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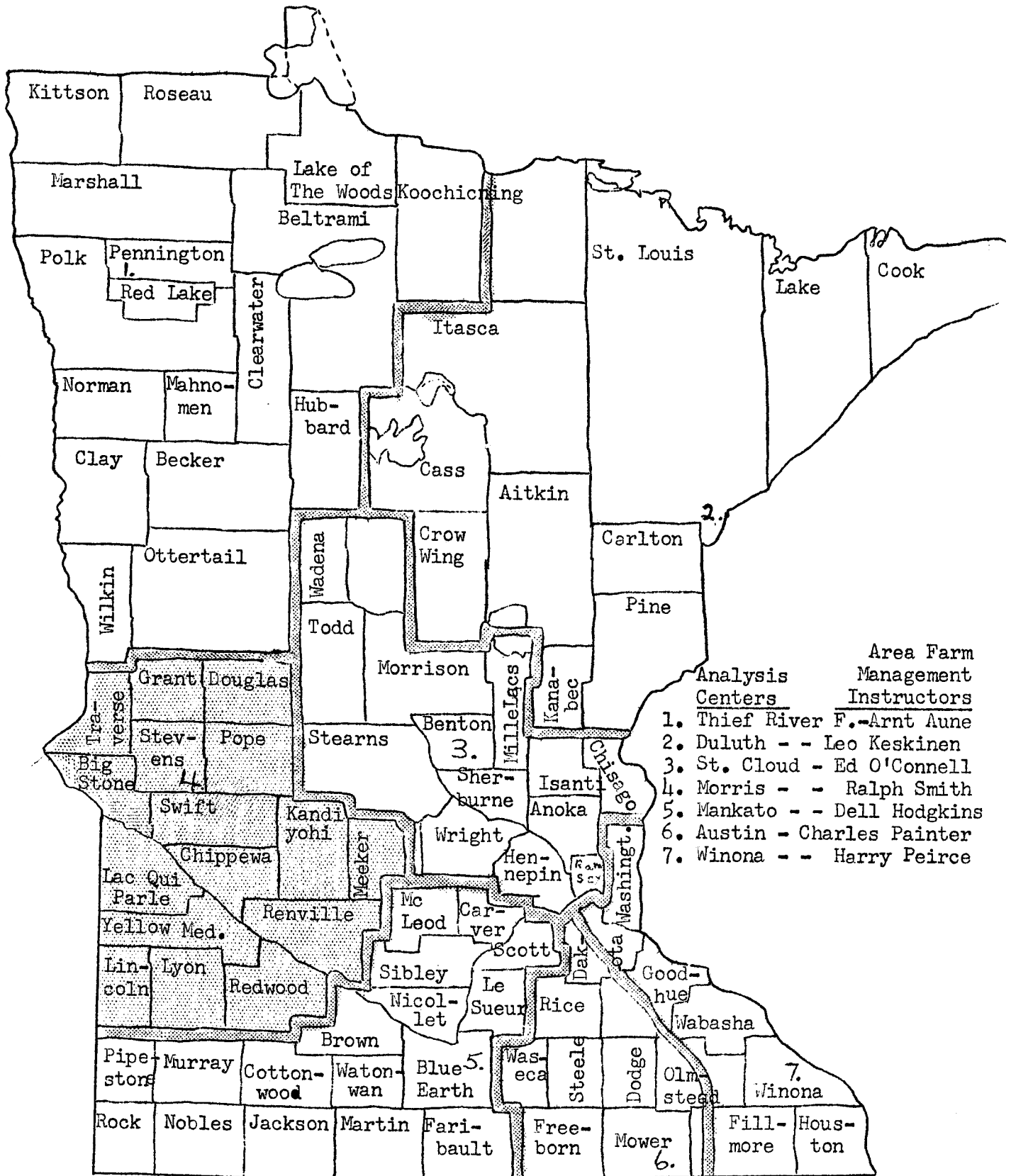
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1959 REPORT
VOCATIONAL AGRICULTURE
FARM MANAGEMENT SERVICE
WEST CENTRAL MINNESOTA

UNIVERSITY OF MINNESOTA
Institute of Agriculture
and
Vocational Division
MINNESOTA DEPARTMENT OF EDUCATION
Cooperating

Report No. 251
Department of Agricultural Economics
Institute of Agriculture
St. Paul 1, Minnesota
April, 1960

VO-AG FARM MANAGEMENT AREAS



* Shaded Area Served By The Morris Analysis Center

1959 REPORT OF THE FARM MANAGEMENT SERVICE FOR VOCATIONAL
AGRICULTURE IN WEST CENTRAL MINNESOTA

Ralph Smith and T. R. Nodland

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INTRODUCTION

The Departments of Agricultural Economics and Agricultural Education, the West Central School and Station and the Agricultural Extension Service of the University of Minnesota are cooperating with the Vocational Division, Minnesota Department of Education in maintaining a farm management service. The service was initiated during 1952 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 West Central Minnesota are handled by Ralph Smith of the West Central School and Experiment Station at Morris. The project is under the general direction of T. R. Nodland of the University of Minnesota Department of Agricultural Economics. The Department of Agricultural Education was represented by M. J. Peterson and the Agricultural Extension Service by E. Hartmans. The State Department of Education was represented by G. R. Cochran, State Supervisor of Agricultural Education.

Each farmer pays an annual fee which covers a portion of the cost. The balance of the costs were defrayed by the University of Minnesota.

This report deals with farmers enrolled in 6 schools in West Central Minnesota. The following tabulation shows by schools the number of 1959 farm records submitted:

SCHOOL	No. of Records	INSTRUCTOR
Alexandria	3	Bernard Sonstegard
Canby	5	Dwaine Englund
Danube	3	Roger Heller
Madison.	1	Kermit Christenson
Sacred Heart	3	Earl Northouse
Olivia	1	G. A. Hammer

The records kept included farm inventories, cash receipts and expense, feed consumed by the various classes of livestock, family living secured from the farm, household and personal expenses and receipts and the operator's liabilities and assets other than farm capital. All types of tenure arrangements are represented ranging from full owners to partnerships in which the operator furnishes little or no capital.

FARM INVENTORIES

The capital investment per farm varied from \$20,328 to \$181,383. The Average investment for all farms included this report and for the one-half high and the one-half low in operator's labor earnings is shown in Table 1.

Landlords or partners supplied some capital in 11 out of the 16 cases included in this report. The landlord's investment has been included in Table 1 in order to show the total amount used per farm.

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. For purposes of comparison, the earnings are presented on a full owner basis.

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 in 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.

Table 1. Summary of Farm Inventories, 1959.

Items	Your Farm		Average of 16 Farms	
	Jan.1	Dec. 31	Jan.1	Dec.31
Size of farm (acres)			303	
Size of business (work units)**			519	
Dairy and dual purpose cows			\$2003	\$2153
Other dairy & dual purpose cows			555	681
Beef cattle (incl. feeders)			9729	8994
Hogs			1735	1099
Sheep (incl. feeders)			147	263
Poultry (incl. turkeys)			402	371
Productive livestock (total)			14571	13561
Horses			--	--
Crop, seed and feed			6097	7529
Power mach. (farm share)			4697	4864
Crop and general machinery			5112	5319
Livestock Equipment			1015	1461
Machinery and equip.(total)			10824	11644
Miscellaneous			--	--
Land			28678	28678
Buildings, fences, etc.			11548	11226
Total farm capital			71718	72638

Items	8 most profitable farms		8 least profitable	
	Jan. 1	Dec. 31	Jan. 1	Dec.31
Size of farms (acres)	326		280	
Size of business(work Units)**	524		513	
Dairy & dual purpose cows\$	4007	4307	---	---
Other dairy & dual purpose	1109	1362	---	---
Beef cattle(incl.feeders)	8243	6608	11215	11380
Hogs	655	726	2815	1471
Sheep (incl. feeders)	194	439	101	88
Poultry (incl. feeders)	148	120	656	621
Productive livestock (tot)	14356	13562	14787	13560
Horses	--	--	--	--
Crop, seed, & feed	6255	9820	5939	5237
Power Mach. (farm share)	4061	4521	5334	5207
Crop & Gen. Mach.	4632	4849	5591	5789
Livestock Equipment	778	1274	1252	1649
Mach. & Equip. (total)	9471	10644	12177	12645
Land	27249	27249	30106	30106
Buildings, fences, etc.	11360	11043	11736	11410
Total farm capital	68691	72318	74745	72958

*For the purpose of comparison, all the data shown in this report with the exception of tables 6 and 7 are presented on a full-owner basis. The assets, expenses and receipts of the landlord were included in the records from rented farms.

Table 2. Summary of Farm Earnings (Cash Statement), 1959

Items	Your farm	Average of 16 farms	8 most profitable farms	8 least profitable farms
FARM RECEIPTS				
Dairy and dual-Pur. cattle		\$ 724	\$1449	\$ ---
Dairy products		2682	5365	---
Beef Cattle (incl. feeders)		15373	12990	17757
Hogs		5906	3010	8802
Sheep & Wool (incl. feeders)		65	100	30
Horses		--	--	--
Poultry		90	36	150
Eggs		1369	456	2283
Corn		2290	2937	1642
Small grain		753	965	541
Other crops		1190	1451	929
Mach. & equip. sold & gas tax refund		265	210	320
Income work off the farm		317	232	403
Miscellaneous		217	312	122
(1) Total farm sales		31243	29508	32979
(2) Increase in farm capital		920	3627	--
(3) Family living from the farm		244	294	194
(4) Total farm receipts 1, 2, & 3		32407	33429	33173
FARM EXPENSES				
Dairy & dual-purpose cattle bought		--	--	--
Beef cattle bought (incl. feeders)		5250	373	10126
Hogs Bought		4165	6079	2251
Sheep Bought (incl. feeders)		591	1183	--
Horses Bought		--	--	--
Poultry Bought		253	217	289
Misc. livestock expense		530	513	547
Feed bought		6489	4905	8072
Fertilizers		901	807	996
Other crop expenses		874	896	852
Custom work hired		674	691	657
Gas, oil & grease bought (f. share)		1127	1232	1021
Rep. of mech. power (farm share)		555	512	599
Repair & upkeep of real estate		141	115	168
Rep. & upkeep of crop & gen. mach.		498	556	439
Rep. & upkeep of livestock equip.		156	148	165
Wages of hired labor		896	953	839
Electricity expense (farm share)		246	282	211
Real estate & pers. Prop. taxes		943	1107	778
General Farm expense		321	309	333
(5) Total cash operating expense		24610	20878	28343
(6) Cap. purchases-mech. pow. (f. share)		804	1458	150
(7) " " -crops & gen. mach.		1400	1187	1612
(8) " " -livestock Equip.		688	676	699
(9) " " -bldgs. & fencing		603	599	608
(10) Total farm purchases (5) to (9)		28105	24798	31412
(11) Decrease in farm capital		--	--	1787
(12) Interest in farm capital		3609	3525	3693
(13) Unpaid family labor		263	285	241
(14) Board furnished hired labor		135	204	67
(15) Total farm expenses (10) to (14)		32112	28812	37200
(16) Labor Earnings (4) - (15)		295	4617	-4027

Table 3. Summary of Farm Earnings (Enterprise Statement) 1959

Items	Your farm	AVERAGE of 16 farms	8 most profitable farms	8 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual-purpose cows	_____	\$2894	5787	--
Other dairy & dual-purpose cattle	_____	725	1451	--
Beef breeding herd	_____	598	--	1195
Feeder cattle	_____	6022	5330	6714
Hogs	_____	3602	1944	5260
Sheep - farm flock & feeders	_____	95	174	17
Chickens	_____	<u>1271</u>	<u>424</u>	<u>2117</u>
All productive livestock	_____	15207	15110	15303
Value of feed fed to livestock	_____	11722	10238	13205
Return over feed from livestock	_____	3485	4872	2098
Crops, seed, and feed	_____	9101	12487	5715
Income from labor off the farm	_____	106	80	132
Agricultural conservation pay	_____	24	21	27
Miscellaneous	_____	<u>193</u>	<u>290</u>	<u>96</u>
(1) Total returns & net increases	_____	12909	17750	8068
EXPENSES AND NET DECREASES				
Horses	_____	--	--	--
Truck	_____	392	412	371
Auto (farm share)	_____	484	452	516
Tractor	_____	1253	1419	1087
Elec. & gas engine exp. (farm)	_____	246	282	211
Hired power	_____	<u>329</u>	<u>349</u>	<u>309</u>
Total power	_____	2704	2914	2494
Crop and general machinery	_____	1550	1753	1348
Livestock equipment	_____	389	300	479
Buildings, fencing, tiling	_____	1032	1024	1040
Misc. productive livestock exp.	_____	530	513	547
Labor	_____	1536	1688	1383
Real estate taxes	_____	752	898	606
Personal property tax	_____	191	209	172
Insurance	_____	172	149	195
General farm	_____	149	160	138
Interest on farm capital	_____	3609	3525	3693
(2) Total expenses & net dec.	_____	12614	13133	12095
(3) Operator's earnings (1)-(2)	_____	295	4617	-4027

*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 produce used in the house 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 income.

The value of the family living as shown in Table 4 amounts to .8 percent of the total farm receipts on these 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 4. Family Living from the Farm, 1959

Items	Your Farm	Average of 32 farms	Your Farm	Average of 32 farms
Adult Equiv. - family	_____	3.6	_____	
- others	_____	.5	_____	
Whole milk	_____	481 qts.	_____	\$44
Cream	_____	---	_____	---
Beef	_____	518 lbs.	_____	124
Hogs	_____	358 lbs.	_____	49
Lamb and mutton	_____	---	_____	---
Poultry	_____	---	_____	1
Eggs	_____	27 doz.	_____	9
Potatoes	_____	---	_____	---
Vegetables & fruit	_____	---	_____	15
Farm Fuel	_____	---	_____	---
Total	_____	---	_____	242

HOUSEHOLD AND PERSONAL EXPENSES AND RECEIPTS

Household and personal accounts are important if the family is to manage it's financial affairs wisely. The household and personal expenses and receipts are presented in Table 5. These farmers spent an average of \$324 per month for family living in addition to the food, fuel and housing furnished by the farm.

Table 3. Summary of Farm Earnings (Enterprise Statement) 1959

Items	Your farm	AVERAGE of 16 farms	8 most profitable farms	8 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual-purpose cows	_____	\$2894	5787	--
Other dairy & dual-purpose cattle	_____	725	1451	--
Beef breeding herd	_____	598	--	1195
Feeder cattle	_____	6022	5330	6714
Hogs	_____	3602	1944	5260
Sheep - farm flock & feeders	_____	95	174	17
Chickens	_____	1271	424	2117
All productive livestock	_____	15207	15110	15303
Value of feed fed to livestock	_____	11722	10238	13205
Return over feed from livestock	_____	3485	4872	2098
Crops, seed, and feed	_____	9101	12487	5715
Income from labor off the farm	_____	106	80	132
Agricultural conservation pay	_____	24	21	27
Miscellaneous	_____	193	290	96
(1) Total returns & net increases	_____	12909	17750	8068
EXPENSES AND NET DECREASES				
Horses	_____	--	--	--
Truck	_____	392	412	371
Auto (farm share)	_____	484	452	516
Tractor	_____	1253	1419	1087
Elec. & gas engine exp. (farm)	_____	246	282	211
Hired power	_____	329	349	309
Total power	_____	2704	2914	2494
Crop and general machinery	_____	1550	1753	1348
Livestock equipment	_____	389	300	479
Buildings, fencing, tiling	_____	1032	1024	1040
Misc. productive livestock exp.	_____	530	513	547
Labor	_____	1536	1688	1383
Real estate taxes	_____	752	898	606
Personal property tax	_____	191	209	172
Insurance	_____	172	149	195
General farm	_____	149	160	138
Interest on farm capital	_____	3609	3525	3693
(2) Total expenses & net dec.	_____	12614	13133	12095
(3) Operator's earnings (1)-(2)	_____	295	4617	-4027

*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.

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Items	Your Farm	Average of 32 farms	Your Farm	Average of 32 farms
Adult Equiv. - family	---	3.6	---	
- others	---	.5	---	
Whole milk	---	481 qts.	---	\$44
Cream	---		---	
Beef	---	518 lbs.	---	124
Hogs	---	358 lbs.	---	49
Lamb and mutton	---		---	
Poultry	---		---	1
Eggs	---	27 doz.	---	9
Potatoes	---		---	
Vegetables & fruit	---		---	15
Farm Fuel	---		---	
Total	---		---	242

HOUSEHOLD AND PERSONAL EXPENSES AND RECEIPTS

Household and personal accounts are important if the family is to manage it's financial affairs wisely. The household and personal expenses and receipts are presented in Table 5. These farmers spent an average of \$324 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 , 1959

Item	Your Farm	Average of 7 farms
Number of persons - family	_____	4.6
Number of adult equiv. - family	_____	3.3
- others*	_____	.3
Food and meals bought	_____	\$934
Operating and supplies	_____	245
Furnishings and equipment	_____	302
Clothing and clothing materials	_____	332
Personal care, personal spending	_____	104
Education, recreation & develop.	_____	188
Gifts and special events	_____	134
Medical care and health ins.	_____	426
Church, welfare	_____	113
Personal share of auto expense	_____	141
Operator's share of upkeep dwell.	_____	72
Household share of ele. exp.	_____	73
Total cash living expense	_____	3064
H. H. & pers. share of new auto	_____	
New Dwelling	_____	
Taxes and other deductions	_____	1
Life Insurance	_____	240
Other Savings and investments	_____	434
Total household & personal cash expense	_____	3739
Total family living from the farm	_____	148
Total cash expenses & requis.	_____	3887
Receipts:		
Return to capital and fam. labor	_____	-887
Miscellaneous income	_____	571
Income from investments	_____	16

*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 for owners and part owners is presented in Table 6. Both the farm and personal assets and liabilities are included.

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

Table 6. Net Worth Statement for Those Farmers Who Kept a Complete Record of all Assets and Liabilities, 1959 (Operator's Share)

Items	Your Farm		5 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	---	---	204	
Owned	---	---	204	
Rented	---	---	---	
Total farm capital	---	---	\$62041	60081
Stocks and bonds	---	---	223	---
Life Insurance	---	---	791	914
Accounts Receivable	---	---	---	---
Outside real estate	---	---	---	---
Other outside investments	---	---	243	555
Total outside investments	---	---	1257	1469
Dwelling	---	---	4476	4260
Cash on hand and in bank	---	---	546	754
Other household & personal assets	---	---	1517	1508
Total cash, h.h. & personal assets	---	---	7796	7991
TOTAL ASSETS	---	---	69837	68072
Federal Land Bank Mortgage	---	---	---	---
Other mortgage on land operated	---	---	15972	15539
Mortgages on other real estate	---	---	---	---
FHA chattel mortgages	---	---	---	---
Production Credit Association	---	---	---	---
Crop Loans	---	---	---	---
Other chattel mortgages	---	---	7046	8779
Notes payable	---	---	3625	2440
Accounts payable	---	---	332	731
TOTAL LIABILITIES	---	---	26975	27489
Farmer's net worth	---	---	42862	40583
Gain in net worth	---	---	---	-2279

Items	8 part owners*	
	Jan. 1	Dec. 31
Total acres in farm	338	
Owned	239	
Rented	99	
Total farm capital	\$68777	\$72478
Stocks and bonds	3947	4276
Life Insurance	2666	2868
Accounts Receivable	---	---
Other outside investments	472	252
Total outside investments	7085	7396
Dwelling	5192	4964
Cash on hand and in bank	467	350
Other h.h. and personal assets	2826	2734
Total cash, h.h. and pers. assets	15570	15444
TOTAL ASSETS	84347	87922
Federal Land Bank Mortgage	---	3025
Other mortgages on land operated	19087	19219
Mortgages on other real estate	---	---
FHA chattel mortgage	---	---
Production Credit Association	2417	---
Crop loans	---	---
Other chattel mortgages	3475	4732
Notes Payable	2506	3415
Accounts Payable	4090	5840
TOTAL LIABILITIES	31575	36241
Farmer's net worth	52772	51681
Gain in net worth	---	-1091

Table 7. Summary of Farm Earnings by Tenure, 1959 (Operator's Share)

Items	Your Farm	5 owners	8 part owners
<u>FARM RECEIPTS</u>			
Dairy and dual-purpose cows	_____	\$ 646	\$ 590
Dairy products	_____	2642	2025
Beef cattle (incl. feeders)	_____	17588	14804
Hogs	_____	723	9966
Sheep and wool (incl. feeders)	_____	22	1235
Poultry (incl. turkeys)	_____	224	18
Eggs	_____	3363	245
Horses	_____	--	--
Corn	_____	2557	1199
Small grain	_____	577	615
Other crops	_____	498	1644
Mach. & Equip. sold, gas tax refund	_____	233	308
Income from work off the farm	_____	21	564
Miscellaneous	_____	124	350
(1) Total farm sales	_____	29196	33563
(2) Increase in farm capital	_____	--	3701
(3) Family living from the farm	_____	131	284
(4) Total farm receipts (1)+(2)+(3)	_____	29327	37548
<u>FARM EXPENSES</u>			
Dairy and dual-purpose cows bought	_____	274	188
Beef cattle bought (incl. feeders)	_____	6373	10786
Hogs bought	_____	274	2439
Sheep bought (incl. feeders)	_____	--	155
Horses bought	_____	--	--
Poultry bought (incl. turkeys)	_____	352	51
Miscellaneous livestock expense	_____	339	593
Feed bought	_____	5390	8640
Fertilizers bought	_____	582	1040
Other crop expense	_____	446	1246
Custom work hired	_____	783	798
Gas, oil & grease bought (farm share)	_____	795	1433
Rep. of mech. power (farm share)	_____	512	539
Repair & upkeep of real estate	_____	119	185
Rep. & upkeep of crop & gen. Mach.	_____	552	528
Rep. & upkeep of livestock equip.	_____	164	190
Wages of hired labor	_____	1064	825
Electricity esp. (farm share)	_____	218	261
Real Estate & pers. property tax	_____	820	838
Cash rent	_____	--	195
General Farm Expense	_____	358	300
Interest paid	_____	1667	1684
(5) Total cash operating expense	_____	21082	32914
(6) Capital purchases - mech. pow. (fm)	_____	1192	861
(7) Capital purchases - crop, gen. mach.	_____	701	1988
(8) Capital purchases - livestock eqp.	_____	825	710
(9) Capital purchases - bldg. & fenc.	_____	757	619
(10) Total farm purchases (5) to (9)	_____	24557	37092
(11) Decrease in farm capital	_____	1960	--
(12) Interest on farm capital	_____	1386	1847
(13) Unpaid family labor	_____	365	296
(14) Board furnished hired labor	_____	204	89
(15) Total farm expenses (10) to (14)	_____	28472	39324
(16) Labor earnings (4) - (15)	_____	855	-1776
(17) Return to capital & family labor (16) + (12) + (13)	_____	2606	368

RETURNS TO CAPITAL AND FAMILY LABOR

The return to capital and family labor represents the amount available to the operator for living expenses, payment on indebtedness, and savings. The landlord's expenses and receipts are not included.

The average return to capital and family labor for 5 owners and 8 part owners. The statement includes only the operator's share of the earnings of the partnership. The earnings as shown in Table 7 are on an actual basis as compared to the full-owner basis in Tables 2 and 3.

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 50 percent of the range according to earnings was \$4617 and of those in the lower 50 percent was \$-4207. This is a range of \$9824 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. Crop yields | 5. Size of business |
| 2. Choice of crops | 6. Work units per worker |
| 3. Return from livestock | 7. Control over expenses |

Operator's
Earnings

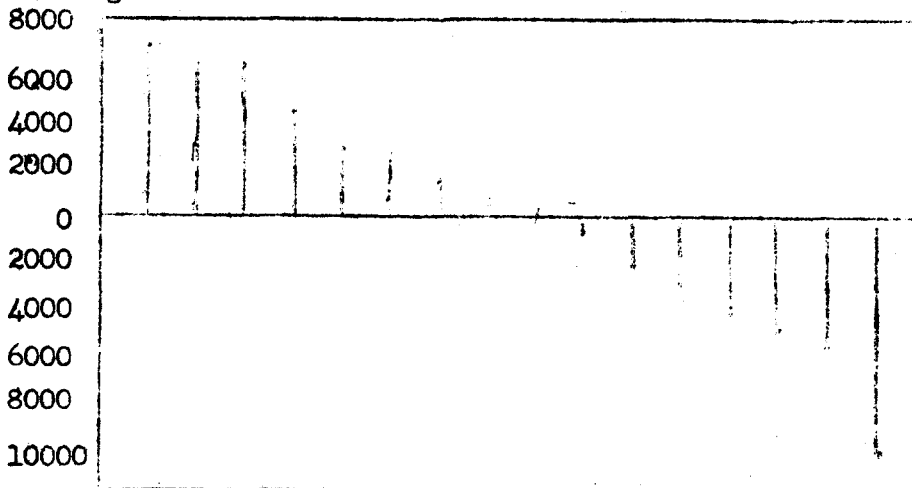


Fig. 1. Range in operator's earnings.
Each line represents the earning of one farmer.

* See Pond, G. A. "Why Farm Earnings Vary". Minn. Agric. 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.

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 as 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 21.

Table 8. Number of Work Units for Each Class of Livestock and Each Acre of Crop.

	No. of work units	Item	No. of work units
Dairy and Dual-purpose cows	10.0 per cow	Small grain	.5 per acre
Other dairy & du. Pur. cattle	3.5 per an. unit*	Sugar beets	1.5 per acre
Beef breeding herd	3.5 per an. unit*	Sweet corn	.7 per acre
Feeder cattle	.25 per 100 lbs.	Corn husked	.7 per acre
Sheep-farm flock	1.5 per an. unit*	Corn, hogged	.4 per acre
Sheep-feeders	.3 per 100 lbs.	Corn, shredded	1.5 per acre
Hogs	.2 per 100 lbs.	Corn, silage	1.0 per acre
Turkeys	.5 per 100 lbs.	Corn, Fodder	1.0 per acre
Hens	20.0 per 100 lbs.	Alfalfa hay	.6 per acre
Canning peas	.5 per acre	Soybean hay	.8 per acre
Soybeans for grain	.5 per acre	Other hay crops	.4 per acre

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

Table 9. Measures of Farm Organization and Management Efficiency, 1959

Measures used in chart on page 13	Your Farm	Average of 16 farms	8 most profitable farms	8 least profitable farms
Operator's earnings	\$ _____	\$295	\$4617	\$-4027
(1) Crop Yields*	_____	100	124	75.7
(2) Percent tillable land in high ret. crops**	_____	67.2	62.8	71.5
(3) Ret. for 100 feed to prod. livestock***	_____	100	101	99
(4) Prod. livestock units per 100 A.****	_____	38.0	35.5	40.6
(5) Size of business - work units	_____	519	524	513
(6) Work units per worker	_____	325	308	342
(7) Pow., Mach., Equip., Bldg. exp. per work unit	_____	11.64	12.02	11.26
Items related to some of the above measures:				
(3) Index of return for 100 feed from:				
Dairy cattle (see pages 18 & 19)	_____	100		
Beef cattle brdg. herd (See pg.20)	_____	100		
Beef cattle-feeders (see pg. 20)	_____	100		
Hogs (see page 17)	_____	100		
Sheep-farm flock (see pg. 21)	_____	100		
Chickens	_____	100		
(4) Number of animal units	_____	100.9	94.0	107.8
(5) Work units on crops	_____	158	152	164
Work units on Prod. livestock	_____	329	349	309
Other work units	_____	32	23	40
(6) Number of family workers	_____	1.2	1.2	1.1
Number of hired workers	_____	.4	.5	.4
Total number of workers	_____	1.6	1.7	1.5
(7) Power expense per work unit	_____	5.77	6.02	5.52
Crop mach. exp. per work unit	_____	3.09	3.31	2.87
Livestock equip., exp. per wk. unit	_____	.71	.60	.83
Bldgs. & fenc. exp. per wk. unit	_____	2.07	2.09	2.04

*Given as a percentage of the average.

**Crops are marked in Table 10 as (1), (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 percent 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

	Oper. labor earnings	Crop yields	High return crops	Return from productive livestock	Pr. L. S. units per 100 A	Work Units	Work units per worker	Pow., mach. Eq., & bldgs. exp. per work unit
8000	140		84	140	54	900	380	3.50
7000	135		82	135	52	850	370	4.50
6000	130		80	130	50	800	360	5.50
5000	125		78	125	48	750	350	6.50
4000	120		76	120	46	700	340	7.50
3000	115		74	115	44	650	330	8.50
2000	110		72	110	42	600	320	9.50
1000	105		70	105	40	550	310	10.50
0	100		68	100	38	500	300	11.50
-1000	95		66	95	36	450	290	12.50
-2000	90		64	90	34	400	280	13.50
-3000	85		62	85	32	350	270	14.50
-4000	80		60	80	30	300	260	15.50
-5000	75		58	75	28	250	250	16.50
-6000	70		56	70	26	200	240	17.50
-7000	65		54	65	24	150	230	18.50
-8000	60		52	60	22	100	220	19.50

Table 10. Distribution of Acres in Farm, 1959

	Crop ratings*	No. Farmers Raising Each Crop	Your Farm	Average of 16 farms
Flax	C	1	_____	2.2
Barley	C	3	_____	1.8
Wheat	C	10	_____	9.0
Oats & oat mixtures	D	14	_____	20.5
Oat Silage	C	1	_____	.8
Total small grain and peas			_____	34.3
Sweet corn and canning peas	A	--	_____	
Corn grain	A	16	_____	115.4
Soybeans for grain	B	7	_____	29.3
Corn or sorghum silage	B	12	_____	27.5
Total cultivated crops			_____	172.2
Alfalfa hay	B	15	_____	29.3
Other legume & mixtures	C	2	_____	1.6
Timothy & brome hay & seed	D	--	_____	--
Total tillable land in hay			_____	30.9
Alfalfa pasture	B		_____	4.8
Other legume & mixtures	C		_____	.3
Sudan and/or rape	C		_____	.1
Other tillable pasture	D		_____	--
Total tillable land in pasture			_____	5.2
Soil Bank	A		_____	--
Tillable land not cropped	D		_____	--
Total tillable land			_____	242.6
Wild hay			_____	.9
Non-tillable pasture			_____	22.0
Timber (not pastured)			_____	15.8
Roads and waste			_____	13.5
Farmstead			_____	8.2
Total acres in farm			_____	303
Percent land tillable			_____	81.5
Percent tillable land in high return crops			_____	67.2

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

Table 11. Crop Yields Per Acre, 1959

Crop	Your Farm	Average of farms growing each crop
Flax, bu.	_____	8.9
Barley, bu.	_____	38.1
Wheat, bu.	_____	22.4
Oats, bu.	_____	43.1
Rye, bu.	_____	--
Oat silage, tons	_____	5.8
Millet, bu.	_____	--
Corn grain, bu.	_____	48.8
Soybeans, bu.	_____	19.7
Corn silage, tons	_____	10.3
Alfalfa hay, tons	_____	2.6
Other legumes & mixtures, tons	_____	.8
Timothy or brome hay, tons	_____	--
Wild hay, tons	_____	--

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. The crop acres per farm ranged from 115 to 557 with an average of 231 (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 cost. The farmer is interested in operating at the lowest cost for power, machinery and labor combined.

Table 12. Power and Machinery Expenses Per Crop Acre, 1959

Items	Your Farm	Average of 16 farms	8 most profitable farms	8 least profitable farms
Crop acres per farm	_____	231	237	225
Tractor and horse exp. per crop A.	_____	5.79	6.70	4.89
Crop & gen. mach. exp. per crop A.	_____	6.41	6.47	6.35

AMOUNT OF LIVESTOCK

A large proportion of the farmers maintained some dairy cattle and hogs (Table 12). Forty-four percent of the farmers kept poultry.

Table 13. Amount of Livestock, 1959

	Your Farm	Average of 16 farms	8 most profitable farms	8 least profitable farms
Number of milk cows	_____	10	20	--
Number of other dairy cattle	_____	7	14	--
Number of beef cattle (incl. feeders)	_____	60	46	74
Number of sheep*	_____	9	13	5
Number of hens	_____	291	123	460
Litter of pigs raised	_____	--	--	--
Pounds of hogs produced	_____	33173	19554	46792
Pounds of feeder cattle produced	_____	30484	23862	37106

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

TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

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

Table 14. Total Feed Costs and Returns From Your Livestock Enterprises, 1959

	<u>Dairy or dual purpose cattle</u>			<u>Beef Breeding</u>
	<u>Cows</u>	<u>Other</u>	<u>All</u>	<u>herd</u>
Total returns	_____	_____	_____	_____
Total feed cost	_____	_____	_____	_____
Total return over feed	_____	_____	_____	_____
	<u>Feeder Cattle</u>	<u>Hogs</u>	<u>Farm Flock of sheep</u>	<u>Chickens</u>
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 percent of the total costs of maintaining dairy cattle and poultry, 50 percent in the case of a farm flock of sheep, and 75 to 90 percent 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 100 pounds of hogs produced varied from \$10.70 for those farmers ranking in the upper one-half in feeding efficiency to a return of \$7.34 for those in the lowest one-half. Some of the important factors that affected return over feed were:

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

Table 15. Feed Costs and Returns from Hogs, 1959

	Your farm	Average of 9 farms	5 farms purchasing feeder pigs	4 farms farrowing pigs
Feed per cwt. hogs produced, lbs.:				
Corn	_____	268	277	259
Small grain	_____	52	27	77
Commercial feeds	_____	88	101	75
60% alfalfa	_____	<u>3</u>	<u>1</u>	<u>6</u>
Total concentrates	_____	411	406	417
Skim milk and buttermilk	_____	-	-	-
Feed cost per cwt. hogs produced:				
Concentrates	\$_____	\$9.90	\$9.92	\$9.87
Skim milk and buttermilk	_____	--	--	--
Pasture	_____	<u>.01</u>	<u>--</u>	<u>.03</u>
TOTAL FEED COSTS	_____	9.91	9.92	9.90
Net increase in val. per cwt. hogs prod. _____		10.98	9.97	11.99
RETURNS ABOVE FEED COST PER CWT. HOGS PRODUCED	\$_____	1.07	.05	2.09
RETURNS FOR \$100 OF FEED	\$_____	115	103	128
Price received per cwt. hogs sold	_____	14.05	14.08	14.02
No. of spring litters raised	_____	4.9	---	11
No. of fall litters raised	_____	<u>4.6</u>	---	<u>10.2</u>
Total No. of litters raised	_____	9.5	---	21.2
No. of pigs born per litter	_____	8.9	---	8.9
No. of pigs weaned per litter	_____	7.3	---	7.3
Pounds of hogs purchased	_____	13237	24851	1623
Pounds of hogs produced	_____	56016	74016	38016

DAIRY AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value of feeds and returns from dairy cattle are presented in Tables 15, 16, 17.

The return over feed cost per cow varied from \$68.59 to 198.29 among the 6 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 16. Factors of Cost and Returns from Dairy Cows, 1959

Items	Your Farm	Average of 6 farms
Pounds of butterfat per cow	_____	311
Price rec. per lb. B. F. sold (cts.)	_____	88.7
Price rec. per lb. B. F. -wh. milk	_____	88.7
Price rec. per lb. F. F. -cream	_____	--
Feeds per cow, lbs.:		
Corn	_____	2002
Small grain	_____	396
Commercial feeds	_____	262
Legume hay	_____	4878
Other hay	_____	--
Fodder and stover	_____	--
Total concentrated	_____	2660
Total dry roughage	_____	4878
Silage	_____	11065
Feed cost per cow:		
Concentrates	\$ _____	\$ 51.36
Roughages	_____	84.65
Pasture	_____	9.91
TOTAL FEED COSTS	_____	145.92
Value of produce per cow:		
B. F. Sales	_____	264.85
Dairy Produce Used in Homes	_____	7.55
Milk to livestock	_____	3.26
Net increase in value of cows	_____	6.45
TOTAL VALUE PRODUCED	_____	282.11
RETURNS ABOVE FEED COST PER COW	_____	136.18
RETURNS FOR \$100 OF FEED	_____	203
Feed cost per lb. F. F. (cents)	_____	47.6
Number cows*	_____	26.0

*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 17. Feed Costs and Returns from Other Dairy and Dual Purpose Cattle, 1959

Items	Your Farm	Average of 6 farms
Feeds per head, lbs.:		
Concentrates	_____	388
Hay and fodder	_____	1205
Silage	_____	5257
Skim milk	_____	—
Whole milk	_____	205
Feed cost per head:		
Concentrates	\$ _____	\$ 8.19
Roughages	_____	29.53
Milk	_____	3.68
Pasture	_____	4.18
TOTAL FEED COSTS PER HEAD	_____	45.58
Net inc. in value of other cattle	_____	81.15
RETURNS ABOVE FEED COST PER HEAD	_____	35.57
RETURNS FOR \$100 OF FEED	_____	194
Number of head of other cattle	_____	24.3

Table 18. Feed Costs and Returns from All Dairy and Dual Purpose Cattle, 1959

Items	Your Farm	Average of 6 farms
Feeds per animal unit, lbs.		
Concentrates	_____	2106
Hay and fodder	_____	4140
Silage	_____	11054
TOTAL FEED COSTS PER ANIMAL UNIT	\$ _____	128.
Value of produce per animal unit:		
Dairy products	_____	189.98
Net increase in value of dairy cattle	_____	<u>54.44</u>
TOTAL VALUE PRODUCED		244.42
RETURNS ABOVE FEED PER ANIMAL UNIT	\$ _____	116.42
Returns Per \$100 OF FEED	_____	198
Animal units of cattle	_____	38.1

Table 19. Feed Costs and Returns from Beef Cattle, 1959

Items	Your Farm	Average of all farms
Beef breeding herd: No. of farms:		2
Feeds per animal unit, lbs.:		
Concentrates	_____	543
Legume	_____	2931
Other hay	_____	--
Fodder and stover	_____	--
Silage	_____	3006
Feed Cost per animal unit:		
Concentrate _s	\$ _____	\$ 12.57
Roughages	_____	30.09
Pasture	_____	15.28
TOTAL FEED COSTS		<u>57.94</u>
Value of produce per animal unit:		
Dairy products	_____	
Net increase in value of animals	_____	<u>134.46</u>
TOTAL VALUE PROCUCED		<u>134.46</u>
RETURN ABOVE FEED COST PER ANIMAL UNIT	_____	76.52
RETURNS FOR \$100 OF FEED	_____	244
Number of cows and herd bulls	_____	34.4
Number of animal units in the herd	_____	35.1
Lbs. beef produced	_____	17588
Feeding cattle: No. of farms:		11
Corn	_____	584
Small grain	_____	28
Commercial feeds	_____	51
Legume hay	_____	514
Other hay	_____	110
Total concentrates	_____	663
Total hay and fodder	_____	624
Silage	_____	2868
Feed per cwt. beef produced:		
Concentrates	\$ _____	12.64
Roughages	_____	5.27
Pasture	_____	.01
TOTAL FEED COSTS		<u>17.92</u>
Net increase in value of feeders	_____	20.22
RETURNS ABOVE FEED COST PER CWT. BEEF PROD.	_____	2.30
RETURNS FOR \$100 FEED	_____	117
Price paid per cwt. beef bought	_____	26.88
Price recd. for feeder cattle sold	_____	25.10
Number of animal units	_____	73.1
Pounds of beef produced	_____	44343

- 21 -
CHICKENS

Four of the 7 farmers raising chickens failed to receive a return large enough to cover the cost of feed. The average return over feed from the 14 flocks included in this report was \$ -.14 cents per hen (Table- - 20)

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. Percent of hens that are pullets
5. Percentage death loss of hens

Table 20. Feed Costs and Returns from Chickens, 1959

Items	Your Farm	Average of 7 farms
Feed per hen, lbs.:		
Grain	_____	60
Commercial feeds	_____	<u>63</u>
Total concentrates	_____	123
Skim milk and buttermilk	_____	-
TOTAL FEED COST PER HEN	\$ _____	3.95
Value of produce per hen:		
Eggs sold and used in house	_____	4.11
Net inc. in value of chicken	_____	<u>- .30</u>
TOTAL VALUE PRODUCED	_____	3.81
RETURN ABOVE FEED COST PER HEN	\$ _____	-.14
RETURNS FOR \$100 OF FEED		
Price recd. per doz. eggs sold (cents)	_____	103
Eggs laid per hen	_____	24.8
	_____	199
Average no. hens on farm during year	_____	666
Percent of hens that are pullets	_____	86
Percent death loss of hens	_____	9.3
Number of chickens started:	_____	531
Lbs. chickens produced	_____	2154

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

Table 21. Summary of Miscellaneous Items by Years

	1953-55	1956	1957	1958	1959
Acres in Farm					
Small grains	83.7	65.8	62.2	53.6	34.3
Cultivated crops	70.7	104.2	108.2	108.2	172.2
Tillable land in hay	31.9	28.5	36.9	30.4	30.9
Tillable land in pasture	11.4	11.4	15.8	10.9	5.2
Soil Bank	--	--	3.8	5.1	--
Tillable land not cropped	1.9	3.6	.8	1.8	--
Total tillable land	199.6	213.5	227.7	210.0	242.6
Wild hay & non-tillable pasture	32.7	26.5	26.2	22.8	22.9
Other non-tillable land	32.3	30.4	37.5	28.7	37.5
Total acres in farm	264.6	270.4	291.4	261.5	303.0
Yields per acre:					
Flax, bu.	10.6	12.1	5.3	13.8	8.9
Barley, bu.	28.5	34.7	25.9	46.9	38.1
Wheat, bu.	17.5	21.6	20.4	31.0	22.4
Oats, bu.	36.7	42.5	38.6	55.8	43.1
Oat silage, ton	--	--	5.1	5.8	5.8
Corn grain, bu.	45.7	60.0	47.5	50.0	48.8
Soybeans, bu.	20.0	18.1	19.8	18.7	19.7
Corn silage, tons	8.3	9.9	8.0	10.1	10.3
Alfalfa hay, tons	2.5	2.7	2.6	2.5	2.6
Measures of fm. org. & management:					
Percent of land in high ret. crops	49.4	55.7	52.7	53.2	67.2
Prod. L. S. units per 100 A	17.5	18.9	21.6	22.6	38.0
Size of business, work units	346	334	351	362	519
Work units per worker	238	223	218	256	325
Exp. per work unit	\$ 9.76	\$10.97	\$13.95	\$13.36	\$11.64
Return above feed cost per:					
Dairy cow	58.90	95.30	113.57	132.24	145.92
An. unit in beef breeding herd	-7.85	-10.84	98.68	87.02	76.52
100 lbs. feeder cattle produced	-5.53	1.21	10.91	9.95	2.30
100 lbs. hogs produced	5.49	4.66	6.54	9.02	1.07
Head native sheep	4.64	8.39	--	--	--
Hen	1.32	1.28	.87	1.13	-.14
Feed cost per:					
Dairy cow	129.49	130.91	148.37	142.28	136.18
An. unit in beef breeding herd	75.48	80.58	98.68	67.20	57.94
100 lbs. feed cattle produced	21.58	19.96	16.90	14.19	17.92
100 lbs. hogs produced	12.71	10.95	11.75	10.02	9.91
Head native sheep	8.91	11.22	--	--	--
Hen	4.07	3.80	3.24	3.28	3.95

Table 21. Summary of Miscellaneous Items by years (Continued)

	1953-55	1956	1957	1958	1959
Misc. livestock information:					
No. dairy & dual purpose cows	10.8	10.0	21.5	21.8	17
Ibs. feed. cattle & herd bulls	2767	4052	22072	36378	30424
Litter of pigs	8.9	6.6	12.8	10.0	--
Lbs. hogs produced	14891	16349	23182	24982	33173
No. of hens	160	161	450	391	291
Lbs. butterfat per milk cow	260	300	296	305	311
No. pigs weaned per litter	6.8	6.0	6.2	6.3	7.3
Percent lamb crop	104	90	--	--	--
Eggs per hen	178	201	179	164	199
Price received per:					
Lb. butterfat sold as cream	\$ 69.2	\$.536	--	.622	--
Lb. butterfat sold as milk	86.2	.866	.88	.862	.887
100 lbs. fat cattle	19.08	17.80	17.55	24.86	25.10
100 lbs. hogs	19.05	14.34	18.13	20.15	14.05
100 lbs. lambs	19.18	17.51	--	--	--
Lbs. of wool	.427	.329	--	--	--
Doz. eggs	.347	.305	.279	30.3	.2
Price of feed:					
Corn, bu.	\$ 1.29	\$ 1.25	\$ 1.10	\$.98	\$.98
Oats	.67	.63	.61	.535	.58
Barley, bu.	1.02	.95	.91	.90	.92
Alfalfa hay, ton	17.50	18.50	17.00	17.75	22.00
Timothy hay, ton	10.10	10.95	9.80	10.25	14.15
Corn Silage, ton	5.87	6.00	5.80	6.00	6.60
Soybean meal, cwt.	4.12	3.68	3.52	3.50	3.85

Table 22. Summary of Farm Earnings by Years

	1953-55	1956	1957	1958	1959
No. of farms	45	39	25	32	16
Farm receipts:					
Dairy & dual-purpose cattle	\$ 709	\$ 629	\$ 814	\$ 786	\$ 724
Dairy products	2121	2252	2697	2737	2682
Beef cattle	1510	1669	4661	7140	15373
Hogs	2737	2243	3253	2736	5906
Sheep and wool	195	98	31	69	65
Horses	5	1	19	—	—
Poultry	128	72	46	120	90
Eggs	791	801	941	841	1369
Corn	1040	2016	2604	1480	2290
Small grain	1602	1080	798	1206	753
Other crops	479	1421	1447	1666	1190
Mach. & equip. sold	186	132	297	230	265
Income from work off farm	401	205	223	406	319
Miscellaneous	168	200	201	208	217
Total farm sales	12072	12819	18032	19625	31243
Increase in farm capital	800	2863	1071	3339	920
Family Living from the farm	272	232	205	237	244
Total farm receipts	13144	15914	19308	23201	32407
Farm Expenses:					
Dairy & dual-purpose cattle	171	154	400	288	
Beef cattle bought	534	862	2839	4475	5250
Hogs bought	208	282	346	589	4165
Sheep bought	26	—	53	93	591
Horses bought	3	—	18	—	—
Poultry bought	101	102	103	101	253
Misc. livestock expense	211	242	319	339	530
Feed Bought	1405	1689	2440	2440	6489
Fertilizers	231	345	630	382	901
Other crop expenses:	501	515	600	552	874
Custom work hired	416	465	584	575	674
Gas, oil & grease bought	786	719	882	970	1127
Repairs for mechanical power	312	328	473	441	555
Repair & upkeep of real estate	149	156	168	224	141
Rep. & upkeep of crop machinery	257	266	360	380	498
Rep. & upkeep of livestock	87	84	81	87	156
Wages of hired labor	424	295	537	499	896
Electricity expense	134	143	177	171	246
Real estate & person. prop. taxes	504	535	641	666	943
General farm expense	158	166	197	211	321
Total cash operation expense	6618	7348	11848	13483	24610
Capital purchases-mech. power	669	617	606	770	804
-crop & gen. mach.	848	745	1198	878	1400
-livestock equipment	152	324	301	210	688
-bldg. & fencing	458	410	944	605	603
Total farm purchases	8745	9444	14897	15946	28105
Decrease in farm capital	—	—	—	—	—
Interest on farm capital	1870	2216	2403	2486	3609
Unpaid family labor	283	436	358	288	263
Board furnished hired labor	81	88	146	101	135
Total farm expense	10979	12184	17804	18821	32112
Labor earnings	2165	3730	1504	4380	295
Net cash income	3327	3375	3135	3679	3138