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UNIVERSITY OF MINNESOTA
Department of Agriculture
and the
TENNESSEE VALLEY AUTHORITY
and the
County Extension Services of
Becker, Kittson, Mahnomen, Marshall, Norman
Pennington, Polk, Red Lake and Roseau Counties
Cooperating

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Annual Report of the Farm Management Service for T.V.A. Phosphate-Test Demonstration Cooperators in Northwestern Minnesota

(March 1, 1943 to February 28, 1944)

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Cooperator_____

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University Farm
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FOURTH ANNUAL REPORT OF THE FARM MANAGEMENT SERVICE FOR T.V.A. PHOSPHATE-TEST DEMONSTRATION COOPERATORS IN NORTHWESTERN MINNESOTA FOR THE YEAR 1943

Prepared by T. R. Nodland and G. A. Pond

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INTRODUCTION

The Division of Agricultural Economics and the Division of Agricultural Extension of the University of Minnesota, the Tennessee Valley Authority and the county extension services of several northwestern Minnesota counties are cooperating in a phosphate-test demonstration project and in a farm management service. This service is offered to a selected group of farmers who have agreed to demonstrate the value of phosphate fertilizer and who have also agreed to keep farm business records. The phosphate is provided by the T.V.A. and the fieldman is provided by the T.V.A. and the Agricultural Extension Service. Each farmer pays the freight and other miscellaneous expenses that may occur between the point of shipment and the farm on all the T.V.A. phosphate furnished and $10.00 per year to cover the summarization of the records and other miscellaneous expenses. The balance of the cost is defrayed by the University of Minnesota.

The analysis of the farm business record 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 field organization is handled by the Division of Agricultural Extension with P. M. Burson in charge of this work. J. R. Burkholder was the fieldman on this project until April 1 and then was succeeded by R. S. Harris. County agricultural agents who cooperated in this project include Martin Ostrem, Howard Grow, Ray Reierson, George Landsverk, Ernest Palmer, Carl G. Ash, Rudolph Stolen, K. Grimsrud, E. T. Larvick, M. C. Wangsness and Melvin Hole.

The following tabulation shows by counties the number of cooperators who completed records in 1943:

Becker	4	Pennington	8
Kittson	6	Polk	12
Mahnomen	6	Red Lake	4
Marshall	10	Roseau	11
Norman	12		
		Total	73

The tables on page 4 and succeeding pages show 72 farms. One farm has been omitted from all averages in the tables because the record was not sufficiently complete for a full analysis.

The records kept by the cooperators include inventories at the beginning and end of the year, cash receipts and expenses, and a record of the farm produce used by the farm family. Complete household and personal records were also kept by 19 cooperators. Supplementary information was secured during the year regarding crop and livestock production practices.

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 to 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.

TYPE OF FARMING

Wheat, flax, sugar beets, potatoes, and legume seeds are grown for sale as cash crops. Dairying is the most important livestock enterprise with sheep ranking second. Some beef cattle and poultry and a small amount of hogs are also raised. Oats, barley, hay, and pasture are important feed crops.

TOPOGRAPHY, SOILS, AND WEATHER

The Red River Valley in the western part of the area is very level with black surface soils that are free of stone except in a few places where the deposit from glacial Lake Agassiz is very shallow. Along the beaches of the glacial lake the soils are gravelly and interspersed with poorly drained areas. In extremely wet seasons the surplus water can be drained from the land only very slowly. A large acreage of poorly drained land is used for hay.

East of the Red River Valley is an area lying within the old lake bed that is also very level. The soils are complexly intermixed and poorly drained. Bog areas are numerous, part open and part timbered with tamarack and spruce. A large amount of peat is found in the eastern portion of the territory.

Table 1. Monthly and Annual Precipitation

	Ada		Fosston		Angus		Roseau	
	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
January	0.38	-0.06	0.65	+0.21	0.20	-0.16	0.64	+0.07
February	1.09	+0.60	1.17	+0.57	1.10	+0.65	0.80	+0.30
March	0.63	-0.04	1.57	+0.61	0.77	+0.21	0.82	-0.13
April	1.47	-0.19	2.50	+1.23	1.28	-0.26	1.12	-0.14
May	4.42	+1.59	4.39	+1.75	2.73	+0.35	2.78	+0.49
June	7.81	+4.16	5.47	+1.78	2.97	-0.45	3.79	+0.62
July	3.56	+0.60	3.61	+0.76	2.15	-0.81	1.40	-1.86
August	4.46	+1.62	2.71	-0.13	5.58	+2.84	4.49	+1.64
September	0.69	-1.55	0.20	-2.26	0.42	-1.63	0.57	-1.98
October	1.40	-0.09	1.30	-0.22	0.91	-0.53	0.88	-0.57
November	0.65	-0.10	0.20	-0.68	0.53	-0.19	0.68	-0.21
December	0.10	-0.46	0.17	-0.49	0.13	-0.39	0.29	-0.31
1943 total	26.66	+6.08	23.94	+3.13	18.77	-0.37	18.26	-2.08
1942 total	21.78	+1.20	27.80	+6.99	19.83	+0.69	22.35	+2.01
1941 total	33.39	+12.81	32.82	+12.01	27.01	+7.87	25.11	+4.77
1940 total	17.68	-2.90	19.96	-0.85	18.75	-0.39	19.79	-0.55
1939 total	16.91	-3.67	17.18	-3.63	17.95	-1.19	16.44	-3.90
1938 total	23.10	+2.52	19.06	-1.75	15.06	-4.08	17.16	-3.18
Normal annual precipitation	20.58		20.81		19.14		20.34	

Weather conditions were unfavorable for early spring farm activities. In the southern portion of the area excess moisture during May caused a great deal of damage to crops. The summer, as a whole, was somewhat warmer and wetter than usual. A considerable amount of both the first and second crops of hay was spoiled because of the frequent rains. Pastures were excellent throughout most of the summer. Dry weather during September and October was ideal for the maturing and harvesting of crops.

Table 2. Monthly and Annual Temperature, 1943

	Ada		Fosston		Angus		Roseau	
	Temperature (degrees, F.)	Departure from normal	Temperature (degrees, F.)	Departure from normal	Temperature (degrees, F.)	Departure from normal	Temperature (degrees, F.)	Departure from normal
January	-1.7	-5.9	-2.3	-4.7	-3.9	-5.9	-6.6	-7.5
February	10.8	+3.3	11.0	+2.7	9.4	+2.8	5.3	+0.1
March	18.0	-4.9	15.0	-8.5	13.2	-9.1	11.0	-9.3
April	43.4	+1.3	41.8	+0.6	42.7	+2.0	39.0	-1.3
May	51.4	-2.6	50.6	-2.0	50.6	-1.9	49.2	-3.2
June	64.6	+0.9	61.5	-1.6	62.0	-0.4	59.6	-3.1
July	72.8	+4.2	70.1	+2.5	70.3	+3.6	70.2	+3.7
August	67.6	+1.5	65.8	+0.8	65.9	+1.4	64.6	+0.8
September	55.4	-1.6	53.7	-2.7	53.5	-2.5	51.4	-3.7
October	48.2	+4.4	46.8	+3.0	46.3	+3.2	44.6	+2.1
November	27.2	+1.1	27.6	+1.4	24.9	-1.2	24.9	+0.5
December	18.3	+7.5	18.2	+8.1	14.6	+5.5	12.0	+3.8

Table 3. Summary of Farm Inventories, 1943*

Items	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
Size of farm (acres)	_____	392	597	326
Size of business (work units)**	_____	506	731	401
Beginning of Year				
Productive livestock (total)	$_____	$2710	$3244	$3108
Dairy and dual purpose cows	_____	832	919	757
Other dairy & dual pur. cattle	_____	570	698	522
Beef cattle (incl. feeders)	_____	454	808	772
Hogs	_____	355	460	284
Sheep (including feeders)	_____	396	203	677
Poultry (including turkeys)	_____	103	156	96
Horses	_____	299	303	360
Crop, seed, and feed	_____	1482	2769	1342
Mach. & equipment (total)	_____	2577	4218	2094
Power mach. (f. share)	_____	1077	1696	873
Crop & gen. mach. (f. share)	_____	1216	2033	987
Livestock equip. & supplies	_____	284	489	234
Buildings, fences, etc.	_____	3716	4480	4139
Land	_____	4918	9175	4396
Total farm capital	$_____	$15702	$24189	$15439
End of Year				
Productive livestock (total)	$_____	$2663	$3628	$2707
Dairy & dual purpose cows	_____	824	1026	790
Other dairy & dual purpose cattle	_____	558	686	495
Beef cattle (incl. feeders)	_____	433	842	567
Hogs	_____	308	571	159
Sheep (including feeders)	_____	394	190	599
Poultry (including turkeys)	_____	146	313	97
Horses	_____	269	271	323
Crop, seed, and feed	_____	1755	3907	1165
Mach. & equipment (total)	_____	2514	4226	2032
Power mach. (f. share)	_____	1043	1771	806
Crop & gen. mach.	_____	1172	1948	974
Livestock equipment & supplies	_____	299	507	252
Buildings, fences, etc.	_____	3708	4770	4047
Land	_____	4918	9175	4396
Total farm capital	$_____	$15827	$25977	$14670

* For the purpose of comparison, all the data shown in this report with the exception of Tables 8 and 9 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 20 for an explanation of "work units."

Table 4. Farm Produce Used in House and House Rental, 1943

Items	Quantities: Your farm	Quantities: Average of 72 farms	Quantities: 14 most profitable farms	Quantities: 14 least profitable farms	Value: Your farm	Value: Average of 72 farms	Value: 14 most profitable farms	Value: 14 least profitable farms
No. of adult equivalents) Family	_____	3.4	4.1	3.3				
Other*	_____	.6	1.0	.4				
Whole milk	_____	842 qts.	948	836	$_____	$40.83	$43.37	$38.66
Skim milk	_____	745 qts.	1371	489	_____	5.25	6.60	4.00
Cream	_____	414 pts.	448	334	_____	79.90	83.22	66.23
Farm-made butter	_____	25 lbs.	28	22	_____	11.55	14.00	10.20
Eggs	_____	135 doz.	217	141	_____	44.62	71.10	45.96
Cattle	_____	386 lbs.	361	515	_____	37.86	35.14	53.71
Hogs	_____	564 lbs.	653	483	_____	74.36	84.77	66.72
Sheep	_____	13 lbs.	-	25	_____	1.53	-	4.13
Poultry	_____	106 lbs.	130	116	_____	20.38	25.50	22.75
Potatoes	_____	26 bu.	28	24	_____	29.01	33.40	24.44
Vegetables & fruits					_____	66.05	85.35	52.90
Farm fuel	_____	6 cds.	6	8	_____	38.48	40.30	41.07
Rental val. of house					_____	139.72	143.72	158.78
Total					$_____	$589.54	$666.47	$589.55

Table 5. Household and Personal Expenses for Those Farms Which Kept Complete Accounts of These Expenses, 1943

Items	Your farm	Average of 19 farms	9 most profitable farms	9 least profitable farms
Number of persons - family	_____	5.1	5.9	4.3
Number of persons, (Family	_____	3.5	4.0	3.1
adult equivalent (Other*	_____	.5	.9	.2
Food and meals bought	$_____	$349	$420	$287
Operating and supplies	_____	102	158	55
Clothing and clothing materials	_____	189	248	142
Personal care, personal spending	_____	55	80	34
Furnishings and equipment	_____	68	66	71
Education, recreation, and development	_____	49	74	27
Medical care and health insurance	_____	93	113	77
Church, welfare, gifts, and taxes	_____	103	121	91
Personal share of auto expense	_____	41	50	32
Household share of elect. & gas eng. exp.	_____	10	12	11
H.H. & pers. sh. of new auto, gas eng. & motor bot.	_____	12	-	25
Life insurance and other investments	_____	637	1067	258
Income tax	_____	211	391	53
Total household and personal cash expenses	$_____	$1919	$2800	$1163
Food furnished by the farm	$_____	$430	$414	$458
Fuel furnished by the farm	_____	34	18	48
House rental	_____	127	136	126
Total household and personal expenses	$_____	$2510	$3368	$1795

* Hired help or others boarded.

Table 6. Summary of Farm Earnings (Cash Statement), 1943

Items	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
FARM EXPENSES				
Dairy and dual purpose cows bought	$	$45	$89	$71
Other dairy & du.pur. cattle bought		51	164	18
Beef cattle bought (including feeders)		62	140	151
Hogs bought		26	27	25
Sheep bought (including feeders)		42	26	53
Poultry bought (including turkeys)		112	308	57
Horses bought		5	6	2
Misc. livestock expense		49	61	46
Misc. crop expenses		346	621	367
Feed bought		684	1399	370
Custom work hired		133	226	135
Mech. power mach. (farm share) (new)		148	399	62
Mech. power mach. (farm share) (upkeep)		128	220	98
Mech. power (farm share) (gas, oil, etc.)		455	842	356
Crop and general mach. (new)		135	262	136
Crop and general mach. (upkeep)		111	219	85
Livestock equipment (new)		53	68	51
Livestock equipment (upkeep)		27	59	10
Buildings and fencing (new)		178	486	90
Buildings and fencing (upkeep)		99	159	85
Hired labor		465	878	382
Taxes		210	358	162
General farm and insurance		54	79	43
(1) Total farm purchases	$	$3618	$7096	$2855
(2) Decrease in farm capital		-	-	769
(3) Board furnished hired labor		144	262	109
(4) Interest on farm capital		788	1254	753
(5) Unpaid family labor		427	645	462
(6) Total farm exp. (Sum of (1) to (5)	$	$4977	$9257	$4948
FARM RECEIPTS				
Dairy and dual purpose cows	$	$252	$228	$192
Dairy products		1197	1583	908
Other dairy & dual purpose cattle		360	454	237
Beef cattle (including feeders)		300	583	595
Hogs		987	1388	693
Sheep and wool (including feeders)		340	242	458
Poultry (including turkeys)		573	1634	162
Eggs		364	650	265
Horses		22	23	36
Potatoes		416	1787	147
Small grain		1194	3323	315
Other crops		285	629	169
Machinery & equip. sold		138	380	42
Agricultural adjustment payments		205	447	123
Income from work off the farm		168	231	114
Misc.		23	49	5
(7) Total farm sales	$	$6824	$13631	$4461
(8) Increase in farm capital		125	1788	-
(9) Family living from the farm		590	666	590
(10) Total farm receipts (7) + (8) + (9)	$	$7539	$16085	$5051
(6) Total farm expenses		4977	9257	4948
(11) Oper. labor earnings (10) - (6)		2562	6828	103

Table 7. Summary of Farm Earnings (Enterprise Statement), 1943*

Items	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
EXPENSES AND NET DECREASES				
Total power	$_____	$845	$1408	$693
Horses	_____	138	155	132
Tractor	_____	397	687	294
Truck	_____	91	276	34
Auto (farm share)	_____	131	153	144
Gas engine (farm share)	_____	10	3	7
Elec. plant or current (farm share)	_____	20	39	19
Hired power	_____	58	95	63
Crop and general machinery	_____	241	352	243
Livestock equipment	_____	63	105	43
Buildings, fencing and tiling	_____	212	282	188
Misc. productive livestock expense	_____	49	60	46
Labor	_____	1079	1866	994
Real estate taxes	_____	168	309	126
Personal property tax	_____	42	49	36
Insurance	_____	17	30	16
General farm	_____	37	49	27
Interest on farm capital	_____	788	1254	753
(1) Total expenses & net decreases	$_____	$3541	$5764	$3165
RETURNS AND NET INCREASES				
All productive livestock	$_____	$4362	$6817	$3099
Dairy and dual purpose cows	_____	1424	1850	1020
Other dairy & dual purpose cattle	_____	490	535	406
Beef cattle	_____	227	446	293
Hogs	_____	988	1554	603
Sheep - farm flock	_____	300	203	339
Turkeys and capons	_____	455	1406	71
Chickens	_____	478	823	367
Crops, seed and feed	_____	1341	5092	-86
Income from labor off the farm	_____	105	116	47
Agricultural conservation payments	_____	205	447	123
Miscellaneous	_____	90	120	85
(2) Total returns & net increases	$_____	$6103	$12592	$3268
(1) Total expenses & net decreases	_____	3541	5764	3165
(3) Oper. labor earnings (2) - (1)	_____	2562	6828	103

* 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 8. Net Worth Statement for Those Farmers Who Kept a Complete Record of All Assets and Liabilities*

	Your farm	22 owned farms	21 part-owned farms**
January 1, 1943			
Total acres in farm	_____	258.2	479.2
Owned	_____	258.2	285.5
Rented	_____	-	193.7
Total farm capital	$_____	$13829	$14632
Accounts receivable	_____	-	71
Outside investments	_____	562	776
Household and personal assets	_____	1480	1227
Total assets	$_____	$15871	$16706
Total liabilities	$_____	$ 2861	$ 3031
Federal Land Bank	_____	627	710
Land Bank Commissioner	_____	199	54
Other mortg. on land operated	_____	1429	1182
Production Credit Assn.	_____	29	163
Sealed grain	_____	127	221
Other chattel mortgages	_____	274	121
Notes payable	_____	115	496
Accounts payable	_____	61	84
Farmer's net worth	$_____	$13010	$13675
December 31, 1943			
Total farm capital	$_____	$13786	$15271
Accounts receivable	_____	-	19
Outside investments	_____	1276	1514
Household and personal assets	_____	1649	1831
Total assets	$_____	$16711	$18635
Total liabilities	$_____	$ 2206	$ 2195
Federal Land Bank	_____	578	631
Land Bank Commissioner	_____	193	54
Other mortg. on land operated	_____	1124	996
Production Credit Assn.	_____	18	141
Sealed grain	_____	51	145
Other chattel mortgages	_____	161	30
Notes payable	_____	67	141
Accounts payable	_____	14	57
Farmer's net worth	$_____	$14505	$16440
Change in net worth	$_____	$+1495	$+2765

* Only the operator's share of the assets and liabilities are included.
** 5 rented for cash, 7 cash and crop share and 9 crop share.

Table 9. Summary of Farm Earnings by Tenure, 1943

	Your farm	22 owners	21 part-owners
FARM EXPENSES			
Dairy and dual purpose cows bought	$_____	$45	$91
Other dairy and dual purpose cattle bought	_____	66	77
Beef cattle bought (including feeders)	_____	28	10
Hogs bought	_____	21	17
Sheep bought (including feeders)	_____	19	71
Poultry bought (including turkeys)	_____	73	137
Horses bought	_____	6	6
Misc. livestock expenses	_____	34	52
Misc. crop expenses	_____	221	411
Feed bought	_____	464	868
Custom work hired	_____	144	141
Mech. power mach. (farm share) (new)	_____	161	178
Mech. power mach. (farm share) (upkeep)	_____	103	138
Mech. power (farm share) (gas, oil, etc.)	_____	292	580
Crop and general mach. (new)	_____	143	132
Crop and general mach. (upkeep)	_____	72	150
Livestock equipment (new)	_____	74	35
Livestock equipment (upkeep)	_____	26	47
Buildings and fencing (new)	_____	126	373
Buildings and fencing (upkeep)	_____	99	113
Hired labor	_____	329	518
Taxes (real estate & pers. property)	_____	166	141
General farm and insurance	_____	63	62
Cash rent	_____	-	119
Interest paid	_____	106	160
(1) Total farm purchases	$_____	$2881	$4627
(2) Decrease in farm capital	_____	43	-
(3) Board furnished hired labor	_____	86	167
(4) Interest on farm capital	_____	584	588
(5) Unpaid family labor	_____	445	243
(6) Total farm exp. (Sum of (1) to (5)	$_____	$4039	$5625
FARM RECEIPTS			
Dairy and dual purpose cows	$_____	$201	$189
Dairy products	_____	1202	1010
Other dairy and dual purpose cattle	_____	294	321
Beef cattle (including feeders)	_____	156	165
Hogs	_____	979	1107
Sheep and wool (including feeders)	_____	282	357
Poultry (including turkeys)	_____	409	501
Eggs	_____	319	380
Horses	_____	54	21
Potatoes	_____	286	400
Small grain	_____	693	2005
Other crops	_____	112	516
Machinery & equipment sold	_____	78	222
Agricultural adjustment payments	_____	117	271
Income from work off the farm	_____	116	348
Misc.	_____	48	95
(7) Total farm sales	$_____	$5346	$7908
(8) Increase in farm capital	_____	-	639
(9) Family living from the farm	_____	616	546
(10) Total farm receipts (7) + (8) + (9)	$_____	$5962	$9093
(6) Total farm expenses	_____	4039	5625
(11) Operator's labor earnings (10) - (6)	_____	1923	3468
(12) Ret. cap. & family labor (4) + (5) + (11)	_____	2952	4299

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 $6828 and of those in the lower 20 per cent was $103. This is a range of $6725 between the average earnings of these two groups. Some of the causes for these differences in earnings may be beyond the control of the farmer. However, all of these farmers could make some changes in their farming operations which would increase earnings. A farmer can secure some ideas as to changes that could profitably be made on his farm by studying the facts about his business as presented in this report and comparing his accomplishments with other farmers following the same general type of farming. 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. Because of the great importance of size of business in 1943, some of these factors do not show a significant relationship with earnings. One record has been omitted from all the averages in Tables 10 through 15 because the business was unusually large and would result in a considerable distortion of the data.

Table 10. Relation of Crop Yields to Farm Earnings

Per cent crop yields were of the average for all 72 farms		No. of farms	Average operator's labor earnings
Group	Average		
Below 90	67	19	$1,112
90-113	99	34	2,388
114 and above	134	18	2,950

The data in Table 10 show that the farmers obtaining high yields had higher earnings than those obtaining low yields. 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 farms	Average operator's labor earnings
Group	Average		
Below 35.0	25.4	22	$1,811
35.0-47.9	42.8	28	1,910
48.0 and above	56.5	21	2,958

*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.

Farmers' earnings are affected by the selection of kinds of crops to be grown as well as by the yields of crops. As a rule, on these farms, such crops as alfalfa, hard spring wheat, flax, barley, sugar beets, and potatoes 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 gross returns from productive livestock* Group	Average	No. of farms	Average operator's labor earnings
Below 80	69	14	$1,803
80-119	99	44	2,015
120 and above	142	13	3,272

*Feed records were not kept on these farms. The index represents gross returns and is weighted by the number of animal units of each class of livestock.

Many of these farms are livestock farms. High gross returns from livestock are accompanied by high farm income. A large proportion of the crops raised are fed on the farm and some additional feed is purchased. Feed is the major item of cost in livestock production and livestock constitute an important source of income 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 10.0	8.3	22	$2,278
10.0-17.4	13.2	32	2,044
17.5 and above	21.2	12	2,352

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

The amount of livestock was less important in 1942 and 1943 than it was in 1940 and 1941. Five very specialized crop farms with more than 50 per cent of the total work units expended on crops were omitted from the averages in Table 13. The amount of livestock is an important factor only on livestock farms. 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

No. of work units Group	Average	No. of farms	Average operator's labor earnings
Below 375	326	19	$1,237
375-574	453	33	2,099
575 and above	728	19	3,298

The size of the farm business is measured in terms of work units. A work unit is the 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. 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. The size of the farm business may be increased by farming more land, by keeping more livestock or by keeping livestock or growing crops of a more intensive type.

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 180	157	16	$1,432
180-311	239	37	2,126
312 and above	342	18	2,992

More units of 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
$3.00 and above	$3.73	21	$1,849
$2.00-2.99	2.48	34	2,202
Below $2.00	1.46	16	2,608

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

When the prices of farm products are high enough to make farming quite profitable, control over expenses is not so important as in periods of low prices. When prices are high, it is more important to secure high production than to hold down expenses. A high overhead expense may be due to a large amount of power and equipment which in turn is offset to some extent by a reduction in labor costs.

Some of the cash expenses can be kept down by careful management. Oftentimes 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 the average. This is 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 farm 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	8	_____	xxxxxxxx	$1,186
Two	19	_____	xxxxxxxxxxx	1,472
Three	11	_____	xxxxxxxxxxx	1,482
Four	22	_____	xxxxxxxxxxxxxxxxxxxx	2,758
Five	7	_____	xxxxxxxxxxxxxxxxxxxxxxxx	3,495
Six or seven	4	_____	xxxxxxxxxxxxxxxxxxxxxxxxxxxxx	4,129

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, 1943

Measures used in chart on page 15	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
Operator's labor earnings	$_____	$2,562	$6,828	$103
(1) Crop yields*	_____	100	122	86
(2) % of tillable land in high ret. crops**	_____	41.5	41.0	41.8
(3) Gross returns from prod. livestock***	_____	100	112	90
(4) Prod. livestock units per 100 acres****	_____	12.7	11.3	14.0
(5) Size of business - work units	_____	506	731	401
(6) Work units per worker	_____	247	252	191
(7) Power, mach., equip. & bldg. exp. per work unit	$_____	$2.64	$2.73	$2.97
Items related to some of the above measures:				
(3) Index of gross returns from -				
Dairy cattle	_____	100	109	83
Dual-purpose cattle	_____	100	104	102
Beef cattle - breeding herd	_____	100	166	85
Beef cattle - feeders	_____	100	-	-
Hogs	_____	100	103	92
Sheep - farm flock	_____	100	131	92
Turkeys	_____	100	95	80
Chickens	_____	100	100	85
(5) Work units on crops	_____	181	305	141
Work units on productive livestock	_____	303	403	251
Other work units	_____	22	23	9
(6) Total number of workers	_____	2.1	2.9	2.1
Number of family workers	_____	1.5	1.8	1.6
Number of hired workers	_____	.6	1.1	.5
(7) Power expense per work unit	$_____	$1.63	$1.77	$1.78
Crop machinery expense per work unit	_____	.47	.45	.59
Livestock equip. expense per work unit	_____	.13	.16	.11
Bldgs. and fencing exp. per work unit	_____	.41	.35	.49

* 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 72 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
$6550	140	61.5	140	20.7	820	370	$1.05
6050	135	59.0	135	19.7	780	355	1.25
5550	130	56.5	130	18.7	740	340	1.45
5050	125	54.0	125	17.7	700	325	1.65
4550	120	51.5	120	16.7	660	310	1.85
4050	115	49.0	115	15.7	620	295	2.05
3550	110	46.5	110	14.7	580	280	2.25
3050	105	44.0	105	13.7	540	265	2.45
2550	100	41.5	100	12.7	500	250	2.65
2050	95	39.0	95	11.7	460	235	2.85
1550	90	36.5	90	10.7	420	220	3.05
1050	85	34.0	85	9.7	380	205	3.25
550	80	31.5	80	8.7	340	190	3.45
50	75	29.0	75	7.7	300	175	3.65
-450	70	26.5	70	6.7	260	160	3.85
-950	65	24.0	65	5.7	220	145	4.05

Table 19. Distribution of Acres in Farm, 1943

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 72 farms	14 most profit-able farms	14 least profit-able farms
Wheat, hard spring	(A)	52	_____	21.2	50.7	11.7
Flax	(B)	39	_____	19.8	40.0	6.9
Barley	(B)	54	_____	26.2	49.3	18.4
Oats	(C)	68	_____	40.1	62.7	30.8
Wheat, durum	(C)	4	_____	1.9	8.8	.0
Rye	(D)	5	_____	2.3	9.3	1.7
Emmer (spelt)	(D)	5	_____	.9	.0	.5
Millet	(D)	10	_____	1.4	3.2	.6
Miscellaneous	(D)	5	_____	1.3	2.1	1.1
Total small grain		70	_____	115.1	226.1	71.7
Sugar beets, seed potatoes, and garden	(A)	12	_____	3.6	9.2	4.9
Other potatoes	(B)	27	_____	4.7	7.4	6.0
Corn, grain	(C)	28	_____	7.3	8.4	4.0
Corn silage	(D)	41	_____	9.8	18.0	10.6
Corn fodder	(D)	11	_____	1.3	.7	1.6
Total cultivated crops		59	_____	26.7	43.7	27.1
Alfalfa hay and seed	(hay A, seed B)	68	_____	33.0	41.8	30.4
Alsike clover hay or seed	(hay B, seed C)	7	_____	2.3	.0	.0
Sweet clover hay	(C)	16	_____	5.2	4.8	3.0
Sweet clover seed	(C)	21	_____	5.2	8.9	7.4
Mixed legumes & non-legumes for hay	(C)	13	_____	4.4	1.8	2.1
Timothy and/or brome hay	(D)	12	_____	3.0	4.7	1.6
Misc. hay and seed crops	(D)	6	_____	2.8	8.4	.5
Quack grass & wild hay on tillable land	(D)	16	_____	11.5	28.7	6.9
Total tillable land in hay		71	_____	67.4	99.1	51.9
Alfalfa pasture	)	9	_____	2.1	4.3	.5
Mixture incl. alf., sw.clover, brome	(B)	32	_____	17.9	13.8	17.1
Sweet clover pasture	(C)	24	_____	8.3	13.6	8.0
Other tillable pasture	(D)	22	_____	13.4	38.3	6.0
Total tillable land in pasture		66	_____	41.7	70.0	31.6
Tillable land not cropped	(D)	39	_____	36.2	91.5	26.5
Total tillable land			_____	287.1	530.4	208.8
Wild hay (non-tillable)		24	_____	12.9	.0	10.8
Non-tillable pasture		49	_____	40.2	16.6	63.5
Timber (not pastured)		32	_____	18.0	10.4	11.8
Roads and waste			_____	25.3	28.8	21.7
Farmstead			_____	8.3	10.4	9.8
Total acres in farm			_____	391.8	596.6	326.4
% tillable land			_____	73.3	88.9	64.0
% tillable land in high return crops			_____	41.5	41.0	41.8

Table 20. Crop Yields per Acre, 1943

Crop	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
Wheat, hard spring, bu.	_____	17.3	20.6	15.7
Flax, bu.	_____	4.5	4.6	4.6
Barley, bu.	_____	16.9	22.7	15.5
Oats, bu.	_____	30.6	36.7	25.6
Wheat, durum, bu.	_____	20.2	22.0	-
Rye, bu.	_____	8.3	11.5	5.4
Emmer (spelt), bu.	_____	13.9	-	-
Millet, bu.	_____	21.0	18.7	-
Seed potatoes, bu.	_____	71.9	-	-
Other potatoes, bu.	_____	76.3	100.6	64.6
Corn, grain, bu.	_____	32.4	37.3	20.5
Corn silage, tons	_____	5.1	6.4	4.6
Corn fodder, tons	_____	3.2	3.5	3.5
Alfalfa hay, tons	_____	1.8	1.7	2.0
Alsike clover hay, tons	_____	1.7	-	-
Alsike clover seed, lbs.	_____	150.	-	-
Sweet clover hay, tons	_____	1.2	1.3	.5
Sweet clover seed, lbs.	_____	211.	177.	226.
Mixed legume and non-legume hay, tons	_____	1.2	1.2	.9
Brome grass hay, tons	_____	1.3	1.5	.6
Timothy hay, tons	_____	1.4	-	-
Quack grass, tons	_____	1.0	1.2	.8
Wild hay, tons	_____	.6	-	.4

Table 21. Summary of Amount of Livestock, 1943

Items	Your farm	Average of 72 farms	14 most profitable farms	14 least profitable farms
No. of horses	_____	3.6	3.5	3.8
No. of colts	_____	.7	.7	.9
No. of dairy & dual purpose cows	_____	12.1	14.7	9.5
Head of other dairy & dual pur. cattle	_____	16.1	20.2	13.8
Head of cattle in beef breeding herd	_____	6.1	9.2	8.0
Litters of pigs	_____	5.8	9.4	4.0
Pounds of hogs produced	_____	7800	11899	4936
Head of sheep (2 lambs = 1 head)	_____	43.7	19.8	63.2
No. of hens	_____	101	171	82
Total no. of prod. lvstk. animal units	_____	37.2	44.4	37.2
% of total that are:				
Dairy cows	_____	20.8	24.0	12.3
Other dairy cattle	_____	12.4	14.0	6.0
Dual purpose cows	_____	14.9	12.1	16.0
Other dual purpose cattle	_____	11.9	8.9	16.0
Beef cattle	_____	9.1	11.5	17.0
Hogs	_____	10.3	12.8	7.8
Sheep - farm flock	_____	14.9	5.4	21.9
Turkeys and capons	_____	2.7	7.2	.6
Hens	_____	3.0	4.1	2.4

Table 22. Feed Costs for Horses and Misc. Power and Machinery Expense, 1943

Items	Your farm	Average of 71 farms*	14 most profitable farms	14 least profitable farms
Feed per horse,** lbs.:				
Grain	_____	532	436	718
Hay	_____	4195	3909	3516
Feed costs per horse:				
Grain	$_____	$ 9.96	$ 8.18	$13.47
Roughage	_____	18.44	21.97	15.11
Pasture	_____	4.57	4.30	4.68
TOTAL FEED COSTS	$_____	$32.97	$34.45	$33.26
Number of work horses	_____	3.6	3.5	3.8
Number of colts	_____	.7	.6	.9
Crop acres per farm	_____	222.1	368.9	161.5
Tractor and horse exp. per crop acre	$_____	$ 2.69	$ 2.25	$ 3.32
Crop & gen. mach. exp. per crop acres	$_____	$ 1.25	$ 1.09	$ 1.70

* One farmer did not have horses. The crop acres and expenses per crop acre are averages of 72 farms.

**Two colts equal one horse.

Table 23. Returns from Productive Livestock, 1943

Items	Your farm	Average of 72 farms	14 highest in livestock returns	14 lowest in livestock returns
DAIRY CATTLE				
No. of farms		38	9	9
Gross returns per dairy cow	$_____	$128.95	$189.01	$ 92.50
Pounds of butterfat per cow	_____	213	293	161
No. of heads of cows	_____	12.9	10.1	15.0
Gross ret.per head oth.dairy cattle	$_____	$ 35.87	$ 47.94	$ 25.05
No. head of other dairy cattle *	_____	16.0	10.3	20.9
Gross ret.per an.unit all da.cattle	$_____	$102.25	$149.70	$ 71.14
No. of an. units all dairy cattle	_____	21.4	15.7	25.8
DUAL PURPOSE CATTLE				
No. of farms		29	2	5
Gross ret. per dual purpose cow	$_____	$110.33	$178.97	$ 82.81
Pounds of butterfat per cow	_____	192	302	158
No. of head of cows	_____	12.8	7.3	14.8
Gross ret.per head oth.du.pur.cattle	$_____	$ 29.79	$ 42.82	$ 15.92
No. head oth. du. pur. cattle**	_____	21.9	17.8	32.2
Gross ret.per an.unit all du.pur.cat.	$_____	$ 82.87	$139.46	$ 55.10
No. of an. units all dual pur. cattle	_____	23.1	12.0	31.5
PRICE REC'D PER LB. BUTTERFAT SOLD				
All butterfat (cents)	_____	54.9	57.3	53.6
Manufacturing cream (cents)	_____	53.8	54.5	52.1
Retail milk or cream (cents)	_____	67.4	71.8	62.3
BEEF-BREEDING HERD				
No. of farms		12	6	0
Gross returns per animal unit	$_____	$ 51.91	$ 68.40	-
No. animal units	_____	24.1	23.3	-
No. beef cows and bulls	_____	11.9	11.7	-
FEEDER CATTLE--1 farm				
Gross ret. per cwt. produced	$_____	-	-	-
Lbs. of cattle produced	_____	-	-	-
Price rec'd. per cwt. sold	$_____	-	-	-
Price paid per cwt. bought in 1943	$_____	-	-	-
HOGS				
No. of farms		63	12	11
Gross ret. per cwt. produced	$_____	$ 12.59	$ 13.07	$ 11.83
Lbs. hogs produced	_____	8857	10028	8462
No. spring litters	_____	5.5	5.6	5.9
No. fall litters	_____	1.1	1.7	.9
Total no. litters raised	_____	6.6	7.3	6.8
Pigs born per litter	_____	8.5	7.8	8.7
Pigs weaned per litter	_____	6.8	6.2	6.5
Price rec'd. per cwt. sold	$_____	$ 13.05	$ 13.29	$ 12.60
SHEEP-FARM FLOCK				
No. of farms		35	5	5
Gross ret. per head***	$_____	$ 7.11	$ 8.77	$ 3.71
No. head of sheep	_____	89.1	65.8	86.0
No. ewes kept for lambing	_____	61.9	43.4	73.0
% lamb crop ****	_____	93	90	64
% death loss ****	_____	6.4	6.6	9.5
Lbs. wool per sheep sheared	_____	7.7	9.4	8.3
Price rec'd. per lb. wool sold (cts)	_____	43.7	42.4	39.0
Price rec'd. per cwt. lambs sold	$_____	$ 11.54	$ 12.02	$ 10.05

See page 20 for footnotes

Table 23. Returns from Productive Livestock, 1943 (Cont.)

Items	Your farm	Average of 72 farms	14 highest in livestock returns	14 lowest in livestock returns
TURKEYS AND CAPONS				
No. of farms		13	5	3
Gross ret. per cwt. produced	$_____	$ 30.08	$ 30.29	$ 26.32
Lbs. produced	_____	8302	10059	5810
Price rec'd. per lb. sold (cts)	_____	33.5	33.4	32.3
CHICKENS				
No. of farms		54	13	11
Gross ret. per hen	$_____	$ 4.91	$ 5.63	$ 4.25
No. hens	_____	133	143	136
Eggs per hen	_____	144	165	125
Price rec'd. per doz. eggs sold (cts.)	_____	33.2	33.6	32.6

*One farmer having both a dairy herd and a beef herd used a beef bull and included all the young stock in the beef herd.

**Three farmers having both a dual purpose herd and a beef herd used a beef bull and included all the young stock in the beef herd.

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

****Lambs which die during month of birth are not included.

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 24.

Table 24. 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	15.5 per cow	Small grain	.7 per acre
Other dairy & du.pur.cattle	2.4 per an. unit*	Sugar beets	2.5 per acre
Beef breeding herd	4.3 per an. unit*	Seed potatoes	4.3 per acre
Feeder cattle	.3 per 100 lbs.	Other potatoes	3.8 per acre
Sheep - farm flock	2.2 per an. unit*	Corn, husked	1.3 per acre
Hogs	.3 per 100 lbs.	Corn, shredded	2.0 per acre
Turkeys	.7 per 100 lbs.	Corn silage	1.4 per acre
Hens	28.0 per 100 hens	Corn fodder	1.1 per acre
		Alfalfa hay	.8 per acre
		Other hay crops	.6 per acre
		Legume seed	1.0 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 25. Miscellaneous Information by Counties, 1943

	Becker & Mahnomen	Kittson W.Marshall W. Polk	Norman	Pennington Red Lake E. Polk	Roseau & E.Marshall
Operator's lab. earnings	$2,331	$4,388	$2,234	$2,027	$1,712
MEAS.OF FARM ORG.& MGT.EFFIC.					
Crop yields - % of av.	99	107	101	91	108
% high ret. crops	42.3	38.8	40.3	43.3	43.0
Index ret. from lvstk.	110	89	107	94	103
A.U. per 100 A.	15.3	11.2	12.0	14.9	9.6
Work units	460	594	484	516	446
Work units per worker	259	257	232	256	226
Exp. per work unit	$ 2.80	$ 2.36	$ 3.14	$ 2.22	$ 2.81
DIST. OF ACRES IN FARM					
Small grain	81.9	218.4	124.3	87.4	95.9
Cult. crops	29.6	45.8	42.0	20.7	10.8
Tillable hay & seed crops	34.5	62.9	34.8	74.9	99.0
Tillable pasture	32.6	38.5	38.9	37.5	53.8
Tillable land not cropped	11.8	40.2	53.7	22.4	48.6
Total tillable land	190.4	405.8	293.7	242.9	308.1
Wild hay (non-tillable)	35.0	8.4	.5	9.9	14.8
Non-tillable pasture	29.8	23.7	23.0	50.0	55.4
Timber,roads,waste,farmstead	40.0	48.6	37.1	63.8	56.2
Total land in farm	295.2	486.5	354.3	366.6	434.5
% land tillable	64.5	83.4	82.9	66.3	70.9
CROP YIELDS PER ACRE					
Spring wheat, bu.	15.0	22.4	14.4	17.6	18.4
Flax, bu.	3.3	3.4	4.8	2.2	6.0
Barley, bu.	15.6	23.6	18.1	14.5	14.0
Oats, bu.	32.4	32.1	29.5	27.7	31.4
Potatoes(oth.than for seed)bu.	58.3	104.4	99.4	48.1	54.3
Corn grain, bu.	25.0	39.2	35.7	36.5	29.5
Corn silage, tons	6.1	5.2	5.1	4.1	5.5
Alfalfa, tons	2.4	1.7	1.5	2.5	1.5
AMOUNT OF LIVESTOCK					
No. dairy & du. pur. cows	11.6	11.7	9.8	15.0	12.0
No.oth.dairy & du.pur.cat.	17.1	18.5	10.6	20.0	14.5
Hd. in beef-breeding herd	1.5	7.6	12.7	4.6	.7
Litters pigs raised	7.1	4.8	7.9	5.3	3.6
Lbs. hogs produced	10402	5747	12127	6629	3567
Hd. sheep in farm flock	44.2	61.0	15.0	37.9	74.2
No. hens	123	110	111	97	57
Tot. no. livestock units	34.9	40.0	34.6	40.5	33.5
% of total that are					
Dairy cattle	16.0	30.2	30.0	43.2	40.9
Dual purpose cattle	45.7	31.8	20.8	22.6	19.1
Beef cattle	2.0	8.0	20.9	7.4	2.1
Hogs	13.3	5.2	16.5	8.9	7.4
Sheep-farm flock	15.9	18.8	4.0	13.3	28.5
Turkeys and capons	3.6	3.3	4.2	1.7	.1
Chickens	3.5	2.7	3.6	2.9	1.9
MISCELLANEOUS					
Work units on crops	152	238	181	157	171
Work units on livestock	299	312	284	338	263
Other work units	8	44	19	21	12
No. of workers	1.8	2.4	2.1	2.1	2.1
No. family workers	1.5	1.6	1.4	1.6	1.5
No. hired workers	.3	.8	.7	.5	.6

Table 26. Summary of Farm Earnings by Years*

Items	1940	1941	1942	1943
No. of farms	98	96	79	72
FARM EXPENSES				
Horses bought	$ 20	$ 19	$ 17	$ 5
Dairy and dual-purpose cattle bought	71	58	89	96
Beef cattle bought (including feeders)	9	18	83	62
Hogs bought	10	24	54	26
Sheep bought (including feeders)	31	22	36	42
Poultry bought (including turkeys)	24	40	66	112
Miscellaneous livestock expense	13	20	31	49
Miscellaneous crop expenses	149	150	265	346
Feed bought	138	187	380	684
Power machinery (farm share) (new)	226	222	124	148
Power machinery (farm share) (upkeep)	330	387	462	583
Custom work hired	74	63	81	133
Crop and general machinery (new)	195	261	165	135
Crop and general machinery (upkeep)	50	57	88	111
Livestock equipment (new)	29	51	60	53
Livestock equipment (upkeep)	5	8	17	27
Buildings and fencing (new)	154	167	208	178
Buildings and fencing (upkeep)	79	52	84	99
Hired labor	211	236	324	465
Taxes	193	196	200	210
General farm and insurance	29	44	56	54
(1) Total farm purchases	$2,040	$2,282	$2,890	$3,618
(2) Decrease in farm capital	-	-	-	-
(3) Board furnished hired labor	103	107	134	144
(4) Interest on farm capital	691	710	756	788
(5) Unpaid family labor	295	338	402	427
(6) Total farm expenses (Sum of (1) to (5)	$3,129	$3,437	$4,182	$4,977
FARM RECEIPTS				
Horses	$ 30	$ 37	$ 21	$ 22
Dairy and dual-purpose cattle	325	409	576	612
Dairy products	610	864	1,054	1,197
Beef cattle (including feeders)	77	118	257	300
Hogs	166	333	750	987
Sheep and wool	222	242	327	340
Poultry (including turkeys)	173	245	451	573
Eggs	65	130	263	364
Potatoes	120	174	272	416
Small grain	560	625	1,150	1,194
Other crops	123	185	161	285
Machinery and equipment sold	116	115	56	138
Income from labor off the farm	116	125	99	105
Agricultural Adjustment payments	252	248	227	205
Miscellaneous	133	86	96	86
(7) Total farm sales	$3,088	$3,936	$5,760	$6,824
(8) Increase in farm capital	364	991	809	125
(9) Family living from farm	366	421	502	590
(10) Total farm receipts (7) + (8) + (9)	$3,818	$5,348	$7,071	$7,539
(6) Total farm expenses	3,129	3,437	4,182	4,977
(11) Operator's labor earnings (10) - (6)	689	1,911	2,889	2,562

*The financial statements differ in that the unpaid family labor rate was $40 per month in 1940, $45 in 1941, $55 in 1942 and $70 in 1943; and the board for hired labor was calculated at $18 per month in 1940, $20 in 1941, and $25 in 1942 and 1943.

Table 27. Summary of Miscellaneous Items by Years

Items	1940	1941	1942	1943
Total farm capital (beginning of year)	$13,639	$13,713	$14,713	$15,702
MEASURES OF FARM ORGANIZATION AND MANAGEMENT EFFICIENCY				
% tillable land in high return crops	34.9	37.6	38.3	41.5
Animal units of prod.livestock per 100 A.	9.6	10.5	12.0	12.7
Work units	456	481	475	506
Work units per worker	219	238	236	247
Expenses per work unit	$ 1.86	$ 1.83	$ 2.26	$ 2.64
ACRES PER FARM - Total	397.1	390.2	395.8	391.8
Crop acres per farm	233.9	231.5	204.5	222.1
CROP YIELDS PER ACRE				
Wheat, bu. (hard spring)	15.0	15.4	22.9	17.3
Flax, bu.	7.3	4.5	6.0	4.5
Barley, bu.	20.0	23.8	32.9	16.9
Oats, bu.	26.7	32.2	46.8	30.6
Potatoes, bu.	103.4	58.7	66.9	76.3
Corn, grain, bu.	28.3	34.5	24.7	32.4
Corn silage, tons	6.1	6.2	6.3	5.1
Alfalfa hay, tons	1.2	1.7	1.8	1.8
Sweet clover hay, tons	.7	1.0	1.4	1.2
Sweet clover seed, lbs.	285	118	258	211
Wild hay, tons	.8	.5	.6	.6
GROSS RETURNS PER:				
Dairy cow	$68.90	$95.93	$114.92	$128.95
Dual-purpose cow	61.95	80.71	105.72	110.33
Animal unit in beef-breeding herd	58.04	57.03	80.20	51.91
Head of sheep in farm flock	5.93	7.05	11.02	7.11
100 lbs. hogs produced	5.81	10.70	14.38	12.59
Hen	1.86	2.88	3.85	4.91
100 lbs. turkeys produced	15.34	20.84	31.77	30.08
PRICE RECEIVED PER:				
Lb. butterfat sold to creameries (cts.)	30.4	37.4	45.3	53.8
100 lbs. lambs sold	$ 8.12	$ 9.88	$13.31	$11.54
100 lbs. hogs sold	$ 5.32	$ 9.67	$13.52	$13.05
Lb. wool sold (cts.)	28.9	40.0	41.3	43.7
Doz. eggs sold (cts.)	13.9	21.9	28.1	33.2
Lb. turkeys sold (cts.)	15.6	21.5	31.7	33.5
MISC. LIVESTOCK INFORMATION				
No. of work horses	4.0	3.6	3.7	3.6
No. of colts	.7	.8	.7	.7
No. of dairy or dual-purpose cows	11.2	11.9	11.9	12.1
Head of other dairy or dual-purpose cattle	13.2	14.4	15.8	16.1
Head of cattle in beef-breeding herd	3.1	3.6	4.3	6.1
Litters of pigs	2.3	2.6	4.0	5.8
Pounds of hogs produced	3,586	4,271	6,654	7,800
No. of hens	60	66	98	101
Head of sheep	38.8	37.4	38.4	43.7
Pounds of butterfat per dairy cow	220	235	230	213
Pounds of butterfat per dual-purpose cow	196	202	210	192
No. of pigs weaned per litter	7.2	7.3	7.3	6.8
% lamb crop	103	108	114	93
Pounds wool per sheep sheared	7.8	7.5	7.9	7.7
Eggs per hen	121	121	129	144