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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

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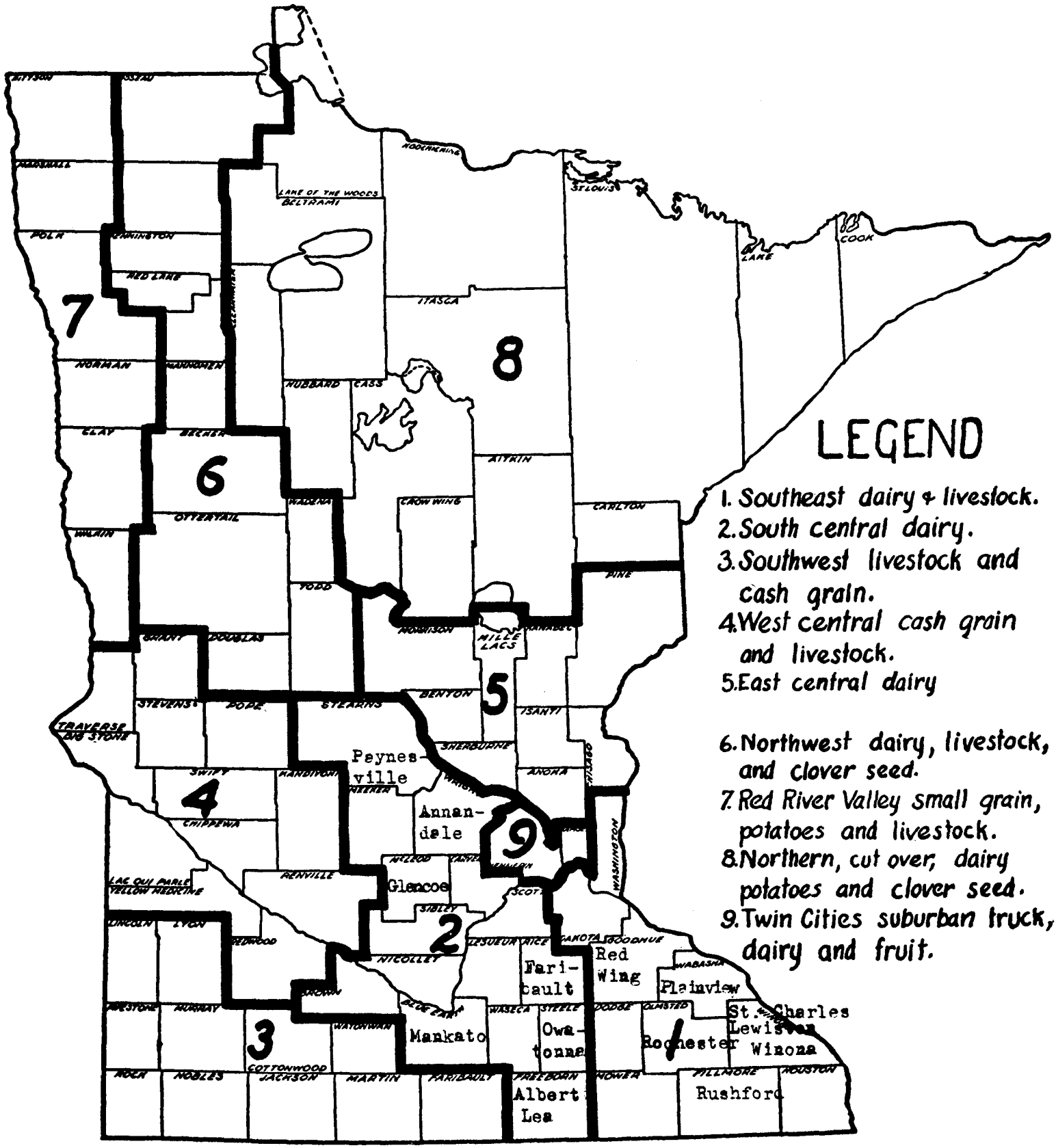

Type of Farming Areas in Minnesota and Location of Schools Submitting Farm Records for this Report

REPORT OF THE FARM MANAGEMENT SERVICE FOR VETERANS TAKING ON-THE-FARM TRAINING IN SOUTHEASTERN MINNESOTA, 1947

T. R. Nodland, G. A. Pond and R. W. Adams

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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 asthe 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. R. R. Beneke aided in closing the records at the end of the year. The State Department of Education was represented by Leo L. Knuti, State Supervisor of Agricultural Education until October 1, 1947. He was followed by G. R. Cochran.

This report deals with the veterans enrolled by 14 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 1947:

Albert Lea	8	Mankato	20	Rochester	1
Annandale	11	Owatonna	6	Rushford	6
Faribault	14	Paynesville	2	St. Charles	16
Glencoe	2	Plainview	25	Winona	15
Lewiston	10	Red Wing	4	TOTAL	140

The subsequent pages in this report show the data for 125 farms. Fifteen 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 3087 to 43031. 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 102 out of the 125 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 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 increaseor 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.

[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, 1947*

Items	Your farm Jan. 1	Your farm Dec. 31	Average of 125 farms Jan. 1	Average of 125 farms Dec. 31
Size of farm (acres)			179	
Size of business (work units)**			337	
Dairy and dual purpose cows			$ 1229	$ 1337
Other dairy & dual purpose cattle			545	606
Beef cattle			197	248
Hogs			632	840
Sheep			39	51
Poultry			165	174
Productive livestock (total)			2807	3256
Horses			99	102
Crop, seed, and feed			1710	2597
Power mach. (farm share)			1093	1308
Crop & general mach. (farm share)			879	1131
Livestock equipment & supplies			271	341
Mach. and equipment (total)			2243	2780
Misc.			-	-
Buildings, fences, etc.			5584	5615
Land			6687	6687
Total farm capital			19130	21037

Items	25 most profitable farms Jan. 1	25 most profitable farms Dec. 31	25 least profitable farms Jan. 1	25 least profitable farms Dec. 31
Size of farm (acres)	241		156	
Size of business (work units)**			250	
Dairy & dual purpose cows	$ 1832	$ 1905	$ 907	$ 1034
Other dairy & dual purpose cattle	749	759	489	470
Beef cattle	696	761	6	16
Hogs	1037	1398	295	300
Sheep	57	49	69	109
Poultry	223	244	118	130
Productive livestock (total)	4599	5116	1884	2059
Horses	120	126	95	95
Crop, seed, and feed	2719	4235	1180	1663
Power mach. (farm share)	1298	1388	946	1229
Crop & general mach.	1186	1513	682	943
Livestock equipment & supplies	312	395	230	306
Mach & equipment (total)	2796	3296	1858	2478
Buildings, fences, etc.	6770	6925	4770	5260
Land	9252	9251	4524	4524
Total farm capital	26256	28949	14311	16079

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), 1947

Items	Your farm	Average of farms	25 most profitable farms	25 least profitable farms
FARM RECEIPTS				
Dairy and dual-purpose cows	_____	$ 371	$ 545	$ 335
Dairy products	_____	1923	2673	1471
Other dairy & dual-purpose cattle	_____	320	363	353
Beef cattle	_____	178	569	-
Hogs	_____	2035	3544	857
Sheep and wool	_____	44	94	64
Poultry	_____	154	165	282
Eggs	_____	647	904	499
Horses	_____	10	9	19
Corn	_____	381	771	77
Small grain	_____	482	1013	220
Other crops	_____	277	346	157
Machinery & equip. sold	_____	244	198	178
Agricultural adjustment payments	_____	21	47	18
Income from work off the farm	_____	84	49	73
Miscellaneous	_____	37	130	45
(1) Total farm sales	_____	7208	11420	4648
(2) Increase in farm capital	_____	1907	2693	1768
(3) Family living from the farm	_____	490	580	398
(4) Total farm receipts (1)+(2)+(3)	_____	$9605	$14693	$6814
FARM EXPENSES				
Dairy and dual-purpose cows bought	$_____	$ 242	$ 187	$ 266
Other dairy and dual-pur.cattle bot	_____	99	107	71
Beef cattle bought	_____	40	16	-
Hogs bought	_____	175	119	56
Sheep bought	_____	12	8	40
Poultry bought (including turkeys)	_____	125	136	180
Horses bought	_____	21	19	32
Misc. livestock expense	_____	77	101	72
Misc. crop expenses	_____	348	473	367
Feed bought	_____	905	1249	766
Custom work hired	_____	248	366	188
Mech. power mach.(farm share)(new)	_____	540	446	580
Mech.power mach.(farm share)(upkp.)	_____	215	233	196
Mech. power (f.share)(gas,oil,etc.)	_____	440	481	404
Crop and general mach. (new)	_____	434	538	414
Crop and general mach. (upkeep)	_____	94	117	77
Livestock equipment (new)	_____	139	180	125
Livestock equipment (upkeep)	_____	28	35	23
Buildings and fencing (new)	_____	347	598	730
Buildings and fencing (upkeep)	_____	81	54	118
Hired labor	_____	167	267	128
Taxes	_____	234	350	211
General farm and insurance	_____	49	54	50
(5) Total farm purchases	_____	5060	6134	5094
(6) Decrease in farm capital	_____	-	-	-
(7) Interest on farm capital	_____	1004	1380	760
(8) Unpaid family labor	_____	584	633	712
(9) Board furnished hired labor	_____	74	111	78
(10) Total farm exp.(sum of (5) to (9)	_____	6722	8258	6644
(11) Oper. labor earnings (4) - (10)	_____	2883	6435	170

Table 3. Summary of Farm Earnings (Enterprise Statement) 1947*

Items	Your farm	Average of 125 farms	25 most profitable farms	25 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual purpose cows		$2134	$2855	$1679
Other dairy & dual pur.cattle		562	738	477
Beef breeding herd		123	536	15
Feeder Cattle		64	197	-
Hogs		2179	3883	877
Sheep - farm flock		44	81	63
Turkeys		11	10	47
Chickens		733	1014	606
All productive livestock		5850	9314	3764
Crops, seed and feed		762	1887	-187
Agricultural conservationPayments		21	47	18
Income from labor off thefarm		46	14	54
Miscellaneous		142	174	142
(1) Total returns & net Increases		6821	11436	3791
EXPENSES AND NET DECREASES				
Horses		$ 115	$ 111	$ 111
Tractor		374	513	316
Truck		84	58	109
Auto (farm share)		254	258	261
Gas engine and elect.exp.(f.shr.)		56	52	52
Hired power		113	178	84
Total power		996	1170	933
Crop and general machinery		280	382	238
Livestock equipment		85	119	66
Buildings, fencing & tiling		315	331	310
Misc.productive livestock exp.		76	100	72
Labor		899	1115	981
Real estate taxes		208	314	188
Personal property tax		26	36	23
Insurance		21	20	24
General farm		28	34	26
Interest on farm capital		1004	1380	760
(2) Total expenses &net decreases		3938	5001	3621
(3) Oper.labor earnings(1)-(2)		2883	6435	170

*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, 1947

Items	Your farm	Average 125 farms	25 most profitable farms	25 least profitable farms	Your farm	Average 125 farms	25 most profitable farms	25 least profitable farms
Adult equiv.-family	____	2.4	2.3	2.4				
-others	____	.4	.7	.4				
Whole milk	____	723 qts.	790	611	____	$ 69.55	$ 72.19	$ 63.95
Skim milk	____	11 qts.	27	1	____	.55	.53	.03
Cream	____	62 pts.	61	40	____	15.70	18.59	11.80
Farm made butter	____	5 lbs.	11	7	____	4.06	8.81	5.22
Beef	____	186 Lbs.	339	85	____	30.98	55.56	12.07
Hogs	____	352 lbs.	436	302	____	83.08	98.15	70.14
Sheep	____	1 lb.	1	-	____	.20	.20	-
Poultry	____	81 lbs.	102	63	____	17.20	24.03	13.17
Eggs	____	109 doz.	139	75	____	41.85	53.21	28.72
Potatoes	____	14 bu.	7	24	____	13.89	11.68	17.53
Vegetables & fruits	____				____	14.03	19.04	8.12
Farm fuel	____	2 cds.	1	3	____	11.98	8.64	22.40
Rental vl. of house					____	186.47	209.31	145.07
Total						$489.54	$579.94	$398.22

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 $136 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. In 1947 each unmarried veteran taking on-the-farm training could receive up to $65.00 per month and married veterans up to $90.00 per month provided the income from farming and the compensation payments did not exceed $2400.00 for the year. Disabled veterans received somewhat larger compensation payments and they were not subject to any limitations on earnings.

Table 5. Household and Personal Expenses and Receipts for Those Farmers Who Kept Complete Accounts of These Items, 1947

Items	Your farm	Average of 105 farms	21 most profitable farms	21 least profitable farms
Number of persons in family		3.3	3.5	3.3
Number of adult equivalents in family		2.4	2.5	2.4
Number of other adult equivalents*		.3	.4	.5
EXPENSES				
Food and meals bought	$	$ 499	$ 512	$ 480
Operating and supplies		157	196	114
Clothing and clothing materials		167	184	132
Personal care, personal spending		96	90	71
Furnishings and equipment		270	297	355
Education, recreation and development		61	68	63
Medical care and health insurance		109	157	66
Church, welfare, gifts		113	159	106
Personal share of auto expense		73	99	52
Household share of elect.&gas eg.exp.		24	29	24
H.H.&pers.shr.of new auto.& motors bot		62	101	20
Total		1631	1892	1483
State and federal income tax		1	-	-
Insurance		70	103	73
Total household and pers.cash exp.		1702	1995	1556
Food furnished by the farm		263	342	218
Fuel furnished by the farm		12	10	19
House rental		177	220	145
Total cash expenses and perquisites		2154	2567	1938
Investments		$ 50	$ 41	$ 53
RECEIPTS				
Sale of investments		$ 62	$ -	$ 34
Income from outside investments		15	27	3
Veterans compensation		1231	1157	1258
Misc. income		64	81	88

*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, 1947 (Operator's Share)

	Your farm		20 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	———		145.4	
Owned	———		145.4	
Rented	———		-	
Total farm capital	———	———	$12677	$15264
Accounts receivable	———	———	181	213
Stocks and bonds	———	———	298	266
Life insurance	———	———	154	174
Real estate other than farm operated	———	———	160	179
Other outside investments	———	———	1	1
Total outside investments	———	———	613	620
Cash on hand and in bank	———	———	222	347
Other household & personal assets	———	———	907	1040
Total cash, household & personal assets	———	———	1129	1387
TOTAL ASSETS	———	———	14600	17484
Mortg. on land operated	———	———	5682	5558
Mortg. on outside real estate	———	———	-	-
Chattel mortgages	———	———	297	327
Notes payable	———	———	770	990
Accounts payable	———	———	680	616
TOTAL LIABILITIES	———	———	7429	7491
Farmer's net worth	———	———	7171	9993
Gain in net worth		———		+2822

	35 cash & Crop share renters*		45 livestock and crop share renters	
	Jan. 1	Dec.31	Jan. 1	Dec. 31
Total acres in farm	144.1		205.9	
Owned	-		-	
Rented	144.1		205.9	
Total farm capital	$5041	$7222	$3311	$4641
Accounts receivable	86	27	180	165
Stocks and bonds	138	139	289	268
Life insurance	78	87	160	163
Real estate	114	299	-	49
Other outside investments	2	8	5	6
Total outside investments	332	533	454	486
Cash on hand and in bank	464	419	304	389
Other household and personal assets	1234	1422	974	1160
Total cash, household & personal assets	1698	1841	1278	1549
TOTAL ASSETS	7157	9623	5223	6841
Mortg. on land not operated	100	214	-	-
Chattel mortgages	889	994	453	308
Notes payable	493	365	589	511
Accounts payable	208	229	129	94
TOTAL LIABILITIES	1690	1802	1171	913
Farmer's net worth	5467	7821	4052	5928
Gain in net worth		+2354		+1876

Table 7. Summary of Farm Earnings by Tenure, 1947 (Operator's Share)

	Your farm	20 Owners	35 cash& cr. shr.renters	45 Livestock & CropShareRente
FARM RECEIPTS				
Dairy and dual purpose cows	_____	$ 292	$ 333	$ 125
Dairy products	_____	1258	1406	1010
Other dairy & dual purpose cattle	_____	179	256	117
Beef cattle	_____	21	45	120
Hogs	_____	1383	1429	1225
Sheep and wool	_____	35	11	20
Poultry	_____	124	203	63
Eggs	_____	485	682	316
Horses	_____	12	10	3
Corn	_____	338	161	190
Small grain	_____	413	201	161
Other crops	_____	241	253	153
Machinery & equipment sold	_____	573	206	126
Agricultural adjustment payments	_____	15	15	8
Income from work off the farm	_____	72	86	48
Misc.	_____	167	4	13
(1) Total farm sales	_____	5608	5301	3698
(2) Increase in farm capital	_____	2587	2181	1330
(3) Family living from the farm	_____	417	472	367
(4) Total farm rec. (1)+(2)+(3)	_____	8612	7954	5395
FARM EXPENSES				
Dairy and dual purpose cows bot	_____	$ 380	$ 454	$ 84
Other dairy & dual.Pur.cattle bot	_____	139	95	53
Beef cattle bot.(including feeders)	_____	3	28	19
Hogs bot	_____	112	189	117
Sheep bot	_____	50	6	1
Poultry bot (including turkeys)	_____	104	192	67
Horses bot	_____	20	28	20
Misc. livestock expenses	_____	54	73	46
Misc. crop expenses	_____	389	259	144
Feed bot	_____	672	906	516
Custom work hired	_____	232	193	136
Mech.power mach.(farm share)(new)	_____	600	629	390
Mech.power mach.(farm share)(upkeep)	_____	196	217	156
Mech.Power (farm share)(gas,oil,etc)	_____	370	386	312
Crop and general mach. (new)	_____	514	343	292
Crop and general mach. (upkeep)	_____	92	79	74
Livestock equipment (new).	_____	182	174	95
Livestock equipment (upkeep)	_____	25	26	20
Land, buildings & fancing (new)	_____	722	60	105
Buildings and fencing (upkeep)	_____	135	21	35
Hired labor	_____	183	106	142
Taxes (real estate & pers.Property)	_____	148	24	31
General farm and insurance	_____	72	34	25
Cash rent	_____	-	521	46
Interest paid	_____	232	59	23
(5) Total farm purchases	_____	5626	5102	2949
(6) Decrease in farm capital	_____	-	-	-
(7) Interest on farm capital	_____	466	248	176
(8) Unpaid family labor	_____	305	280	192
(9) Board furnished hired labor	_____	85	37	75
(10) Total farm exp.(Sum of (5) to(9)	_____	6482	5667	3392
(11) Operator's labor earn.(4) - (10)	_____	2130	2287	2003
(12) Ret.cap.& family lab.(7)+(8)+(11)	_____	2901	2815	2371

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 11 owners and 36 cash 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 $6435 and of those in the lower 20 per cent was $170. This is a range of $6265 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	Average operator's
Range	Average	farms	labor earnings
Below 75	65	21	$1446
75 - 124	100	85	3056
125 and above	136	19	3700

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. The relationship is not marked because in 1947 other factors were more important than choice of crops.

[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 32.0	26.3	30	$2392
32.0 - 51.9	40.8	63	3113
52.0 and above	59.1	32	2890

Return from Livestock. This is a measure of feeding efficiency. The majority of these farmers maintain some cattle, hogs and poultry. Six farmers did not keep any livestock. 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 86	38	66	$2347
86 - 116	49	99	3149
117 and above	36	136	3185

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

**Two farmers did not maintain 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 8.0	5.4	17	$1979
8.0 - 23.9	15.6	88	2777
24.0 and above	29.7	20	4119

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 220	168	26	$1501
220 - 459	323	74	2766
460 and above	554	25	4669

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 150	116	27	$1480
150 - 274	202	73	2707
275 and above	338	25	4913

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
$7.00 and above	$8.82	25	$ 711
$3.45 - $6.99	5.12	75	2882
Below $3.45	2.74	25	4064

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 preceding 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	5	_____		$ 16
1	9	_____	xxxxxxx	1528
2	21	_____	xxxxxxxxxx	2193
3	32	_____	xxxxxxxxxxxx	2800
4	25	_____	xxxxxxxxxxxxx	2833
5	14	_____	xxxxxxxxxxxxxx	3299
6	16	_____	xxxxxxxxxxxxxxxxx	4340
7	3	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	8150

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 accomplishmen 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, 1947

Measures used in chart on page 15	Your farm	Average of 125 farms	25 most profitable farms	25 least profitable farms
Operator's labor earnings	$_____	$2883	$6435	$170
(1) Crop yields*	_____	100	106	90
(2) % of tillable land in high ret. crops**	_____	42.0	40.5	34.2
(3) Ret. for $100 feed to prod.livestock***	_____	100	105	96
(4) Prod. livestock units per 100 acres****	_____	16.5	18.9	16.9
(5) Size of business - work units	_____	337	474	250
(6) Work units per worker	_____	199	263	147
(7) Pow., mach., equip., & bldg. exp. per work unit	$_____	$5.38	$4.43	$6.70
Items related to some of the above measures:				
(3) Index of return for $100 feed from				
Dairy cattle (See pages 20 and 21)	_____	100	100	103
Beef breeding herd (See page 25)	_____	100	114	-
Beef cattle - feeders (see page 24)	_____	100	135	-
Hogs (See page 22)	_____	100	110	79
Sheep - farm flock (See page 25)	_____	100	87	-
Turkeys	_____	100	-	-
Chickens (See page 23)	_____	100	113	90
(4) Number of animal units	_____	24.1	37.6	17.1
(5) Work units on crops	_____	96	138	69
Work units on productive livestock	_____	233	334	172
Other work units	_____	8	2	9
(6) Number of family workers	_____	1.5	1.5	1.6
Number of hired workers	_____	.2	.3	.1
Total number of workers	_____	1.7	1.8	1.7
(7) Power expense per work unit	$_____	$3.24	$2.56	$4.23
Crop machinery expense per work unit	_____	.89	.83	1.03
Livestock equip. expense per work unit	_____	.25	.28	.25
Bldgs. & fencing exp. per work unit	_____	1.00	.76	1.19

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

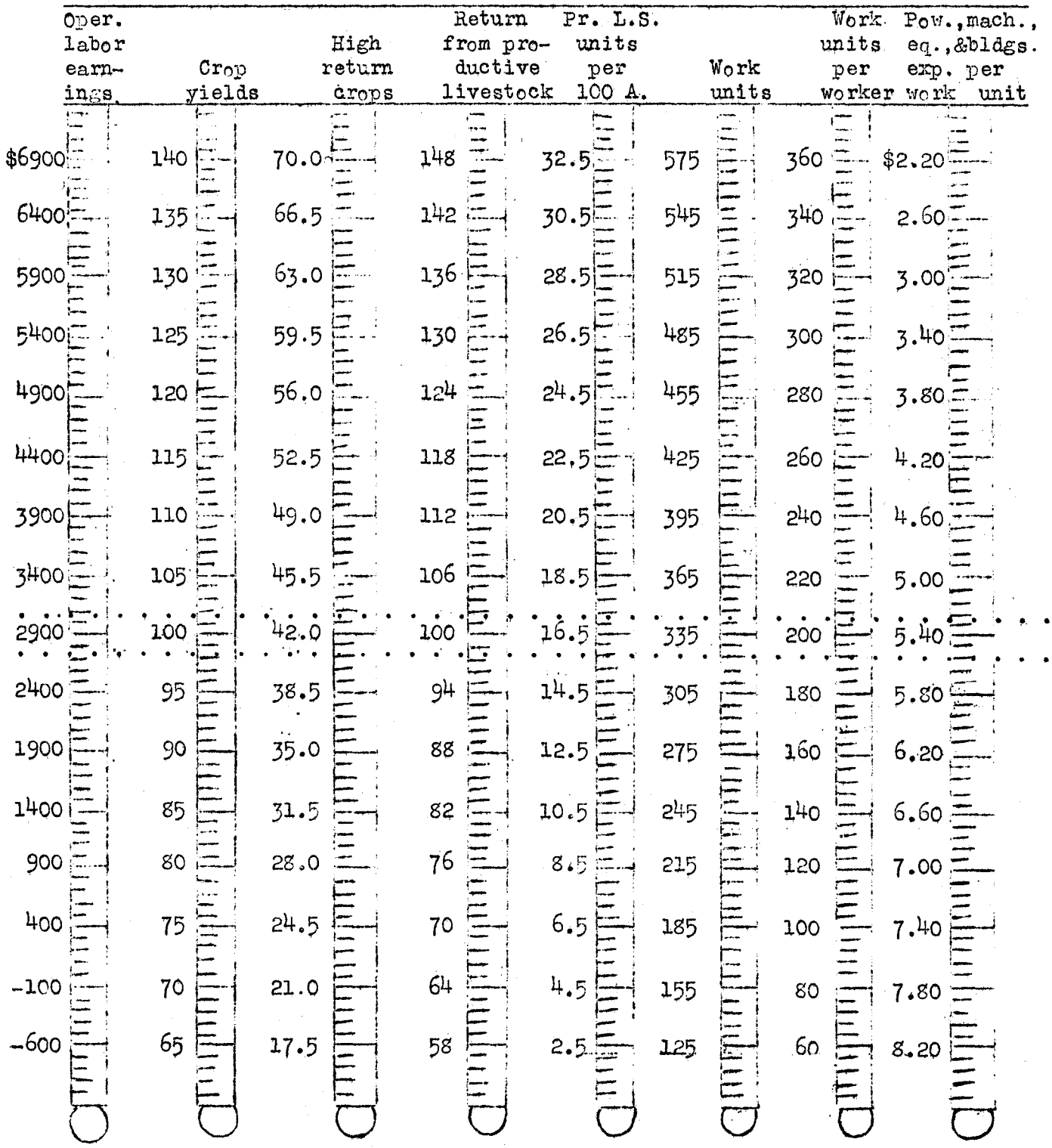

Table 18. Distribution of Acres in Farm, 1947

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 125 farms	25 most profitable farms	25 least profitable farms	Acr per grow crop
Canning peas	(A)	4		.4	-	.4	13.5
Flax	(C)	21		3.0	7.8	1.9	17.8
Soybeans	(C)	37		4.9	6.1	.4	16.6
Barley	(D)	23		2.1	4.7	1.9	11.4
Oats and barley	(D)	9		1.3	2.5	1.9	17.8
Oats	(D)	121		29.7	44.3	21.9	30.7
Oats and wheat	(D)	7		1.0	2.7	.6	18.0
Wheat	(D)	37		2.7	3.0	3.5	9.2
Rye, millet and buckwheat	(D)	9		.9	2.4	1.0	12.7
Total small grain and peas		124		46.0	73.5	33.5	46.4
Sugar beets, hybrid seed corn, potatoes and truck crops	(A)	16		.5	1.5	.5	3.6
Corn grain	(A)	119		29.2	30.1	15.3	30.7
Corn silage	(B)	72		5.8	9.4	3.2	10.1
Sweet corn	(B)	5		.4	.4	.8	10.8
Corn fodder	(D)	13		.7	.3	1.4	7.0
Total cultivated crops		125		36.6	50.7	21.2	36.6
Alfalfa hay	(A)	43		4.2	6.7	3.4	12.1
Red clover hay	(B)	44		6.9	9.1	5.0	19.6
Soybean hay	(C)	8		.4	-	.1	6.2
Mixed legumes & non-legumes	(C)	42		8.3	8.8	10.7	24.6
Legumes for seed	(C)	4		.6	.8	2.0	17.5
Timothy and/or brome hay	(D)	20		1.8	1.6	1.0	11.0
Timothy seed	(D)	3		.1	.1	.2	5.0
Other annual hay	(D)	1		.1	-	.4	10.0
Total tillable land in hay		119		22.4	27.1	22.8	23.3
Alfalfa and mixtures incl. alf.	(A)	3		.2	.6	-	6.8
Other legumes and mixtures	(C)	4		.4	-	-	11.9
Sudan grass or rape pasture	(C)	2		-	-	-	1.8
Other tillable pasture	(D)	43		5.6	11.6	3.8	16.5
Total tillable land in pasture		49		6.2	12.2	3.8	15.9
Tillable land not cropped	(D)	11		1.0	1.4	1.5	11.0
Total tillable land		125		112.2	164.9	82.8	112.2
Wild hay (non-tillable)		38		3.1	2.8	2.1	10.5
Non-tillable pasture		115		40.7	49.6	39.8	44.0
Timber (not pastured)		54		13.5	13.2	21.7	31.3
Roads and waste				5.3	6.2	7.0	
Farmstead				4.1	4.7	2.9	
Total acres in farm				178.9	241.4	156.3	
Per cent land tillable				64.5	70.4	53.8	
Per cent tillable land in high ret. crops				42.0	40.5	34.2	

Table 19. Crop Yields Per Acre, 1947

Crop	Your farm	Average of 125 farms	25 most profitable farms	25 least profitable farms
Canning peas, value	_____	$57.59	-	-
Flax, bu.	_____	10.5	10.8	5.5
Soybeans, bu.	_____	15.4	16.5	14.3
Barley, bu.	_____	24.1	26.1	19.4
Oats and barley, bu.	_____	33.3	28.4	29.6
Oats, bu.	_____	36.0	36.0	33.7
Oats and wheat, bu.	_____	36.9	37.0	-
Wheat, bu.	_____	17.5	19.0	16.0
Rye, bu.	_____	16.9	-	-
Buckwheat, bu.	_____	9.9	-	-
Corn grain, bu.	_____	38.9	41.4	37.0
Corn silage, tons	_____	7.0	7.1	7.6
Sweet corn, tons	_____	1.7	-	-
Corn fodder, tons	_____	2.1	-	1.9
Alfalfa hay, tons	_____	2.5	2.5	1.7
Red clover hay, tons	_____	2.0	2.1	1.5
Soybean hay, tons	_____	1.8	-	-
Other leg. & leg. mix. for hay, tons	_____	1.9	1.9	1.6
Brome or timothy hay, tons	_____	1.4	1.8	.9
Wild hay on non-tillable land, tons	_____	.8	.9	.6

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 16 to 398 with an average of 108 (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, 1947

Items	Your farm	Average of 125 farms	25 most profitable farms	25 least profitable farms
Crop acres per farm	_____	108.1	154.0	79.6
Tractor and horse exp. per crop acre	_____	$4.99	$4.11	$6.39
Crop & gen. mach.exp. per crop acre	_____	$2.94	$2.72	$3.47

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 farmers did not maintain horses.

Table 21. Feed Costs For Horses, 1947

Items	Your farm	Average of 95 farms
Feed per horse, lbs.:		
Grain	_____	624
Hay	_____	3576
Fodder & stover	_____	573
Feed Cost per horse:		
Grain	_____	$18.46
Roughage	_____	29.74
Pasture	_____	6.87
Total feed cost	_____	$55.07
Number of work horse	_____	2.6
Number of colts	_____	.2

AMOUNT OF LIVESTOCK

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

Table 22. Amount of Livestock, 1947

	Your farm	Average of 125 farms	25 most profitable farms	25 least profitable farms
Number of milk cows	_____	10.5	13.7	8.2
Number of other dairy cattle	_____	10.9	15.1	9.5
Number of beef cattle(incl.feeders)	_____	2.6	9.5	.2
Number of sheep*	_____	4.0	6.8	6.2
Number of hens	_____	133	167	106
Number of litters of pigs raised	_____	6.6	11.0	3.0
Pounds of hogs produced	_____	8822	15940	3668
Number of horses	_____	2.0	2.3	2.0
Number of colts	_____	.1	.1	.2

*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 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 23. Total Feed Costs and Returns From Your Livestock Enterprises, 1947

	Dairy or dual purpose cattle			Beef breeding herd	Feeder cattle
	Cows	Other	All		
Total returns					
Total feed cost					
Total return over feed					

	Hogs	Farm flock of sheep	Chickens	Turkeys
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 eight herds which were classified as dual purpose cattle.

The return over feed cost per cow varied from -$105.32 to $192.27 among the 115 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 sixteen herds which ranked below the average of the whole group in all of these factors showed a return over feed of $14.68 per cow. On the other hand, the nine herds which ranked above the average of the whole group in each of these five factors had a return over feed per cow of $147.61. 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, 1947

Items	Your farm	Average of 115 farms	23 farms highest in butterfat per cow	23 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	218	293	141
% butterfat in milk	_____	3.6	3.6	3.6
Price rec. per lb. B.F. sold (cents)	_____	86.8	90.0	82.5
As cream (cents)	_____	80.7	80.1	78.9
Other (cents)	_____	93.5	94.8	97.1
Feeds per cow, lbs:				
Corn	_____	864	940	516
Small grain	_____	687	739	501
Commercial feeds	_____	251	396	84
Legume hay	_____	3340	3944	2921
Other hay	_____	1194	809	932
Fodder and stover	_____	448	297	359
Total concentrates	_____	1802	2075	1101
Total dry roughage	_____	4982	5050	4212
Silage	_____	4767	6760	3762
Total digestible nutrients*	_____	4623	5225	3549
T.D.N. per lb. B.F.	_____	21.2	17.8	25.2
% T.D.N. that is protein	_____	12.8	13.6	11.8
Feed cost per cow:				
Concentrates	$_____	$ 59.39	$ 71.81	$ 34.19
Roughages	_____	57.12	67.19	46.74
Pasture	_____	6.81	6.31	6.65
TOTAL FEED COSTS	$_____	$123.32	$145.31	$ 87.58
Value of produce per cow:				
B.F. sales	$_____	$173.11	$246.89	$100.20
Dairy produce used in house	_____	12.41	11.09	19.35
Milk to livestock	_____	16.23	17.40	13.97
Net increases in value of cows	_____	-3.03	-11.26	-1.92
TOTAL VALUE PRODUCED	$_____	$198.72	$264.12	$131.60
RETURNS ABOVE FEED COST PER COW	$_____	$ 75.40	$118.81	$ 44.02
RETURNS FOR $100 OF FEED	$_____	$172.00	$193.00	$153.00
Feed cost per lb. B.F. (cents)	_____	56.6	49.6	62.1
% fall freshening	_____	47	49	40
Number of cows**	_____	11.4	10.8	10.7

* 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, 1947

Items	Your farm	Average of 114 farms	23 farms highest in butterfat per cow	22 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	316	410	187
Hay and fodder	_____	1817	1728	1549
Silage	_____	1475	1695	1693
Skim milk	_____	426	231	540
Whole milk	_____	239	277	115
Feed cost per head:				
Concentrates	$_____	$ 10.47	$ 14.97	$ 5.59
Roughages	_____	20.22	20.84	18.14
Milk	_____	10.62	11.04	6.59
Pasture	_____	2.85	2.86	2.58
TOTAL FEED COSTS PER HEAD	_____	$ 44.16	$ 49.71	$ 32.90
Net inc. in value of other dairy cattle	_____	57.81	63.03	56.44
RETURNS ABOVE FEED COST PER HEAD	$_____	13.65	13.32	23.54
RETURNS FOR $100 OF FEED	$_____	$160.00	$161.00	$200.00
Number of head of other dairy cattle	_____	11.8	10.6	14.0

Table 26. Feed Costs and Returns From All Dairy and Dual Purpose Cattle, 1947

Items	Your farm	Average of 115 farms	23 farms highest in butterfat per cow	23 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	_____	1367	1673	761
Hay and fodder	_____	4408	4333	3675
Silage	_____	4254	5661	3853
Feed cost per animal unit:				
Concentrates	_____	$ 45.64	$ 57.01	$ 23.44
Roughages	_____	51.24	57.18	42.74
Pasture	_____	6.37	6.32	5.74
TOTAL FEED COSTS PER ANIMAL UNITS	$_____	$103.25	$120.51	$ 71.92
Value of produce per animal unit:				
Dairy products	_____	$126.78	$169.56	$ 76.77
Net increase in val.of dairycattle	_____	33.78	31.93	44.17
TOTAL VALUE PRODUCED	_____	$160.56	$201.49	$120.94
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	57.31	80.98	49.02
RETURNS PER $100 OF FEED	$_____	$169.00	$180.00	$173.00
Animal units of dairy cattle	_____	17.6	16.7	17.8

Table 27. Relation of Return Over Feed per Dairy 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
None	16	xxx	$ 14.68
1	19	xxxxxxxx	38.36
2	18	xxxxxxxxxx	59.04
3	31	xxxxxxxxxxxxxxxxxx	89.31
4	22	xxxxxxxxxxxxxxxxxxxxxxx	115.75
5	9	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	147.61

HOGS

The return over feed cost per 100 pounds of hogs produced varied from $12.08 for those farmers ranking in the upper one-fifth in feeding efficiency to a return of $9.00 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, 1947

Items	Your farm	Average of 105 farms	21 farms highest in returns above feed	21 farms lowest in returns above feed
Feed per cwt. hogs produced, lbs.:				
Corn	_____	400	278	603
Small grain	_____	164	110	255
Commercial feeds	_____	26	22	33
Total concentrates	_____	590	410	891
Skim milk and buttermilk	_____	166	115	347
Feed cost per cwt. hogs produced:				
Concentrates	$_____	$ 20.22	$ 13.60	$ 31.44
Skim milk and buttermilk	_____	.75	.50	1.40
Pasture	_____	.22	.22	.29
TOTAL FEED COSTS	$_____	$ 21.19	$ 14.32	$ 33.13
Net increase in val.per cwt. hogs prod.	$_____	$ 24.74	$ 26.40	$ 24.13
RETURNS ABOVE FEED COST PER CWT. HOGS PROD	$_____	$ 3.55	$ 12.08	-$ 9.00
RETURNS FOR $100 OF FEED	$_____	$130.00	$191.00	$ 75.00
Price.received per cwt. hogs sold	$_____	$ 24.35	$ 25.04	$ 24.35
No. of spring litters raised	_____	5.9	5.7	4.9
No. of fall litters raised	_____	1.9	2.0	1.6
Total.No. of litters raised	_____	7.8	7.7	6.5
No. of pigs born per litter	_____	7.7	8.6	7.4
No. of pigs weaned per litter	_____	6.2	6.9	5.8
Pounds of hogs produced	_____	10470	10715	7222

Fourteen 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 fourteen farmers who ranked above the average of the entire group in each of the four factors received a return over feed of $9.72 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	14	xxxxxxx	$ -2.65
1	32	xx	.85
2	26	xxxxxxxxxx	4.22
3	19	xxxxxxxxxxxxxxxx	7.20
4	14	xxxxxxxxxxxxxxxxxxxxxx	9.72

CHICKENS

Thirty-six out of the 103 farmers raising chickens failed to receive a return large enough to cover the cost of feed. The average return over feed from the 103 flocks included in this report was 45 cents per hen (Table 30).

Table 30. Feed Costs and Returns from Chickens, 1947

Items	Your farm	Average of 103 farms	21 farms highest in returns above feed	21 farms lowest in returns above feed
Feed per hen, lbs.:				
Grain	_____	90	74	122
Commercial feeds	_____	42	42	50
Total concentrates	_____	132	116	172
Skim milk and buttermilk	_____	4	5	4
TOTAL FEED COST PER HEN	$_____	$ 5.00	$ 4.49	$ 6.76
Value of produce per hen:				
Eggs sold and used in house	$_____	$ 4.94	$ 6.00	$ 4.13
Net increase in value ofchickens	_____	.51	1.17	.43
TOTAL VALUE PRODUCED	_____	5.45	7.17	4.56
RETURNS ABOVE FEED COST PER HEN	$_____	$ .45	$ 2.68	$ -2.20
RETURNS FOR $100 OF FEED	$_____	$115.00	$164.00	$ 64.00
Price rec'd per doz.eggs sold(cents)	_____	40.4	40.4	39.8
Eggs laid per hen	_____	147	179	124
Ave.no.of hens on farm during year	_____	158	207	114
% of hens that are pullets	_____	75	90	66
% of death loss of hens	_____	12	8	13
Number of chicks put on feed	_____	276	345	227
Price paid per 100 chicks purchased	$_____	$ 25.56	$ 26.22	$ 23.54
Pounds of poultry produced	_____	710	1084	557

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 nine flocks which ranked below the average of the whole group in all of the factors or excelled in only one failed to cover feed cost by $1.00 per hen. The three flocks which ranked above the average of the whole group in five factors had a return over feed per hen of $2.04.

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	12	xxxxxxxxxx	$ -1.00
2	30	x	-.04
3	36	xxxx	.38
4	22	xxxxxxxxxxxxxxxxxx	1.82
5	3	xxxxxxxxxxxxxxxxxx	2.04

Table 32. Feed Costs and Returns From Feeder Cattle, 1947

Items	Your farm	Average of 5 farms
Feeds per cwt. beef produced, lbs.:		
Corn	_____	664
Small grain	_____	22
Commercial feeds	_____	29
Legume hay	_____	628
Other hay	_____	162
Fodder and stover	_____	157
Total concentrates	_____	715
Total dry roughages	_____	947
Silage	_____	339
Feed cost per cwt. beef produced:		
Concentrates	$_____	$23.44
Roughages	_____	8.99
Pasture	_____	1.29
TOTAL FEED COSTS	$_____	$33.72
Net increase in value of feeders	$_____	32.95
RETURNS ABOVE FEED COST PER CWT. BEEF PRODUCED	_____	$ -.77
RETURNS FOR $100 OF FEED	_____	$136.00
Price rec'd per cwt. beef sold in 1947	$_____	19.75
No. of animal units	_____	11.3
Pounds of beef produced	_____	4372

Table 33. Feed Costs and Returns from Beef Breeding Herds, 1947

Items	Your farm	Average of 5 farms
Feed per animal unit, lbs.:		
Concentrates	_____	567
Legume hay	_____	1256
Other hay	_____	836
Fodder and stover	_____	416
Silage	_____	3763
Skim milk*	_____	136
Whole milk*	_____	38
Feed cost per animal unit:		
Concentrates	_____	$16.75
Roughages	_____	30.81
Milk	_____	2.07
Pasture	_____	7.72
Total feed cost	_____	$57.35
Value of produce per animal unit:		
Dairy products	_____	$11.39
Net increase in value of beef cattle	_____	81.43
Total value produced	_____	$92.82
Return over feed cost per animal unit	_____	$35.47
Return for $100 of feed	_____	$177.
Number of cows and herd bulls	_____	15.4
Number of animal units	_____	33.3
Pounds of beef produced	_____	16698

*Milk from the dairy or dual purpose herd.

Table 34. Feed Costs and Returns from a Farm Flock of Sheep, 1947

Items	Your farm	Average of 9 farms
Feed per head,* lbs.:		
Concentrates	_____	39
Legume hay	_____	141
Other hay	_____	88
Fodder and stover	_____	41
Silage	_____	136
Feed cost per head:		
Concentrates	$_____	$ 1.13
Roughages	_____	2.80
Pasture	_____	1.06
TOTAL FEED COSTS	$_____	$ 4.99
Value of produce per head:		
Wool	_____	$ 2.50
Net increase in value of sheep	_____	8.98
TOTAL VALUE PRODUCED	$_____	$11.48
RETURNS ABOVE FEED COST PER HEAD	_____	6.49
RETURNS FOR $100 OF FEED	$_____	$345.00
Price per cwt. of lambs sold	$_____	$ 19.94
Price per lb. wool sold (cents)	_____	35.5
Pounds of wool per sheep sheared	_____	8.8
Number of ewes kept for lambing	_____	42
% lamb crop**	_____	92
% death loss**	_____	7.6
Pounds of sheep produced	_____	2143
No. of head of sheep*	_____	52.5

*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.

Items	On-The-Farm Trainees	S. E. Minn. Farm Management Service
FARM RECEIPTS		
Dairy Cattle sales	$ 691	$ 1480
Dairy products	1923	4129
Beef cattle (including feeders)	178	628
Hogs	2035	4362
Sheep and Wool (including feeders)	44	224
Poultry and eggs	801	2019
Horses	10	23
Crops	1140	2339
Power, machinery & equip, sales	244	291
Income from work off the farm	84	302
Miscellaneous	58	150
(1) Total farm sales	7208	15947
(2) Increase in farm capital	1907	3542
(3) Family living from the farm	490	741
(4) Total farm receipts	9605	20230
FARM EXPENSES		
Dairy cattle bought	$ 341	$ 296
Beef cattle bought	40	140
Hogs	175	226
Sheep	12	65
Poultry	125	149
Horses	21	11
Misc. livestock expense	77	250
Misc. crop expense	348	780
Feed bought	905	2224
Custom work hired	248	400
Mech. Power mach. (farm share)(new)	540	527
Mech. " " (farm share) upkeep, gas, etc.	655	988
Crop and general mach. (new)	434	726
" " " " (upkeep)	94	212
Livestock equipment (new)	139	97
Livestock equipment (new)	28	91
Buildings and fencing (new)	347	897
" " " (upkeep)	81	354
Hired labor	167	893
Taxes	234	362
General farm and insurance	49	157
(5) Total farm purchases	$5060	$ 9845
(6) Interest on farm capital	1004	1559
(7) Unpaid family labor	584	582
(8) Board furnished hired labor	74	201
(9) Total farm expenses (Sum of (5) to (8)	6722	12187
(10) Operator's labor earnings (4) - (9)	2883	8043

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, 1947.

Item	On-The-Farm Trainees	S. E. Minn. Farm Management Service
Acres in farm	179	223
Productive livestock	$ 2807	$ 4802
Horses	99	178
Crop, seed and feed	1710	4005
Machinery and equipment	2243	3414
Buildings, fences, etc.	5584	7551
Land	6687	9462
Total farm capital	$19130.	$29412

Table 37. Livestock Production on Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service, 1947.

Items	On-The-Farm Trainees	S. E. Minn. Farm Management Service
No. of milk cows	10.5	16.9
Pounds of butterfat per cow	218	272
Litters of pigs raised	6.6	11.0
Pounds of hogs produced	8822	17686
No. pigs weaned per litter	6.2	6.2
No. of hens	133	239
Eggs per hen	147	177

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, 1947.

Items	On-The-Farm Trainees	S. E. Minn. Farm Management Service
% high return crop	42.0	50.2
Productive livestock units per 100 acres.	16.5	22.6
Work units per farm	344	573
Work units per worker	202	287
Overhead Expenses per work unit	$5.36	$4.74

Table 39. Crop Yields Per Acre On Farms Operated by On-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service, 1947.

Crop	On-The-Farm Trainees	S. E. Minn. Farm Management Service
Flax - bu.	10.5	13.1
Soybeans, bu.	15.4	14.6
Barley, bu.	24.1	29.4
Oats, bu.	36.0	47.5
Corn grain, bu.	38.9	41.6
Corn silage, tons	7.0	7.8
Alfalfa hay, tons	2.5	2.4

Table 40. Livestock Feeding Efficiency on Farms Operated by on-The-Farm Trainees and Members of the Southeastern Minnesota Farm Management Service, 1947.

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

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.