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Southeastern South Dakota Farm Record Summary 1947 Fifth Annual Report

R. O. Olson

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1947

FIFTH ANNUAL REPORT

SOUTHEASTERN
SOUTH DAKOTA

FARM RECORD SUMMARY

Agricultural Economics Pamphlet No. 25

July 1948

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Agricultural Experiment Station
in cooperation with
Agricultural Extension Service
South Dakota State College
Brookings, South Dakota

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Table of Contents

	<u>Page</u>
Introduction	1
Climatic Conditions During 1947	2
Definition of Terms and Measures Used	2
Summary of Farm Inventories	4
Crop Acreage Summary	5
Crop Yield Summary	5
Livestock Summary	6
Farm Produce and Fuel Furnished to Household	6
Summary of Farm Earnings	7
Reasons for Variations in Farm Earnings	8
Relationship of Efficiency in Farming to Earnings	10
Farm Organization and Management Efficiency Factors	11
Thermometer Chart	12
Comparative Standing of Cooperators	13
Size of Farm Related to Farm Earnings and Other Factors	14
Tenure Related to Farm Earnings and Other Factors	15
Summary of Feed Costs and Returns from Chickens	16
Summary of Feed Costs and Returns from Dairy Cows	17
Summary of Feed Cost and Returns from Fattening Cattle	18
Summary of Feed Cost and Returns from Hogs	19

FIFTH ANNUAL REPORT OF THE SOUTHEASTERN

SOUTH DAKOTA FARM RECORD PROJECT, 1947

Prepared by R. O. Olson

Introduction

The Department of Agricultural Economics and the Agricultural Extension Service of South Dakota State College are cooperating in a farm record project in two areas of the state. This report covers results of the study in Southeastern South Dakota. A summary of the results of the North Central area are included in a separate report.

The following is a list of the counties covered in the Southeastern South Dakota Study and the county agents who actively cooperated in the project.

<u>County</u>	<u>Agent</u>	<u>Number of records</u>
Moody	C. M. Culhane	10
Minnehaha	Glen Schrader	20
Lincoln	Kenneth Ostroot	12
Clay	Raymond Venard	10
Union	Harmon Boyd	7

The farmers who cooperated in the project kept records of cash receipts and expenses, beginning and end of the year inventories, crop records, livestock records, and records of farm produce used in the household. A number of the farmers also kept records of quantities of feed fed to livestock. Additional information was obtained on crop and livestock practices followed, crop varieties, and on family and hired labor.

Several calls were made at each farm during the year by C. A. Hustrulid, the Farm Management fieldman, to assist the farmers on their bookkeeping problems and to check the records for accuracy and completeness. Arthur Anderson and Lyle Bender, Extension Specialists assisted in the organization and educational work in the field and aided in closing out the records at the end of the year.

This farm record study was organized and supervised by C. R. Hogleund, who was with the Experiment Station until May of this year. The analysis of the data and preparation of this report was carried out under the direction of R. O. Olson of the Experiment Station.

Except where otherwise stated the summaries have been prepared as though each operator was a full owner in order to compare all farms on a more nearly equal basis. However, each cooperator received an earnings statement on the basis of his actual tenure status. In table 17 a comparison is made between owners, part-owners, and renters for earnings and various organization and management efficiency factors.

Average earnings were high for cooperating farmers in this area in 1947. High prices with good yields for most crops contributed to high gross receipts. Operating expenses increased sharply over previous years offsetting much of the increase in returns. The largest increases in expenses came in feed purchased, fuel and oil, hired labor and power and machinery costs. High operating costs can be expected to continue for some time after farm prices drop. Careful planning to hold these costs down will be necessary in the future if high earnings are to be maintained.

There were wide variations in earnings as well as in the methods and practices followed on the farms in this study. It is reasonable to assume that similar variations occur among all farmers in this 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 the usefulness of farm records as a basis for analyzing a farm business and for improving the organization and management of a farm.

Weather as a factor in 1947

This area had a wet cool spring which delayed spring work considerably. Fall-sown and early sown spring grains made good progress, however, and yields for these crops were good. The dry weather in July hastened maturity of late sown grains, cutting down yields and quality somewhat. The below normal rainfall in July and one of the hottest and driest Augusts in history were very hard on the corn crop. Yields were below average throughout the area. The cold weather and heavy snow in November interfered with corn picking causing much to remain in the fields over winter.

Table 1. Monthly and Annual Precipitation and Departure from Normal: Flandreau, Sioux Falls, Vermillion and Wentworth Weather Stations, 1947

Month	Flandreau		Sioux Falls		Vermillion		Wentworth	
	1947	Departure	1947	Departure	1947	Departure	1947	Departure
January	0.39	- 0.11	1.34	+ 0.68	0.87	+ 0.31	0.41	- 0.12
February	0.25	- 0.31	0.19	- 0.56	0.30	- 0.50	0.16	- 0.37
March	0.89	- 0.16	0.58	- 0.70	0.38	- 0.83	0.98	- 0.08
April	3.26	+ 0.95	2.93	+ 0.34	2.90	+ 0.39	4.33	+ 2.07
May	2.15	- 1.26	1.42	- 2.41	2.82	- 0.74	1.26	- 2.22
June	6.56	+ 2.43	7.27	+ 2.93	5.00	+ 0.95	5.69	+ 1.53
July	0.94	- 1.76	0.25	- 2.90	1.13	- 2.03	1.40	- 1.61
August	2.67	- 0.28	2.32	- 0.93	1.54	- 1.44	2.52	- 0.62
September	3.16	+ 0.76	2.82	+ 0.25	1.68	- 1.48	2.58	+ 0.05
October	2.51	+ 1.08	3.55	+ 2.06	3.45	+ 1.91	2.20	+ 0.69
November	1.81	+ 0.86	2.22	+ 1.18	2.02	+ 0.98	3.48	+ 2.72
December	0.12	- 0.45	0.72	- 0.03	0.70	+ 0.03	0.38	- 0.16
1947 Total	24.71	+ 1.75	25.61	- 0.09	22.79	- 2.45	25.39	+ 1.88
1946 Total	27.27	+ 4.76	26.26	+ 0.58	24.09	- 1.04	32.00	+ 9.03
1945 Total	26.71	+ 4.20	25.37	- 0.31	22.73	- 2.40	23.33	+ 0.36
1944 Total	29.19	+ 6.68	32.21	+ 6.53	37.81	+12.68	33.16	+10.19
1943 Total	28.63	+ 5.51	23.45	- 2.97	25.53	- 1.93	28.69	+ 4.95

Definition of Terms and Measures Used

1. Operator's labor earnings - is the measure of financial success used in this report. It is a measure of the relative financial success of a farmer and represents the returns for his year's work (including family living from the farm) above all farm expenses, and a deduction for the value of unpaid family labor and an interest charge for the use of farm capital.
2. Productive man work units - is a measure of size of business used in this report. A work unit represents the amount of work that a farm worker can do in a 10-hour day working at average efficiency. For example, it requires about 10 hours of man labor to produce an acre of corn and 140 hours to care for a milk cow for a year. Thus an acre of corn would represent 1.0 work units and a milk cow 14.0 work units.

The work unit standards used in this report are shown in the following tables:

Crops			Livestock		
Item	Per	No. of work units	Item	Per	No. of work units
Corn, grain	Acre	1.0	Milk cows	cow	14.0
Corn, hogged off	"	.6	Other dairy cattle	animal unit	4.0
Corn and cane silage	"	1.5	Beef cows	cow	4.0
Sorghum	"	1.0	Other beef cattle	animal unit	4.0
Soybeans	"	1.0	Bulls	head	4.0
Potatoes	"	4.0	Litter	litter	4.0
Small grain	"	.7	Other hogs	head	.5
Alfalfa hay	"	1.0	Ewes	head	.5
Other tame hay	"	.7	Other sheep	head	.2
Wild hay	"	.5	Hens	100	20.0
Annual pasture	"	.3	Chickens raised	100	4.0

3. Work unit per worker - is a measure of the efficient use of labor on a farm.
4. Livestock increase - is the value of gross livestock sales less purchases and plus or minus changes in inventory values of livestock from the beginning to the end of the year.
5. Crop yield index - is a comparison of the yield per acre of all crops on a given farm or group of farms with the average yield of all crops for the entire group of farms studied. For example, a farm with a crop yield index of 105 means that the average yield for this farm is 5 percent greater than the average.
6. Crop selection index - is a measure of the success of a farmer or group of farmers in choosing high value crops. Crops were rated A, B, C and D. All of the acres in A crops, one-half of acres in B crops and one-fourth of acres in C crops were used in calculating the percent of cropland in high return crops. The group average was then considered 100 with variations compared to this average. The following crops were rated as A crops: alfalfa, alfalfa and grass mixtures, and corn. The following were rated as B crops: silage, soybeans, flax, and oats. C crops were wheat, barley, annual hay and pasture, and sweet clover and mixed legume hay and pasture.
7. Livestock returns per \$100 feed fed - is a measure of the efficiency in converting feed into livestock products. It is obtained by dividing the value of the net livestock increase by the value of feed fed to all productive livestock during the year. This figure is multiplied by 100.
8. Part-owner - is a farmer who owns part of the land he operates and rents the rest.

Table 2. Summary of Farm Inventories, 1947*

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least Profitable farms
		<u>Beginning of Year</u>		
Horses and mules	\$ _____	\$ 113	\$ 141	\$ 102
Productive livestock (total)	\$ _____	\$ 8,403	\$ 13,026	\$ 6,056
Cattle	_____	5,142	8,460	3,528
Hogs	_____	2,686	3,503	1,843
Sheep	_____	412	899	525
Poultry	_____	163	164	160
Feed and Seed	\$ _____	\$ 7,409	\$ 9,483	\$ 6,783
Mach. and equipment (total)	\$ _____	\$ 3,760	\$ 4,666	\$ 3,686
Power machinery	_____	1,361	1,727	1,256
Crop and gen. mach.	_____	1,977	2,438	2,023
Livestock equip.	_____	422	501	407
Improvements (farm)**	\$ _____	\$ 5,352	\$ 6,586	\$ 5,966
Land	\$ _____	\$ 20,418	\$ 25,718	\$ 17,444
Total Farm Capital	\$ _____	\$ 45,455	\$ 59,620	\$ 40,039
		<u>End of Year</u>		
Horses and mules	\$ _____	\$ 103	\$ 143	\$ 96
Productive livestock (total)	\$ _____	\$ 9,689	\$ 18,169	\$ 5,816
Cattle	_____	5,499	10,888	3,289
Hogs	_____	3,357	5,395	1,659
Sheep	_____	656	1,720	708
Poultry	_____	177	166	160
Feed and seed	\$ _____	\$ 5,967	\$ 9,078	\$ 3,564
Mach. and equipment (total)	\$ _____	\$ 4,573	\$ 5,147	\$ 4,570
Power machinery	_____	1,693	1,855	1,623
Crop and gen. mach.	_____	2,422	2,785	2,476
Livestock equipment	_____	458	507	471
Improvements (farm)**	\$ _____	\$ 5,401	\$ 6,774	\$ 6,115
Land	\$ _____	\$ 20,391	\$ 25,720	\$ 17,443
Total Farm Capital	\$ _____	\$ 46,124	\$ 65,031	\$ 37,604

*These include value of both owner's and operator's share of farm capital.

**Does not include value of dwelling.

Table 3. Crop Acreage Summary, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
Corn for grain	_____	98.6	115.5	77.5
Sorghum forage	_____	1.1	3.1	.5
Corn and cane silage	_____	7.9	12.5	8.7
Soybeans	_____	8.7	11.7	10.5
Miscellaneous	_____	.2	.5	.4
Total Row Crops		116.5	143.3	97.6
Wheat	_____	7.2	16.3	1.5
Oats	_____	65.9	68.1	48.4
Barley	_____	6.9	15.3	9.9
Rye-grain	_____	1.5	.3	2.3
Flax	_____	13.0	25.1	4.9
Total Small Grain		94.5	125.1	67.0
Alfalfa hay	_____	16.1	26.9	15.4
Other tame hay	_____	1.4	.6	.4
Total Tame Hay		17.5	27.5	15.8
Rotation Pasture	_____	14.4	21.1	14.1
Total Tame hay & Past.		31.9	48.6	29.9
Idle and Fallow	_____	.1	---	---
Total Tillable Land		243.0	317.0	194.5
Native hay	_____	7.4	7.1	6.0
Native pasture	_____	28.6	48.1	35.7
Farmsteads, roads, etc.	_____	18.8	20.1	17.3
Total Acres Operated		297.8	392.3	253.5
% of farm in cropland	_____	81.5	81.3	76.9
% of cropland in row crops	_____	47.6	45.5	49.1
% of cropland in sm. grain	_____	39.3	38.5	36.3
% of cropland in hay & past.	_____	13.1	16.0	14.6

Table 4. Crop Yield Summary, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
Corn for grain	_____	35.3	38.5	30.1
Soybeans	_____	12.6	14.8	12.0
Wheat	_____	20.1	24.2	12.3
Oats	_____	38.8	41.6	36.8
Barley	_____	36.7	28.3	33.3
Rye	_____	19.9	41.2	13.7
Flax	_____	13.7	15.4	14.2
Alfalfa hay	_____	2.3	2.3	2.4
Other tame hay	_____	1.9	1.3	1.7
Sorghum forage	_____	6.4	18.0	3.0
Silage	_____	9.0	9.1	11.0
Native hay	_____	1.6	1.9	1.2

Table 5. Livestock Summary, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
Horses	_____	2.4	3.0	1.7
Beef cows	_____	2.6	3.9	1.5
Beef heifers	_____	1.9	2.6	2.5
Other beef cattle	_____	5.3	5.9	5.6
Steers	_____	17.6	33.7	7.9
Milk cows	_____	7.0	8.5	5.9
Dairy heifers	_____	2.3	3.8	2.1
Other dairy cattle	_____	4.1	7.3	2.3
Bulls	_____	.8	1.1	.6
Ewes	_____	8.8	15.0	14.3
Other sheep	_____	23.5	61.6	28.9
Litters of pigs	_____	16.8	20.9	9.8
Hens and pullets	_____	159.6	148.9	143.2
Total Units Prod. Livestock*	_____	39.9	63.9	28.4

*A unit of productive livestock is equal to one mature cow, 2 yearlings, 7 sheep, 14 lambs, 5 sows, 10 pigs, and 100 hens.

Table 6. Farm Produce and Fuel Furnished to Household, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
Whole milk, qts.	_____	1147	1437	1001	\$ _____	\$116.90	\$143.69	\$108.75
Cream, qts.	_____	123	132	92	_____	62.57	66.10	50.17
Farm-made butter, lbs.	_____	73	80	43	_____	55.56	59.65	34.62
Eggs, doz.	_____	176	160	148	_____	64.45	57.53	57.20
Poultry, lbs.	_____	117	100	98	_____	25.09	20.89	22.26
Cattle, lbs.	_____	463	739	355	_____	94.02	147.80	76.67
Hogs, lbs.	_____	463	497	397	_____	113.37	119.22	104.23
Sheep, lbs.	_____	14	30	12	_____	2.97	6.30	2.59
Potatoes, bu.	_____	9	8	6	_____	17.13	15.12	11.69
Vegetables	_____	_____	_____	_____	_____	45.85	53.33	20.67
Fruits	_____	_____	_____	_____	_____	24.87	22.17	21.33
Farm Fuel	_____	_____	_____	_____	_____	3.10	_____	11.53
Total Value	_____	_____	_____	_____	\$ _____	\$625.88	\$711.80	\$521.71

Table 7. Summary of Farm Earnings, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
FARM RECEIPTS				
Hogs	\$ _____	\$ 5,643	\$ 7,108	\$ 3,598
Cattle	_____	7,460	15,862	4,127
Dairy Products	_____	1,115	1,525	951
Eggs	_____	548	550	485
Poultry (includes turkeys)	_____	200	177	187
Sheep and wool	_____	948	3,129	469
Horses	_____	25	23	47
Crops	_____	5,140	6,001	4,155
Machinery & equipment	_____	121	156	266
Farm program payments	_____	66	107	71
Income from work off farm	_____	139	121	309
Miscellaneous	_____	179	165	171
(1) TOTAL FARM SALES	\$ _____	\$21,584	\$34,924	\$14,321
(2) Increase in inventories	_____	669	5,411	_____
(3) Family living from farm	_____	625	713	523
(4) TOTAL FARM RECEIPTS (sum 1-3)	\$ _____	\$22,878	\$41,048	\$15,321
FARM EXPENSES				
Auto (farm share)	\$ _____	\$ 267	\$ 271	\$ 255
Power, mach., & equip. (upkeep)	_____	1,084	1,217	1,035
Power, mach., & equip. (new)	_____	1,576	1,720	1,512
Farm improvements (upkeep)	_____	269	439	258
Farm improvements (new)	_____	254	378	330
Hired labor	_____	847	1,498	373
Crop expenses	_____	946	1,250	614
Feed bought	_____	2,456	3,732	1,691
Livestock bought	_____	4,428	11,948	2,439
Other livestock expenses	_____	217	307	202
Taxes	_____	341	568	305
Insurance	_____	125	180	123
Miscellaneous farm expenses	_____	253	227	275
(5) TOTAL FARM PURCHASES	\$ _____	\$13,063	\$23,736	\$ 9,413
(6) Decrease in inventories	_____	_____	_____	4,435
(7) Board furnished hired labor	_____	127	190	76
(8) Unpaid family labor (\$150 per mo.)	_____	448	480	620
(9) Interest on farm capital (5%)	_____	2,311	3,133	2,013
(10) TOTAL FARM EXPENSES (sum 5-9)	_____	\$15,949	\$27,538	\$14,557
(11) OPERATOR'S LABOR EARNINGS (4)-(10)	\$ _____	\$ 6,929	\$13,510	\$ 764
(12) RETURNS TO CAPITAL & FAMILY LABOR (sum 8+9+11)	\$ _____	\$ 9,688	\$17,123	\$ 3,397

REASONS FOR VARIATIONS IN FARM EARNINGS

The least successful farmers had operator's labor earnings which averaged only \$764 while the most successful ones averaged \$13510. Differences in the organization of the farm business and the management practices followed account for the wide differences in earnings. Some of the more important factors affecting earnings are discussed below.

Size of business

One of the most important factors affecting earnings was found to be size of the business unit as measured in terms of total work units. On a large farm it is possible to make more efficient use of labor and equipment. Also, even without the increased efficiency, the larger volume of business will give greater earnings. This is especially true in years when prices are high. Operator's labor earnings averaged only \$3857 on the farms of 380 work units or less compared with average earnings of \$11,891 for the farms of 580 work units and over. (See table 8) It is not always possible to increase the size of business by adding more land, but the size can usually be increased by shifting to more intensive crop and livestock enterprises or by adding more units of livestock.

Table 8. Relation of Size of Business to Farm Earnings

Number of work units		No. of farms	Average operator's labor earnings
Range	Average		
Under 380	285	15	\$ 3,857
380 - 579	470	29	\$ 5,952
580 & over	767	15	\$11,891

Labor Efficiency

Labor is an important item of cost in farm production. Efficient use of labor can be expected to contribute to higher earnings. Work units per worker shows a close relationship to earnings. The fifteen farms having less than 260 work units per worker had earnings averaging only \$2,964 compared to earnings of \$9,182 for the fifteen farmers having 350 work units or more. (See table 9) Size of business is closely related to work units per worker. It is easier to attain high work units per worker on large farms. Labor efficiency can usually be increased by enlarging the size of business, by distributing labor peaks throughout the season, by planning the work carefully, and by the use of labor saving equipment and methods.

Table 9. Relation of Amount of Work Performed Per Worker to Earnings

Work units per worker		No. of farms	Average operator's labor earnings
Range	Average		
Under 260	204	15	\$2,964
260 - 349	309	29	\$7,815
350 & over	418	15	\$9,182

High Crop Yields

High yields contribute to high earnings. The fifteen farms having lowest crop yields had average operator's labor earnings of only \$3,901 as compared to \$10,375 for the group having high yields. (See table 10) Yields are largely dependent on such factors as weather and soils. They are also to a large extent dependent upon management practices. High yields are dependent on the use of adapted seed varieties and recommended cropping practices. The use of alfalfa and other legumes in the cropping system helps boost yields.

Table 10. Relation of Crop Yields to Farm Earnings

Percent crop yields were of average of all 59 farms		No. of farms	Average operator's labor earnings
Range	Average		
Under 85	75	15	\$ 3,901
85 - 109	100	29	\$ 6,713
110 & over	134	15	\$10,375

Amount of Productive Livestock

In this area much of the crops produced can be marketed most efficiently through livestock. The farms producing a large amount of livestock will usually have higher earnings than those marketing their crops directly. Table 11 shows the close relationship between the amount of livestock and operator's labor earnings. The managerial ability of the operator is important in determining the amount and kinds of livestock kept. Livestock enterprises which distribute the labor load throughout the year and make use of available resources need consideration.

Table 11. Relation of Amount of Productive Livestock to Earnings

Total animal units		No. of farms	Average operator's labor earnings
Range	Average		
Under 25	16	15	\$ 4,897
25 - 49	35	29	\$ 5,842
50 & over	73	15	\$11,096

Livestock Feeding Efficiency

Since so much of the crops produced in this area is fed to livestock, it is important that livestock be managed efficiently to get the maximum returns from the feed fed. With the high feed costs last year many farmers lost money on their feeding operations. Table 12 shows that the fifteen farmers with lowest feeding efficiency only received \$81 for each \$100 worth of feed fed. Their earnings were only \$4,514 compared with \$8,233 for the fifteen efficient livestock feeders who averaged \$193 return for each \$100 feed fed.

Table 12. Relation of Livestock Feeding Efficiency to Farm Earnings

Livestock returns per \$100 feed fed to productive livestock		No. of farms	Average operator's labor earnings
Range	Average		
Under 105	81	15	\$4,514
105 - 159	135	27	\$8,057
160 & over	193	15	\$8,233

RELATIONSHIP OF EFFICIENCY IN FARMING TO EARNINGS

Some farmers show good management efficiency in some parts of their farm business which is offset by poor results in other parts of the business. Farmers who excel in many of the efficiency factors usually have higher earnings than those who rank low in most of these factors. Table 13 illustrates the importance of well organized and efficiently operated farm business.

Table 13. Relation of Number of Factors Above Average to Farm Earnings

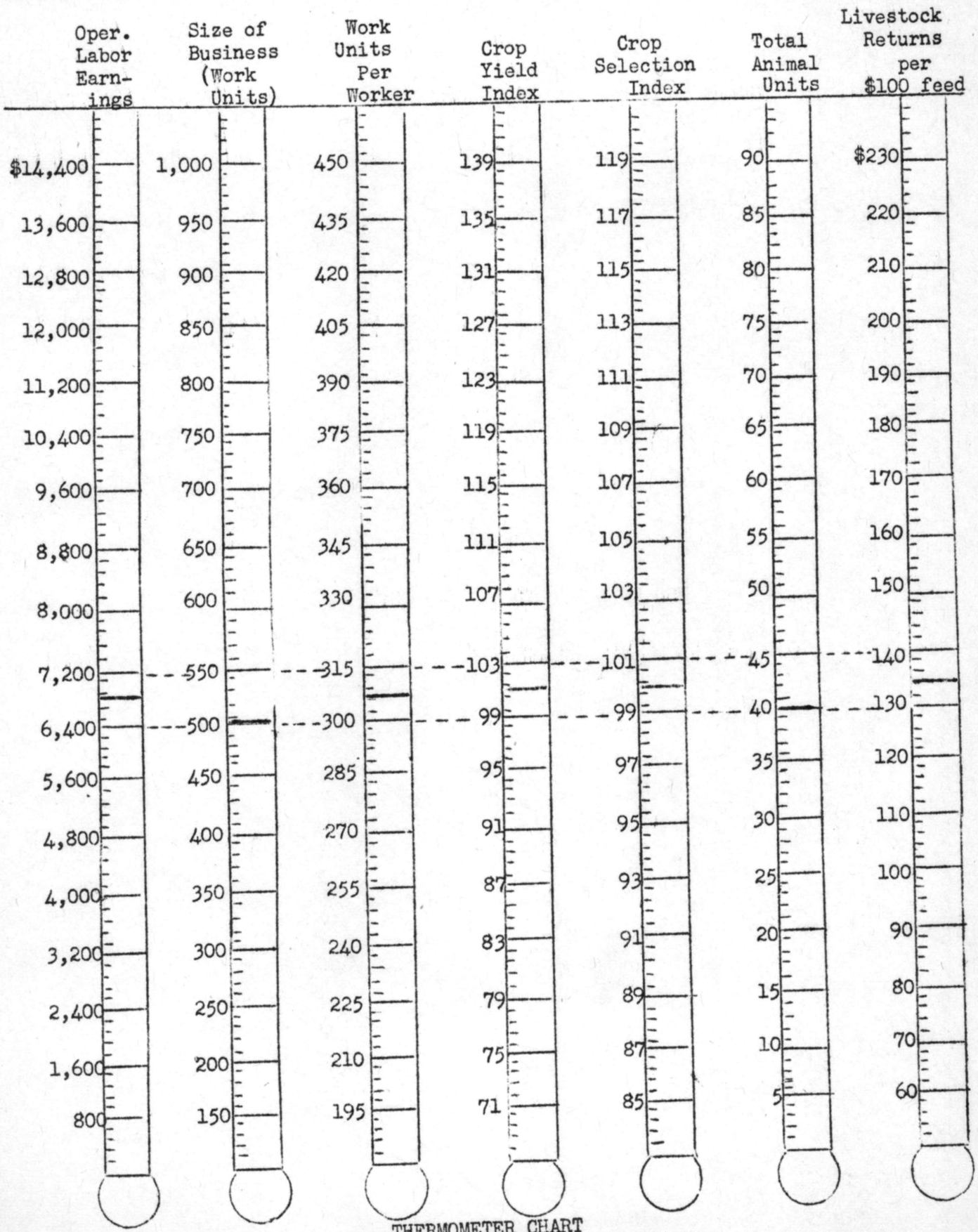
No. of factors above average	No. of farms	Your farm	Average operator's labor earnings
0 - 1	21	\$ _____	\$ 3,997
2	11	\$ _____	\$ 5,246
3	16	\$ _____	\$ 9,007
4 - 5	11	\$ _____	\$10,716

Table 14. Farm Organization and Management Efficiency Factors, 1947

Item	Your Farm	Average of 59 farms	15 most profitable farms	15 least profitable farms
Operator's Labor Earnings	\$ _____	\$ 6,929	\$13,511	\$ 764
Acres owned	_____	157	266	169
Acres rented	_____	141	166	85
Total operated	_____	297	392	254
<u>Capital Investment</u>				
Total capital managed	\$ _____	\$45,504	\$62,323	\$37,570
Productive livestock	\$ _____	\$ 9,046	\$15,598	\$ 5,936
Power and machinery	\$ _____	\$ 4,275	\$ 5,047	\$ 4,228
Rate earned on investment	_____	16.3	24.7	4.2
<u>Size of Business</u>				
*Work units (total)	_____	499	649	404
On crops	_____	209	266	171
On livestock	_____	276	371	202
Off farm	_____	14	12	31
<u>Labor Utilization</u>				
Number of workers	_____	1.6	1.9	1.5
*Work units per worker	_____	310	347	285
Crop acres per worker	_____	150	173	133
Animal units per worker	_____	24	34	20
Livestock increase per worker	\$ _____	\$ 8,056	\$11,589	\$ 5,475
<u>Crop Organization and Efficiency</u>				
Total acres in crops	_____	246	326	195
*Crop yield index	_____	100	106	91
*Crop selection index	_____	100	98	98
% cropland is of farm	_____	81.5	81.3	76.9
% cropland in row crops	_____	47.6	45.5	49.1
% cropland in small grain	_____	39.3	38.5	36.3
% cropland in hay & pasture	_____	13.5	16.0	14.6
<u>Livestock Org. and Efficiency</u>				
Number of beef cows	_____	2.9	3.9	2.2
Number of milk cows	_____	6.5	8.2	5.1
Number of ewes	_____	7.5	18.6	15.7
Number of litters of pigs	_____	16.2	20.9	9.8
Number of hens	_____	121.9	116.0	133.4
*Total prod. livestock units	_____	39.4	63.0	27.4
*Livestock ret. per \$100 feed	\$ _____	\$135.6	\$157.5	\$87.8
Pound butterfat per cow	_____	247	222	177
Eggs laid per hen	_____	158	112	98
Pigs saved per litter	_____	5.7	6.1	4.0
<u>Power, Mach. & Equip.</u>				
Power invest. per crop acre	\$ _____	\$7.21	\$6.33	\$ 8.22
Crop mach. inv. per crop acre	\$ _____	\$9.24	\$8.41	\$11.95

*Measures used thermometer chart on page 12.

Compare your standing in regards to the measures of farm organization and efficiency with the average for the group shown between the dotted lines. The figures from the bottom to the top of the seven efficiency bars show the range from the least efficient to the most efficient farms.



THERMOMETER CHART

Table 16. Size of Farm Related to Earnings, Farm Organization & Efficiency Factors, 1947

Item	Under 199 acres	240 acres	320 acres	400 acres	440 & over acres
Operator's Labor Earnings	\$ 3,119	\$ 6,127	\$ 7,298	\$ 8,824	\$11,541
Number of farms	10	21	13	7	8
Acres owned	64	108	150	309	285
Acres rented	76	130	165	88	259
Total operated	140	238	315	397	544
<u>Capital Investment</u>					
Total capital managed	\$21,909	\$35,737	\$47,651	\$67,717	\$76,239
Productive livestock	\$ 4,259	\$ 6,972	\$ 8,504	\$14,697	\$16,413
Power and machinery	\$ 2,344	\$ 3,839	\$ 4,173	\$ 5,567	\$ 6,865
Rate earned on investment	12.7	17.6	16.7	15.4	17.4
<u>Size of Business</u>					
Work units (total)	278	445	501	574	845
On crops	96	168	216	268	397
On livestock	174	261	283	273	429
Off farm	9	16	2	3	19
<u>Labor Utilization</u>					
Number of workers	1.1	1.4	1.7	1.8	2.6
Work units per worker	246	334	300	321	331
Crop acres per worker	102	145	157	186	180
Animal units per worker	19	25	23	30	25
Livestock increase per worker	\$ 6,216	\$ 8,628	\$ 7,087	\$ 9,250	\$ 9,381
<u>Crop Organization & Efficiency</u>					
Total acres in crops	114	194	259	328	454
Crop yield index	96	102	110	114	89
Crop selection index	102	102	95	107	99
% cropland is of farm	81.8	81.3	82.1	77.6	84.5
% cropland in row crops	46.5	46.7	45.8	55.4	47.5
% cropland in small grain	40.7	40.0	39.8	30.1	43.5
% cropland in hay & past.	12.8	13.3	14.4	14.5	9.0
<u>Livestock Org. & Efficiency</u>					
Number of beef cows	2	2	4	5	4
Number of milk cows	5	7	6	3	10
Number of ewes	5	-	23	14	-
Number of litters of pigs	9	14	19	16	27
Number of hens	121	121	144	99	111
Total prod. livestock units	22	33	39	53	67
Livestock returns per \$100 feed	\$146	\$150	\$123	\$111	\$126
Pounds butterfat per cow	264	261	222	241	195
Eggs laid per hen	133	166	157	137	112
Pigs saved per litter	5.9	5.7	5.6	6.1	5.3
<u>Power, Mach. & Equip.</u>					
Power inv. per crop acre	\$9.38	\$ 7.18	\$6.52	\$7.83	\$5.11
Crop mach. inv. per crop acre	\$8.75	\$10.46	\$7.81	\$9.55	\$8.68

Table 17. Tenure Related to Earnings, Farm Organization and Efficiency Factors, 1947

Item	Your Farm	Tenants	Part- Owners	Owners
Operator's Labor Earnings*	\$ _____	\$ 5,185	\$ 6,185	\$ 5,871
Number of farms	_____	21	19	19
Acres owned	_____	20	194	295
Acres rented	_____	237	154	-
Total operated	_____	257	348	295
<u>Capital Investment</u>				
Total capital owned**	\$ _____	\$17,131	\$41,831	\$45,227
Productive livestock	\$ _____	\$ 7,021	\$11,364	\$ 8,968
Power and Machinery	\$ _____	\$ 3,524	\$ 4,345	\$ 5,034
Rate earned on investment	_____	23.3	16.8	14.4
<u>Size of Business</u>				
Work units (total)	_____	434	581	488
on crops	_____	179	242	212
on livestock	_____	247	337	247
off farm	_____	8	2	29
<u>Labor Utilization</u>				
Number of workers	_____	1.5	1.7	1.6
Work units per worker	_____	280	342	312
Crop acres per worker	_____	131	163	158
Animal units per worker	_____	21	29	24
Livestock increase per worker	\$ _____	\$ 6,709	\$ 9,170	\$ 8,430
<u>Crop Organization & Efficiency</u>				
Total acres in crops	_____	209	280	252
Crop yield index	_____	97	103	107
Crop selection index	_____	100	100	101
% cropland is of farm	_____	80.9	79.0	84.8
% cropland in row crops	_____	47.3	47.2	48.3
% cropland in small grain	_____	42.4	40.7	34.7
% cropland in hay & past.	_____	10.3	12.1	17.0
<u>Livestock Org. & Efficiency</u>				
Number of beef cows	_____	2	5	3
Number of milk cows	_____	7	8	4
Number of ewes	_____	10	9	4
Number of litters of pigs	_____	15	15	18
Number of hens	_____	99	149	120
Total prod. livestock units	_____	32	50	37
Livestock ret. per \$100 feed	\$ _____	\$139	\$136	\$130
Pounds butterfat per cow	_____	272	233	230
Eggs laid per hen	_____	164	159	148
Pigs saved per litter	_____	5.6	5.8	5.7
<u>Power, Mach. & Equip.</u>				
Power invest. per crop acre	\$ _____	\$7.36	\$6.42	\$7.81
Crop mach. inv. per crop acre	\$ _____	\$7.96	\$8.49	\$1.41

*Operator's labor earnings are the actual figures for these farms and have not been adjusted to a full owner basis for tenants and part-owners.

**Includes only the operator's share of farm capital.

SUMMARY OF FEED COSTS AND RETURNS FROM PRODUCTIVE LIVESTOCK

Some of the farmers cooperating in this project kept detailed feed records showing the amount and value of feed that was fed to various classes of livestock during the year. These records have been summarized for some classes of livestock to provide a basis for comparing individual enterprises on the farms. The records of feed fed to beef herds, young cattle, and feeder and native sheep were not sufficiently detailed to provide useful summaries so have been omitted from this report.

Feed is the largest single item of cost for all classes of livestock. The proportion of the total cost of production which goes for feed varies considerably, however, among the different kinds of livestock. Feed makes up about 40 to 50 percent of the total cost of maintaining dairy cows and poultry, and from 75 to 90 percent of the cost of producing fat cattle and hogs. Consequently, if all costs other than feed are to be met, it is necessary to obtain higher returns above feed cost from dairy cows and chickens than from other livestock enterprises.

Table 18. Summary of Feed Costs and Returns from Chickens, 1947

Item	Your Farm	Av. of all farms	Av. of farms high in return above feed	Av. of farms low in return above feed
Number of farms	_____	26	6	6
Av. number of laying hens	_____	168	156	171
Pounds of feed fed per hen				
Grain	_____	106	116	102
Commercial feeds	_____	26	27	26
Total concentrates	_____	132	143	128
Skim milk and buttermilk	_____	1	1	---
Feed Cost Per Hen	_____	\$4.46	\$4.82	\$4.52
Value of eggs produced	_____	\$5.17	\$6.66	\$3.73
Increase in value of chickens	_____	\$1.21	\$2.68	\$.47
Total value produced	_____	\$6.38	\$9.34	\$4.20
RETURN ABOVE FEED COST PER HEN	_____	\$1.92	\$4.52	(\$-.32)
RETURN PER \$100 WORTH OF FEED	_____	\$147	\$199	\$91
Eggs laid per hen	_____	172	204	122
Price rec'd per doz eggs sold	_____	\$0.37	\$0.40	\$0.36
Pounds of chicken produced	_____	559	1363	434

Table 19. Summary of Feed Costs and Returns from Dairy Cows, 1947

Item	Your Farm	Av. of all farms	Av. of farms high in return above feed	Av. of farms low in return above feed
Number of farms	_____	23	7	7
Average number of cows per farm	_____	10	12	8
Pounds of butterfat per cow	_____	263	318	221
Feed per cow (lbs.):				
Corn	_____	1,356	1,110	2,394
Small grain	_____	858	1,243	658
Commercial feeds	_____	95	153	94
Total concentrates	_____	2,309	2,506	3,146
Legume hay	_____	3,570	3,455	3,794
Other hay	_____	689	1,044	1,054
Silage	_____	6,274	3,890	9,077
Feed cost per cow:*				
Concentrates	_____	\$.68.36	\$ 74.35	\$ 92.65
Roughages	_____	\$.53.90	\$ 47.56	\$ 65.37
Total Feed Cost Per Cow	_____	\$ 122.26	\$ 121.91	\$ 158.02
Value of dairy products per cow	_____	\$ 213.28	\$ 274.82	\$ 177.06
RETURN ABOVE FEED COST PER COW	_____	\$ 91.02	\$ 152.91	\$ 19.04
RETURNS PER \$100 WORTH OF FEED	_____	\$ 194	\$ 253	\$ 113
Price received per pound b.f. sold	_____	.73	.73	.73
Feed cost per pound butterfat	_____	.46	.38	.71

*Pasture costs were not included because of the lack of information in the records. The cost for pasture would probably amount to about \$6 to \$8 per cow.

Table 20. Summary of Feed Costs and Returns from Fattening Cattle, 1947

Item	Your Farm	Av. of all farms	Av. of farms high in return above feed	Av. of farms low in return above feed
Number of farms	_____	8	4	4
Pounds of beef produced	_____	19,396	23,735	15,057
Lbs. feed per 100# beef prod:				
Corn	_____	514	455	574
Small grain	_____	25	30	20
Commercial feeds	_____	4	3	5
Total concentrates	_____	543	488	599
Legume hay	_____	153	180	125
Other hay	_____	36	21	51
Silage	_____	206	176	236
Cost of feed per 100# prod:				
Concentrates	_____	\$16.60	\$14.97	\$18.23
Roughages	_____	\$ 2.13	\$ 2.15	\$ 2.10
Total Feed Cost	_____	\$18.73	\$17.12	\$20.33
Increase in value per 100# beef	_____	\$30.80	\$34.70	\$26.89
RETURN ABOVE FEED PER 100# BEEF	_____	\$12.07	\$17.58	\$ 6.56
RETURN PER \$100 WORTH OF FEED	_____	\$ 171	\$ 208	\$ 135
Price rec'd per 100# beef sold	_____	\$23.28	\$24.03	\$22.27

Table 21. Summary of Feed Cost and Returns from Hogs, 1947

Item	Your Farm	Av. of all farms	Av. of farms high in return above feed	Av. of farms low in return above feed
Number of farms	_____	31	8	8
Pounds of pork produced	_____	27,002	22,967	24,040
Feed fed per 100# pork prod: (lbs.)				
Corn	_____	416	307	591
Small grain	_____	178	154	223
Commercial feeds	_____	21	16	30
Total concentrates	_____	615	477	844
Feed cost per 100# pork prod:*	_____	\$18.81	\$14.49	\$25.85
Net increase in value per 100# pork prod.	_____	\$25.28	\$29.44	\$24.05
RETURN ABOVE FEED COST PER 100# PORK PROD.	_____	\$ 6.47	\$14.95	\$(-1.80)
RETURN PER \$100 WORTH OF FEED	_____	\$ 144	\$203	\$95
Av. price rec'd per cwt. sold	_____	\$20.57	\$22.67	\$18.25
Number of spring litters	_____	16.2	13.6	18.3
Number of fall litters	_____	7.2	7.0	6.5
Total number of litters raised	_____	23.4	20.6	24.8
Number of pigs born per litter	_____	7.3	7.4	6.8
Number of pigs weaned per litter	_____	5.6	5.1	5.6

*Does not include a charge for pasture.