SUMMARY REPORT
of the
SOUTHEASTERN MINNESOTA FARM MANAGEMENT SERVICE
1940-1942

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University of Minnesota
Department of Agriculture
and
United States Department of Agriculture
Bureau of Agricultural Economics
and the
County Extension Services of
Dakota, Dodge, Freeborn, Goodhue, LeSueur, Mower, Nicollet, Olmstead, Rice, Scott, Steele, Wabasha, and Waseca Counties
Cooperating

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Cooperator: _____

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Summary Report of the Southeastern Minnesota Farm Management Service for the Years 1940, 1941, and 1942

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INTRODUCTION

Since January 1, 1928, farmers in several southeastern Minnesota counties have been cooperating with the University of Minnesota and the Bureau of Agricultural Economics of the United States Department of Agriculture in a Farm Management Service Project. This service is offered to farmers who desire to keep records, and to have the records summarized and analyzed in connection with those of other farmers. Each farmer who cooperates in this service pays an annual fee which covers a part of the cost. The balance of the cost is defrayed by the University of Minnesota.

The Southeast Minnesota Farm Management Association was organized in 1939 by the farmers cooperating in the Farm Management Service. This Association serves as an agency thru which the members may contribute to the determination of policies and to the maintenance of the field organization and membership.

The data included in this report were secured from the records of those farmers who cooperated in the Service continuously during the three year period, 1940 to 1942. The 117 farms included in this report were located in the following counties: Dakota, Dodge, Freeborn, Goodhue, LeSueur, Mower, Nicollet, Olmsted, Rice, Scott, Steele, Wabasha and Waseca.

The cooperators were assisted and supervised in keeping their records by the field agent, Glen Myers, who visited each farm several times each year. The records kept included inventories, cash receipts and expenses, a report of feed consumed by the various classes of livestock and a record of the family living secured from the farm.

The data in this report are presented very largely in terms of 3 year averages in contrast with the annual reports containing information for a single year. These three year average figures are somewhat more stable than the annual figures since to a considerable extent the effect of minor uncontrollable factors that may cause considerable variation in net returns or in efficiency of production for an individual year are reduced or eliminated. The data in this report should serve as a more stable basis for farm planning than that shown in the annual reports.

Because the farmers included in this study are, in general, above the average in managerial ability and operate larger and more productive farms, they have returns materially higher than the average for this section of the state. There were, nevertheless, wide variations in the methods and practices followed by these men. It is reasonable to assume that similar variations occur among all farmers in the area. To the extent that this is true, this report should be of value to all farmers and others interested in agriculture in that it illustrates how farm records may be used as a basis for making an analysis of a farm business and for improving the management of a farm.

Description of the Area

There is some variation in soil conditions and topography among these counties. The soil varies from sandy loam to a rich black silt loam; the latter type predominates in this area. Some of the farms are level, all tillable and well drained, but most of them are gently rolling with some land too rough or too wet to cultivate. Goodhue and Wabasha Counties have more rolling land than the other counties.

Much of the level land is tiled to make possible its cultivation in wet years. However, on a number of farms, there is considerable land which is poorly drained. In much of Goodhue, Dodge, Mower and Olmsted Counties and in the eastern part of Dakota, Rice and Steele Counties, the soil is lime deficient and applications of lime are necessary in order to grow alfalfa and sweet clover. In the remainder of the area it is not necessary, as a rule, to apply lime in order to grow these two crops.

Description of the Cropping Seasons

In general, weather conditions during the three years 1940 to 1942 were very favorable for crop production. In April and May 1940 the temperatures were below normal. Small grains got an excellent start even though precipitation was also below normal. Fairly high temperatures in June and July with ample summer rainfall resulted in high corn yields. Hay yields because of low rainfall in the spring and wet weather losses in curing the second crop were relatively low.

In 1941 warm weather together with frequent rains in May and June favored the growth of crops. Hot, dry weather during July and August damaged small grains and pasture but was favorable for corn. In 1942 cool wet weather in May retarded the growth of vegetation, and the planting of corn and other late crops was seriously delayed. Small grains and grasses did well in July. Heavy rains delayed haying, harvesting and threshing, and caused some damage to grain in shocks and to hay. Heavy rains, heavy snows and freezing temperatures in late September damaged late maturing corn and soybeans.

Table 1. Monthly and Annual Departure from Normal Precipitation

	Rochester			Albert Lea			Faribault			St. Peter		
	1940	1941	1942	1940	1941	1942	1940	1941	1942	1940	1941	1942
	Inches											
Jan.	-0.69	+0.57	-0.97	-0.75	-0.01	-0.73	-0.41	+0.11	-0.41	-0.58	-0.28	-0.85
Feb.	+0.17	-0.54	-0.60	+0.09	+0.16	-0.57	-0.07	-0.24	-0.33	+0.13	+0.56	-0.37
Mar.	+0.28	+1.22	+1.70	+0.72	-0.18	+0.19	+0.01	-0.12	+0.52	+1.25	+0.18	+1.43
Apr.	-0.84	-1.33	-0.89	-0.86	-0.14	+0.46	-0.55	+0.46	+0.21	-0.45	-0.01	+0.16
May	-1.33	+0.44	+2.08	-3.18	+1.18	+0.60	-1.57	+0.12	+1.91	-1.58	+0.95	-0.47
June	-1.74	+1.25	+1.67	-0.44	+1.95	-0.22	+1.39	-0.93	-1.83	+6.34	+0.59	-0.38
July	+1.78	-0.88	+2.68	-0.94	-2.24	+3.43	-2.60	-1.52	-0.11	-1.36	-1.54	-0.37
Aug.	+0.99	-2.99	+3.88	+2.95	-2.79	+0.29	+1.41	-1.57	+2.47	+6.40	-2.42	-1.61
Sept.	-1.98	+3.35	+4.53	-3.32	+3.82	+0.01	-3.07	+0.01	+1.40	-3.11	+0.84	+4.77
Oct.	+0.83	+1.73	-0.42	+1.54	+5.29	-0.92	+0.43	+1.92	-1.13	+0.31	+3.44	-1.99
Nov.	+1.98	-0.83	-0.59	+1.63	-0.69	-0.86	+1.87	-0.82	-0.60	+2.57	+0.02	-0.28
Dec.	+1.26	-0.35	+0.45	+0.55	+0.18	-0.28	+0.72	-0.12	+0.69	+1.02	+0.17	+0.45
Total	+0.71	+1.64	+13.52	-2.01	+6.53	+1.40	-2.44	-2.70	+2.79	+10.94	+2.50	+0.49

Table 2. Summary of Farm Inventories, 1940-1942*

Items	Your farm	Average of 117 farms	23 most profitable farms	23 least profitable farms
Size of farm (acres)		231	291	181
Size of business (work units)**		687	878	546
Average Inventory - Beginning of Year				
Horses	$	$416	$488	$408
Productive livestock (total)		3167	4652	2441
Dairy and dual purpose cows		1139	1274	1108
Other dairy & dual purpose cattle		603	686	575
Beef cattle (including feeders)		431	976	56
Hogs		584	827	462
Sheep (including feeders)		146	236	93
Poultry (including turkeys)		264	653	147
Crop, seed, and feed		2386	3271	1477
Mach. & equipment (total)		2911	3872	2219
Power mach. (f. share)		1049	1313	809
Crop & gen. mach. (f. share)		1336	1711	982
Livestock equip. & supplies		526	848	428
Buildings, fences, etc.		6708	8089	5821
Land		9503	11277	7760
Total farm capital		25091	31649	20126
Average Inventory - End of Year				
Horses	$	$391	$444	$368
Productive livestock (total)		3756	5634	2734
Dairy & dual purpose cows		1217	1356	1127
Other dairy & dual purpose cattle		658	790	597
Beef cattle (including feeders)		478	1131	30
Hogs		923	1410	692
Sheep (including feeders)		185	274	100
Poultry (including turkeys)		295	673	188
Crop, seeds, and feed		2760	3911	1698
Mach. & equipment (total)		3169	4185	2400
Power mach. (f. share)		1134	1413	855
Crop & gen. mach.		1444	1837	1068
Livestock equipment & supplies		591	935	477
Buildings, fences, etc.		6792	8143	5804
Land		9503	11277	7760
Total farm capital		26371	33594	20764

* For the purpose of comparison the inventories as shown in this table and the earnings as shown elsewhere in this report are presented on a full-owner basis. The assets, expenses and receipts of the landlord were included in the statements for rented farms.

** See page 28 for an explanation of the term "work units".

Table 3. Net Worth Statement for those Farmers Who Kept a Complete Record of All Assets and Liabilities

	Your farm	29 owned farms	11 part-owned farms	16 rented farms
Net Worth Statement, January 1, 1940				
Total acres in farm	____	184.8	240.7	210.9
Owned	____	184.8	182.5	-
Rented	____	-	58.2	210.9
Total farm capital	$ ____	$20261	$23137	$ 4869
Accounts receivable	____	558	584	412
Household and personal assets	____	2322	1915	1541
Total assets	____	23141	25636	6822
Total liabilities	____	6636	10953	2118
Real estate mortgages	____	4646	7569	-
Chattel mortgages	____	386	1585	1236
Notes	____	1359	1210	516
Accounts payable	____	245	589	366
Farmer's net worth	$ ____	$16505	$14683	$ 4704
Net Worth Statement, December 31, 1942				
Total acres in farm	____	184.8	268.2	222.7
Owned	____	184.8	201.6	-
Rented	____	-	66.6	222.7
Total farm capital	$ ____	$23408	$28518	$ 7476
Accounts receivable	____	340	202	493
Household and personal assets	____	3706	2157	2066
Total assets	____	27454	30877	10035
Total liabilities	____	5051	8438	1179
Real estate mortgages	____	3558	6548	-
Chattel mortgages	____	246	634	570
Notes	____	1010	964	422
Accounts payable	____	237	292	187
Farmer's net worth	$ ____	$22403	$22439	$ 8856

Table 4. Summary of Amount of Livestock

Items	Your farm	Average of 117 farms	23 most profitable farms	23 least profitable farms
Average Amount of Livestock, 1940-1942				
No. of horses	_____	4.0	4.7	3.8
No. of colts	_____	1.0	1.2	.7
No. of dairy & dual purpose cows	_____	17.7	20.1	16.3
Head of other dairy & dual purpose cattle	_____	17.7	21.4	17.2
Head of cattle in beef breeding herd	_____	4.3	9.3	0
Pounds of feeder cattle produced	_____	1461	3937	284
Litters of pigs	_____	14.2	19.5	11.2
Pounds of hogs produced	_____	21193	30961	15064
Head of sheep (2 lambs = 1 head)	_____	16.0	24.0	16.9
No. of hens	_____	217	260	202
Total no.of prod.lvstk.animal units	_____	47.8	69.4	37.8
% of total that are:				
Dairy and dual purpose cows	_____	39.8	31.5	42.8
Other dairy and dual purpose cattle	_____	20.7	16.9	23.9
In beef breeding herd	_____	3.9	6.1	0
Feeder cattle	_____	3.3	6.6	1.1
Native sheep	_____	4.5	5.0	5.1
Feeder sheep	_____	.9	.5	.2
Hogs	_____	19.1	19.3	20.7
Turkeys	_____	2.6	9.7	0
Hens	_____	5.2	4.4	6.2
Average Number of Livestock on Hand, January 1, 1940				
Horses	_____	4.2	5.0	4.2
Colts	_____	1.1	1.6	.8
Dairy and dual purpose cows	_____	16.7	19.5	15.4
Other dairy and dual purpose cattle	_____	17.9	19.8	17.9
Beef breeding herd	_____	3.6	7.8	0
Feeder cattle	_____	3.4	9.5	1.3
Sheep-farm flock	_____	12.9	19.2	14.6
Hogs	_____	50	63	45
Hens	_____	246	301	217
Average Number of Livestock on Hand, December 31, 1942				
Horses	_____	3.7	4.5	3.4
Colts	_____	.9	1.0	.6
Dairy and dual purpose cows	_____	18.3	20.6	16.4
Other dairy and dual purpose cattle	_____	18.7	22.2	16.6
Beef breeding herd	_____	5.0	11.0	0
Feeder cattle	_____	2.5	7.7	0
Sheep-farm flock	_____	16.4	27.9	15.8
Hogs	_____	67	106	50
Hens	_____	300	336	281

Table 5. Summary of Farm Earnings (Cash Statement), 1940-1942

Items	Your farm	Average of 117 farms	23 most profitable farms	23 least profitable farms
FARM EXPENSES				
Horses bought	$	$ 27	$ 27	$ 18
Dairy and dual-purpose cows bought		60	81	26
Other dairy & dual-purpose cattle bought		67	88	35
Beef cattle bought (incl. fdrs.)		227	663	19
Hogs bought		97	147	115
Sheep bought (including feeders)		78	68	5
Poultry bought (including turkeys)		121	300	77
Misc. crop expenses		221	271	164
Feed bought		908	1972	646
Power mach. (farm share) (new)		303	381	194
Power mach. (farm share) (upkeep)		415	555	303
Custom work hired		135	146	113
Crop and general mach. (new)		280	369	220
Crop and general mach. (upkeep)		71	93	57
Livestock equipment (new)		138	214	113
Livestock equipment (upkeep)		39	56	35
Misc. livestock expense		108	208	81
Buildings and fencing (new)		308	298	212
Buildings and fencing (upkeep)		171	221	161
Hired labor		514	753	363
Taxes		273	354	239
Insurance		29	45	29
General farm		45	51	38
(1) Total farm purchases		4635	7361	3263
(2) Decrease in farm capital		-	-	-
(3) Board furnished hired labor		161	232	96
(4) Interest on farm capital		1287	1631	1022
(5) Unpaid family labor		268	286	274
(6) Total farm expenses(Sum of (1)to(5)		6351	9510	4655
FARM RECEIPTS				
Horses		35	51	33
Dairy and dual-purpose cows		327	421	252
Dairy products		1795	2164	1654
Other dairy and dual-purpose cattle		320	360	315
Beef cattle (including feeders)		527	1389	86
Hogs		1961	2889	1410
Sheep and wool (including feeders)		188	243	107
Poultry (including turkeys)		632	2358	153
Eggs		640	950	493
Corn		107	105	82
Small grain		294	313	182
Other crops		302	330	72
Power machinery sold		113	139	74
Crop and gen. mach. sold		52	84	36
Misc.		153	221	98
Income from work off the farm		149	105	90
Agricultural adjustment payments		350	483	212
(7) Total farm sales		7945	12605	5349
(8) Increase in farm capital		1280	1945	638
(9) Family living from the farm		514	606	423
(10) Total farm receipts (7)+(8)+(9)		9739	15156	6410
(6) Total farm expenses		6351	9510	4655
(11) Operator's labor earnings(10)-(6)		3388	5646	1755

Table 6. Summary of Farm Earnings (Enterprise Statement) 1940-1942*

Items	Your farm	Average of 117 farms	23 most profitable farms	23 least profitable farms
EXPENSES AND NET DECREASES				
Total power	$____	$728	$944	$582
Horses	____	181	213	171
Tractor	____	222	305	168
Truck	____	86	149	39
Auto (farm share)	____	109	134	86
Gas engine (farm share)	____	6	7	8
Elec. plant or current (farm share)	____	57	64	52
Hired power	____	67	72	58
Crop and general machinery	____	203	258	168
Livestock equipment	____	97	158	80
Buildings, fencing and tiling	____	278	331	275
Misc. productive livestock expense	____	98	203	78
Labor	____	977	1307	762
Real estate taxes	____	237	307	213
Personal property tax	____	36	47	26
Insurance	____	29	45	29
General farm	____	45	51	38
Interest on farm capital	____	1287	1631	1022
(1) Total expenses & net decreases	____	4015	5282	3273
RETURNS AND NET INCREASES				
All productive livestock	____	6763	10933	4833
Dairy and dual purpose cows	____	2156	2610	1916
Other dairy & dual purpose cattle	____	623	800	543
Beef breeding herd	____	164	334	2
Feeder cattle	____	192	500	33
Hogs	____	2229	3365	1561
Sheep - farm flock	____	127	199	111
Sheep - feeders	____	25	23	0
Turkeys	____	459	2003	7
Chickens	____	788	1099	660
Crops, seed and feed	____	-26	-845	-216
Income from work off the farm	____	149	105	90
Agricultural conservation payments	____	350	483	212
Miscellaneous	____	167	252	109
(2) Total returns & net increases	____	7403	10928	5028
(1) Total expenses & net decreases	____	4015	5282	3273
(3) Oper. labor earnings (2) - (1)	____	3388	5646	1755

* 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 in page 6.

Table 7. Family Living From the Farm, 1940-1942

Items	Your farm	Average 117 farms	23 most profitable farms	23 least profitable farms	Your farm	Average 117 farms	23 most profitable farms	23 least profitable farms
No.of persons(Family		3.2	3.6	2.8				
adult equiv.(Other*		.8	1.0	.5				
Wholemilk		1223 qts.	1463	1030	$	$44.27	$53.04	$36.76
Skim milk		285 qts.	431	336		1.21	1.74	1.32
Cream		260 pts.	348	156		31.65	40.63	20.29
Farm made butter		1 lbs.	-	-		.44	-	-
Eggs		206 doz.	244	179		44.35	51.57	38.49
Cattle		324 lbs.	420	242		24.75	33.42	15.76
Hogs		517 lbs.	545	416		44.36	48.57	36.35
Sheep		7 lbs.	11	7		.51	.62	.52
Poultry						19.99	22.04	19.03
Potatoes		24 bu.	32	19		16.46	21.15	12.82
Vegetables & fruits						39.97	39.72	32.63
Farm fuel		7 cds.	8	5		30.89	34.64	25.80
Rental vl. of house						214.43	259.32	183.00
Misc.(wool,honey,etc.)						.25	-	-
Total						$513.53	$606.46	$422.77

Table 8. Household and Personal Expenses for Those Farms Which Kept Complete Accounts of These Expenses, 1940-1942

Items	Your farm	Average of 66 farms	13 most profitable farms	13 least profitable farms
Number of persons - family		4.4	4.8	3.6
Number of persons, (Family		3.4	3.4	3.0
adult equivalent (Other*		.9	1.2	.6
Food and meals bought	$	$343	$414	$261
Operating and supplies		129	139	98
Clothing and clothing materials		160	214	113
Personal care, personal spending		46	55	29
Furnishings and equipment		125	132	129
Education, recreation and development		66	106	59
Medical care and health insurance		98	133	65
Church, welfare, gifts and income tax		109	157	91
Personal share of auto expense		101	106	83
Household share of elect.& gas eng.exp.		41	42	32
H.H.&pers.shr.of new auto,gas eng.&motors	bot	60	74	43
Life insurance and other investments		307	419	209
Total household and personal cash expenses		1585	1991	1212
Food furnished by the farm		280	299	220
Fuel furnished by the farm		30	34	28
House rental		209	290	149
Total household and personal expenses		2104	2614	1609

* Hired help or others boarded.

ANALYSIS OF THE REASONS FOR DIFFERENCES IN OPERATOR'S EARNINGS

The operator's labor earnings varied widely among the farmers included in this study. The average labor earnings of those farmers ranking in the upper 20 per cent in the range according to earnings was $5646 and of those in the lower 20 per cent, $1755. This is a range of $3891 between the average earnings of these two groups.

There were likewise variations between years on the same farm. The variations between years were determined by ranking the 117 farms from high to low on the basis of the 1940-1942 average earnings and for each of the three years included in this study. The deviations from the 1940-1942 rank were then noted. For example one farmer was number 31 on the basis of the three-year average earnings, number 29 in 1940, 39 in 1941 and 26 in 1942 or an average deviation of 5 from the 1940-1942 rank. Thirty-one per cent of the farmers had an average yearly deviation from their three-year average rank of less than 10 and 77 per cent had less than 20.

In general the yearly deviations from the 1940-1942 rank were relatively small (see Table 9). The farmers in the upper and lower 20 per cent in the range according to earnings had an average deviation of 10 from their three-year rank. In other words, if a farmer ranked 15th in his average earnings and had a yearly deviation of 10, he would be expected to fluctuate between 5th place and 25th place in the rank of earnings during 1940, 1941 and 1942.

Table 9. Deviations from the 1940-1942 Ranked Earnings

Farms grouped according to earnings	Average deviation from the 1940-1942 rank
Highest 20 per cent	10.1
Next 20 per cent	16.0
Next 20 per cent	16.6
Next 20 per cent	15.8
Lowest 20 per cent	10.4

It is interesting to note that there was less year-to-year deviation in earnings among the farmers in the upper and lower group than in the intermediate groups. Earnings are high or low in any given year principally because of certain factors that are more or less inherent in the organization of the farm. The farmer with a good farm well organized and skillfully managed is likely to have a consistently high rank in earnings from year to year unless he is a victim in a particular year of some unusual and uncontrollable circumstance. Of the 23 farmers whose earnings ranked in the upper 20 per cent for the three year period 8 failed to achieve that ranking in 1940. Six of these 8 men depended on poultry, especially turkeys, for an important share of their income. Heavy losses in the November 11 storm caused a severe reduction in their income. During the 3 years only 2 of these 23 men ranked below the upper one-half of the whole group of 117 in any one year. Both of these low rankings were registered in 1940 and were the result of severe storm losses.

On the other hand, those farmers in the lower 20 per cent ranked according to earning showed relatively little deviation from year to year. A low ranking in the factors affecting farm success that results from limitation in the size and quality of the farm and in the organization and management keep the earnings consistently low. In only one instance each year did any farmer in this group rank above the lower 40 per cent in earnings and none of them reached the 50 per cent mark. In the intermediate group the rankings in earnings are much more variable from year to year.

The more important of these organization and management factors affecting earnings and their relationships with earnings are presented in the following tables.

Table 10. Relation of Crop Yields to Farm Earnings

Per cent crop yields were of the average for all 117 farms		No. of	Average operator's
Group	Average	farms	labor earnings
Below 90	81	25	$3199
90 - 110	100	61	3285
111 and above	118	31	3744

High production per acre, up to certain limits, tends to lower the cost per bushel of grain or per ton of hay. Any possible method of management that will increase crop yields and therefore lower cost of production more than the extra expense incurred in securing the higher yields should be given consideration.

Table 11. Relation of Choice of Crops to Farm Earnings

Per cent of tillable land in high return crops*		No. of	Average operator's
Group	Average	farms	labor earnings
Below 35.0	31.8	23	$3197
35.0 - 47.9	41.2	66	3258
48.0 and above	53.6	28	3851

*Crops are marked on page 16 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.

As a rule, on these farms, such crops as alfalfa, clover, canning crops, sugar beets, corn, barley, winter wheat, and flax bring a higher net return per acre than other crops usually grown. Additions can be made to earnings by putting as high a percentage as possible of the tillable land into these higher return crops.

Table 12. Relation of Returns from Productive Livestock to Farm Earnings

Index of returns for $100 feed fed to productive livestock*		No. of	Average operator's
Group	Average	farms	labor earnings
Below 93	87	37	$3155
93 - 108	98	46	3454
109 and above	117	34	3552

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

The majority of these farmers maintain a dairy herd. However, in addition to the dairy herd there is quite an investment in other classes of productive livestock such as beef cattle, hogs, sheep or poultry. Most or all of the feed raised is fed on the farm and considerable additional feed is purchased. Feed is the major item of cost in livestock production and livestock constitute the major source of income on these farms. Hence there is some relationship between returns for $100 of feed and operator's labor earnings on these farms. There are a number of reasons for differences among farms in livestock returns. High productivity per animal and economy in the use of feed and labor are important. Other factors of considerable importance are kind of feed used, quality of pastures, balance of ration, degree of sanitation, and kind of shelter and equipment.

Table 13. Relation of Amount of Productive Livestock to Farm Earnings

Productive livestock units per 100 acres* Group	Average	No. of farms	Average operator's labor earnings
Below 21.0	17.6	39	$3139
21.0-28.9	24.3	56	3219
29.0 & above	34.9	22	4259

*Acres in timber not pastured, roads, waste and farmstead were not included.

On some farms the returns from livestock are so low that they do not cover feed and other costs. Such livestock is unprofitable, especially if there is more than enough to utilize what would otherwise be waste feed. If the livestock is yielding a net return, an increased amount of livestock adds to size of business and the opportunity to increase the farm earnings. Livestock produces manure and aids in keeping up the fertility of the land, and utilizes waste products on the farm. Livestock also helps to provide productive employment throughout the year. Any method that aids in utilizing the available resources to full and efficient capacity should add to the farm income.

Table 14. Relation of Size of Business (Work units) to Farm Earnings

Work Units Group	Average	No. of farms	Average operator's labor earnings
Below 550	466	29	$2399
550 - 799	663	61	3246
800 and above	979	27	4772

Average farm earnings tend to increase with an increase in size of business. For farmers operating their farms at a loss, the larger the volume of business, the larger will be the loss, but a farmer who is making a profit could make a larger profit if he increased his size of business, providing that in so doing he does not lower materially the efficiency in some one or more important branches of his business. Those farmers who have large businesses usually have more flexibility of their organization than does the man with a small business, and can utilize more efficiently and to better advantage available labor, power, machinery and buildings.

Table 15. Relation of Amount of Work Accomplished per Worker to Farm Earnings

Work units per worker		No. of	Average operator's
Group	Average	farms	labor earnings
Below 260	230	28	$2649
260 - 354	305	62	3499
355 and above	386	27	3901

More days of productive work accomplished per worker reduces the labor charge per unit of business. Higher labor accomplishment can be secured in several ways. In the first place, the business must be large enough so that there will be at least sufficient work available for the family labor. The farm should be so organized that the labor requirements are well distributed throughout the year. Handling pastures in such a way that as large a proportion as possible of the year's feed for livestock may be obtained from them helps to reduce labor requirements. Proper planning of the farm work and economical use of labor-saving machinery help to increase the work accomplished per worker.

Table 16. Relation of Power, Machinery, Equipment and Building Expense to Farm Earnings*

Expense per work unit		No. of	Average operator's
Group	Average	farms	labor earnings
$2.20 and above	$2.63	26	$2861
$1.65 - $2.19	1.92	57	3574
Below $1.65	1.35	34	3479

*Includes building, fencing, all crop machinery and livestock equipment, power, horse feed, and miscellaneous horse expense.

The expense factor does not show as high relationship with earnings when prices are high as when they are low. Some farms are under-equipped. On a few farms, excessive expenses constitute the main factor causing earnings to be very low.

Some of the cash expenses can be kept down by careful management. Often times necessary repairs and improvements can be made by using the available farm labor rather than by hiring extra help. Repairs and overhauling should be done before spring work begins insofar as possible; or on rainy days or in other spare time during the summer. Reducing the number of horses to the minimum required for efficient operation of the farm helps reduce the power expense. In some cases, farmers can offset some or all of the power and machinery expense by using their equipment for outside work.

EFFECT OF WELL BALANCED EFFICIENCY ON FARM PROFITS

It is quite evident from this report that few farmers have a monopoly on efficiency. Quite often farm operators show efficient management in one part of the farm business, which is offset by poor results in other phases. These farmers get medium returns while those who fall down all along the line get the lowest returns, and on the other hand those few who can manage to attain high efficiency in all parts of their organization receive returns well above average. This is well illustrated in Table 17.

Table 17. Relation of Operator's Labor Earnings to the Number of Factors in Which the Farmer is Above Average

No. of factors in which farmer excels*	No. of farms	Your farm	The length of the shaded lines are in proportion to the average operator's labor earnings	Average operator's labor earnings
None or one	11	_____	xxxxxxxxxxxxx	$2112
Two	20	_____	xxxxxxxxxxxxxxxxx	2761
Three	31	_____	xxxxxxxxxxxxxxxxxxx	3204
Four	32	_____	xxxxxxxxxxxxxxxxxxxxx	3457
Five	14	_____	xxxxxxxxxxxxxxxxxxxxxxxxx	4535
Six	9	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxx	4942

* No farmers were above average in all seven factors.

The array in Table 17 indicates that it will be 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 above factors and the elements of strength and weakness in his farm business.

Table 18. Measures of Farm Organization and Management Efficiency, 1940-42

Measures used in chart on page 15	Your farm	Average of 117 farms	23 most profitable farms	23 least profitable farms
Operator's Labor Earnings	$	$3388	$5646	$1755
(1) Crop yields*		100	101	95
(2) % of tillable land in high return crops**		42.4	43.6	41.5
(3) Ret.for $100 feed to prod.livestock***		100	104	97
(4) Prod. livestock units per 100 acres****		24.0	27.7	24.3
(5) Size of business - work units		687	878	546
(6) Work units per worker		306	327	279
(7) Pow.,mach.,equip.,& bldg.exp.per work unit	$	$1.91	$1.91	$2.07
Measures and items related to some of the above measures:				
(3) Index of return for $100 feed from -				
Dairy cattle		100	103	98
Dual purpose cattle		100	106	101
Beef breeding herd		100	107	-
Feeder cattle		100	90	-
Hogs		100	105	94
Native sheep		100	105	100
Feeder sheep		100	-	-
Turkeys		100	101	-
Chickens		100	99	100
(5) Work units on crops		181	229	137
Work units on productive livestock		462	619	385
Other work units		44	30	24
(6) Total number of workers		2.3	2.7	1.9
Number of family workers		1.4	1.5	1.3
Number of hired workers		.9	1.2	.6
(7) Power expense per work unit	$	$1.07	$1.08	$1.08
Crop machinery expense per work unit		.30	.29	.32
Livestock equip.expense per work unit		.14	.18	.14
Bldgs.and fencing exp.per work unit		.40	.36	.53

* Given as a percentage of the average.

** Crops are marked on page 16 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 117 farms included in this summary are located between the dotted lines across the center of this page.

Oper. labor earnings	Crop yields	High return crops	Return from productive livestock	Pr. l.s. units per 100 A.	Work units	Work units per worker	Pow., mach., eq., & bldg. exp. per work unit
$5800	132	58.5	132	40.0	1090	425	$.70
5500	128	56.5	128	38.0	1040	410	.85
5200	124	54.5	124	36.0	990	395	1.00
4900	120	52.5	120	34.0	940	380	1.15
4600	116	50.5	116	32.0	890	365	1.30
4300	112	48.5	112	30.0	840	350	1.45
4000	108	46.5	108	28.0	790	335	1.60
3700	104	44.5	104	26.0	740	320	1.75
3400	100	42.5	100	24.0	690	305	1.90
3100	96	40.5	96	22.0	640	290	2.05
2800	92	38.5	92	20.0	590	275	2.20
2500	88	36.5	88	18.0	540	260	2.35
2200	84	34.5	84	16.0	490	245	2.50
1900	80	32.5	80	14.0	440	230	2.65
1600	76	30.5	76	12.0	390	215	2.80
1300	72	28.5	72	10.0	340	200	2.95

Table 19. Distribution of Acres in Farm, 1940-1942

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 117 farms	23 most profitable farms	23 least profitable farms
Canning peas	(A)	10		.7	.9	.1
Flax	(B)	73		7.5	8.5	5.3
Barley	(B)	83		13.0	12.5	11.1
Winter wheat	(B)	52		5.0	8.4	3.2
Spring wheat	(C)	40		1.5	1.7	1.4
Oats and barley	(C)	78		15.3	27.4	9.3
Oats and wheat	(C)	37		2.9	3.5	2.3
Oats	(D)	90		15.0	13.2	13.3
Rye	(D)	13		.9	1.9	1.1
Soybeans for grain	(D)	53		3.4	5.7	.9
Miscellaneous	(D)	17		.5	.5	.4
Total small grain and peas		117		65.7	84.2	48.4
Sugar beets, hybrid seed corn, potatoes and truck crops	(A)	72		2.3	2.9	.7
Sweet corn	(B)	19		1.7	2.0	.5
Corn grain	(B)	117		33.7	45.6	26.5
Corn silage	(C)	104		8.5	10.2	7.6
Corn fodder	(D)	36		.6	.7	.5
Total cultivated crops		117		46.8	61.4	35.8
Alfalfa hay	(A)	115		20.3	26.6	17.2
Red clover hay	(B)	46		2.9	2.3	2.0
Soybean hay	(C)	66		2.8	3.3	3.8
Mixed legumes & non-legumes	(C)	54		3.6	5.4	2.3
Legumes for seed	(C)	7		.6	0	0
Timothy and/or brome	(D)	44		1.7	1.7	1.8
Timothy seed	(D)	11		.3	.5	.1
Other annual hay	(D)	35		.9	1.1	1.1
Total tillable land in hay		117		33.1	40.9	28.3
Alfalfa pasture	(A)	61		1.8	2.3	2.0
Sweet clover pasture	(B)	49		3.3	4.4	4.3
Mixture inc.alf.,sw.clov.,brome	(B)	48		3.8	5.7	2.3
Other legumes and mixtures	(C)	58		5.6	7.3	3.0
Sudan grass or rape pasture	(C)	72		2.3	1.5	2.3
Other tillable pasture	(D)	88		6.1	5.9	4.4
Total tillable land in pasture		113		22.9	27.1	18.3
Tillable land not cropped	(D)	62		2.9	.7	1.9
Total tillable land				171.4	214.3	132.7
Phalaris hay (non-tillable)		18		1.1	1.9	.6
Wild hay (non-tillable)		55		3.9	6.6	1.5
Non-tillable pasture		105		29.6	36.6	27.8
Timber (not pastured)		63		6.9	7.9	6.0
Roads and waste				11.3	15.4	6.4
Farmstead				6.9	8.0	6.0
Total acres in farm				231.1	290.7	181.0
% land tillage				75.3	75.1	74.1
% tillable land in high return crops				42.4	43.6	41.5

Table 20. Crop Yields Per Acre, 1940-1942

Crop	Your farm	Average 117 farms	23 most profitable farms	23 least profitable farms
Canning peas, value above seed cost	$____	$31.13	-	-
Flax, bu.	____	10.5	9.8	8.9
Barley, bu.	____	34.3	36.1	33.5
Winter wheat, bu.	____	22.3	20.8	20.9
Spring wheat, bu.	____	19.3	21.4	19.6
Oats and barley, bu.	____	43.5	45.8	40.4
Oats and wheat, bu.	____	38.8	32.6	34.5
Oats, bu.	____	44.8	45.7	42.0
Rye, bu.	____	15.9	14.3	10.2
Soybeans for grain, bu.	____	13.7	12.7	15.3
Sweet corn, tons	____	3.9	-	-
Corn, grain, bu.	____	59.0	57.6	57.5
Corn and cane silage, tons	____	9.5	9.6	8.9
Corn and cane fodder, tons	____	3.2	2.9	3.1
Alfalfa hay, tons	____	2.6	2.7	2.4
Red clover hay, tons	____	2.1	1.7	2.1
Soybean hay, tons	____	1.5	1.3	1.5
Mixed legume & non-legume hay, tons	____	1.6	1.8	1.0
Legumes for seed, lbs.	____	110.5	-	-
Timothy and/or brome hay, tons	____	1.3	1.8	1.1
Timothy seed, lbs.	____	179.7	198.9	-
Other annual hay, tons	____	1.4	1.1	1.7
Phalaris hay on non-tillable land, tons	____	1.7	1.2	1.4
Wild hay, tons	____	1.0	.8	1.7

SOURCE AND DISPOSAL OF FEED GRAINS

Corn is by far the most important single feed grain crop on the farms studied (Table 21). Oats ranks second, the mixture of oats and barley is third, and barley is fourth. The other crops are of minor importance.

Weather conditions during the period 1940-1942 were, in general, very favorable for crop production. Of all of the major crops except barley there was a larger average inventory carry-over at the end of the year than at the beginning. Wheat purchases during the period were exceptionally large because of the sale of government-owned wheat to farmers for feed purposes. An average of 193 tons of grain was available on these farms, 40 per cent represents carry-over from the previous year, 48 per cent was raised during the year and 12 per cent was purchased. Approximately one-half of this supply of grains was fed, 42 per cent was held over as inventory stocks, 6 per cent was sold and 1.5 per cent was seeded. A quantity is not shown for seed corn. Practically all of the corn was grown from hybrid seed which was purchased. Hybrid seed corn raised on these farms has not been included in the tabulations for corn.

Table 21. Source and Disposal of Feed Grains Per Farm *

Crop	Quantity Available			Disposal made of the grains			
	On hand Jan. 1	Purchased	Raised	Sold	Seeded	Fed	On hand Dec. 31
Corn, bu.	1610	470	1835	184	-	2038	1693
Oats, bu.	507	330	702	49	47	919	524
Barley, bu.	436	25	391	151	27	295	379
Wheat, bu.	113	100	129	59	10	137	136
Oats & barley, bu.	385	42	617	21	28	591	404
Oats & wheat, bu.	69	4	105	2	6	101	69
Rye, bu.	24	2	14	4	1	14	21
Soybeans, bu.	24	3	49	18	5	16	37
Total, tons	77.4	23.1	92.1	12.4	2.6	97.5	80.1

* Average for all farms in S.E. Minn. Farm Management Service, 1940-1942

VARIATIONS IN RETURNS FROM LIVESTOCK

The variations between years in the return over feed secured from livestock were determined in a manner similar to that for operator's earnings. The farms were ranked from high to low on the basis of the 1940-1942 average return over feed from dairy cows, hogs and chickens and for each of the three years included in this study. The deviations from the 1940-1942 rank for each of these three classes of livestock were then noted.

Fifty per cent of the farmers maintaining dairy cattle had an average yearly deviation from their three-year average rank of less than 10, and 88 per cent had less than 20 (Table 22). Thirty per cent of farmers raising chickens had an average yearly deviation of less than 10 and 76 per cent had less than 20. Only 11 per cent of the farmers raising hogs had an average deviation of 10 or less and 61 per cent had a deviation of less than 20.

Table 22. Distribution of Farms According to Deviation From 1940-1942 Average Return Over Feed From Dairy Cows, Hogs and Chickens

Deviation from 1940-1942 rank	Percentage of farms maintaining		
	Dairy Cows	Hogs	Chickens
Below 5.0	23	5	8
5.0 - 9.9	27	6	22
10.0 - 14.9	25	28	27
15.0 - 19.9	13	22	19
20.0 - 24.9	8	11	11
25.0 & over	4	28	13

The year-to-year deviations in return over feed were less among the farmers in the upper and lower groups than in the remaining intermediate groups (Table 23). In general, the return secured from the various livestock enterprises are high or low because of differences in the organization and management of the enterprises. A farmer with a well organized and skillfully managed enterprise is likely to have a consistently high rank in return over feed unless some unusual and uncontrollable event occurs.

Table 23. Deviations from the 1940-1942 Return Over Feed From Dairy Cows, Hogs and Chickens

Farms grouped according to return over feed	Average deviation from 1940-1942 rank		
	Dairy Cows	Hogs	Chickens
Highest 20 per cent	6.9	17.4	10.8
Next 20 per cent	11.8	18.7	15.1
Next 20 per cent	12.7	26.6	18.5
Next 20 per cent	14.4	21.6	14.7
Lowest 20 per cent	8.2	18.2	13.5

The farmers in the upper 20 per cent in the range according to return over feed from dairy cows had an average deviation of 7 and those in the lower 20 per cent 8. Of the 20 farmers in the upper 20 per cent for the three-year period 6 failed to achieve that ranking in 1940 and 1942 and 5 in 1941. During the three years only 2 of these 20 men ranked below the upper 40 per cent in return over feed. In only one instance did a farmer in the lower 20 per cent according to the 1940-1942 average return over feed rank above the lower 60 per cent. There was less year-to-year deviation in return over feed among the farmers in the upper and lower groups than in the remaining group.

There was slightly more variation in the return secured from chickens. Six of the 20 farmers in the upper one-fifth according to return over feed for the period 1940-1942 failed to achieve that ranking in 1940 and 8 failed to achieve that rank in 1941 and 1942. During the three years one man in this upper group ranked slightly below the upper one-half of the entire group of 102 farmers. Four farmers in the lower 20 per cent based on the 1940-1942 average return over feed ranked above the upper one-half in a single year.

The returns from hogs were much more variable than from dairy cows or poultry. Thirteen of the 23 farmers in the upper one-fifth according to the 1940-1942 average return over feed did not achieve that ranking in 1940; 5 of the 13 ranked in the lower one-half. Ten farmers dropped out of the top one-fifth in 1941 with 2 going below the upper one-half. Only 4 dropped out of the top fifth in 1942, none of whom were below the 50 per cent mark. Ten farmers in the low one-fifth on the basis of 1940-1942 average return over feed ranked higher in both 1940 and 1941 and 8 in 1942.

Table 24. Factors of Cost and Returns from Dairy Cows, 1940-1942

	Your farm	Average of 101 farms	20 farms highest in butterfat per cow	20 farms lowest in butterfat per cow
Pounds of butterfat per cow		260	325	193
Feeds per cow, lbs.:				
Corn		810	839	600
Small grain		1172	1516	915
Com. feeds - under 25% protein		71	123	22
Com. feeds - over 25% protein		103	188	50
Legume hay		3788	4175	3254
Other hay		318	157	469
Fodder and stover		286	236	490
Total concentrates		2156	2666	1587
Total dry roughage		4392	4568	4213
Silage		6124	5832	6873
Total digestible nutrients*		4869	5293	4433
T.D.N. per lb. B.F.		18.7	16.3	23.0
% T.D.N. that is protein		14.4	15.2	13.4
Feed cost per cow:				
Concentrates	$	$22.39	$28.11	$15.91
Roughages		22.64	23.43	21.82
Pasture		5.30	5.08	5.30
TOTAL FEED COSTS		$50.33	$56.62	$43.03
Value of produce per cow:				
B.F. Sales	$	$100.84	$123.80	$70.78
Dairy produce used in house		4.73	4.88	4.98
Milk to livestock		13.06	17.42	11.35
Net increases in value of cows		4.13	6.34	2.62
TOTAL VALUE PRODUCED		$122.76	$152.44	$89.73
RETURNS ABOVE FEED COST PER COW	$	$72.43	$95.82	$46.70
RETURNS FOR $100 OF FEED	$	$247.00	$271.00	$218.00
Price received per lb. B.F. sold(cts)		42.8	41.4	42.2
As manufacturing cream (cents)		38.5	38.5	38.3
As mkt. mk. & cm. & mk.for cheese (cts.)		52.3	52.6	54.1
Feed cost per lb. B.F. (cents)		19.4	17.4	22.3
% fall freshening		57.7	65.4	49.8
Number of cows**		18.6	17.8	16.8

* 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 25. Feed Costs and Returns from Other Dairy Cattle, 1940-1942

Items	Your farm	Average of 101 farms	20 farms highest in butterfat per cow	20 farms lowest in butterfat per cow
Feeds per head, lbs.:				
Concentrates	_____	467	581	380
Hay and fodder	_____	1731	1846	1661
Silage	_____	2234	2291	2355
Whole milk	_____	407	451	330
Skim milk	_____	1086	1476	878
Feed cost per head:				
Concentrates	$_____	$4.90	$5.92	$3.90
Roughages	_____	8.42	9.27	7.84
Milk	_____	8.49	9.87	6.95
Pasture	_____	2.49	2.31	2.32
TOTAL FEED COSTS	$_____	$24.30	$27.37	$21.01
Net inc. in value of other dairy cattle	_____	$36.50	$44.37	$28.66
RETURNS ABOVE FEED COST PER HEAD	$_____	$12.20	$17.00	$ 7.65
RETURNS FOR $100 OF FEED	$_____	157.00	177.00	141.00
Number of head of other dairy cattle	_____	17.1	17.3	15.5

Table 26. Feed Costs and Returns from All Dairy Cattle, 1940-1942

Items	Your farm	Average of 101 farms	20 farms highest in butterfat per cow	20 farms lowest in butterfat per cow
Feeds per animal unit, lbs.:				
Concentrates	_____	1746	2116	1360
Hay and fodder	_____	4001	4163	3800
Silage	_____	5488	5263	6081
Feed cost per animal unit:				
Concentrates	$_____	$18.03	$22.17	$13.08
Roughages	_____	20.38	21.24	19.64
Pasture	_____	5.14	4.87	5.05
TOTAL FEED COSTS	$_____	$43.55	$48.28	$37.77
Value of produce per animal unit:				
Dairy products	$_____	$75.24	$90.30	$54.54
Net increase in value of dairy cattle	_____	24.84	32.52	19.04
TOTAL VALUE PRODUCED	$_____	$100.08	$122.82	$73.58
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	$ 56.53	$ 74.54	$35.81
RETURNS PER $100 OF FEED	$_____	$232.00	$256.00	$199.00
Animal units of dairy cattle	_____	27.6	26.9	24.9

Table 27. Factors of Cost and Returns from Dual Purpose Cows, 1940-1942

Items	Your farm	Average of 13 farms	6 farms highest in butterfat per cow	6 farms lowest in butterfat per cow
Pounds of butterfat per cow	_____	186	215	157
Feeds per cow, lbs.:				
Corn	_____	690	852	553
Small grain	_____	915	1039	801
Com. feeds - under 25% protein	_____	30	30	28
Com. feeds - over 25% protein	_____	73	42	99
Legume hay	_____	3305	3580	3208
Other hay	_____	434	508	411
Fodder and stover	_____	347	426	325
Total concentrates	_____	1708	1963	1481
Total dry roughage	_____	4086	4514	3944
Silage	_____	4688	2899	6308
Total digestible nutrients*	_____	4122	4264	4114
T.D.N. per lb. B.F.	_____	22.2	19.8	26.2
% T.D.N. that is protein	_____	14.1	14.0	14.4
Feed cost per cow:				
Concentrates	$_____	$18.00	$19.21	$17.08
Roughages	_____	19.33	18.33	21.05
Pasture	_____	5.60	5.95	5.17
TOTAL FEED COSTS	$_____	$42.93	$43.49	$43.30
Value of produce per cow:				
B.F. sales	$_____	$60.80	$67.61	$52.20
Dairy produce used in house	_____	6.14	8.45	4.47
Milk to livestock	_____	14.08	17.61	11.12
Net increases in value of cows	_____	6.79	5.87	7.82
TOTAL VALUE PRODUCED	$_____	$87.81	$99.54	$75.61
RETURNS ABOVE FEED COST PER COW	$_____	$44.88	$56.05	$32.31
RETURNS FOR $100 OF FEED	$_____	$215.00	$238.00	$187.00
Price received per lb. B.F. sold	_____	38.6	38.2	38.9
Feed cost per lb. B.F. (cents)	_____	23.1	20.2	27.6
% fall freshening	_____	45.5	48.2	44.8
Number of cows	_____	15.0	13.2	16.0

* Not including nutrients received from pasture

Table 28. Feed Costs and Returns from Other Dual Purpose Cattle, 1940-1942

Items	Your farm	Average of 13 farms	6 farms highest in returns above feed	6 farms lowest in returns above feed
Feeds per head, lbs.:				
Concentrates	_____	626	496	830
Hay and fodder	_____	1551	1530	1670
Silage	_____	1785	2143	1429
Whole milk	_____	231	276	202
Skim milk	_____	1157	1249	1201
Feed cost per head:				
Concentrates	$_____	$6.16	$4.82	$8.21
Roughages	_____	7.16	7.16	7.51
Milk	_____	6.37	7.14	6.16
Pasture	_____	2.35	2.33	2.41
TOTAL FEED COSTS.	$_____	$22.04	$21.45	$24.29
Net increase in value	$_____	$33.93	$38.48	$31.00
RETURNS ABOVE FEED COST PER HEAD	$_____	$11.89	$17.03	$ 6.71
RETURNS FOR $100 OF FEED	$_____	$160.00	$182.00	$131.00
Number of head	_____	26.1	23.7	25.1

Table 29. Feed Costs and Returns from All Dual Purpose Cattle

Items	Your farm	Average of 13 farms	6 farms highest in returns above feed	6 farms lowest in returns above feed
Feeds per animal unit, lbs.:				
Concentrates	_____	1457	1697	1366
Hay and fodder	_____	3477	3682	3449
Silage	_____	3990	2488	5438
Feed cost per animal unit:				
Concentrates	$_____	$14.97	$16.45	$15.00
Roughages	_____	16.31	15.05	18.11
Pasture	_____	5.16	5.42	4.94
TOTAL FEED COSTS	$_____	$36.44	$36.92	$38.05
Value of produce per animal unit:				
Dairy products	$_____	$39.31	$47.31	$33.18
Net increase in value	_____	32.26	34.89	29.57
TOTAL VALUE PRODUCED	$_____	$71.57	$82.20	$62.75
RETURNS ABOVE FEED PER ANIMAL UNIT	$_____	$35.13	$45.28	$24.70
RETURNS FOR $100 OF FEED	$_____	$204.00	$232.00	$168.00
Animal units	_____	28.6	22.8	32.2

Table 30. Feed Costs and Returns from Beef Cattle, 1940-1942

Items	Your farm	Average of all farms	Farms highest in returns above feed	Farms lowest in returns above feed
Beef breeding herd: no. of farms:		9	4	4
Feeds per animal unit, lbs.:				
Concentrates		1220	983	1416
Legume hay		1546	1404	1723
Other hay		1374	1008	1915
Fodder and stover		351	164	617
Silage		3135	3769	2558
Skim milk*		48	52	57
Whole milk*		29	16	48
Feed cost per animal unit:				
Concentrates	$	$12.79	$9.41	$15.50
Roughages		12.92	12.07	14.42
Milk*		.70	.44	1.14
Pasture		5.94	5.19	6.67
TOTAL FEED COSTS	$	$32.35	$27.11	$37.73
Value of produce per animal unit:				
Dairy products	$	$2.42	$3.11	$2.34
Net increase in value of animals		44.37	51.83	36.00
TOTAL VALUE PRODUCED	$	$46.79	$54.94	$38.34
RETURNS ABOVE FEED COST PER ANIMAL UNIT	$	$14.44	$27.83	$ .61
RETURNS FOR $100 OF FEED	$	159.00	216.00	105.00
Number of cows and herd bulls		14.9	9.4	15.4
Number of animal units in the herd		31.3	32.0	27.6
Feeder cattle: no. of farms:		9	4	4
Feeds per cwt. beef produced, lbs.:				
Corn		764	815	758
Small grain		77	74	80
Com. feeds - under 25% protein		17	22	17
Com. feeds - over 25% protein		35	31	37
Legume hay		228	226	237
Other hay		76	83	65
Fodder and stover		50	14	75
Total concentrates		893	942	892
Total dry roughages		354	323	377
Silage		378	270	496
Feed cost per cwt. beef produced:				
Concentrates	$	$8.94	$9.06	$9.28
Roughages		1.50	1.37	1.66
Pasture		.18	.09	.28
TOTAL FEED COSTS	$	$10.62	$10.52	$11.22
Net increase in value of feeders	$	14.50	16.71	12.85
RETURNS ABOVE FEED COST PER CWT. BEEF PROD.		3.88	6.19	1.63
RETURNS FOR $100 OF FEED	$	138.00	159.00	113.00
Price received per cwt. beef sold	$	10.27	10.39	10.14
No. of animal units		22.3	18.6	25.5
Pounds of beef produced		13166	11765	14404

*A few farmers had both dairy or dual-purpose cows and beef cows and fed milk produced by the milking herd to beef calves.

Table 31. Feed Costs and Returns from Sheep, 1940-1942

Items	Your farm	Average of all farms	Farms highest in returns above feed	Farms lowest in returns above feed
Native sheep: no. of farms:		38	8	8
Feeds per head,* lbs.:				
Concentrates		79	61	114
Legume hay		221	193	281
Other hay		34	54	45
Fodder and stover		31	14	5
Silage		127	106	163
Feed cost per head:				
Concentrates	$	$.78	$.61	$1.16
Roughages		1.09	1.00	1.34
Pasture		.97	1.02	.94
TOTAL FEED COSTS	$	$2.84	$2.63	$3.44
Value of produce per head:				
Wool	$	$2.78	$2.93	$2.72
Net increase in value of sheep		5.15	6.81	3.39
TOTAL VALUE PRODUCED	$	$7.93	$9.74	$6.11
RETURNS ABOVE FEED COST PER HEAD	$	$5.09	$7.11	$2.67
RETURNS FOR $100 OF FEED	$	$300.00	$388.00	$191.00
Value per lamb sold	$	$9.13	$9.78	$8.82
Price per lb. wool sold (cts.)		37.5	37.2	37.1
Pounds of wool per sheep sheared		8.8	9.5	9.1
Number of ewes kept for lambing		31	23	30
% lamb crop		104	107	86
% death loss		14	9	17
No. of head of sheep*		46.4	37.4	45.5
Feeder sheep: no. of farms		2		
Feeds per cwt. sheep produced, lbs.:				
Concentrates		986		
Legume hay		274		
Other hay		27		
Fodder and stover		121		
Silage		4		
Feed cost per head:				
Concentrates	$	$9.48		
Roughages		1.20		
Pasture		.83		
TOTAL FEED COSTS	$	$11.51		
Net increase in value of sheep	$	16.51		
RETURNS ABOVE FEED COST PER CWT. PROD.	$	5.00		
RETURNS FOR $100 OF FEED	$	144.00		
Price per cwt. sheep sold	$	10.60		
Pounds of sheep produced		6988		

* Two lambs under 6 mos. of age considered as one head.

Table 32. Feed Costs and Returns from Hogs and Chickens, 1940-1942

Items	Your farm	Average of all farms	Farms highest in returns above feed	Farms lowest in returns above feed
Hogs: No. of farms:		114	23	23
Feed per cwt. hogs produced, lbs.:				
Corn		329	288	405
Small grain		122	96	149
Com. feeds - under 25% protein		4	3	4
Com. feeds - over 25% protein		15	13	16
Total concentrates		470	400	574
Skim milk, buttermilk and whey		229	209	250
Feed cost per cwt. hogs produced:				
Concentrates	$	$4.85	$4.10	$5.87
Skim milk, buttermilk and whey		.40	.37	.45
Pasture		.17	.15	.18
TOTAL FEED COSTS	$	$5.42	$4.62	$6.50
Net increase in value per cwt. hogs prod.		$10.18	$10.55	$10.01
RETURNS ABOVE FEED COST PER CWT. HOGS PROD.		$4.76	$5.93	$3.51
RETURNS FOR $100 OF FEED	$	$192	$229	$156
Price received per cwt. hogs sold	$	$9.24	$9.40	$9.26
No. of spring litters raised		9	10	9
No. of fall litters raised		6	6	6
Total no. of litters raised		15	16	15
No. of pigs born per litter		7.9	7.9	7.6
No. of pigs weaned per litter		6.4	6.5	6.0
Pounds of hogs produced		21599	25480	20765
Chickens: No. of farms:		102	20	20
Feed per hen, lbs.:				
Grain		99	105	102
Commercial feeds		27	33	24
Total concentrates		126	138	126
Skim milk and buttermilk		23	28	19
Feed cost per hen:				
Concentrates	$	$1.77	$1.94	$1.78
Skim milk and buttermilk		.04	.05	.04
TOTAL FEED COST	$	$1.81	$1.99	$1.82
Value of produce per hen:				
Eggs sold and used in house	$	$2.70	$3.39	$2.11
Net increase in value of chickens		.70	1.20	.34
TOTAL VALUE PRODUCED	$	$3.40	$4.59	$2.45
RETURNS ABOVE FEED COST PER HEN	$	$1.59	$2.60	$ .63
RETURNS FOR $100 OF FEED	$	$191	$235	$136
Price rec'd per doz. eggs sold (cts.)		22.7	23.0	22.1
Percent of eggs sold on grade basis		34	36	35
Eggs laid per hen		141	176	115
No. of hens		247	260	205
% of hens that are pullets		79	87	71

Table 33. Feed Costs and Returns for Turkeys, 1940-1942

Items	Your farm	Average of 8 farms	4 farms highest in returns above feed	4 farms lowest in returns above feed
Feed per cwt. turkeys produced, lbs.:				
Grain	_____	445	458	433
Com. feeds - under 25% protein	_____	56	57	56
Com. feeds - over 25% protein	_____	145	144	145
Total concentrates	_____	646	659	634
Skim milk	_____	40	25	54
Feed cost per cwt. turkeys produced	$_____	$10.18	$10.21	$10.14
Value of produce per cwt. turkeys prod.				
Eggs and poults	$_____	$3.41	$5.23	$1.60
Net increases in turkeys	_____	19.46	19.58	19.34
TOTAL VALUE PRODUCED	$_____	$22.87	$24.81	$20.94
RETURNS ABOVE FEED COST PER CWT. TURKEYS PRODUCED	$_____	$12.69	$14.60	$10.80
RETURNS FOR $100 FEED	$_____	$227	$247	$207
Price rec'd per lb. turkey sold (cts.)	_____	22.8	20.9	24.8
Pounds of turkeys produced	_____	27728	22928	32528

Table 34. Feed Costs for Horses and Misc. Power and Machinery Expense, 1940-1942

Items	Your farm	Average of 116 farms*	23 most profitable farms	22 least profitable farms*
Feed per horse,**lbs.:				
Grain	_____	1827	1858	1636
Hay	_____	4684	4583	4251
Fodder and stover	_____	414	224	477
Feed costs per horse:				
Grain	$_____	$17.82	$17.77	$16.11
Roughage	_____	14.55	14.01	13.39
Pasture	_____	3.71	3.58	3.90
TOTAL FEED COSTS	$_____	$36.08	$35.36	$33.40
Number of work horses	_____	4.0	4.7	4.0
Number of colts	_____	1.0	1.2	.7
Crop acres per farm	_____	150.6	195.0	114.6
Tractor and horse exp. per crop acre	$_____	$2.76	$2.66	$3.12
Crop and general mach. exp. per crop acre	$_____	1.45	1.66	1.50

* One farmer did not have horses. The crop acres and expenses per crop acre are averages of 117 farms.

**Two colts equal one horse.

Table 35. Average Price of Feeds, 1940-1942

	1940	1941	1942	3-year Average
Ear corn per bu.	$ .42	$ .50	$ .66	$ .53
Oats per bu.	.26	.32	.44	.34
Barley per bu.	.31	.38	.57	.42
Bran per cwt.	1.20	1.45	1.95	1.55
Linseed oilmeal per cwt.	1.70	2.00	2.30	2.00
Soybean oilmeal per cwt.	1.70	2.10	2.50	2.10
Tankage per cwt.	2.50	3.30	4.10	3.30
Meat scraps per cwt.	2.55	3.30	4.10	3.30
Skim milk per cwt.	.15	.18	.22	.18
Alfalfa per ton	7.50	8.00	8.00	7.85
Red or alsike clover per ton	6.40	6.80	6.80	6.65
Timothy per ton	4.80	5.15	5.15	5.05
Corn fodder per ton	3.20	3.40	3.40	3.35
Corn silage per ton	2.10	2.40	2.75	2.40

EXPLANATION OF TERM "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 36.

Table 36. 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	14.5 per cow	Small grain	.8 per acre
Other dairy & du. pur. cattle	4.4 per an. unit*	Sugar beets	3.0 per acre
Beef breeding herd	4.0 per an. unit*	Sweet corn	2.5 per acre
Feeder cattle	.4 per 100 lbs.	Corn, husked	1.7 per acre
Sheep - farm flock	2.0 per an. unit*	Corn, hogged	1.1 per acre
Sheep - feeders	.5 per 100 lbs.	Corn, shredded	2.8 per acre
Hogs	.3 per 100 lbs.	Corn silage	2.1 per acre
Turkeys	.7 per 100 lbs.	Corn fodder	1.5 per acre
Hens	28.0 per 100 hens	Alfalfa hay	1.0 per acre
Canning peas	2.0 per acre	Soybean hay	1.4 per acre
Soybeans for grain	1.0 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.