University of Minnesota
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

NORTHERN MINNESOTA

1950

Cooperator: _____

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Division of Agricultural Economics

University Farm

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Fig. 1. 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 NORTHERN MINNESOTA, 1950

T. R. Nodland, H. G. Routhe, R. M. Dennistoun and G. A. Pond

INDEX

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 numbers 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. At the end of the year, W.E. McDaniel and J.A. Tyvand of the Division of Agricultural Economics aided in closing the records.

This report deals with the veterans enrolled by twenty-two schools located in northern Minnesota (Type-of-Farming Areas 5, 6 and 8)[1]. The map on the inside front cover shows the location of the schools. The following tabulation shows by schools the number of farm records submitted in 1950:

Type-of-Farming Area 5		Type-of-Farming Area 6		Type-of-Farming Area 8			
Cambridge	6	Frazee	3	Akeley	8	Little Fork	2
Foley	1	Pelican Rapids	7	Baudette	6	McGregor	2
Little Falls	8	Perham	11	Brainerd	4	Northome	3
Mora	10	Staples	10	Carlton	3	Pequot Lakes	4
Princeton	5	Wadena	6	Cromwell	3	Pine River	8
				Kelliher	4	Williams	4
Total	30	Total	37			Total	51

The subsequent pages in this report show the data for 111 farms. Seven farms were omitted from all the averages in the tables because the records did not include a full year or they were otherwise too incomplete 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 $2894 to $38868. The average investment for all farms 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 56 out of the 111 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 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 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.

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, 1950*

Items	Your farm Jan. 1	Your farm Dec. 31	Average of 111 farms Jan. 1	Average of 111 farms Dec. 31
Size of farm (acres)			191	
Size of business (work units)**			242	
Dairy and dual purpose cows			$1163	$1348
Other dairy & dual purpose cattle			523	644
Beef cattle			84	90
Hogs			163	185
Sheep			19	29
Poultry			106	95
Productive livestock (total)			2058	2391
Horses			65	54
Crop, seed, and feed			847	814
Power mach. (farm share)			1107	1310
Crop & general mach. (farm share)			725	898
Livestock equipment & supplies			180	226
Mach. & equipment (total)			2012	2434
Misc.			-	-
Buildings, fences, etc.			3398	3506
Land			2954	2966
Total farm capital			11334	12165

Items	22 most profitable farms Jan. 1	22 most profitable farms Dec. 31	22 least profitable farms Jan. 1	22 least profitable farms Dec. 31
Size of farm (acres)	237		179	
Size of business (work units)**	335		225	
Dairy & dual purpose cows	$1692	$1985	$1031	$1197
Other dairy & dual purpose cattle	881	954	455	552
Beef cattle	73	87	230	198
Hogs	252	240	177	173
Sheep	53	50	17	62
Poultry	127	126	160	128
Productive livestock (total)	3078	3442	2070	2310
Horses	78	70	56	45
Crop, seed, and feed	1303	1357	894	590
Power mach. (farm share)	1387	1868	1110	1212
Crop & general mach.	1046	1294	694	825
Livestock equipment & supplies	233	295	226	265
Mach. & equipment (total)	2666	3457	2030	2302
Misc.	-	-	-	-
Buildings, fences, etc.	4356	4287	3736	3898
Land	4663	4663	2708	2708
Total farm capital	16144	17276	11494	11853

* 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), 1950

Items	Your farms	Average of 111 farms	22 most profitable farms	22 least profitable farms
FARM RECEIPTS				
Dairy and dual-purpose cows		$ 328	$ 488	$ 310
Dairy products		1439	2147	1179
Other dairy & dual-purpose cattle		427	721	371
Beef cattle		83	70	192
Hogs		515	1004	531
Sheep and wool		27	75	22
Poultry (including turkeys)		109	354	88
Eggs		324	405	425
Horses		8	4	8
Corn		26	78	--
Small grain		138	257	118
Other crops		105	148	96
Machinery & equip. sold		183	253	214
Agricultural adjustment payments		21	19	17
Income from work off the farm		77	117	21
Miscellaneous		22	16	46
(1) Total farm sales		3832	6156	3638
(2) Increase in farm capital		831	1132	359
(3) Family living from the farm		451	533	420
(4) Total farm receipts (1)+(2)+(3)		5114	7821	4417
FARM EXPENSES				
Dairy and dual-purpose cows bought	$	$ 165	$ 159	$ 218
Other dairy and dual-pur. cattle bot.		91	40	173
Beef cattle bought		28	10	102
Hogs bought		39	45	53
Sheep bought		11	1	37
Poultry bought (including turkeys)		44	83	57
Horses bought		5	---	4
Misc. livestock expense		44	62	62
Misc. crop expenses		155	217	193
Feed bought		604	817	703
Custom work hired		170	184	223
Mech, power mach.(farm share)(new)		536	905	500
Mech. power mach.(farm share)(upkp)		106	138	135
Mech, power (F. share)(gas,oil,etc.)		350	434	370
Crop and general mach.(new)		330	474	287
Crop and general mach.(upkp)		56	71	66
Livestock equipment (new)		83	114	82
Livestock equipment(upkp)		13	23	14
Buildings and fencing (new)		325	188	415
Buildings and fencing (upkp)		61	59	92
Hired labor		84	201	62
Taxes		163	251	160
General farm and insurance		47	52	59
(5) Total farm purchases		3510	4528	4067
(6) Decrease in farm capital		--	--	--
(7) Interest on farm capital		587	835	584
(8) Unpaid family labor		221	196	341
(9) Board furnished hired labor		28	70	19
(10) Total farm exp. (sum of(5) to(9)		4346	5629	5011
(11) Oper. labor earnings (4) - (10)		768	2192	-594

Table 3. Summary of Farm Earnings (Enterprise Statement) 1950*

Items	Your farm	Average of 111 farms	22 most profitable farms	22 least profitable farms
RETURNS AND NET INCREASES				
Dairy and dual purpose cows	_____	$1726	$2550	$1347
Other dairy & dual pur. cattle	_____	813	1352	593
Beef cattle	_____	55	62	60
Hogs	_____	547	1014	533
Sheep	_____	27	71	31
Poultry	_____	421	731	460
All productive livestock	_____	3589	5780	3024
Crops, seed, and feed	_____	-554	-568	-1000
Agricultural cons. payments	_____	21	19	17
Income from labor off the farm	_____	60	75	14
Miscellaneous	_____	108	111	155
(1) Total returns & net increases	_____	3224	5417	2210
EXPENSES AND NET DECREASES				
Horses	_____	$ 50	$ 43	$ 43
Tractor	_____	304	388	337
Truck	_____	69	61	142
Auto(farm share)	_____	207	240	196
Gas engine and elect.exp.(f.shr.)	_____	48	62	43
Hired power	_____	80	82	108
Total power	_____	758	876	869
Crop and general machinery	_____	209	292	234
Livestock equipment	_____	48	75	56
Buildings, fencing, and tiling	_____	213	256	291
Misc. productive livestock exp.	_____	44	62	62
Labor	_____	387	526	489
Real estate taxes	_____	127	202	120
Personal property tax	_____	36	49	40
Insurance	_____	28	28	34
General farm	_____	19	24	25
Interest on farm capital	_____	587	835	584
(2) Total exp. & net decreases	_____	2456	3225	2804
(3) Oper. labor earnings (1) - (2)	_____	768	2192	-594

*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 9 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 10 per cent of the average inventory value of the dwelling.

Table 4. Family Living from the Farm, 1950

Items	Your farm	Average 111 farms	22 most profitable farms	22 least profitable farms	Your farm	Ave. 111 farms	22 most profitable farms	22 least profitable farms
Adult equiv. - family	_____	2.5	2.5	2.6				
- others	_____	.2	.4	.2				
Whole milk	_____	740 qts.	841	623	_____	$61.14	$68.91	$54.03
Skim milk	_____	130 qts.	143	146	_____	3.05	4.73	1.47
Cream	_____	131 pts.	196	85	_____	28.23	43.53	14.73
Farm made butter	_____	8 lbs.	7	4	_____	4.79	4.64	2.43
Beef	_____	182 lbs.	197	100	_____	37.17	38.53	20.86
Hogs	_____	278 lbs.	370	328	_____	48.09	54.74	58.56
Sheep	_____	1 lbs.	--	6	_____	.14	--	.68
Poultry	_____	73 lbs.	94	53	_____	19.45	21.59	10.98
Eggs	_____	80 doz.	119	78	_____	23.97	34.35	23.82
Potatoes	_____	10 bu.	10	7	_____	12.06	10.31	8.84
Vegetables & fruits					_____	20.91	22.64	21.43
Farm fuel	_____	10 cds.	10	9	_____	52.13	73.17	38.77
Rental vl. of house					_____	138.73	155.64	163.69
Misc.					_____	1.00	--	--
Total					_____	450.86	532.78	420.29

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 $110 per month for family living in addition to the food, fuel and housing furnished by the farm.

Table 5. Household and Personal Expenses and Receipts for Those Farmers Who Kept Complete Accounts of These Items, 1950

Items	Your farm	Average of 98 farms	20 most profitable farms	20 least profitable farms
Number of persons in family	_____	3.5	3.7	3.9
Number of adult equivalents in family	_____	2.5	2.6	2.7
Number of other adult equivalents*	_____	.2	.3	.2
EXPENSES				
Food and meals bought	$_____	$498	$547	$540
Operating and supplies	_____	125	171	132
Clothing and clothing materials	_____	137	165	144
Personal care, personal spending	_____	67	80	83
Furnishings and equipment	_____	129	191	117
Education, recreation and development	_____	45	58	51
Medical care and health insurance	_____	107	118	86
Church, welfare, gifts	_____	55	79	56
Personal share of auto expense	_____	63	74	73
Household share of elec.&gas eg.exp.	_____	30	34	34
H.H. & per. shr. of new auto&motorsbot.	_____	61	108	43
Total cash living expense	_____	1317	1625	1359
State and federal income tax	_____	6	7	9
Insurance	_____	38	64	51
Total household and pers. cash exp.	_____	1361	1696	1419
Food furnished by the farm	_____	265	293	217
Fuel furnished by the farm	_____	46	40	40
House rental	_____	136	143	153
Total cash expenses and perquisites	_____	1808	2172	1829
Purchase of stocks, bonds, and other invest.	___	$ 24	$ 21	$ 23
RECEIPTS				
Income from outside investments	_____	$11	$20	$5
Veterans compensation	_____	$1412	$1558	$1573
Misc. income	_____	7	17	---

*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, part-owners and renters 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, 1950 (Operator's Share)

	Your farm		51 Owners	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	———		163.4	
Owned	———		163.4	
Rented	———		---	
Total farm capital	———	———	$10233	$11160
Accounts Receivable	———	———	44	55
Stocks and bonds	———	———	15	7
Life insurance	———	———	34	29
Outside real estate	———	———	21	53
Other outside investments	———	———	3	4
Total outside investments	———	———	73	93
Cash on hand and in bank	———	———	139	105
Other household & personal assets	———	———	974	1056
Total cash, household & personal assets	———	———	1113	1161
TOTAL ASSETS	———	———	11463	12469
Federal Land Bank Mortgage	———	———	152	143
Other mortgages on land operated	———	———	2275	2055
Mortgages on other real estate	———	———	---	10
Production Credit Association	———	———	103	109
Crop loans	———	———	37	71
Other Chattel Mortgages	———	———	600	547
Notes payable	———	———	652	741
Accounts payable	———	———	201	279
TOTAL LIABILITIES	———	———	4100	3955
Farmer's net worth	———	———	7363	8514
Gain in net worth		———		+1151

	30 part owners		15 renters*	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
Total acres in farm	212.1		194.7	
Owned	136.9		---	
Partner's share or rented	75.2		194.7	
Total farm capital	$7619	$8644	$5390	$6112
Accounts receivable	82	114	---	10
Stocks and bonds	66	66	143	145
Life insurance	69	73	55	72
Other outside investments	8	12	---	1
Total outside investments	143	151	198	218
Cash on hand and in bank	97	246	472	354
Other household and personal assets	660	750	1109	1274
Total cash, household & personal assets	757	996	1581	1628
TOTAL ASSETS	8601	9905	7169	7968
Federal Land Bank Mortgage	---	---	---	---
Other mortgages on land operated	1340	1187	---	---
Production Credit Association	33	28	---	---
Crop loans	21	---	---	---
Other Chattel mortgages	559	613	448	350
Notes payable	599	559	834	648
Accounts payable	229	248	270	267
TOTAL LIABILITIES	2781	2635	1552	1265
Farmer's net worth	5820	7270	5617	6703
Gain in net worth		+1450		+1086

* Three rented for cash, five cash and crop share and six livestock and crop share and one crop share.

Table 7. Summary of Farm Earnings by Tenure, 1950 (Operator's Share)

	Your farm	51 Owners	30 part-owners	15 renters
FARM RECEIPTS				
Dairy and dual purpose cows	_____	$ 257	$ 263	$ 351
Dairy products	_____	1242	1248	1636
Other dairy and dual purpose cattle	_____	363	389	479
Beef cattle	_____	87	128	---
Hogs	_____	490	390	726
Sheep and wool	_____	24	9	---
Poultry	_____	53	35	82
Eggs	_____	316	224	632
Horses	_____	8	4	2
Corn	_____	3	60	24
Small grain	_____	84	77	183
Other crops	_____	79	56	72
Machinery & equipment sold	_____	209	129	190
Agricultural adjustment payments	_____	26	20	8
Income from work off the farm	_____	77	19	54
Misc.	_____	20	36	23
(1) Total farm sales	_____	3338	3087	4462
(2) Increase in farm capital	_____	927	1025	722
(3) Family living from the farm	_____	446	394	401
(4) Total farm rec. (1)+(2)+(3)	_____	4711	4506	5585
FARM EXPENSES				
Dairy and dual purpose cows bot	_____	168	147	142
Other dairy & dual pur. cattle bot	_____	146	44	47
Beef cattle bot. (including feeders)	_____	45	20	---
Hogs bot	_____	25	48	50
Sheep bot (including feeders)	_____	8	---	---
Poultry bot (including turkeys)	_____	39	29	38
Horses bot	_____	5	8	---
Misc. livestock expenses	_____	44	35	55
Misc. crop expenses	_____	141	135	140
Feed bot	_____	523	520	663
Custom work hired	_____	168	162	132
Mech. power mach. (farm share)(new)	_____	608	425	598
Mech. power mach. (farm share)(upkp)	_____	103	86	133
Mech. power (farm share)(gas, oil, etc)	_____	331	316	408
Crop and general mach. (new)	_____	320	256	376
Crop and general mach. (upkeep)	_____	48	48	98
Livestock equipment (new)	_____	95	66	119
Livestock equipment (upkeep)	_____	12	6	26
Land, buildings & fencing(new)	_____	468	437	24
Buildings and fencing (upkp)	_____	76	52	24
Hired labor	_____	42	68	276
Taxes (real estate & pers. property	_____	138	107	45
General farm and insurance	_____	61	26	32
Cash rent	_____	--	55	251
Interest paid	_____	128	99	22
(5) Total farm purchases	_____	3742	3195	3699
(6) Decrease in farm capital	_____	--	--	--
(7) Interest on farm capital	_____	407	308	265
(8) Unpaid family labor	_____	186	129	197
(9) Board furnished hired labor	_____	13	16	114
(10) Total farm exp. (Sum of (5) to (9)	_____	4348	3648	4275
(11) Operator's labor earn. (4) - (10)	_____	363	858	1310
(12) Ret. cap. & family lab. (7)+(8)+(11)	_____	956	1295	1772

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 51 owners, 30 part-owners and 15 renters is shown in Table 7. The statements include only the veterans share of the earnings in each case. 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 $2192 and of those in the lower 20 per cent was $-594. This is a range of $2786 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 in each of the three type-of-farming areas 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 65	49	18	$ 231
65 - 129	97	72	802
130 and above	154	21	1114

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, D 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.

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 20.0	10.1	22	$ 564
20.0 - 44.9	30.6	68	717
45.0 and above	53.7	21	1149

Return from Livestock. This is a measure of feeding efficiency. All of these farmers maintain dairy cattle. In addition to the dairy herd some farmers maintain a few hogs, chickens and sheep. 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 improvements 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 75	66	19	$352
75 - 124	97	72	761
125 and above	143	20	1190

*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 this area where hay and pasture are the predominant crops. 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	6.0	19	$690
8.0 - 17.9	12.2	69	747
18.0 and above	21.6	23	897

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 165	138	20	$411
165 - 325	233	72	568
325 and above	388	19	1904

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 reduced 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 145	119	21	$ 249
145 - 250	193	72	700
250 & above	278	18	1647

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
$6.75 and above	$8.16	17	$-192
$3.50 - 6.74	5.16	76	878
Below $3.50	2.71	18	1212

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 inter-relationships between these factors the exact relationship between one factor and earnings cannot 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
0 or 1	15	_____	x	$ -79
2	17	_____	xxxx	231
3	34	_____	xxxxxxxxxxx	735
4	24	_____	xxxxxxxxxxxxx	837
5	15	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	1716
6 or 7	6		xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	1952

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, 1950

Measures used in chart on page 15	Your farm	Average of 111 farms	22 most profitable farms	22 least profitable farms
Operator's labor earnings	$____	$768	$2192	$-594
(1) Crop yields*	____	100	136	86
(2) % of tillable land in high ret. crops**	____	30.9	36.2	27.5
(3) Ret. for $100 feed to prod. livestock***	____	100	113	87
(4) Prod. livestock units per 100 acres****	____	13.1	14.5	12.1
(5) Size of business - work units	____	242	335	225
(6) Work units per worker	____	186	239	173
(7) Pow., mach., equip., & bldg. exp. per work unit	____	$5.22	$4.63	$6.66
Items related to some of the above measures:				
(2) % of tillable land in high ret. crops.				
Type-of-farming area 5	____	31.5	37.4	24.5
Type-of-farming area 6	____	35.1	36.8	25.6
Type-of-farming area 8	____	27.0	33.9	31.5
(3) Index of return for $100 feed from				
Dairy cattle (See pages 20 and 21)	____	100	114	87
Beef cattle - breeding herd	____	100	--	--
Beef cattle - feeders	____	100	--	--
Hogs (See page 23)	____	100	98	104
Sheep - farm flock (See page 24)	____	100	--	--
Chickens (See page 22)	____	100	111	92
(4) Number of animal units	____	16.1	22.9	15.3
(5) Work units on crops	____	67	94	67
Work units on productive livestock	____	165	229	156
Other work units	____	10	12	2
(6) Number of family workers	____	1.2	1.2	1.3
Number of hired workers	____	.1	.2	--
Total number of workers	____	1.3	1.4	1.3
(7) Power expense per work unit	$____	$3.30	$2.71	$4.03
Crop machinery expense per work unit	____	.87	.89	1.06
Livestock equip. expense per work unit	____	.20	.24	.26
Bldgs. & fencing exp. per work unit		.85	.79	1.31

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

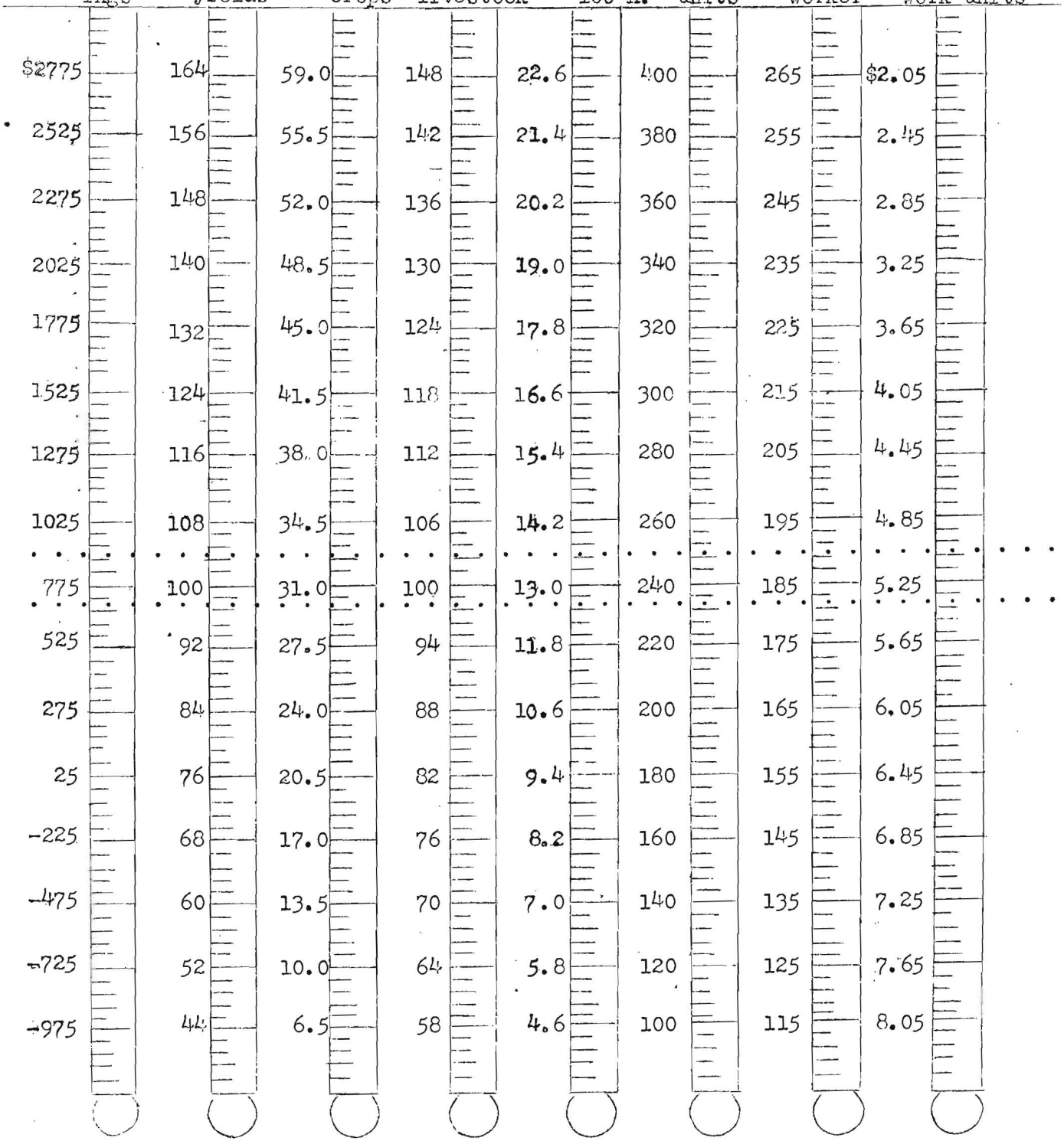

Table 18. Distribution of Acres in Farm, 1950

Crop	Crop ratings for type-of-farming area*			Your farm	Average of farms in type-of-farming area		
	5	6	8		5	6	8
Flax	C	B	B	_____	—	.7	1.3
Barley	D	B	C	_____	.6	2.9	1.5
Oats	C	C	C	_____	18.7	32.0	10.6
Wheat	D	C	D	_____	.5	6.2	.5
Rye	C	D	D	_____	4.4	.5	.3
Misc.	D	D	D	_____	-	-	1.0
Total small grain				_____	24.2	42.3	15.2
Garden and seed potatoes	A	A	A	_____	.1	.4	.6
Potatoes	B	B	B	_____	.1	.4	.2
Corn silage	C	C	C	_____	8.9	8.5	3.4
Corn grain	C	C	D	_____	4.1	11.4	1.7
Corn fodder	D	D	D	_____	1.5	2.2	1.4
Soybeans for grain	D	D	D	_____	.2	-	-
Total cultivated crops				_____	14.9	22.5	7.3
Alfalfa hay	A	A	A	_____	6.7	15.1	9.2
Alfalfa seed	B	B	B	_____	.2	-	.2
Red or alsike clover hay	B	B	B	_____	3.7	2.9	2.5
Red or alsike clover seed	B	B	B	_____	.3	.1	.4
Mixed legumes & non-legumes	C	C	C	_____	5.2	.6	9.0
Timothy and/or brome hay	D	D	D	_____	1.3	.1	1.6
Wild hay on tillable land	D	D	D	_____	4.6	1.9	5.2
Annual hay	D	D	D	_____	1.2	2.8	2.0
Total tillable land in hay				_____	23.2	23.5	30.1
Legumes and mixtures	**	**	**	_____	2.3	3.9	2.6
Other tillable pasture	D	D	D	_____	5.5	2.8	7.4
Total tillable land in pasture				_____	7.8	6.7	10.0
Tillable land not cropped	D	D	D	_____	.8	.9	2.3
Total tillable land				_____	70.9	95.9	64.9
Wild hay (non-tillable)				_____	9.5	9.7	8.3
Non-tillable pasture				_____	40.1	73.0	50.3
Timber (not pastured)				_____	12.5	10.9	40.3
Roads and waste				_____	14.0	16.2	22.6
Farmstead				_____	3.6	4.9	4.2
Total acres in farm				_____	150.6	210.6	190.6
Per cent land tillable				_____	47.1	45.5	34.1
Per cent tillable land in high ret. crops				_____	31.6	35.1	27.0

* A, B, C, and D refer to ranking used in calculating per cent of tillable land in high return crops, see page 10.

** Alfalfa pasture was rated as an A crop and other legumes and mixtures for pasture a C crop.

Table 19. Crop Yields Per Acre, 1950

Crop	Your farm	Average of farms growing each crop in type-of-farming area 5	6	8
Flax, bu.	_____	--	4.8	5.5
Barley, bu.	_____	11.1	25.2	16.9
Oats, bu.	_____	19.4	25.1	23.7
Wheat, bu.	_____	8.6	12.7	--
Rye, bu.	_____	14.8	--	12.2
Potatoes, bu.	_____	49	80	104
Corn silage, tons	_____	3.2	4.7	3.4
Corn, grain, bu.	_____	19.4	26.8	2.3*
Corn fodder, tons	_____	1.8	1.8	2.5
Alfalfa hay, tons	_____	1.3	1.3	1.4
Alfalfa seed, lbs.	_____	--	--	--
Red or alsike clover hay, tons	_____	1.3	1.2	1.1
Red or alsike clover seed, lbs.	_____	--	--	140
Other leg.&leg.mix.for hay, tons	_____	.9	.9	1.5
Brome or timothy hay, tons	_____	.7	1.3	.8
Wild hay on tillable land, tons	_____	1.1	1.0	1.2
Annual hay, tons	_____	1.2	.8	.7
Wild hay on non-tillable land, tons	_____	1.0	1.0	.8

*Most of the corn froze in August, 1950.

POWER AND MACHINERY EXPENSE

Power and machinery expense per crop acre is an indication of the economy with which capital is invested in these items. The crop acres per farm ranged from 5 to 217 with an average of 76(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, 1950

Items	Your farm	Average of 111 farms	22 most profitable farms	22 least profitable farms
Crop acres per farm	_____	75.9	99.9	76.3
Tractor and horse exp. per crop acre	_____	$5.59	$4.97	$5.66
Crop & gen. mach. exp. per crop acre	_____	3.02	3.03	3.44

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

Table 21. Feed Costs for Horses, 1950

Items	Your farm	Average of 65 farms
Feed per horse, lbs.:		
Grain	_____	204
Hay	_____	4779
Fodder and stover	_____	362
Feed cost per horse:		
Grain	_____	$4.38
Roughage	_____	31.30
Pasture	_____	5.44
Total feed cost	_____	41.12
Number of work horses	_____	2.2
Number of colts	_____	---

AMOUNT OF LIVESTOCK

Nearly all the farmers maintained some dairy cattle. The average number of dairy cows per farm was approximately eight head (Table 22). Fifty-seven per cent of the farmers kept some hogs and fifty-one percent kept a few hens.

Table 22. Amount of Livestock, 1950

	Your farm	Average of 111 farms	22 most profitable farms	22 least profitable farms
Number of milk cows	_____	8.3	11.1	7.3
Number of other dairy cattle	_____	9.4	13.5	7.9
Number of beef cattle	_____	.8	.7	1.7
Number of sheep*	_____	1.9	4.6	2.8
Number of hens	_____	82	105	111
Number of litters of pigs raised	_____	3.0	4.5	3.0
Pounds of hogs produced	_____	2651	5033	2485
Number of horses	_____	1.3	1.7	1.0

*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 24. 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 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 24. Total Feed Costs and Returns From Your Livestock Enterprises, 1950

	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	Turkeys	Chickens
Total returns				
Total feed costs				
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 AND DUAL PURPOSE CATTLE

The quantity of feed consumed, value of feeds and returns from dairy cattle are presented in Tables 25, 26, and 27. One hundred herds were classified as dairy cattle and 6 herds were classified as dual purpose cattle. The return over feed cost per cow varied from $-71.34 to $199.87 among the 106 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 produced).
4. Quality of ration (percentage of protein in T.D.N.).
5. Economy of ration (feed cost per pound butterfat).

Table 25. Factors of Cost and Returns from Dairy and Dual Purpose Cows, 1950

Items	Your farm	Average of 106 farms	21 farms highest in butterfat per cow	21 farms lowest in butterfat per cow
Pounds of butter fat per cow	_____	256	355	172
Per cent of butterfat in milk	_____	3.8	4.0	3.8
Price rec. per lb. B.F. sold(cents)	_____	73.7	75.0	69.6
As cream (cents)	_____	68.1	67.8	67.5
Other (cents)	_____	81.6	83.5	75.8
Feed per cow, lb.				
Corn	_____	495	741	312
Small grain	_____	792	1271	472
Commercial feeds	_____	494	810	415
Legume hay	_____	3410	4977	2309
Other hay	_____	2463	2133	3151
Fodder and stover	_____	724	987	656
Total concentrates	_____	1781	2822	1199
Total hay and fodder	_____	6597	8097	6116
Silage	_____	4408	4122	2146
Total digestible nutrients*	_____	5310	6864	4236
T.D.N. per lb. B.F.	_____	20.7	19.3	24.6
% T.D.N. that is protein	_____	12.8	14.2	11.7
Feed cost per cow:				
Concentrates	$_____	$43.68	$71.47	$27.85
Roughages	_____	64.12	81.36	49.24
Pasture	_____	5.08	4.78	5.00
TOTAL FEED COSTS	$_____	$112.88	$157.61	$82.09
Value of produce per cow:				
B.F. sales	$_____	$169.41	$237.56	$101.12
Dairy produce used in home	_____	14.23	15.20	16.08
Milk to livestock	_____	20.08	29.73	16.52
Net increases in value of cows	_____	3.72	4.26	-.11
TOTAL VALUE PRODUCED	$_____	$207.44	$286.75	$133.61
RETURNS ABOVE FEED COST PER COW	$_____	$94.56	$129.14	$51.52
RETURNS FOR $100 OF FEED	$_____	$195	$190	$178
Feed cost per lb. B.F. (cents)	_____	44.1	44.4	47.7
% fall freshening	_____	40	50	34
Number of cows**	_____	8.6	8.2	7.8

*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 26. Feed Costs and Returns from Other Dairy and Dual Purpose Cattle, 1950

Items	Your farm	Average of 105 dairy herds	21 farms highest in butterfat per cow	21 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	298	440	268
Hay and fodder	_____	2484	2873	2260
Silage	_____	1259	822	1066
Skim milk	_____	1263	1574	1391
Whole milk	_____	321	466	239
Feed cost per head:				
Concentrates	$_____	$7.25	$10.85	$6.19
Roughages	_____	21.90	25.93	17.50
Milk	_____	14.73	21.23	12.51
Pasture	_____	2.12	1.96	2.26
TOTAL FEED COSTS PER HEAD	$_____	$46.00	$59.97	$38.46
Net inc. in value of other dairy cattle	_____	$91.27	$90.03	$83.56
RETURNS ABOVE FEED COST PER HEAD	_____	$45.27	$30.06	$45.10
RETURNS FOR $100 OF FEED	_____	$224	$158	$243
Number of head of other dairy cattle	_____	9.9	9.7	9.3

Table 27. Feed Costs and Returns from All Dairy and Dual Purpose Cattle, 1950

Items	Your farm	Average of 106 dairy herds	21 farms highest in butterfat per cow	21 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	_____	1362	2046	1149
Hay and fodder	_____	5842	7004	5333
Silage	_____	3719	3172	2104
Feed cost per animal unit:				
Concentrates	$_____	$32.38	$51.71	$22.07
Roughages	_____	55.91	68.31	44.31
Pasture	_____	4.75	4.41	4.82
TOTAL FEED COST	$_____	93.04	124.43	71.20
Value of produce per animal unit:				
Dairy products	$_____	$120.35	$163.40	$76.88
Net increas in value of dairy cattle	_____	64.45	65.45	59.63
TOTAL VALUE	$_____	$184.80	$228.85	$136.51
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	$ 91.76	$104.42	$ 65.31
RETURNS PER $100 OF FEED	$_____	$211	$190	$206
Animal units of dairy cattle	_____	13.7	13.2	12.7

The herds which ranked low in these factors had low returns over feed. As indicated in Table 28, the 32 herds which ranked below the average of the whole group in all of these factors or excelled in one showed a return over feed of $57 per cow. On the other hand, the 32 herds which ranked above the average of the whole group in four or five factors had a return over feed per cow of $129. These data suggest that dairy returns could be very materially increased by more attention to these five management factors.

Table 28. 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 cost per cow	Average return over feed
None or 1	32	xxxxxxxxxxxxx	$57.00
2	17	xxxxxxxxxxxxxxxxx	74.00
3	25	xxxxxxxxxxxxxxxxxxxxxxxxxxx	112.00
4 or 5	32	xxxxxxxxxxxxxxxxxxxxxxxxxxxxx	129.00

Table 29. Feed Costs and Returns from Chickens, 1950

Items	Your farm	Average of 57 farms	14 farms highest in returns above feed	14 farms lowest in returns above feed
Feed per hen, lbs.:				
Grain	_____	69	66	94
Commercial feeds	_____	46	51	47
Total concentrates	_____	115	117	141
Skim milk and buttermilk	_____	12	20	3
TOTAL FEED COST PER HEN	$_____	$3.44	$3.53	$4.11
Value of produce per hen:				
Eggs sold and used in house	$_____	$3.93	$5.13	$3.05
Net increase in value of chickens	_____	.14	.80	-.27
TOTAL VALUE PRODUCED	$_____	4.07	5.93	2.78
RETURNS ABOVE FEED COST PER HEN	$_____	$ .63	$2.40	$-1.33
RETURNS FOR $100 OF FEED	$_____	$122	$172	$63
Price rec'd per doz. eggs sold (cents)	_____	31.0	32.4	29.8
Eggs laid per hen	_____	152	191	121
Ave. no. of hens on farm during the year	_____	150	186	89
% of hens that are pullets	_____	68	79	70
% of death loss of hens	_____	14	11	16
Numbers of chicks started:				
Straight run	_____	31	39	36
Pullets	_____	139	176	96
Cockerels	_____	18	12	14
Pounds of poultry produced	_____	419	653	301

Table 30. Feed Costs and Returns from Hogs, 1950

Items	Your farm	Average of 63 farms	16 farms highest in returns above feed	16 farms lowest in returns above feed
Feed per cwt. hogs produced, lbs.:				
Corn	_____	196	128	261
Small grain	_____	172	139	228
Commercial feeds	_____	59	67	68
Total concentrates	_____	427	334	557
Skim milk and buttermilk	_____	586	352	848
Feed cost per cwt. hogs produced:				
Concentrates	$_____	$10.01	$8.18	$13.06
Skim milk and buttermilk	_____	2.15	1.22	3.21
Pasture	_____	.17	.17	.25
TOTAL FEED COSTS	$_____	$12.33	$9.57	$16.52
Net increase in val. per cwt. hogs prod.	$_____	$20.96	$25.46	$17.77
RETURNS ABOVE FEED COST PER CWT. HOGS PROD.	_____	$ 8.63	$15.89	$ 1.25
RETURNS FOR $100 OF FEED	$_____	$190	$287	$111
Ave. weight per hog sold, lbs.	_____	152	100	169
Price received per cwt. hogs sold	$_____	$21.15	$23.68	$18.35
No. of spring litters raised	_____	3.5	4.2	2.0
No. of fall litters raised	_____	1.7	2.6	.9
Total no. of litters raised	_____	5.2	6.8	2.9
No. of pigs born per litter	_____	8.7	9.1	8.7
No. of pigs weaned per litter	_____	6.7	7.5	6.1
Pounds of hogs produced	_____	4512	3720	3171

Table 31. Feed Costs and Returns from a Farm Flock of Sheep, 1950

Items	Your farm	Average of 7 farms
Feeds per head, *lbs.:		
Concentrates	_____	61
Legume hay	_____	285
Other hay	_____	238
Fodder and stover	_____	284
Silage	_____	164
Feed cost per head:		
Concentrates	$_____	$1.39
Roughages	_____	5.98
Pasture	_____	.92
TOTAL FEED COSTS	$_____	$8.29
Value of produce per head:		
Wool	$_____	$ 3.87
Net increase in valueof sheep	_____	10.45
TOTAL VALUE PRODUCED	$_____	$14.32
RETURNS ABOVE FEED COST PER HEAD	$_____	$ 6.03
RETURNS FOR $100 OF FEED	$_____	$ 210
Price per cwt. of lambs sold	$_____	$26.06
Price per lb. wool sold (cts.)	_____	59.3
Pounds of wool per sheep sheared	_____	7.1
Number of ewes kept for lambing	_____	21
% lamb crop**	_____	87
% death loss	_____	9.3
Pounds of sheep produced	_____	1023
No. of head of sheep*	_____	27.2

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

Table 32. Summary of Farm Inventories by Years

	1947	1948	1949	1950
Number of farms	141	204	188	111
Dairy and dual purpose cows	1078	1101	1176	1256
Other dairy & dual purpose cattle	451	511	540	583
Beef cattle (inc. feeders)	57	30	72	87
Hogs	181	199	185	174
Sheep	17	58	36	24
Poultry	96	87	76	100
Productive livestock (total)	1880	1986	2085	2224
Horses	82	77	67	59
Crop, seed, & feed	977	1045	1054	831
Power mach. (farm share)	917	1022	1253	1209
Crop & general mach. (farm share)	673	741	821	811
Livestock equipment & supplies	216	193	212	203
Mach. & equipment (total)	1806	1956	2286	2223
Miscellaneous	2	1	1	-
Buildings, fences, etc.	3638	3332	3208	3452
Land	3809	3386	3564	2960
Total farm capital	12194	11783	12265	11749

Table 33. Summary of Farm Earnings by Years

	1947	1948	1949	1950
Monthly charge for unpaid family labor	$87	$119	$112	$110
Monthly charge for board to hired labor	33	38	33	32
FARM RECEIPTS				
Dairy and dual-purpose cows	$282	$335	$263	$328
Dairy products	1546	1798	1471	1439
Other dairy & dual-purpose cattle	260	357	316	427
Beef cattle	45	33	55	83
Hogs	428	436	500	515
Sheep and wool	19	60	39	27
Poultry	71	97	43	109
Eggs	388	328	267	324
Horses	14	15	12	8
Small grain	501	326	270	138
Other crops	221	218	248	131
Machinery & equip. sold	119	174	211	183
Agricultural adjustment payments	26	33	29	21
Income from work off the farm	78	65	108	77
Miscellaneous	14	15	40	22
(1) Total farm sales	4012	4290	3872	3832
(2) Increase in farm capital	1067	936	781	831
(3) Family living from the farm	453	441	417	451
(4) Total farm receipts (1)+(2)+(3)	5532	5667	5070	5114
FARM EXPENSES				
Dairy and dual purpose cows bought	$175	$205	$166	$165
Other dairy and dual pup. cattle bot.	57	100	79	91
Beef cattle bought	8	10	24	28
Hogs bought	60	49	51	39
Sheep bought	14	6	11	11
Poultry bought	50	43	37	44
Horses bought	16	21	7	5
Misc. livestock expense	41	43	41	44
Misc. crop expenses	195	206	187	155
Feed bought	549	533	385	604
Custom work hired	164	191	205	170
Mech. power mach. (farm share) (new)	507	477	568	536
Mech. power mach. (farm share) (upkp)	151	152	111	106
Mech. power (f. share)(gas,oil,etc.)	313	356	376	350
Crop and general mach. (new)	269	333	360	330
Crop and general mach. (upkeep)	71	75	63	56
Livestock equipment (new)	73	66	76	83
Livestock equipment (upkeep)	13	14	15	13
Buildings and fencing (new)	221	243	256	325
Buildings and fencing (upkeep)	94	93	81	61
Hired labor	102	100	81	84
Taxes	121	134	159	163
General farm and insurance	40	43	39	47
(5) Total farm purchases	3304	3493	3378	3510
(6) Decrease in farm capital	-	-	-	-
(7) Interest on farm capital	610	589	613	587
(8) Unpaid family labor	381	360	329	221
(9) Board furnished hired labor	29	33	24	28
(10) Total farm exp. (sum of (5) to (9)	4324	4475	4344	4346
(11) Oper. labor earnings (4) - (10)	1208	1192	726	768

Table 34. Summary of Acres and Crop Yields Per Farm by Years

	1947	1948	1949	1950
ACRES PER FARM				
Flax	4.2	3.5	5.0	.8
Barley	3.0	1.6	1.4	1.7
Oats	18.3	20.6	19.2	19.7
Wheat	3.7	2.4	2.8	2.3
Other small grains	1.9	1.1	2.2	1.9
Total small grains	31.1	29.2	30.6	26.4
Corn	15.4	16.4	16.4	13.8
Other cultivated crops	.6	.4	.7	.5
Total cultivated crops	16.0	16.8	17.1	14.3
Alfalfa for hay or seed	5.9	6.6	10.4	10.5
Clover for hay or seed	2.2	2.6	3.1	3.2
Other hay and seed crops	17.7	15.9	11.4	12.3
Total tillable land in hay	25.8	25.1	24.9	26.0
Total tillable land in pasture	3.3	3.3	3.9	8.4
Tillable land not cropped	1.3	2.0	2.2	1.5
Total tillable land	77.5	76.4	78.7	76.6
Wild hay (non-tillable)	8.0	9.0	8.3	9.1
Non-tillable pasture	46.8	49.7	51.3	54.9
Timber, roads, waste, and farmstead	31.2	28.9	47.7	45.7
Total land in farm	163.5	164.0	186.0	186.3
CROP YIELDS PER ACRE				
Flax, bu.	8.5	11.0	7.8	5.3
Barley, bu.	21.1	26.3	26.5	19.3
Oats, bu.	31.5	32.9	31.5	23.0
Wheat, bu.	14.7	15.6	11.3	12.6
Potatoes, bu.	87.3	94.8	75.5	77.5
Corn for grain, bu.	28.1	42.9	42.1	18.1
Corn for silage, tons	5.0	6.7	7.2	4.0
Corn fodder, tons	2.1	2.7	2.6	2.0
Alfalfa hay, tons	1.8	1.9	1.8	1.3
Red or alsike clover hay, tons	1.5	1.5	1.2	1.2
Brome or timothy hay, tons	1.6	1.2	1.1	.9
Wild hay on non-tillable land, tons	1.1	1.0	1.3	.9

Table 35. Summary of Miscellaneous Items by Years

	1947	1948	1949	1950
MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY				
% high return crops	27.3	27.0	32.7	30.9
A.U. livestock per 100 A.	13.3	13.1	13.6	13.1
No. of work units *	288	284	293	242
Work units per worker	201	213	223	186
Expenses per work unit	$4.39	$4.54	$4.34	$5.22
AMOUNT OF LIVESTOCK				
No. of milk cows	9.0	8.3	8.6	8.3
No. of other dairy cattle	8.7	8.7	9.3	9.4
No. head of sheep	1.7	4.5	2.5	1.9
No. of hens	85	72	60	82
Lbs. hogs produced	2093	2348	3132	2651
No. litters of hogs raised	1.5	1.7	2.6	3.0
No. of horses	1.7	1.5	1.3	1.3
PRODUCTION PER UNIT OF LIVESTOCK				
Lbs. B.F. per dairy cow	218	236	253	256
Pigs weaned per litter	6.7	7.4	7.3	6.7
No. eggs laid per hen	138	138	142	152
Lbs. wool per sheep sheared	6.9	6.7	6.5	7.1
% lamb crop	98	109	104	87
PRICE RECEIVED PER				
Lb. B.F. sold (cts.)	87.1	97.6	73.4	73.7
Cwt. hogs sold	$25.50	$25.55	$20.71	$21.15
Cwt. lambs sold	20.50	22.41	22.54	26.06
Lb. wool sold (cts)	38.4	48.4	48.2	59.3
Doz. eggs sold (cts)	40.9	41.5	39.9	31.0
RETURN ABOVE FEED COST PER				
Dairy cow	$102.85	$141.61	$100.81	$94.56
Cwt. hogs produced	8.87	7.74	6.44	8.63
Head of sheep	8.85	7.85	7.67	6.03
Hen	.76	1.40	1.81	.63
FEED COST PER				
Dairy cow	$94.89	$103.18	$93.35	$112.88
Cwt. hogs produced	16.77	15.18	10.46	12.33
Head of sheep	3.10	5.55	5.72	8.29
Hen	4.40	3.85	3.48	3.44
Horse	35.50	38.08	34.05	41.12

* Number of work units for the years 1947, 1948, and 1949 was obtained by dividing the total number of work units by the total number of farms cooperating from the N.E. and N.W. areas.