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7-15-1947

# North Central South Dakota Farm Record Summary 1946 Fourth Annual Report

C. R. Hoglund

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1946

FOURTH ANNUAL REPORT

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NORTH CENTRAL  
SOUTH DAKOTA

FARM RECORD  
SUMMARY

THIS BOOK DOES  
NOT CIRCULATE

Agricultural Economics Pamphlet No. 24

July 1947

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47 FARMS

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Agricultural Experiment Station  
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Agricultural Extension Service  
South Dakota State College  
Brookings, South Dakota

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# FOURTH ANNUAL REPORT OF THE NORTH CENTRAL

## SOUTH DAKOTA FARM RECORD PROJECT, 1946

Prepared by C. R. Hoglund

### Introduction

This is the fourth annual report of the farm record study started by the Experiment Station in 1943. Farm record cooperators are located in two areas of the state; namely, the North Central and Southeastern Areas. A summary of the results of the Southeastern area are included in a separate pamphlet.

The analysis of the farm record data and the preparation of the report was carried out under the direction of C. R. Hoglund of the Experiment Station. C. A. Hustrulid, Farm Management Fieldman, made most of the field calls on the cooperating farmers during the year and assisted in the preparation of the material for this report. Arthur Anderson and Lyle Bender, Extension Specialists, assisted in the organization and education work in the field. The following is a list of counties covered in the study, and the county agents who actively cooperated in the project.

<u>County</u>	<u>Agent</u>	<u>Number of records</u>
Beadle	Gale Peppers	10
Faulk	Konrad Stummeier & Douglas Wallace	12
Hand	LaVerne Kortan	15
Potter	Rayburn Butrum	5
Sully	John F. Neu	5

The farm record cooperators were visited one or two times during the year, and again at the end of the year when the records were closed. The cooperators kept records which included cash receipts and expenses, beginning and end of year inventories of feed and seed, machinery and equipment, buildings and land and livestock, crop record, livestock record and a record of farm produce and fuel used by the household. Additional information was obtained on crop and livestock practices used, crop varieties, feed fed to productive livestock, and on family and hired labor.

Operator's labor earnings have been calculated on a full owner basis in order to more nearly compare all farms on an equal basis. However, each cooperator received an earnings statement on the basis of his actual tenure situation. Summary of farm inventories and earnings are prepared as though the operator was a full owner except for table 18 in which a comparison is made between owners, part-owners, and tenants for earnings and various farm organization and management efficiency factors.

Earnings for most of the cooperating farmers were high during 1946. The removal of price controls during the latter part of 1946 affected some farmers more than others. Hail damage in some portions of the area greatly reduced crop yields and income on some farms.

Increased operating expenses during 1946 were more than offset by increases in prices farmers received for livestock and crops. Most farmers will be faced with continued high operating costs in the future. These high operating costs will probably continue high for some time after farm prices drop. Careful planning of future farm operations will help farmers to meet lower prices.

Climatic Conditions

Total rainfall during 1946 averaged from six to eight inches above normal in the North Central Area. Most of this extra rainfall came during September and October and thus did not greatly affect small grain yields. Except for scattered hail damage, climatic conditions were favorable for small grain production during 1946. Corn yields were well above average due to the heavy rainfall. However, late fall rains delayed the maturing of the corn and tended to produce some soft corn.

Table 1. Monthly and Annual Precipitation and Departure from Normal, Faulkton, Gettysburg, and Miller Weather Stations, 1946

Month	Faulkton		Gettysburg		Miller	
	1946	Departure	1946	Departure	1946	Departure
January	T*	-0.47	T*	-0.31	0.17	-0.24
February	0.38	-0.21	0.23	-0.20	0.51	+0.10
March	1.81	+0.63	2.38	+1.38	2.02	+1.17
April	3.05	+0.64	1.90	+0.21	1.86	0.00
May	3.39	+0.67	2.59	+0.49	2.20	-0.50
June	3.79	+0.55	4.60	+1.41	5.72	+2.55
July	2.62	+0.43	2.46	+0.64	1.53	-0.71
August	1.11	-1.07	1.89	+0.66	0.44	-1.72
September	4.37	+3.00	2.33	+1.74	5.00	+3.68
October	3.03	+1.90	2.60	+1.96	3.48	+2.45
November	0.68	+0.04	0.45	+0.15	0.89	+0.37
December	0.30	-0.13	0.07	-0.24	0.21	-0.19
1946 Total	24.53	+5.98	22.00	+7.89	24.03	+6.96
1945 Total	17.77	-0.78	16.21	+2.10	18.04	+ .97
1944 Total	25.93	+7.38	18.78	+4.67	24.91	+7.84
1943 Total	17.33	-1.86	15.17	-1.14	20.29	+2.54

\*Trace

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 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 130 hours to care for a milk cow for a year. Thus an acre of corn would represent 1 work unit and a milk cow 13 work units.

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

Crops			Livestock		
Item	Per	No. of Work Units	Item	Per	No. of Work Units
Corn, grain	Acre	.9	Dual purpose cows	cow	10.0
Corn, hogged off	"	.6	Milk cows	cow	13.0
Corn and cane silage	"	1.4	Other dairy cattle	animal unit	4.0
Corn and cane fodder	"	.9	Beef cows	cow	3.0
Sorghum	"	.9	Other beef cattle	animal unit	3.0
Potatoes	"	4.0	Bulls	head	3.0
Small grain	"	.5	Litter	litter	4.0
Alfalfa hay	"	.8	Other hogs	head	.5
Other tame hay	"	.7	Ewes	head	.5
Wild hay	"	.4	Other sheep	head	.2
Annual pasture	"	.3	Hens	100	20.0
			Chickens raised	100	4.0

3. Work units 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 as 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, wheat, oats, and barley. The following were rated as B crops: corn grain, corn and cane forage, and flax. C crops were sorghum for grain, millet, rye, sweet clover, mixed legume, and all annual hay and pasture. All other crops were rated as D.
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 or rancher who owns part of the land he operates and rents the rest.

Table 2. Summary of Farm Inventories, 1946\*

Item	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
	<u>Beginning of Year</u>			
Horses and mules	\$ _____	\$ 196	\$ 232	\$ 147
Productive livestock (total)	_____	8,758	9,648	4,958
Cattle	_____	5,847	6,353	3,249
Hogs	_____	1,608	2,473	975
Sheep	_____	1,115	638	543
Poultry	_____	188	184	191
Feed and seed	_____	7,356	11,146	4,434
Mach. and equipment (total)	_____	3,782	5,278	2,228
Power machinery	_____	1,733	2,389	851
Crop and gen. mach.	_____	1,772	2,513	1,149
Livestock equipment	_____	277	376	228
Improvements (Farm)**	_____	4,106	5,297	2,753
Land	_____	13,708	19,093	9,990
Total farm capital	\$ _____	\$37,906	\$50,694	\$24,510
	<u>End of Year</u>			
Horses and mules	\$ _____	\$ 185	\$ 273	\$ 151
Productive livestock (total)	_____	10,131	12,062	5,455
Cattle	_____	7,482	8,794	3,934
Hogs	_____	1,589	2,415	984
Sheep	_____	893	712	387
Poultry	_____	167	141	150
Feed and seed	_____	7,832	15,196	2,826
Mach. and equipment (total)	_____	4,299	5,638	2,393
Power machinery	_____	1,929	2,339	856
Crop and gen. machinery	_____	2,104	2,963	1,287
Livestock equipment	_____	266	336	250
Improvements (Farm)**	_____	3,743	5,075	2,605
Land	_____	13,708	19,093	9,991
Total farm capital	\$ _____	\$39,898	\$57,337	\$23,421

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

\*\*Does not include value of dwelling.

Table 3. Crop Acreage Summary, 1946

Item	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
Corn for grain	_____	119.1	190.6	79.5
Sorghum grain	_____	.7	1.6	1.5
Sorghum forage	_____	13.7	9.1	7.6
Corn and cane silage	_____	1.4	3.7	2.3
Total Row Crops		134.9	205.0	90.9
Wheat	_____	139.1	280.0	49.6
Oats	_____	100.8	74.0	92.9
Barley	_____	62.0	115.5	14.3
Rye-grain	_____	18.5	22.5	13.6
Flax	_____	8.0	24.6	1.8
Miscellaneous	_____	4.6	--	4.8
Total Small Grain		333.0	516.6	177.0
Alfalfa hay	_____	10.0	13.4	2.5
Other tame hay	_____	5.7	6.3	6.8
Total Tame Hay		15.7	19.6	9.4
Rotation Pasture		10.0	10.0	15.5
Total Tame Hay & Past.		25.7	29.6	24.9
Idle and Fallow		10.5	8.6	15.9
Total Tillable Land		504.1	759.9	308.7
Native hay	_____	154.2	159.2	123.6
Native pasture	_____	482.5	623.4	348.7
Farmsteads, roads, etc.	_____	39.1	48.4	29.5
Total Acres Operated		1179.9	1590.8	810.5
% of farm in cropland	_____	47.2	51.3	47.3
% of cropland in row crops	_____	28.9	26.3	31.3
% of cropland in sm. grain	_____	63.0	68.7	56.7
% of cropland in hay & past.	_____	6.1	4.1	9.3

Table 4. Crop Yield Summary, 1946

Crop	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
Corn for grain	_____	22.7	26.6	19.2
Sorghum grain	_____	7.2	7.2	--
Wheat	_____	14.3	16.4	10.4
Oats	_____	28.1	36.1	19.8
Barley	_____	20.7	24.1	18.5
Rye	_____	8.8	15.8	5.9
Flax	_____	9.6	10.7	6.0
Alfalfa hay	_____	1.2	1.1	1.0
Other tame hay	_____	1.6	1.8	1.1
Corn and sorghum forage	_____	1.9	2.9	1.4
Silage	_____	6.3	6.6	6.5
Native hay	_____	.7	.8	.7



Table 5. Livestock Summary, 1946

Item	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
Horses	_____	4.6	5.7	3.1
Beef cows	_____	33.2	43.4	19.3
Beef heifers	_____	8.1	8.7	4.6
Other beef cattle	_____	26.6	29.7	13.4
Steers	_____	11.0	16.4	4.1
Milk cows	_____	5.9	6.6	6.5
Dairy heifers	_____	.9	.9	1.3
Other dairy cattle	_____	1.4	2.1	1.0
Bulls	_____	1.5	1.2	1.2
Ewes	_____	27.7	29.0	28.7
Other sheep	_____	30.1	24.8	13.7
Litters of pigs	_____	8.0	12.0	6.0
Hens and pullets	_____	148.0	131.0	128.0
Total units prod. livestock*	_____	75.0	94.3	48.9

\*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, 1946

Item	Quantity				Value			
	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
Whole milk, qts.	_____	1340	1248	1164	\$ _____	\$100.32	\$ 93.45	\$ 87.27
Cream, qts.	_____	144	158	119	_____	72.19	78.69	59.55
Farm-made butter, lbs.	_____	117	161	89	_____	77.44	104.64	58.68
Eggs, doz.	_____	242	238	229	_____	74.76	72.26	70.99
Poultry, lbs.	_____	200	168	135	_____	46.46	37.05	32.05
Cattle, lbs.	_____	471	610	277	_____	75.70	97.96	44.49
Hogs, lbs.	_____	446	514	465	_____	75.82	91.04	79.11
Potatoes, bu.	_____	15	19	14	_____	28.46	30.42	24.54
Vegetables	_____				_____	63.51	43.91	68.18
Fruits	_____				_____	3.76	6.95	5.45
Farm fuel	_____				_____	6.55	26.00	--
Total value					\$ _____	\$624.97	\$682.37	\$530.31

Table 7. Summary of Farm Earnings, 1946

Item	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
<b>FARM RECEIPTS</b>				
Hogs	\$ _____	\$ 2,765	\$ 4,260	\$ 1,519
Cattle	_____	3,545	3,436	2,346
Dairy Products	_____	413	558	408
Eggs	_____	342	311	279
Poultry (includes turkeys)	_____	289	499	267
Sheep and wool	_____	1,015	488	659
Horses	_____	14	9	4
Crops	_____	6,334	12,503	2,237
Machinery & equipment	_____	83	133	104
Farm program payments	_____	171	248	133
Income from work off farm	_____	114	213	41
Miscellaneous	_____	175	280	176
(1) TOTAL FARM SALES	\$ _____	\$15,260	\$22,938	\$ 8,173
(2) Increase in inventories	_____	2,184	6,645	--
(3) Family living from farm	_____	625	682	530
(4) TOTAL FARM RECEIPTS (sum 1-3)	\$ _____	\$18,069	\$30,265	\$ 8,703
<b>FARM EXPENSES</b>				
Auto (farm share)	\$ _____	\$ 297	\$ 330	\$ 171
Power, mach. & equip. (upkeep)	_____	1,550	2,386	1,009
Power, mach. & equip. (new)	_____	1,221	1,353	702
Farm improvements (upkeep)	_____	360	507	241
Farm improvements (new)	_____	211	548	34
Hired labor	_____	893	1,548	489
Crop expenses	_____	808	1,335	318
Feed bought	_____	716	625	346
Livestock bought	_____	847	865	699
Other livestock expenses	_____	199	144	159
Taxes	_____	399	509	239
Insurance	_____	165	272	88
Miscellaneous farm expenses	_____	93	116	49
(5) TOTAL FARM PURCHASES	\$ _____	\$ 7,759	\$10,538	\$ 4,544
(6) Decrease in inventories	_____	--	--	1,089
(7) Board furnished hired labor	_____	160	266	52
(8) Unpaid family labor (\$100 per mo.)	_____	321	409	264
(9) Interest on farm capital (5%)	_____	1,934	2,701	1,191
(10) TOTAL FARM EXPENSES (sum 5-9)	\$ _____	\$10,174	\$13,914	\$ 7,140
(11) OPERATOR'S LABOR EARNINGS (4)-(10)	\$ _____	\$ 7,895	\$16,351	\$ 1,563
(12) RETURNS TO CAPITAL & FAMILY LABOR (sum 8+9+11)	\$ _____	\$10,150	\$19,461	\$ 3,018

WHY FARM EARNINGS VARY

Operator's labor earnings were extremely favorable during 1946 for the group of farm record cooperators in the North Central Area of the state. With the exception of farms suffering hail damage, crop and livestock production was continued at a high level during 1946. Operator's labor earnings on this group of farms ranged from a few with less than \$500 to a high of nearly \$20,000. Most of the extremely low earnings were associated with inadequate size of farm, low crop yields and inefficient livestock production. Six of the more important management factors affecting farm earnings will be discussed here.

Size of Business Important

Size of business as measured in terms of total work units was found to be one of the most important factors affecting earnings. Operator's labor earnings averaged \$3,846 on farms with small sized businesses to over \$13,000 on the farms with the largest size of business. The size of a farm business can be increased by farming more land and by keeping more livestock. Many farmers in the North Central area have added some additional land to their operating units in recent years. Some farms in this area are still too small to provide a good level of farm living. Extremely favorable climatic conditions in recent years cannot be expected to continue indefinitely. Farmers need to consider adjustments in their farming operations to meet more normal environmental conditions. The relationship of size of business to farm earnings is shown in table 8.

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 475	396	11	\$ 3,846
475 - 874	616	24	\$ 6,256
875 & over	1082	12	\$13,289

Plan Use of Labor

Efficient use of labor is dependent on careful planning and the use of the most economical methods in producing crops and livestock. The amount of work accomplished per worker varied from some as low as 186 to a few as high as 500 or more work units (days of productive work) per year. Efficient labor utilization is usually associated with high earnings. The group of farmers averaging 450 or more work units per worker had twice as high earning as did the group of farmers averaging less than 300 work units per worker (table 9). Labor efficiency can be increased by using labor saving practices and machinery, by eliminating some labor peaks and by enlarging the size of business. Careful planning of field and chore work and the possible elimination of unessential tasks will increase labor efficiency without lowering production.

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

Number of work units		No. of farms	Average operator's labor earnings
Range	Average		
Under 300	246	12	\$ 5,777
300 - 449	359	24	\$ 6,928
450 & over	552	11	\$10,575

High Crop Yields Reduce Costs

High crop yields contributed greatly to earnings during 1946. Earnings were about two and a half times as high on the farms with crop yields 25 percent above average compared to earnings on farms on which yields were 85 percent or less than average. High crop yields are dependent on the use of adapted seed varieties and recommended cropping practices, including a regular rotation. The use of alfalfa or other recommended legumes helps boost yields. The relation of crop yields to earnings is shown in table 10.

Table 10. Relation of Crop Yields to Farm Earnings

Percent crop yields were of average of all 47 farms		No. of farms	Average operator's labor earnings
Range	Average		
Under 85	66	9	\$ 3,959
85 - 124	101	23	\$ 7,482
125 & over	143	13	\$10,737

Crop Selection Needs Study

Economical livestock production and high earnings are dependent on the kind of crops a farmer produces. It is important that farmers grow the feed crops that produce the greatest quantity of nutrients per acre. The selection of crops that bring high cash returns per acre has been especially important in recent years. The choice of crops should include alfalfa and other legumes which maintain soil fertility and provide high protein feed.

Table 11. Relation of Crop Selection to Farm Earnings

Percent selection of high return crops were of average of all 47 farms		No. of farms	Average operator's labor earnings
Range	Average		
Under 93	84	12	\$ 4,827
93 - 108	102	22	\$ 8,308
109 & over	116	13	\$ 8,556

Stress More Roughage Consuming Livestock

The kinds and numbers of productive livestock kept on a farm has an important effect on farm earnings. The proportion of the farm in grassland, the lay of land and the managerial ability of the operator should determine the kinds and amounts of livestock kept. In this area greater stress needs to be placed on the production of roughage consuming livestock. The return of more normal (less rainfall) climatic conditions and less favorable cash grain prices will undoubtedly make beef cattle and sheep production relatively more profitable.

Table 12. Relation of Amount of Productive Livestock to Farm Earnings

Total animal units		No. of farms	Average operator's labor earnings
Range	Average		
Under 50	37	14	\$ 3,880
50 - 99	67	21	\$ 7,992
100 & over	136	12	\$10,814

Increase Livestock Feeding Efficiency

Greatly increased feed prices plus the uncertainty of future livestock prices makes it desirable for farmers to use feed efficiently. Some farmers actually lost money on the livestock kept while others more than doubled the value of feed during 1946. High production per unit, sanitation, balanced rations, adequate pastures, the right kind of shelter plus good management are all important factors contributing to efficient livestock production. The most efficient livestock producers had earnings that were almost twice as high as the least efficient producers as shown in the following table.

Table 13. 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 \$125	\$ 96	11	\$ 4,494
125 - \$209	\$161	16	\$ 7,308
\$210 & over	\$273	15	\$ 8,147

RELATIONSHIP OF EFFICIENCY IN FARMING TO EARNINGS

Farmers who excel in many efficiency factors usually have higher earnings than do those who rank low in most or all of these factors. Some farmers show good management efficiency and high returns in some parts of the farm business which are offset by poor results in other parts of the business. The farmers who excelled in five management factors received earnings that were over seven times as great as for the farmers who were above average in none or only one factor. Table 14 illustrates the importance of an efficiently organized and operated farm business.

Table 14. Relation of Numbers of Factors Above Average to Farm Earnings

No. of factors above average	No. of farms	Your farm	Average operator's labor earnings
0 - 1	10	\$ _____	\$ 2,122
2	14	\$ _____	\$ 5,691
3	8	\$ _____	\$ 7,694
4	8	\$ _____	\$ 9,710
5	7	\$ _____	\$15,984

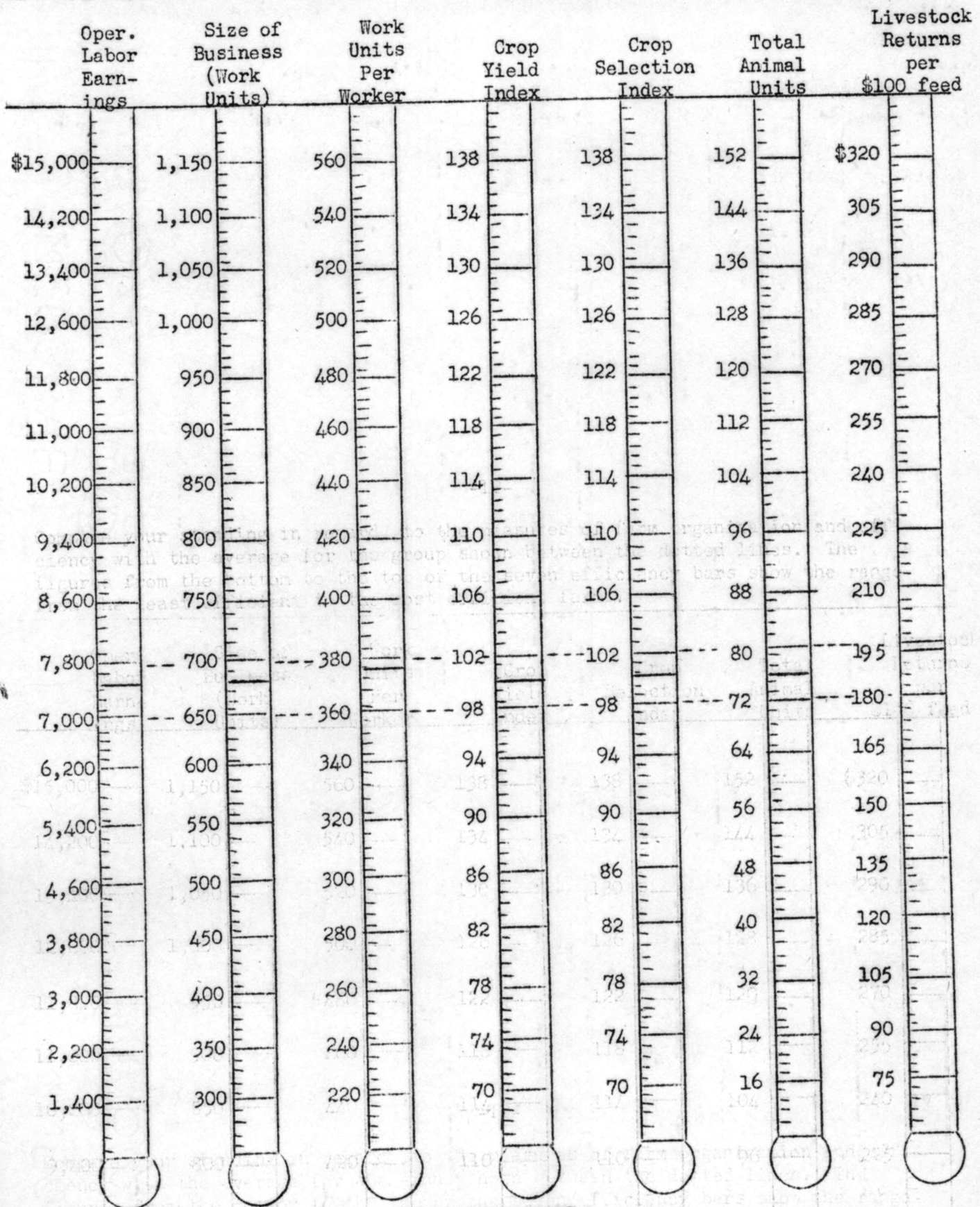
Farmers should study table 15 on page 11, table 16 on page 13 and the thermometer chart on page 12 to determine the weak and strong points in their farm business.

Table 15. Farm Organization and Management Efficiency Factors, 1946

Item	Your farm	Average of 47 farms	11 most profitable farms	11 least profitable farms
Operator's Labor Earnings	\$ _____	\$ 7,895	\$16,351	\$ 1,563
Acres owned	_____	695	906	472
Acres rented	_____	485	685	339
Total operated	_____	1,180	1,591	811
<u>Capital Investment</u>				
Total capital managed	\$ _____	\$38,670	\$54,010	\$23,820
Productive livestock	\$ _____	\$ 9,444	\$10,855	\$ 4,945
Power and machinery	\$ _____	\$ 4,231	\$ 5,711	\$ 2,460
Rate earned on investment	_____	21.4	33.8	9.6
<u>Size of Business</u>				
*Work units (total)	_____	684.7	938.3	480.7
On crops	_____	334.2	517.8	202.9
On livestock	_____	337.9	399.3	273.7
Off farm	_____	12.6	21.2	4.1
<u>Labor Utilization</u>				
Number of workers	_____	1.9	2.2	1.5
*Work units per worker	_____	375	460	332
Crop acres per worker	_____	270	366	220
Animal units per worker	_____	40	46	33
Livestock increase per worker	\$ _____	\$5,136	\$5,895	\$4,118
<u>Crop Organization and Efficiency</u>				
Total acres in crops	_____	504	760	308
*Crop yield index	_____	101	120	82
*Crop selection index	_____	100	104	93
% cropland is of farm	_____	47	51	47
% cropland in row crops	_____	29	26	31
% cropland in small grain	_____	63	69	57
% cropland in hay & pasture	_____	6	4	9
<u>Livestock Org. &amp; Efficiency</u>				
Number of beef cows	_____	31	35	19
Number of milk cows	_____	5	6	5
Number of ewes	_____	23	26	25
Number of litters of pigs	_____	8	12	6
Number of hens	_____	148	131	128
*Total productive livestock units	_____	75	94	49
*Livestock returns per \$100 feed	\$ _____	\$192	\$241	\$146
Pounds butterfat per cow	_____	170	179	159
Eggs laid per hen	_____	113	129	110
Pigs saved per litter	_____	5.9	5.7	5.9
<u>Power, Mach. &amp; Equip.</u>				
Power invest. per crop acre	\$ _____	\$4.60	\$3.64	\$3.87
Crop mach. inv. per crop acre	\$ _____	\$4.26	\$3.38	\$4.10

\*Measures used in thermometer chart on page 12.

Compare your standing in regard 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. Comparative Standing of Cooperators on Individual Efficiency Factors

Oper. Labor	: Power				: Work				: Crop Efficiency				: Livestock Efficiency			
	: Acres & Mach. per	: Inv. per acre	: Crop acre	: Farm	: Units	: Crop yield	: Corn	: Oats	: Barley	: Wheat	: Return per \$100 feed	: B. F. per cow	: Pigs weaned per litter	: Eggs laid per hen	: Increase	
\$19,632	\$20.09	551	153	40.0	27.0										\$8,367	
18,586	17.22	537	152	38.6	50.0	24.8					350				228	
18,423	15.45	531	151	38.0	48.3	23.7				\$404	346				185	
17,241	14.88	517	147	36.4	46.1	22.0	35.4			320	299				170	
16,909	14.03	491	146	36.0	44.7	21.8	33.3			316	288				169	
15,733	12.70	478	140	35.0	44.0	20.0	30.0			315	261				153	
15,422	12.34	475	139	34.8	43.5	19.3	29.4			279	238				148	
12,301	11.43	452	136	33.8	41.7	19.1	28.2			266	231	8.6			142	
11,803	11.27	436	134	33.1	40.0	18.9	26.7			256	224	8.3			139	
10,915	10.90	426	130	31.7	38.6	18.0	26.0			235	223	8.0			135	
10,472	10.46	416	121	30.1	35.5	17.2	25.6			229	209	7.3			133	
10,247	9.46	408	111	28.5	35.0	16.5	25.0			218	204	7.1			129	
10,061	9.34	398	110	27.8	31.6	16.1	24.0			213	193	7.0			125	
9,614	9.20	397	109	26.0	31.3	15.6	23.6			211	187	6.6			123	
9,037	9.16	392	108	25.0	30.0	15.4	23.3			209	186	6.5			121	
9,011	8.96	389	106	24.5	29.2	15.0	22.0			207	178	6.3			118	
8,109	8.93	381	103	23.2	28.6	14.8	22.0			193	177	6.0			116	
AVERAGE \$ 7,895	\$ 8.86	375	100	22.7	28.1	14.3	20.7			\$192	170	5.9			113	
7,648	8.65	373	96	21.3	26.7	13.3	20.5			187	161	5.7			106	
6,921	8.40	350	94	21.1	25.0	12.8	20.4			182	156	5.6			104	
6,491	7.98	343	92	21.0	24.1	12.0	20.0			176	151	5.5			99	
6,155	7.16	337	91	20.0	22.4	11.9	18.2			161	149	5.3			92	
5,648	6.95	332	88	19.7	20.0	10.7	16.7			149	146	5.2			90	
5,427	6.80	325	86	19.4	19.4	10.0	16.6			145	142	5.0			88	
5,158	6.71	316	84	16.9	18.0	8.8	16.3			139	137	4.8			82	
4,650	6.57	313	81	16.0	17.7	8.6	16.0			136	131	4.7			81	
4,493	6.42	296	79	15.0	16.7	8.3	15.0			128	129	4.5			73	
4,227	6.19	269	74	14.8	15.6	8.0	12.0			125	125	4.2			72	
4,116	6.03	250	69	14.6	15.0	7.7	6.8			111	121	3.8			69	
3,782	5.81	236	53	13.4	13.0	6.5	6.4			109	116	2.5			65	
3,642	5.30	228	52	10.6	10.8	4.0	6.0			104	111				61	
2,953	4.92	204	43	10.0	8.5	5.6	5.6			103	108				60	
2,407	4.06	186	32	9.4	7.5	4.0	4.0			90	104				51	
2,213	3.48	320	26	8.0	6.9	3.3	3.3			88	98				47	
1,753	3.07	160		5.0	5.7					75	93				36	



Table 17. Size of Farm Related to Earnings, Farm Organization & Efficiency Factors, 1946

Item	Under 560	640	800	960	1120	1200 & over
Operator's Labor Earnings	\$ 3,816	\$4,481	\$7,348	\$7,027	\$6,555	\$10,560
Number of farms	9	4	5	7	5	17
Acres owned	272	467	296	466	744	1,171
Acres rented	132	160	509	465	368	785
Total operated	404	627	805	931	1,112	1,956
<u>Capital Investment</u>						
Total capital managed	\$18,001	\$33,487	\$27,268	\$35,412	\$39,579	\$55,258
Productive livestock	\$ 4,496	\$10,993	\$ 6,471	\$ 7,444	\$ 9,802	\$13,314
Power and machinery	\$ 2,550	\$ 2,844	\$ 4,393	\$ 4,395	\$ 3,675	\$ 5,511
Rate earned on investment	19.0	15.5	23.9	26.0	21.2	21.6
<u>Size of Business</u>						
Work units (total)	420	516	661	617	689	894
On crops	151	211	290	306	344	482
On livestock	263	305	318	304	327	408
Off farm	6	-	53	7	18	4
<u>Labor Utilization</u>						
Number of workers	1.4	1.4	1.8	2.1	2.0	2.2
Work units per worker	276	385	407	299	355	433
Crop acres per worker	166	258	274	227	313	330
Animal units per worker	29	40	35	29	42	51
Livestock inc. per worker	\$4,517	\$5,943	\$4,636	\$4,387	\$5,479	\$5,630
<u>Crop Organization &amp; Efficiency</u>						
Total acres in crops	239	320	451	471	589	692
Crop yield index	99	113	81	116	97	104
Crop selection index	94	98	97	102	96	107
% cropland is of farm	60.4	50.8	56.6	52.1	52.8	36.9
% cropland in row crops	33.7	36.4	23.0	30.7	27.4	26.2
% cropland in small grain	52.8	49.2	68.9	63.4	60.8	69.7
% cropland in hay & pasture	9.4	13.0	8.1	5.9	6.0	2.5
<u>Livestock Org. &amp; Efficiency</u>						
Number of beef cows	11	21	22	19	20	55
Number of milk cows	7	6	4	7	2	4
Number of ewes	11	56	53	29	34	21
Number of litters of pigs	8	5	10	9	7	9
Number of hens	160	168	160	154	159	124
Total prod. livestock units	45	62	57	58	81	107
Livestock rot per \$100 feed	\$222	\$128	\$215	\$176	\$124	\$196
Pounds butterfat per cow	178	219	132	168	176	145
Eggs laid per hen	113	120	105	125	122	108
Pigs saved per litter	6.2	7.2	4.7	5.5	6.7	6.0
<u>Power, Mach. &amp; Equip.</u>						
Power inv. per crop acre	\$5.91	\$4.17	\$4.97	\$4.43	\$2.69	\$4.53
Crop mach. inv. per crop acre	\$4.82	\$4.44	\$6.61	\$3.66	\$3.61	\$4.25

Table 18. Tenure Related to Earnings, Farm Organization and Efficiency Factors, 1946

Item	Your farm	Tenants	Part Owners	Owners
Operator's Labor Earnings*	\$ _____	\$ 5,869	\$ 7,255	\$ 4,972
Number of farms	_____	5	33	9
Acres owned	_____	-	840	553
Acres rented	_____	623	596	-
Total operated	_____	623	1,436	553
<u>Capital Investment</u>				
Total capital owned**	\$ _____	\$15,740	\$37,418	\$27,850
Productive livestock	\$ _____	\$ 4,809	\$10,039	\$ 7,681
Power and machinery	\$ _____	\$ 4,490	\$ 4,587	\$ 2,811
Rate earned on investment	_____	37.0	20.3	18.1
<u>Size of Business</u>				
Work units (total)	_____	533	767	463
On crops	_____	279	385	181
On livestock	_____	225	371	280
Off farm	_____	29	11	2
<u>Labor Utilization</u>				
Number of workers	_____	1.6	2.1	1.5
Work units per worker	_____	354	390	336
Crop acres per worker	_____	301	281	207
Animal units per worker	_____	29	44	33
Livestock increase per worker \$	_____	\$ 3,796	\$ 5,339	\$ 5,140
<u>Crop Organization &amp; Efficiency</u>				
Total acres in crops	_____	460	566	301
Crop yield index	_____	98	103	118
Crop selection index	_____	101	106	94
% cropland is of farm	_____	73.0	42.2	56.9
% cropland in row crops	_____	28.5	28.4	30.8
% cropland in small grain	_____	67.3	65.1	52.3
% cropland in hay & pasture	_____	2.3	4.7	13.3
<u>Livestock Org. &amp; Efficiency</u>				
Number of beef cows	_____	12	38	16
Number of milk cows	_____	6	4	6
Number of ewes	_____	8	30	32
Number of litters of pigs	_____	9	9	5
Number of hens	_____	215	139	163
Total prod. livestock units	_____	42	87	56
Livestock returns per \$100 feed\$	_____	\$208	\$186	\$207
Pounds butterfat per cow	_____	145	157	207
Eggs laid per hen	_____	85	116	122
Pigs saved per litter	_____	5.5	5.7	7.6
<u>Power, Mach. &amp; Equip.</u>				
Power invest. per crop acre \$	_____	\$4.68	\$4.41	\$5.25
Crop mach.inv.per crop acre \$	_____	\$4.67	\$4.51	\$4.20

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

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

Table 19. Four Year Summary of Farm Earnings  
19 Farms With Continuous Records, 1943-46

Item	1943	1944	1945	1946
Total investment managed	\$27,595	\$28,868	\$30,564	\$34,832
Rate earned on investment	13.1	15.6	19.7	16.5
<b>FARM RECEIPTS</b>				
Hogs	\$ 3,492	\$ 3,489	\$ 1,996	\$ 2,763
Cattle	1,770	1,231	2,743	3,178
Dairy products	403	406	340	512
Eggs	473	433	412	379
Poultry (includes turkeys)	252	187	339	271
Sheep and wool	575	408	550	500
Horses	6	8	7	11
Crops	1,768	2,670	4,182	5,922
Machinery & equipment	120	74	81	139
Farm program payments	320	227	123	155
Income from work off farm	-	180	30	32
Miscellaneous	241	36	96	154
(1) TOTAL FARM SALES	\$ 9,420	\$ 9,349	\$10,899	\$14,025
(2) Increase in inventories	-	1,186	2,057	463
(3) Family living from farm	475	572	637	661
(4) TOTAL FARM RECEIPTS (sum 1-3)	\$ 9,895	\$11,107	\$13,593	\$15,149
<b>FARM EXPENSES</b>				
Auto (farm share)	\$ 155	\$ 188	\$ 211	\$ 335
Power, mach., & equip.(upkeep)	848	935	1,053	1,149
Power, mach., & equip. (new)	257	710	541	1,036
Farm improvements (upkeep)	186	181	267	342
Farm improvements (new)	86	78	207	302
Hired labor	563	717	775	734
Crop expenses	334	414	590	594
Feed bought	1,151	746	878	818
Livestock bought	613	584	700	849
Other livestock expenses	115	129	137	152
Taxes	224	292	299	352
Insurance	52	65	68	74
Miscellaneous farm expenses	81	39	63	72
(5) TOTAL FARM PURCHASES	\$ 4,665	\$ 5,078	\$ 5,789	\$ 7,079
(6) Decrease in inventories	610	-	-	-
(7) Board furnished hired labor	68	130	156	128
(8) Unpaid family labor	280	435	442	135
(9) Interest on farm capital(5%)	\$1,380	\$ 1,443	\$ 1,528	\$ 1,742
(10) TOTAL FARM EXPENSES(sum 5-9)	\$7,003	\$ 7,086	\$ 7,915	\$ 9,084
(11) OPERATOR'S LABOR EARNINGS (4-10)	\$2,892	\$ 4,021	\$ 5,678	\$ 6,065
(12) RETURNS TO CAPITAL & FAMILY	\$4,552	\$ 5,899	\$ 7,648	\$ 7,942

Table 20. Four Year Summary of Organization and Efficiency Factors

19 Farms With Continuous Records, 1943-46

Item	1943	1944	1945	1946
Acres owned	406	472	499	602
Acres rented	478	382	357	347
Total operated	884	854	856	949
<u>Crop Organization</u>				
% cropland is of farm	55.2	52.8	55.6	52.4
% cropland in row crops	28.1	33.3	30.5	32.9
% cropland in small grain	57.3	56.1	57.1	57.3
% cropland in hay & pasture	8.6	3.9	7.6	5.8
<u>Crop Yields Per Acre</u>				
Corn, bu.	13.9	26.4	19.0	19.4
Oats, bu.	27.2	31.6	45.7	24.4
Barley, bu.	10.6	12.3	28.1	18.0
Flax, bu.	5.8	9.0	6.3	13.7
Alfalfa, tons	1.1	1.5	1.7	1.1
Wheat, bu.	6.3	12.0	17.7	12.7
<u>Livestock Org. and Efficiency</u>				
Number of horses	4	4	4	3
Number of milk cows	7	8	8	7
Number of beef cows	19	22	24	27
Number of ewes	46	32	22	17
Number of litters of pigs	18	9	9	7
Number of hens & pullets	171	200	199	170
Total prod. livestock units	67	69	67	68
Livestock returns per \$100 feed	\$187	\$150	\$159	\$188
Pounds butterfat per cow	-	159	175	191
Eggs laid per hen	-	105	115	116
Pigs saved per litter	-	5.0	5.7	5.4
<u>Size of Business</u>				
Work units (total)	639	671	641	635
Number of workers	2.1	2.0	2.1	1.6
Work units per worker	306	322	332	352
<u>Power, Mach. &amp; Equip.</u>				
Power invest. per crop acre	\$3.85	\$4.04	\$4.70	\$4.53
Crop mach. inv. per crop acre	\$2.80	\$3.65	\$4.10	\$4.39