226
Percent death loss of hens	_____	11%

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

Table 19. Feed Costs and Returns from Beef Cattle, 1957

Items	Your farm	Average of 7 farms
Feeds per animal unit, lbs.:		
Concentrates	_____	513
Legume	_____	4462
Other hay	_____	2505
Silage	_____	2176
Whole milk	_____	28
Feed Cost per animal unit:		
Concentrates	$_____	$ 10.69
Roughages	_____	46.34
Milk	_____	.93
Pasture	_____	$ 7.69
TOTAL FEED COSTS	$_____	$ 65.65
Value of produce per animal unit:		
Dairy Products	$_____	$ 4.65
Net increase in value of animals	_____	125.32
TOTAL VALUE PRODUCED	_____	$129.97
RETURNS ABOVE FEED COST PER ANIMAL UNIT	$_____	$ 64.32
RETURNS FOR $100 OF FEED	$_____	$ 198
Number of cows and herd bulls	_____	14.1
Number of animal units in the herd	_____	20.8

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, 1957

Items	Your farm	Average of 14 farms
Feed per cwt. hogs produced, lbs.:		
Corn	_____	116
Small grain	_____	295
Commercial feeds	_____	120
Total concentrates	_____	531
Skim milk	_____	67
Feed cost per cwt. hogs produced:		
Concentrates	$_____	$10.12
Skim milk	_____	.21
Pasture	_____	.51
TOTAL FEED COST	$_____	$10.84
Net increase in val. per cwt. hogs prod.	$_____	$17.32
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	$_____	$ 6.40
RETURNS FOR $100 FEED	$_____	$ 158
Price received per cwt. hogs sold	$_____	$ 17
No. of spring litters raised	_____	3.2
No. of fall litters raised	_____	1.8
Total No. of litters raised	_____	5.0
No. of pigs born per litter	_____	9.7
No. of pigs weaned per litter	_____	7.8
Pounds of hogs produced	_____	8181

Table 21. Average Prices of Feed, and Produce used in Home, 1957

Feed Prices

Farm Grown Grains		Hay	
Corn	$1.00 per bu.	Alfalfa	$12.00 per Ton
Oats	.50 per bu.	Red Clover	8.00 per Ton
Barley	.91 per bu.	Timothy	6.00 per Ton
Wheat	2.09 per bu.		
Other Roughages		**Milk for Feed**	
Corn Silage	$5.00 per Ton	Whole milk	$ 3.25 per cwt.
Grass Silage	5.00 per Ton	Skim milk	.34 per cwt.

Home Produce

Milk	7 ¢ per quart
Cream	28¢ per pint
Eggs	30¢ per dozen
Poultry	15¢ per pound
Beef	18¢ per pound
Hogs	16¢ per pound