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Department of Agriculture
and
Vocational Division
Minnesota Department of Education

Cooperating

ANNUAL REPORT

of the

FARM MANAGEMENT SERVICE for VETERANS

TAKING ON-THE-FARM TRAINING

in

SOUTHEASTERN MINNESOTA

1948

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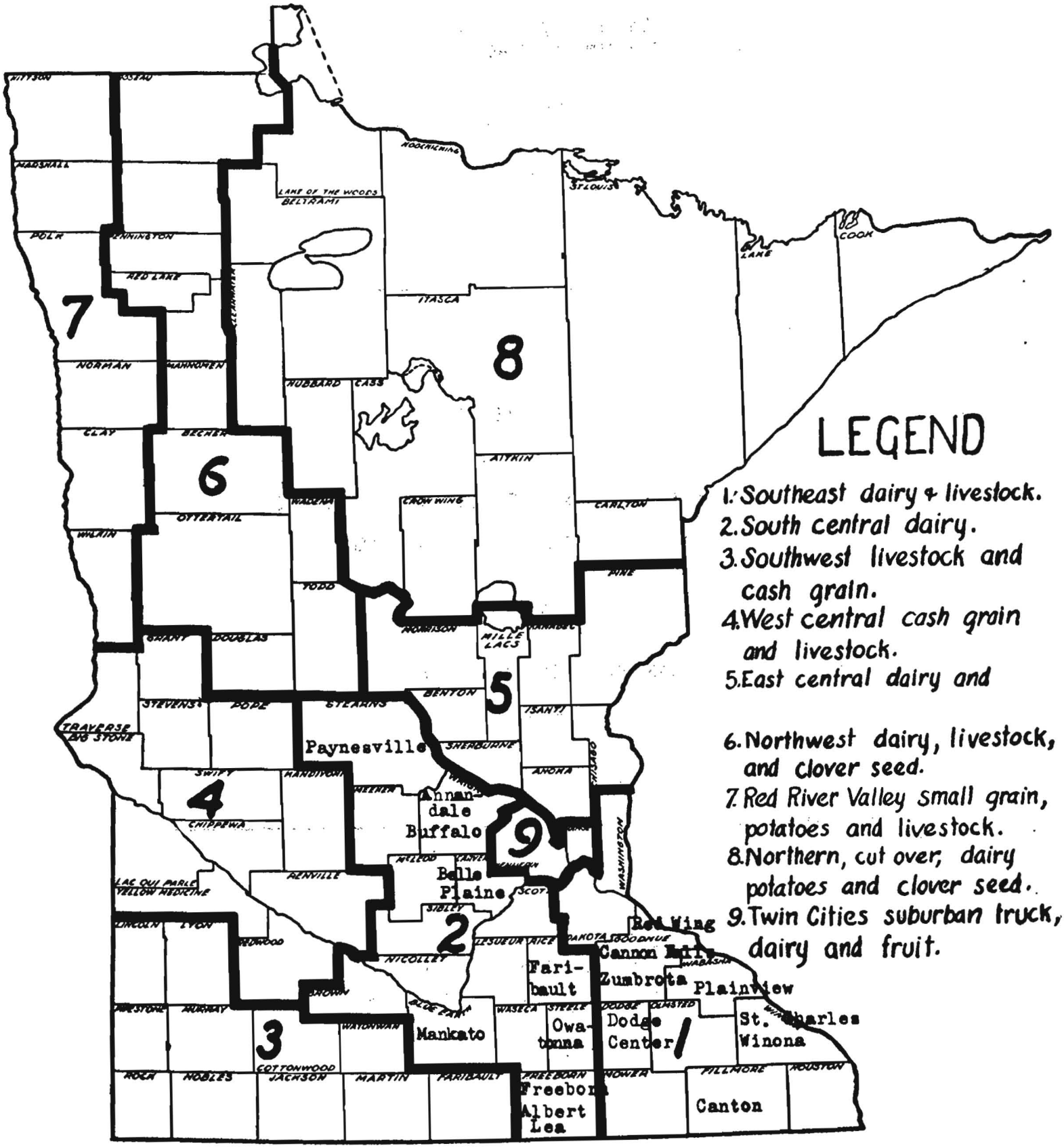

Type of Farming Areas in Minnesota and Location of Schools Submitting Farm Records for this Report

REPORT OF THE FARM MANAGEMENT SERVICE FOR VETERANS TAKING ON-THE-FARM TRAINING IN SOUTHEASTERN MINNESOTA, 1948

T. R. Nodland, G. A. Pond and B. F. Stanton

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INTRODUCTION

In the fall of 1946, the Vocational Division of the Minnesota Department of Education asked the University of Minnesota to set up a farm management service for veterans taking on-the-farm training in the public schools throughout the state. The service was initiated on January 1, 1947. The cooperating agencies are the Division of Agricultural Economics, University of Minnesota, and the Vocational Division, Minnesota Department of Education representing 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. Schools with an on-the-farm training program can enroll their students in the farm management service. The enrollment is on a voluntary basis insofar as the number of schools participating and the number of veterans enrolled in the service are concerned.

The analysis of the records and the preparation of the reports are handled by the Division of Agricultural Economics under the direction of G. A. Pond and T. R. Nodland. The State Department of Education was represented by G.R. Cochran, State Supervisor of Agricultural Education.

This report deals with the veterans enrolled by 17 schools located in Southeastern Minnesota (Type-of-Farming Area 1 and 2)[1]. The map on the inside front cover of this report shows the location of the schools. The following tabulation shows by schools the number of farm records submitted in 1948:

Albert Lea	17	Dodge Center	9	Plainview	22
Annandale	5	Faribault	16	Red Wing	7
Belle Plaine	3	Freeborn	4	St. Charles	2
Buffalo	2	Mankato	13	Winona	5
Cannon Falls	3	Owatonna	6	Zumbrota	4
Canton	4	Paynesville	4	TOTAL	126

The subsequent pages in this report show the data for 121 farms. Five farms were omitted from all the averages in the tables because the records were not sufficiently complete for a full analysis.

The records kept by the enrollees included farm inventories at the beginning and at the end of the year, cash farm receipts and expenses, feed consumed by the various classes of livestock, family living received from the farm, liabilities and assets other than the farm capital and household and personal cash expenses and receipts.

Only records from actual farm operators are included in this report. All types of tenure arrangements from full owners to partnerships in which the operator furnishes little or no capital are represented.

FARM INVENTORIES

The capital investment per farm varied from $6978 to $60357. The average investment for all farm included in this report and for the one-fifth high and the one-fifth low in operator's labor earnings is shown in Table 1.

Landlords or partners supplied some capital in 93 out of the 121 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 labor 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 labor earnings. Table 2 shows the earnings statement on a cash basis and Table 3 shows the earnings on a 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.

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[1]For a description of the area, see Engene, S. A. and Pond, G. A. "Agricultural Production and Types of Farming in Minnesota." Minn. Agri. Expt. Sta. Bul. 347, May, 1940.

Table 1. Summary of Farm Inventories, 1948*

Items	Your farm Jan. 1	Your farm Dec. 31	Average of 121 farms Jan. 1	Average of 121 farms Dec. 31
Size of farm (acres)			168	
Size of business (work units)**			345	
Dairy and dual purpose cows			$ 1422	$ 1532
Other dairy & dual purpose cattle			653	772
Beef cattle			215	304
Hogs			740	910
Sheep			52	42
Poultry			189	202
Productive livestock (total)			3271	3762
Horses			93	80
Crop, seed, and feed			2477	2508
Power mach. (farm share)			1322	1580
Crop & general mach. (farm share)			1071	1556
Livestock equipment & supplies			333	390
Mach. and equipment (total)			2726	3526
Buildings, fences, etc.			6306	6569
Land			7280	7280
Total farm capital			22153	23725

Items	24 most profitable farms Jan. 1	24 most profitable farms Dec. 31	24 least profitable farms Jan. 1	24 least profitable farms Dec. 31
Size of farm (acres)	208		165	
Size of business (work units)**	474		283	
Dairy & dual purpose cows	$1936	$1995	$1098	$1070
Other dairy & deal purpose cattle	949	958	577	679
Beef cattle	335	641	315	346
Hogs	1285	1405	701	785
Sheep	113	102	51	41
Poultry	223	236	185	229
Productive livestock (total)	4841	5337	2927	3150
Horses	132	116	110	101
Crop, seed, and feed	3248	3401	2542	1891
Power mach. (farm share)	1545	1578	1095	1262
Crop and general mach.	1413	1893	797	1142
Livestock equipment & supplies	374	420	315	318
Mach. & equipment (total)	3332	3891	2207	2722
Buildings, fences, etc.	6604	6683	5540	5748
Land	8157	8157	6396	6396
Total farm capital	26314	27585	19722	20008

*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.

**See page 13 for an explanation of "work units."

Table 2. Summary of Farm Earnings (Cash Statement), 1948

Items	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
FARM RECEIPTS				
Dairy and dual-purpose cows		$ 399	$ 632	$ 263
Dairy products		2335	3342	1451
Other dairy & dual-purpose cattle		407	732	261
Beef cattle		205	205	153
Hogs		2106	3355	2058
Sheep and wool		60	106	50
Poultry		159	216	158
Eggs		853	984	940
Horses		15	20	15
Corn		375	432	152
Small grain		570	698	177
Other crops		304	372	198
Machinery & equip. sold		208	215	160
Agricultural adjustment payments		29	33	34
Income from work off the farm		118	220	61
Miscellaneous		22	44	17
(1) Total farm sales		8165	11606	6148
(2) Net increase in farm capital		1572	1271	286
(3) Family living from the farm		516	585	447
(4) Total farm receipts (1)+(2)+(3)		$10253	$13462	$6881
FARM EXPENSES				
Dairy and dual-purpose cows bought	$	$ 164	$ 157	$ 34
Other dairy and dual-pur.cattle bot		122	76	83
Beef cattle bought		129	165	110
Hogs bought		177	168	234
Sheep bought		28	5	3
Poultry bought (including turkeys)		78	103	81
Horses bought		12	14	15
Misc. livestock expense		85	99	81
Misc. crop expenses		427	476	362
Feed bought		925	1148	792
Custom work hired		336	349	281
Mech. power mach.(farm share)(new)		582	385	453
Mech. power mach.(Farm share)(upkp.)		213	254	195
Mech. power (f.share)(gas,oil,etc.)		542	606	490
Crop and general mach. (new)		715	739	500
Crop and general mach. (upkeep)		119	138	99
Livestock equipment (new)		121	112	91
Livestock equipment (upkeep)		44	48	32
Buildings and fencing (new)		547	375	432
Buildings and fencing (upkeep)		155	182	173
Hired labor		177	233	162
Taxes		271	324	231
General farm and insurance		70	57	72
(5) Total farm purchases		6039	6213	5006
(6) Decrease in farm capital		-	-	-
(7) Interest on farm capital		1147	1347	993
(8) Unpaid family labor		627	909	616
(9) Board furnished hired labor		63	63	80
(10) Total farm exp.(sum of (5) to (9)		7876	8532	6695
(11) Oper. labor earnings (4) - (10)		2377	4930	186

Table 3. Summary of Farm Earnings (Enterprise Statement) 1948*

Items	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual purpose cows	_____	$2633	$3875	$1632
Other dairy & dual pur.cattle	_____	732	1072	524
Beef breeding herd	_____	98	270	82
Feeder Cattle	_____	75	84	- 6
Hogs	_____	2146	3397	1971
Sheep - farm flock	_____	44	90	36
Chickens	_____	1007	1173	1118
All productive livestock	_____	6735	9961	5357
Crops, seed and feed	_____	-127	- 51	-1286
Agric. Conservation payments	_____	29	33	34
Income from labor off the farm	_____	62	77	14
Miscellaneous	_____	166	176	148
(1)Tot. returns & net increases	_____	6865	10196	4267
EXPENSES AND NET DECREASES				
Horses	_____	$ 79	$ 109	$ 99
Tractor	_____	494	475	461
Truck	_____	107	123	94
Auto (farm share)	_____	243	282	202
Gas engine and elect.exp.(f.shr.)	_____	66	90	48
Hired power	_____	135	145	113
Total power	_____	1124	1224	1017
Crop and general machinery	_____	360	399	305
Livestock equipment	_____	102	103	110
Buildings, fencing & tiling	_____	360	412	329
Misc.productive livestock exp.	_____	85	99	82
Labor	_____	969	1301	942
Real estate taxes	_____	231	259	198
Personal property tax	_____	40	65	33
Insurance	_____	23	17	25
General farm	_____	47	40	47
Interest on farm capital	_____	1147	1347	993
(2) Total expenses & net decreases	_____	4488	5266	4081
(3) Oper.labor earnings (1)-(2)	_____	2377	4930	186

*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 labor 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 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 five per cent 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.

The rental value of the dwelling is calculated by taking ten per cent of the average inventory value of the dwelling.

Table 4. Family Living from the Farm, 1948

Items	Your farm	Average 121 farms	24 most profitable farms	24 least profitable farms	Your farm	Average 121 farms	24 most profitable farms	24 least profitable farms
Adult equiv.-family	____	2.4	2.6	2.2				
-others	____	.2	.2	.3				
Whole milk	____	731 qts.	822	595	____	$ 66.89	$ 78.18	$ 58.15
Skim milk	____	44 qts.	11	116	____	.42	.32	.99
Cream	____	43 pts.	69	53	____	13.45	35.41	10.19
Farm made butter	____	7 lbs.	-	14	____	4.34	-	7.69
Beef	____	215 lbs.	407	66	____	36.91	70.28	12.18
Hogs	____	318 lbs.	428	276	____	68.17	90.14	62.59
Poultry	____	68 lbs.	69	68	____	18.59	17.04	19.58
Eggs	____	108 doz.	113	94	____	41.53	45.05	37.79
Potatoes	____	7 bu.	7	7	____	9.56	10.85	9.77
Vegetables & fruits	____	-	-	-	____	17.83	23.50	14.81
Farm fuel	____	3 cd.	2	3	____	15.42	16.52	13.35
Rental vl. of house	____				____	222.83	197.64	199.67
Total					____	$515.94	$584.93	$446.76

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 $143 per month for family living in addition to the food, fuel and housing furnished by the farm. Most of the personal receipts were in the form of veterans' compensation payments.

Table 5. Household and Personal Expenses and Receipts for Those Farmers Who Kept Complete Accounts of These Items, 1948

Items	Your farm	Average of 97 farms	19 most profitable farms	19 least profitable farms
Number of persons in family		3.1	3.0	3.0
Number of adult equivalents in family		2.3	2.2	2.3
Number of other adult equivalents*		.2	.2	.4
EXPENSES				
Food and meals bought	$	$546	$586	$549
Operating and supplies		192	187	213
Clothing and clothing materials		187	226	138
Personal care, personal spending		82	74	86
Furnishings and equipment		186	162	142
Education, recreation and development		61	70	63
Medical care and health insurance		144	163	142
Church, welfare, gifts		152	174	88
Personal share of auto expense		67	74	66
Household share of elect.& gas eng. exp.		31	42	19
H.H.& pers. shr.of new auto & motors bot.		69	93	89
Total		1717	1851	1595
State and federal income tax		27	49	4
Insurance		75	64	64
Total hshld. and pers. cash exp.		1819	1964	1663
Food furnished by the farm		257	286	255
Fuel furnished by the farm		11	11	8
House rental		204	162	199
Total cash expenses and perquisites		2291	2423	2125
Investments		9	-	5
RECEIPTS				
Sale of investments		$ 43	-	-
Income from outside investments		55	226	2
Veterans compensation		1139	1059	1219

*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, cash and crop shared renters and livestock share partnerships 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, 1948 (Operator's Share)

	Your farm		21 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	———		148.0	
Owned	———		148.0	
Rented	———		-	
Total farm capital	———	———	$17647	$19874
Accounts receivable	———	———	83	18
Stocks and bonds	———	———	181	173
Life insurance	———	———	117	124
Real estate other than farm operated	———	———	148	-
Other outside investments	———	———	2	25
Total outside investments	———	———	448	322
Cash on hand and in bank	———	———	273	343
Other household & personal assets	———	———	1243	1293
Total cash, household & personal assets	———	———	1516	1636
TOTAL ASSETS	———	———	19694	21850
Mortg. on land operated	———	———	6847	7130
Mortg. on outside real estate	———	———	121	-
Chattel mortgages	———	———	707	925
Notes payable	———	———	1932	1858
Accounts payable	———	———	129	214
TOTAL LIABILITIES	———	———	9736	10127
Farmer's net worth	———	———	9958	11723
Gain in net worth		———		+ 1765

	27 Cash & Crop share renters*		26 livestock and crop share renters	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	156.8		169.7	
Owned	-		3.5	
Rented	156.8		166.2	
Total farm capital	$6967	$8304	$5189	$6212
Accounts receivable	20	16	39	6
Stocks and bonds	209	191	404	383
Life insurance	115	124	182	199
Real estate	-	-	257	238
Other outside investments	2	5	2	2
Total outside investments	326	320	845	822
Cash on hand and in bank	515	276	532	576
Other household and personal assets	1357	1527	1507	1599
Total cash, household & personal assets	1872	1803	2039	2175
TOTAL ASSETS	9185	10443	8112	9215
Mortg. on land not operated	-	-	-	-
Chattel mortgages	684	583	322	346
Notes payable	316	399	1193	1089
Accounts payable	228	193	89	119
TOTAL LIABILITIES	1228	1175	1604	1554
Farmer's net worth	7957	9268	6508	7661
Gain in net worth		+1311		+1153

Table 7. Summary of Farm Earnings by Tenure, 1948 (Operator's Share)

	Your farm	21 Owners	27 cash & cr. shr. renters	26 livestock & cr. share renters
FARM RECEIPTS				
Dairy and dual purpose cows		$ 363	$ 307	$ 122
Dairy products		1778	1476	1579
Other dairy & dual purpose cattle		359	221	214
Beef cattle		381	74	168
Hogs		1586	1644	1444
Sheep and wool		62	95	11
Poultry		152	172	96
Eggs		817	663	515
Horses		10	22	19
Corn		307	262	95
Small grain		325	296	346
Other crops		187	307	176
Machinery & equipment sold		117	281	163
Agricultural adjustment payments		30	12	7
Income from work off the farm		91	89	102
Misc.		10	28	1
(1) Total farm sales		6575	5949	5058
(2) Increase in farm capital		2227	1337	1023
(3) Family living from the farm		510	451	457
(4) Total farm rec. (1)+(2)+(3)		9312	7737	6538
FARM EXPENSES				
Dairy and dual purpose cows bot		88	202	113
Other dairy & dual pur. cattle bot		104	139	84
Beef cattle bot (including feeders)		427	71	4
Hogs bot		180	68	125
Sheep bot		131	19	-
Poultry bot (including turkeys)		99	47	55
Horses bot		9	15	12
Misc. livestock expenses		98	78	54
Misc. crop expenses		470	274	213
Feed bot		900	685	645
Custom work hired		274	280	239
Mech. power mach. (farm share)(new)		461	578	617
Mech. power mach. (farm share)(upkeep)		202	195	180
Mech. power (farm share)(gas, oil, etc.)		506	515	433
Crop and general mach. (new)		544	768	664
Crop and general mach. (upkeep)		124	99	112
Livestock equipment (new)		117	154	105
Livestock equipment (upkeep)		38	43	39
Land, buildings & fencing (new)		1285	14	1
Buildings and fencing (upkeep)		192	55	22
Hired labor		192	144	150
Taxes (real estate & pers. property)		230	29	30
General farm and insurance		118	42	41
Cash rent		1	690	42
Interest paid		353	40	51
(5) Total farm purchases		7143	5244	4031
(6) Decrease in farm capital		-	-	-
(7) Interest on farm capital		585	341	234
(8) Unpaid family labor		367	309	354
(9) Board furnished hired labor		81	53	62
(10) Total farm exp. (Sum of (5) to (9)		8176	5947	4681
(11) Operator's labor earn. (4) - (10)		1136	1790	1857
(12) Ret. cap. & family lab. (7)+(8)+(11)		2088	2440	2445

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 21 owners, 27 cash and crop share renters and 26 livestock and crop share renters is shown in Table 7. The statement includes only the veterans 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.

MANAGEMENT FACTORS AND THEIR RELATION TO EARNINGS

Every study of farm earnings shows a wide variation in earnings among farmers in a given year. The average labor earnings of those farmers ranking in the upper 20 per cent of the range according to earnings was $4930 and of those in the lower 20 per cent was $186. This is a range of $4744 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 and their relationships with earnings are presented in the following tables. These factors vary from year to year in their relative influence on earnings.[1]

Crop Yields. The measure of crop yields used is the crop yield index. It is a comparison of the yield per acre of all crops on a given farm with the average yields for all farms included in the study. High crop yields make their maximum contribution to earnings if they are the result of good crop selection, the use of adapted varieties, skill and timeliness in performing the operations.

Table 8. Relation of Crop Yields to Farm Earnings

Index of crop yields		No. of farms	Average operator's labor earnings
Range	Average		
Below 80	63	21	$1605
80 - 124	101	79	2307
125 and above	133	21	3411

Choice of Crops. Over a period of years certain crops have a definite advantage over others. The crops are classified on page 16 as A, B, C or D crops on the basis of their average net returns per acre. The relation of choice of crops to earnings is shown in Table 9.

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[1] See Pond, G. A. "Why Farm Earnings Vary." Minn. Agri. Expt. Sta. Bul. 386, June, 1945.

Table 9. Relation of choice of Crops to Farm Earnings

Percent of tillable land in high return crops		No. of farms	Average operator's labor earnings
Range	Average		
Below 33.0	26.6	20	$2268
33.0 - 53.9	44.2	77	2394
54.0 and above	60.0	24	2409

Return from livestock. This is a measure of feeding efficiency. The majority of these farmers maintain some cattle, hogs and poultry. Most of the crops raised and some additional purchased feed are fed to livestock. Since feed is the major item of cash in livestock production, an increase in feeding efficiency results in a higher earnings.

Table 10. Relation of Returns From Productive Livestock to Farm Earnings.

Index of returns for $100 feed consumed by productive livestock*		No. of farms	Average operator's labor earnings
Range	Average		
Below 80	70	21	$1813
80 - 119	97	78	2284
120 and above	139	22	3243

* The index is weighted by the number of animal units of each class of livestock.

Amount of Livestock. This factor measures the importance of livestock in the farm business. It is the amount of livestock units per 100 acres in the farm other than land in timber, roads, waste and farmstead. Livestock are important in that they add to the size of business. They provide employment throughout the year and aid in maintaining or building up the fertility of the land.

Table 11. Relation of Amount of Livestock to Farm Earnings.

Livestock units per 100 acres		No. of farms	Average operator's labor earnings
Range	Average		
Below 11.4	9.1	28	$1978
11.4 - 22.9	16.6	69	2221
23.0 and above	28.7	24	3290

Size of Business. Productive man work units are a measure of size of business. The relationship of size of business to farm earnings is shown in Table 12. Average farm earnings tend to increase with an increase in size of business if size is accompanied by good management. For farmers operating their farms at a loss, the larger the volume of business, the larger will be the loss. Normally a large business has an advantage over a small business because they utilize more efficiently and to better advantage available labor, power, machinery, equipment and buildings.

Table 12. Relation of Size of Business to Farm Earnings

Work Units Range	Average	No. of farms	Average operator's labor earnings
Below 225	174	24	$ 1222
225 - 424	322	71	2303
425 and above	566	26	3645

Work accomplished per Worker. The work accomplished per worker is determined by dividing the total man work units by the number of workers on the farm during the year. An increase in the productive work accomplished per worker reduces the labor charge per unit of business. Planning of the farm work and economical use of labor-saving machinery help to increase the output of work per worker.

Table 13. Relation of Work Accomplished Per Worker to Farm Earnings.

Work units per worker Range	Average	No. of farms	Average operator's labor earnings
Below 170	133	21	$1085
170-269	219	77	2367
270 and above	317	23	3588

Control Over Expenses. The depreciation and cash cost of upkeep for power, machinery, equipment and buildings per unit of work is used as a measure of the efficiency of their use on a farm. Some farmers lack power, machinery and buildings for satisfactory operation. In case of others, an excessive investment in these items may constitute an important factor limiting earnings.

Table 14. Relation of Expenses to Farm Earnings.

Expenses per work unit Range	Average	No. of farms	Average Operator's labor earnings
$7.80 and above	$9.01	23	$1920
$4.20 - 7.79	5.79	76	2243
Below $4.20	3.35	22	3317

CUMULATIVE EFFECT OF EXCELLING IN A NUMBER OF MANAGEMENT FACTORS

The relation of several management factors to operator's labor earnings has been shown in the proceeding section. Because of the large number of interrelationships between these factors the exact relationship between one factor and earnings can not be determined. The combined or cumulative influence of the seven management factors on earnings is shown in Table 15. Insofar as these factors are within the farmer's control, he may be well paid for his efforts to improve his efficiency as measured by them.

Table 15. Relation of Operator's Labor Earnings to the Number of Factors in Which the Farmer Excels.

No. of factors in which farmer excels	No. of Farms	Your farm	The length of the lines is in proportion to the average operator's labor earnings	Average operator's labor earnings
None or 1	17		xxxxxxxxxxxxxxx	$1408
2 or 3	45		xxxxxxxxxxxxxxxxxxxx	1764
4 or 5	43		xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	2936
6 or 7	16		xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	3624

The array in Table 15 suggests that it may be well worth while for each cooperator to study carefully his ranking on pages 14 and 15, and learn his standing in respect to each of the seven factors as indicators of elements of strength and weakness in his farm business.

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 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 16.

Table 16. Number of Work Units for Each Class of Livestock and each Acre of Crop.

Item	No. of work units	Item	No. of work units
Dairy and dual pur. cows	14.0 per cow	Small grain	.7 per acre
Other dairy & du. pur. cattle	4.0 per an.unit*	Corn, husked	1.1 per acre
Beef breeding herd	4.0 per an.unit*	Corn, hogged	.7 per acre
Feeder cattle	.35 per 100 lbs.	Corn, shredded	2.2 per acre
Sheep - farm flock	1.8 per an.unit*	Corn silage	1.7 per acre
Hogs	.3 per 100 lbs.	Corn fodder	1.0 per acre
Turkeys	.7 per 100 lbs.	Alfalfa hay	.9 per acre
Hens	22.0 per 100 hens	Soybean hay	1.4 per acre
Soybeans for grain	.7 per acre	Other hay crops	.6 per acre

*Animal unit represents one cow, one bull, one feeder steer or heifer, two head of other cattle, seven head of sheep, fourteen lambs, five hogs, ten pigs, 100 hens or 1400 pounds of turkeys produced.

Table 17. Measures of Farm Organization and Management Efficiency, 1948.

Measures used in chart on page 15	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
Operator's labor earnings	$____	$2377	$4930	$ 186
(1) Crop yields*	____	100	112	84
(2) % of tillable land in high ret. crops**	____	44.4	43.6	43.7
(3) Ret. for $100 feed to prod. livestock***	____	100	108	87
(4) Prod. livestock units per 100 acres****	____	17.2	20.9	14.8
(5) Size of business - work units	____	345	474	283
(6) Work units per worker	____	216	279	177
(7) Pow., mach., equip., & bldg. exp. per work unit	$ ____	$5.96	$4.77	$6.46
Items related to some of the above measures:				
(3) Index of return for $100 feed from				
Dairy cattle (See pages 20 and 21)	____	100	106	84
Beef breeding herd (See page 25)	____	100	148	--
Beef cattle - feeders (See page 24)	____	100	---	--
Hogs (See page 22)	____	100	108	103
Sheep - farm flock (See page 25)	____	100	100	--
Chickens (See page 23)	____	100	108	93
(4) Number of animal units	____	24.1	34.9	20.6
(5) Work units on crops	____	94	117	80
Work units on productive livestock	____	241	344	200
Other work units	____	10	13	3
(6) Number of family workers	____	1.5	1.5	1.4
Number of hired workers	____	.1	.2	.2
Total number of workers	____	1.6	1.7	1.6
(7) Power expense per work unit	$ ____	$3.48	$2.78	$3.72
Crop machinery expense per work unit	____	1.09	.23	1.12
Livestock equip. expense per work unit	____	.31	.92	.42
Bldgs. & Fencing exp. per work unit	____	1.08	.84	1.22

* Given as a percentage of the average.

** Crops are marked in Table 18 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 were not included.

Thermometer Chart

Using your figures from page 14, locate your standing with respect to the various measures of farm organization and management efficiency. The averages for the 121 farms included in this summary are located between the dotted lines across the center of this page.

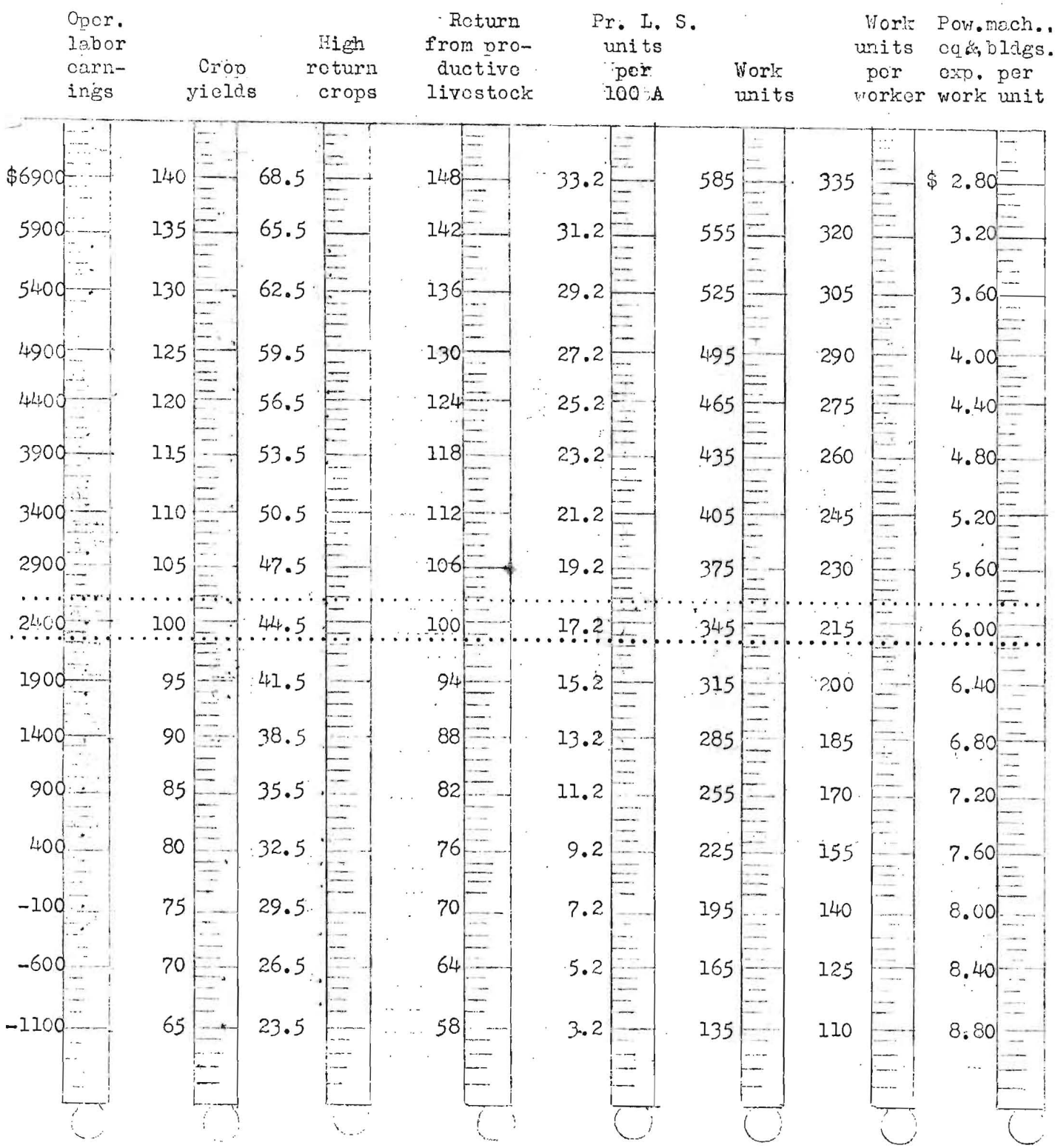

Table 18. Distribution of Acres in Farm, 1948

Crop: (A), (B), (C) and (D) refer to ranking used in calculating % of tillable land in High Return Crops (see page 14)		No. growing this crop	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
Canning peas	(A)	4		.3	.4	.4
Flax	(C)	25		2.9	4.0	1.4
Soybeans	(C)	37		5.2	6.0	3.1
Barley	(D)	34		4.0	5.4	2.5
Oats and Barley	(D)	5		.6	.2	---
Oats	(D)	120		28.0	36.8	26.0
Oats and wheat	(D)	10		1.3	1.8	.5
Wheat	(D)	33		2.9	3.4	2.5
Rye	(D)	6		.6	---	---
Total small grain and peas		121		45.8	58.0	36.4
Potatoes and truck crops	(A)	9		.4	.2	.1
Corn grain	(A)	120		29.3	34.6	26.0
Corn silage	(B)	75		5.9	9.2	4.6
Sweet corn	(B)	4		.2	.2	.4
Corn fodder	(D)	9		.3	.1	.6
Total cultivated crops		121		36.1	44.3	31.7
Alfalfa hay	(A)	68		6.7	8.4	5.5
Red clover hay	(B)	41		4.4	1.5	5.7
Soy bean hay	(C)	7		.4	.9	.1
Mixed legumes & non-legumes	(C)	25		3.8	5.3	5.3
Legumes for seed	(C)	8		.5	.1	.3
Timothy and/or brome hay	(D)	23		2.2	5.1	.9
Other annual hay	(D)	2		.1	.4	---
Total tillable land in hay		111		18.1	21.7	17.8
Alfalfa and mixtures incl. alf.	(A)	6		.7	1.8	---
Other legumes and mixtures	(C)	20		3.1	5.9	2.9
Sudan grass or rape pasture	(C)	9		.3	1.0	---
Other tillable pasture	(D)	34		4.2	5.8	3.7
Total tillable land in pasture		57		8.3	14.5	6.6
Tillable land not cropped	(D)	9		1.4	---	4.6
Total tillable land		121		109.7	138.5	97.1
Wild hay (non-tillable)		44		3.4	4.6	2.8
Non-tillable pasture		108		33.6	44.8	37.2
Timber (not pastured)		56		9.6	9.4	11.8
Roads and waste				7.0	5.6	11.7
Farmstead				4.7	4.6	4.2
Total acres in farm				168.0	207.5	164.8
Per cent land tillable				65.3	66.7	58.9
Per cent tillable land in high ret. crops				44.4	43.6	43.7

Table 19, Crop Yields Per Acre, 1948

Crop	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
Canning peas, value	_____	$42.62	----	----
Flax, bu.	_____	11.5	11.7	10.7
Soybeans, bu.	_____	19.0	22.4	12.9
Barley, bu.	_____	32.2	36.3	24.1
Oats and barley, bu.	_____	45.1	----	----
Oats, bu.	_____	48.0	55.1	37.4
Oats and wheat, bu.	_____	37.1	36.1	----
Wheat, bu.	_____	18.8	16.5	16.7
Rye, bu.	_____	15.6	----	----
Buckwheat, bu.	_____	5.7	----	----
Corn grain, bu.	_____	54.2	59.2	48.6
Corn silage, tons	_____	8.6	9.5	7.3
Sweet corn, tons	_____	2.0	----	----
Corn fodder, tons	_____	2.2	----	----
Alfalfa hay, tons	_____	2.3	2.7	1.9
Red clover hay, tons	_____	1.7	1.8	1.2
Soybean hay, tons	_____	1.4	----	----
Other Leg. and leg. mix for hay, tons	_____	1.8	1.9	1.5
Legume for seed, lbs.	_____	92.5	----	----
Brome or timothy hay, tons	_____	1.3	1.3	1.0
Wild hay on non-tillable land, tons	_____	.9	.6	1.0

POWER AND MACHINERY EXPENSES

Power and machinery expense per crop acre is an indication of the economy with which capital is invested in these items. The crop acres per farm ranged from 33 to 321 with an average of 103 (Table 20). 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 20. Power and Machinery Expenses Per Crop Acre, 1948.

Items	Your farm	Average of 121 farms	24 Most profitable farms	24 Least profitable farms
Crop acres per farm	_____	103.4	128.6	88.7
Tractor and horse exp. per crop acre	_____	$ 5.82	$ 4.97	$ 6.37
Crop & Gen. mach. exp. per crop acre	_____	$ 3.71	$ 3.81	$ 3.46

The feed cost for horses is a part of the cost of power on those farms maintaining horses. The annual feed cost per horse is shown in Table 21. Thirty-seven farmers did not maintain horses.

Table 21. Feed Costs For Horses, 1948.

Items	Your farm	Average of 84 farms
Feed per horse, lbs.:		
Grain	_____	381
Hay	_____	3310
Fodder & stover	_____	156
Feed Cost per horse		
Grain	_____	$ 10.22
Roughage	_____	23.85
Pasture	_____	6.57
Total feed cost	_____	$ 40.64
Number of work horse	_____	2.4
Number of colts	_____	.1

AMOUNT OF LIVESTOCK

Nearly all the farmers maintained some dairy or dualpurpose cattle. (Table 22). Eighty-four per cent of the farmers kept hogs and poultry.

Table 22. Amount of Livestock, 1948.

	Your farm	Average of 121 farms	24 most profitable farms	24 least profitable farms
Number of milk cows	_____	10.5	15.1	7.6
Number of other dairy cattle	_____	11.0	15.6	9.4
Number of beef cattle (incl.feeders)	_____	2.2	4.1	2.8
Number of sheep*	_____	3.5	6.2	3.8
Number of hens	_____	149	176	160
Number of litters of pigs raised	_____	7.0	10.0	6.3
Pounds of hogs produced	_____	10097	16098	9773
Number of horses	_____	1.7	2.3	1.8
Number of colts	_____	.1	.1	---

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

TOTAL FEED COSTS AND RETURNS FROM YOUR LIVESTOCK ENTERPRISES

The total "return over feed costs" for each class of livestock is shown in Table 23. 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 thefeed cost of "all dairy" or "all dual purpose" cattle. The return over feed is not a <u>net</u> 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 23. Total Feed Costs and Returns From Your Livestock Enterprises, 1948.

	Dairy or dual purpose cattle			Beef breeding herd
	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 costs 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 CATTLE

The quantity of feed consumed, value of feeds and returns from dairy cattle are presented in Tables 24, 25 and 26. The statements include ten herds which were classified as dual purpose cattle.

The return over feed cost per cow varied from $-89.29 to $349.25 among the 111 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 (pounds T.D.N. fed per pound butterfat.)
4. Quality of ration (percentage of protein in T.D.N.)
5. Economy of ration (feed cost per pound butterfat.)

The herds which ranked low in these factors had low returns over feed. As indicated in Table 27, the twentyfive herds which ranked below the average of the whole group in all of these factors or excelled in only one showed a return over feed of $76.48 per cow. On the other hand, the thirty-two herds which ranked above the average of the whole group in each of four or five factors had a return over feed per cow of $194.72. These data suggest that dairy returns could be very materially increased by more attention to these five management factors.

Table 24. Factors of Cost and Returns from Dairy and Dual Purpose Cows, 1948.

Items	Your farm	Average of 111 farms	22 farms highest in butterfat per cow	22 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	232	312	158
Price rec. per lb. B.F. sold (cents)	_____	101.9	106.0	98.9
As cream (cents)	_____	92.3	94.6	89.9
Other (cents)	_____	110.3	109.8	113.8
Feeds per cow, lbs:				
Corn	_____	878	997	623
Small Grain	_____	810	1121	512
Commercial feeds	_____	279	416	101
Legume hay	_____	3112	3741	2043
Other hay	_____	1229	849	1216
Fodder and stover	_____	425	192	850
Total concentrates	_____	1967	2534	1236
Total dry roughage	_____	4766	4782	4109
Silage	_____	5298	5275	3723
Total digestible nutrients*	_____	4756	5173	3577
T.D.N. per lb. B.F.	_____	20.5	16.6	22.6
% T.D.N. that is protein	_____	13.0	14.4	11.1
Feed cost per cow:				
Concentrates	$_____	$57.50	$72.80	$34.09
Roughages	_____	51.88	59.37	39.12
Pasture	_____	6.98	6.53	7.32
TOTAL FEED COSTS	$_____	116.36	138.70	80.53
Value of produce per cow:				
B.F. sales	$_____	220.80	$305.52	$142.93
Dairy produce used in house	_____	9.50	10.80	7.43
Milk to livestock	_____	15.89	13.94	10.96
Net increases in value of cows	_____	3.25	1.90	2.64
TOTAL VALUE PRODUCED	$_____	249.44	332.16	163.96
RETURNS ABOVE FEED COST PER COW	$_____	133.08	193.46	83.43
RETURNS FOR $100 OF FEED	$_____	231.00	256.00	218.00
Feed cost per lb. B.F. (cents)	_____	50.2	44.5	51.0
% fall freshening	_____	47	58	32
Number of cows**	_____	11.4	11.1	12.4

*Not including nutrients received from pasture.

**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 25. Feed Costs and Returns from Other Dairy and Dual Purpose Cattle, 1948.

Items	Your farm	Average of 111 farms	22 farms highest in butterfat per cow	22 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	419	441	292
Hay and fodder	_____	1793	1804	1724
Silage	_____	1516	1604	1128
Skim milk	_____	532	423	511
Whole milk	_____	275	327	262
Feed cost per head:				
Concentrates	$_____	$ 12.51	$ 14.41	$ 7.68
Roughages	_____	17.58	20.36	14.95
Milk	_____	11.45	13.27	8.98
Pasture	_____	2.75	2.67	2.80
TOTAL FEED COSTS PER HEAD	_____	44.29	50.71	34.41
Net inc. in value of other cattle	_____	73.17	79.38	77.01
RETURNS ABOVE FEED COST PER HEAD	$_____	28.88	28.67	42.60
RETURNS FOR $100 OF FOOD	$_____	$189.00	$169	$248
Number of head of other cattle	_____	11.8	9.3	13.3

Table 26. Feed Costs and Returns From All Dairy and Dual Purpose Cattle, 1948.

Items	Your farm	Average of 111 farms	22 farms highest in butterfat per cow	22 farms lowest in butterfat per cow
Feeds per animal unit, lbs.;				
Concentrates	_____	1573	2063	999
Hay and fodder	_____	4273	4306	3849
Silage	_____	4396	4614	3201
Feed cost per animal unit:				
Concentrates	_____	$46.07	$59.93	$27.31
Roughages	_____	45.38	53.21	35.67
Pasture	_____	6.48	6.31	6.83
TOTAL FEED COSTS PER ANIMAL UNITS	$_____	97.93	119.45	69.81
Value of produce per animal unit:				
Dairy Products	_____	156.59	225.42	101.78
Net increase in val. of dairy cattle	_____	45.39	41.47	44.26
TOTAL VALUE PRODUCED	_____	201.98	266.89	146.04
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	104.05	147.44	76.23
RETURNS PER $100 OF FEED	$_____	$221	$236	$232
Animal units of cattle	_____	17.6	15.9	19.3

Table 27. Relation of Return Over Feed per Milk Cow to the Number of Factors in which Farmers Excelled.

No. of factors in which farmers excelled	No. of farms	The length of the line is proportional to the average return over feed per cow	Average return over feed
0-1	25	xxxxxxxx	$76.48
2-3	54	xxxxxxxxxxxx	122.75
4-5	32	xxxxxxxxxxxxxxxxxxx	194.72

HOGS

The return over feed cost per 100 pounds of hogs produced varied from $12.50 for those farmers ranking in the upper one-fifth in feeding efficiency to a return of $1.87 less than the feed cost for those in the lowest one-fifth. 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 28. Feed Costs and Returns from Hogs, 1948.

Items	Your farm	Average of 102 farms	20 farms highest in returns above feed	20 farms lowest in returns above feed
Feed per cwt. hogs produced, lbs.:				
Corn	_____	304	217	411
Small grain	_____	154	138	194
Commercial feeds	_____	31	24	32
Total concentrates	_____	489	379	637
Skim milk and buttermilk	_____	164	121	170
Feed cost per cwt. hogs produced:				
Concentrates	$_____	$14.02	$10.24	$19.17
Skim milk and buttermilk	_____	.63	.49	.64
Pasture	_____	.13	.15	.09
TOTAL FEED COSTS	$_____	14.78	10.88	19.90
Net increase in val. per cwt. hogs prod.	$_____	21.03	23.38	18.03
RETURNS ABOVE FEED COST PER CWT. HOGS PROD.	$_____	6.25	12.50	- 1.87
RETURNS FOR $100 OF FEED	$_____	$155	$230	$90
Price received per cwt. hogs sold	$_____	23.46	23.21	22.62
No. of spring litters raised	_____	5.3	5.0	5.0
No. of fall litters raised	_____	2.8	1.9	3.0
Total No. of Litters raised	_____	8.1	6.9	8.0
No. of pigs born per litter	_____	8.5	8.9	8.4
No. of pigs weaned per litter	_____	7.0	7.0	6.7
Pounds of hogs produced	_____	12039	10329	12139

Eleven farmers ranked below the average in the four factors. They failed to receive a return large enough to cover the cost of feed (Table 29). The eleven farmers who ranked above the average of the entire group in each of the four factors received a return over feed of $9.43 for each 100 pounds of hogs produced. These data suggest that superior management leads to high returns.

Table 29. Relation of Return Over Feed Per 100 Pounds of Hogs Produced to the Number of Factors in Which Farmers Excelled

No. of factors in which farmers excelled	No. of farms	The length of the line is proportional to the average return over feed per 100 pounds of hogs produced.	Average return over feed
0	11	xxxx	$ 1.64
1	28	xxxxxxxxxxxx	5.31
2	33	xxxxxxxxxxxxx	6.04
3	19	xxxxxxxxxxxxxxxxxxxx	8.82
4	11	xxxxxxxxxxxxxxxxxxxxxx	9.43

CHICKENS

Seven out of the 102 farmers raising chickens failed to receive a return large enough to cover the cost of feed. The average return over feed from the 102 flocks included in this report was $2.22 per hen (Table 30).

Table 30. Feed Costs and Returns from Chickens, 1948

Items	Your farm	Average of 102 farms	20 farms highest in returns above feed	20 farms lowest in returns above feed
Feed per hen, lbs.:				
Grain	_____	84	86	94
Commercial feeds	_____	36	38	32
Total concentrates	_____	120	124	126
Skim milk and buttermilk	_____	7	5	6
TOTAL FEED COST PER HEN	$_____	$4.13	$4.53	$4.25
Value of produce per hen:				
Eggs sold and used in house	$_____	5.62	7.04	4.29
Net increase in value of chickens	_____	.73	1.92	.11
TOTAL VALUE PRODUCED	_____	6.35	8.96	4.40
RETURNS ABOVE FEED COST PER HEN	$_____	2.22	4.43	.15
RETURNS FOR $100 OF FEED	$_____	$159	$206	$104
Price rec'd per doz. eggs sold (cents)	_____	42.4	42.3	43.1
Eggs laid per hen	_____	159	200	120
Ave. no. of hens on farm during year	_____	173	197	139
% of hens that are pullets	_____	63	71	39
% of death loss of hens	_____	13	10	16
Number of chicks put on feed	_____	225	362	113
Price paid per 100 chicks purchased	$_____	30.88	29.54	35.09
Pounds of poultry produced	_____	630	1151	267

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. Per cent of hens that are pullets
5. Percentage death loss of hens

The data in Table 31 shows that the flocks which ranked low in these factors had low returns over feed. The eleven flocks which ranked below the average of the whole group in all of the factors or excelled in only one received a return over feed cost of $1.09 per hen. The four flocks which ranked above the average of the whole group in five factors had a return over feed per hen of $3.97.

Table 31. Relation of Return Over Feed Per Hen to the Number of Factors in Which Farmers Excelled

No. of factors in which farmers excelled	No. of farms	The length of the line is proportional to the average return over feed per hen.	Average return over feed
None or 1	11	xxxxx	$ 1.09
2	30	xxxxxxxx	1.56
3	34	xxxxxxxxxxx	2.32
4	23	xxxxxxxxxxxxxxx	3.21
5	4	xxxxxxxxxxxxxxxxxxx	3.97

Table 32. Feed Costs and Returns From Feeder Cattle, 1948

Items	Your farm	Average of 5 farms
Feeds per cwt. beef produced, lbs.:		
Corn	_____	184
Small grain	_____	82
Commercial feeds	_____	27
Legume hay	_____	245
Other hay	_____	61
Fodder and stover	_____	0
Total concentrates	_____	293
Total hay and fodder	_____	306
Silage	_____	224
Feed cost per cwt. beef produced:		
Concentrates	$_____	$9.85
Roughages	_____	3.54
Pasture	_____	1.46
TOTAL FEED COSTS	$_____	14.85
Net increase in value of feeders	$_____	31.25
RETURNS ABOVE FEED COST PER CWT. BEEF PRODUCED		$16.40
RETURNS FOR $100 OF FEED	_____	$212
Price rec'd per cwt. beef sold in 1948	_____	24.45
Price paid per cwt. beef bought	_____	22.88
No. of animal units	_____	12.4
Pounds of beef produced	_____	6808

Table 33. Feed Costs and Returns from Beef Breeding Herds, 1948

Items	Your farm	Average of 4 farms
Feed per animal unit, lbs.:		
Concentrates	_____	909
Legume hay	_____	1571
Other hay	_____	723
Silage	_____	3548
Feed cost per animal unit:		
Concentrates	$_____	$26.51
Roughages	_____	29.13
Pasture	_____	5.84
Total feed cost	_____	61.48
Net increase in value of beef cattle per animal unit	_____	113.41
Return over feed cost per animal unit	_____	51.93
Return for $100 of feed	_____	$207
Number of cows and herd bulls	_____	16.0
Number of animal units	_____	31.1
Pounds of beef produced	_____	10995

Table 34. Feed Costs and Returns from a Farm Flock of Sheep, 1948

Items	Your farm	Average of 10 farms
Feed per head,* lbs.:		
Concentrates	_____	50
Legume hay	_____	147
Other hay	_____	30
Silage	_____	101
Feed cost per head:		
Concentrates	$_____	$1.11
Roughages	_____	1.63
Pasture	_____	1.44
TOTAL FEED COSTS	_____	$4.18
Value of produce per head:		
Wool	$_____	$ 3.64
Net increase in value of sheep	_____	13.12
TOTAL VALUE PRODUCED	_____	$16.76
RETURNS ABOVE FEED COST PER HEAD	_____	$12.58
RETURNS FOR $100 OF FEED	$_____	$433
Price per cwt. of lambs sold	$_____	$22.62
Price per lb. wool sold (cents)	_____	43.6
Pounds of wool per sheep sheared	_____	8.6
Number of ewes kept for lambing	_____	33
% lamb crop**	_____	79
% death loss**	_____	7.6
Pounds of sheep produced	_____	2293
No. of head of sheep*	_____	42.5

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

SOME COMPARISONS WITH ESTABLISHED FARMERS

As a rule, beginning farmers have lower earnings than well established farmers. The data in Table 35 shows a comparison between the earnings of veterans taking on-the-farm training in southeastern Minnesota and those of members of the Southeast Minnesota Farm Management Service. The latter are, in general, older and more experienced operators who have been in business for a number of years. For purposes of comparison, the earnings are presented on a full-owner basis.

Some of the reasons for the lower earnings received by the veterans are shown in Table 36 and the succeeding tables. The beginning farmers are on smaller farms and they have a smaller capital investment in the farming business.

Table 35. Summary of Farm Earnings for On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service, 1947 and 1948.

Items	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
Monthly charge for unpaid family labor	$102	$125	$125	$125
Monthly charge for board to hired labor	40	39	36	36
FARM RECEIPTS				
Dairy Cattle sales	691	806	1480	1754
Dairy products	1923	2335	4129	4811
Beef cattle (including feeders)	178	205	628	686
Hogs	2035	2106	4362	4222
Sheep and Wool (including feeders)	44	60	224	299
Poultry and eggs	801	1012	2019	1998
Horses	10	15	23	15
Crops	1140	1249	2339	2491
Power, machinery & equip, sales	244	208	291	360
Income from work off the farm	84	118	302	386
Miscellaneous	58	51	150	166
(1) Total farm sales	7208	8165	15947	17188
(2) Increase in farm capital	1907	1572	3542	1520
(3) Family living from the farm	490	516	741	791
(4) Total farm receipts	9605	10253	20230	19499
FARM EXPENSES				
Dairy cattle bought	$ 341	$ 286	$ 296	$ 344
Beef cattle bought	40	129	140	302
Hogs	175	177	226	199
Sheep	12	28	65	45
Poultry	125	78	149	145
Horses	21	12	11	11
Misc. livestock expense	77	85	250	257
Misc. crop expense	348	427	780	933
Feed bought	905	925	2224	2090
Custom work hired	248	336	400	507
Mech. Power mach.(farm share) (new)	540	582	527	1021
Mech. " " (farm share) (upkeep, gas, etc.)	655	755	988	1157
Crop and general mach. (new)	434	715	726	1244
" " " " (upkeep)	94	119	212	229
Livestock equipment (new)	139	121	97	128
Livestock equipment (upkeep)	28	44	91	89
Buildings and fencing (new)	347	547	897	1205
" " " (upkeep)	81	155	354	383
Hired labor	167	177	893	957
Taxes	234	271	362	465
General farm and insurance	49	70	157	164
(5) Total farm purchases	$ 5060	$6039	$9845	$ 11875
(6) Interest on farm capital	1004	1147	1559	1694
(7) Unpaid family labor	584	627	582	544
(8) Board furnished hired labor	74	63	201	209
(9) Total farm expenses (Sum of (5) to (8)	$ 6722	7876	12187	$ 14322
(10) Operator's labor earnings (4) - (9)	2883	2377	8043	5177

They maintain a smaller amount of livestock per farm and the level or production of livestock, particularly milk cows, is materially lower. The accumulation of the necessary livestock, machinery and equipment with which to operate a farm at full capacity is a costly process and one that generally carried involves a considerable period of time.

Table 36. Capital Invested in the Farm Business Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service, January 1.

Item	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
Acres in farm	$ 179	$ 168	223	225
Productive livestock	2807	3271	4802	5419
Horses	99	93	178	142
Crops, seed and feed	1710	2477	4005	5754
Machinery and equipment	2243	2726	3414	3981
Buildings, fences, etc.	5584	6306	7551	8270
Land	6687	7280	9462	9547
Total farm capital	$19130	$22153	$29412	$33113

Table 37. Livestock Production of Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service.

Items	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
No. of milk cows	10.5	10.5	16.9	16.7
Pounds of butterfat per cow	218	232	272	284
Litters of pigs raised	6.6	7.0	11.0	12.4
Pounds of hogs produced	8822	10097	17686	19215
No. pigs weaned per litter	6.2	7.0	6.2	6.4
No. of hens	133	149	239	230
Eggs per hen	147	159	177	179

A comparison of farm organization and management factors for farms operated by on-the-farm trainees and the members of the Southeast Minnesota Farm Management Service is presented in Tables 38, 39 and 40. The well-established farmers lead in all seven of the primary organization and management factors affecting earnings. Since the established farmers have been in business longer and have more experience and knowledge of farming, they have a large proportion of their tillable land in high return crops, more livestock, larger business, a higher work accomplishment per worker, lower overhead expenses per unit of business, higher crop yields and produce livestock and livestock products more efficiently.

Table 38. Comparison of Farm Organization and Management Factors for Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service.

Items	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
% high return crop	42.0	44.4	50.2	51.0
Productive livestock units per 100 acres	16.5	17.2	22.6	22.2
Work units per farm	337	345	573	577
Work units per worker	199	216	287	288
Overhead Expenses per work unit	$ 5.38	$ 5.96	$ 4.74	$ 5.62

Table 39. Crop Yields Per Acre On Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service.

Crop	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
Flax - bu.	10.5	11.5	13.1	12.5
Soybeans, bu.	15.4	19.0	14.6	18.5
Barley, bu.	24.1	32.2	29.4	32.6
Oats, bu.	36.0	48.0	47.5	55.0
Corn grain, bu.	38.9	54.2	41.6	60.3
Corn silage, tons	7.0	8.6	7.8	9.3
Alfalfa hay, tons	2.5	2.3	2.4	2.3

Table 40. Livestock Feeding Efficiency on Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service.

Items	On-The-Farm Trainees		S.E. Minn. Farm Management Service	
	1947	1948	1947	1948
T.D.N. per lb. B.F. produced	21.2	20.5	18.5	19.2
Feed Cost per lb. B.F. produced	56.6	50.2	51.1	50.0
Lbs. concentrates required per cwt. hogs produced	607	505	542	491

Beginning farmers can look to the records of the well-established farmers for some goals which they should achieve in a few years provided they study their business records and continually look for improvements in their farming operations. There are no sensational short-cuts to a well organized and well managed farming business. It is only by a continual study of the business that one can find the points of weakness which need improvement. Farm records are the best possible guide to improved farm organization and increased farm earnings. Members of the S.E. Farm Management Service have had records as a guide to managements - some for as long as twenty years - and the results are reflected in their earnings.