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North Central South Dakota Farm Record Summary 1945 Third Annual Report

C. R. Hoglund

1945

THIRD ANNUAL REPORT

NORTH CENTRAL SOUTH DAKOTA

FARM RECORD SUMMARY

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52 FARMS

Agricultural Experiment Station
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THIRD ANNUAL REPORT OF THE NORTH CENTRAL SOUTH DAKOTA FARM RECORD PROJECT, 1945

Prepared by C. R. Hoglund

Introduction

This is the third 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 by the Experiment Station under the direction of C. R. Hoglund. The organization and educational work in the field was handled largely by the Extension Service under the guidance of Lyle Bender, Extension Farm Management Specialist. The tabulation of the data was under the supervision of C. A. Hustrulid, Farm Management Fieldman. The following is a list of counties covered in the study, and the county agents who actively cooperated in the project.

County	Agent	Number of records
Beadle	Gale Peppers	11
Faulk	Konrad Stummeier	15
Hand	LaVerne Kortan	17
Potter	James O'Connell	5
Sully	John F. Neu	4

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 19 in which a comparison is made between owners, part-owners, and tenants for earnings and various farm organization and management efficiency factors.

The farm record data used in this report have been tabulated for high profit and low profit farms as well as for the entire group. Summaries of farm inventories, crop acreages and yields, livestock numbers, farm produce used in home, and farm earnings are given in the following tables for high profit, low profit, and the average of all farms.

Operator's labor earnings, farm organization and efficiency measures, and other related factors have also been calculated for size of farm and tenure comparisons.

Climatic Conditions During 1945

Total rainfall during 1945 for the North Central Area ranged from about normal to more than two inches above for the various parts of the area in which the cooperators were located. Climatic conditions were exceptionally favorable for small grain and hay production. Small grain yields were the highest on record for most farms in this area. A cool, late spring season contributed to lower corn yields than was the situation in 1944. Some of the corn failed to mature properly due to early frost.

Table 1. Monthly and Annual Precipitation and Departure from Normal, Faulkton Gettysburg, and Miller Weather Stations, 1945

Month	Faulkton		Gettysburg		Miller	
	1945	Departure	1945	Departure	1945	Departure
January	0.47	0.00	0.54	+0.23	0.54	+0.13
Feburary	0.32	-0.27	0.43	0.00	0.50	+0.09
March	1.16	-0.02	0.99	-0.01	1.11	+0.26
April	1.32	-1.09	0.48	-1.21	2.54	+0.68
May	4.97	+2.25	3.04	+0.94	2.27	-0.43
June	3.21	-0.03	4.25	+1.06	3.98	+0.81
July	1.56	-0.63	2.74	+0.92	2.75	+0.51
August	1.57	-0.61	1.23	0.00	1.47	-0.69
September	2.93	+1.56	2.11	+1.02	1.20	-0.12
October	0.12	-1.01	0.05	-0.59	0.34	-0.69
November	0.00	-0.64	T	-0.30	0.62	+0.10
December	0.14	-0.29	0.35	+0.04	0.72	+0.32
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

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 100 hours to care for a milk cow for a year. Thus an acre of corn would represent 1 work unit and a milk cow 10 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	1.0	Milk cows	cow	10.0
Corn, hogged off	"	.6	Other dairy cattle	animal unit	4.0
Corn and cane silage	"	1.5	Beef cows	cow	4.0
Corn and cane fodder	"	1.0	Other beef cattle	animal unit	4.0
Sorghum	"	1.0	Bulls	head	4.0
Potatoes	"	4.0	Litter	litter	4.0
Small grain	"	.6	Other hogs	head	.5
Alfalfa hay	"	1.0	Ewes	head	.5
Other tame hay	"	.7	Other sheep	head	.2
Wild hay	"	.4	Hens	100	20.0
Annual pasture	"	.3	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, 1945*

Item	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
	Beginning of Year			
Horses and mules	$_____	$ 212	$ 209	$ 191
Productive livestock (total)	_____	7,381	9,782	6,721
Cattle	_____	5,211	6,808	4,802
Hogs	_____	1,235	2,454	514
Sheep	_____	736	299	1,259
Poultry	_____	199	221	146
Feed and seed	_____	5,206	8,135	2,837
Mach. and equipment (total)	_____	3,455	4,873	1,933
Power machinery	_____	1,605	2,284	820
Crop and gen. mach.	_____	1,598	2,243	923
Livestock equipment	_____	252	346	190
Improvements (Farm)**	_____	3,758	5,873	3,357
Land	_____	12,314	15,138	8,565
Total farm capital	$_____	$32,314	$44,010	$23,604
	End of Year			
Horses and mules	$_____	$ 185	$ 194	$ 169
Productive livestock (total)	_____	8,144	10,443	6,700
Cattle	_____	5,551	7,207	4,352
Hogs	_____	1,535	2,644	777
Sheep	_____	854	400	1,398
Poultry	_____	204	192	173
Feed and seed	_____	6,061	10,793	2,828
Mach. and equipment (total)	_____	3,780	5,420	1,925
Power machinery	_____	1,770	2,707	870
Crop and gen. mach.	_____	1,748	2,355	871
Livestock equipment	_____	262	358	184
Improvements (Farm)**	_____	3,800	5,731	3,182
Land	_____	12,364	15,138	8,565
Total farm capital	$_____	$34,334	$47,719	$23,369

* 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, 1945

Item	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
Corn for grain	_____	122.1	164.5	81.3
Sorghum-grain	_____	1.0	.8	---
Sorghum forage	_____	8.5	15.5	4.1
Corn and cane silage	_____	2.4	6.0	2.3
Soybeans		.6	---	1.1
Total Row Crops		134.6	186.8	88.8
Wheat	_____	127.3	244.5	20.6
Oats	_____	108.1	129.5	91.1
Barley	_____	57.3	89.5	15.3
Rye-grain	_____	14.4	19.8	1.3
Flax	_____	13.3	20.1	---
Miscellaneous		2.3	1.6	---
Total Small Grain		322.7	505.0	128.3
Alfalfa hay	_____	7.9	3.5	9.7
Other tame hay		4.6	9.1	2.0
Total Tame Hay		12.5	12.6	11.7
Rotation Pasture		19.2	23.7	16.6
Total Tame Hay & Past.		31.7	36.3	28.3
Idle and Fallow		40.5	12.4	29.0
Total Tillable Land		529.5	740.5	274.4
Native hay	_____	114.3	129.8	101.5
Native pasture	_____	422.0	362.8	381.8
Farmsteads, roads, etc.		43.7	60.0	26.3
Total Acres Operated		1109.5	1293.1	784.0
% of farm in cropland	_____	52.9	59.9	46.8
% of cropland in row crops	_____	27.6	25.6	33.4
% of cropland in sm. grain	_____	57.5	67.3	44.9
% of cropland in hay & past.	_____	7.2	5.5	12.2

Table 4. Crop Yield Summary, 1945

Crop	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
Corn for grain	_____	19.7	22.0	17.1
Sorghum-grain	_____	21.4	27.8	15.0
Soybeans	_____	8.0	---	---
Wheat	_____	17.8	18.6	15.7
Oats	_____	40.6	43.7	38.0
Barley	_____	25.8	24.6	24.7
Rye	_____	15.2	20.0	5.0
Flax	_____	8.9	10.9	---
Alfalfa hay	_____	1.7	1.3	1.8
Other tame hay	_____	1.3	1.0	2.2
Corn & sorghum forage	_____	4.4	5.3	2.0
Silage	_____	6.6	7.9	2.4
Native hay	_____	.8	.8	.3

Table 5. Livestock Summary, 1945

Item	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
Horses	_____	4.6	4.5	4.0
Beef cows	_____	27.8	34.7	20.8
Beef heifers	_____	7.5	5.0	6.3
Other beef cattle	_____	22.7	31.0	14.0
Steers	_____	12.2	26.8	8.6
Milk cows	_____	6.9	8.5	6.1
Dairy heifers	_____	1.4	2.0	2.5
Other dairy cattle	_____	1.7	1.9	2.1
Bulls	_____	1.1	1.4	1.0
Ewes	_____	32.4	26.4	48.7
Other sheep	_____	35.6	11.5	24.3
Litters of pigs	_____	11	19	7
Hens and pullets	_____	181	203	156
Total units prod. livestock*	_____	72.0	93.5	56.7

* 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, 1945

Item	Quantity				Value			
	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
Whole milk, qts.	_____	1288	1536	1192	$_____	$117.83	$134.39	$104.30
Cream, qts.	_____	150	160	122	_____	75.21	80.00	61.00
Farm-made butter, lbs.	_____	135	163	132	_____	64.80	78.02	63.50
Eggs, doz.	_____	219	241	153	_____	67.96	74.63	47.31
Poultry, lbs.	_____	232	269	153	_____	52.48	59.12	35.64
Cattle, lbs.	_____	389	689	125	_____	54.22	89.52	23.25
Hogs, lbs.	_____	503	590	269	_____	66.76	82.66	30.66
Lamb, lbs.	_____	3	---	---	_____	.80	----	1.75
Potatoes, bu.	_____	20	32	13	_____	34.78	56.14	21.00
Vegetables					_____	75.72	101.82	83.50
Fruits					_____	4.66	9.68	8.70
Farm fuel					_____	6.04	9.55	7.50
Total Value					$_____	$621.26	$775.53	$488.11

Table 7. Summary of Farm Earnings, 1945

Item	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
FARM RECEIPTS				
Hogs	$_____	$ 2,337	$ 4,760	$ 814
Cattle	_____	2,854	3,753	1,886
Dairy Products	_____	321	382	248
Eggs	_____	370	471	253
Poultry (includes turkeys)	_____	335	667	142
Sheep and wool	_____	652	190	746
Horses	_____	6	3	10
Crops	_____	4,881	8,046	1,151
Machinery & equipment	_____	119	273	57
Farm program payments	_____	194	195	117
Income from work off farm	_____	186	219	20
Miscellaneous	_____	101	155	48
(1) TOTAL FARM SALES	$_____	$12,356	$19,114	$ 5,492
(2) Increase in inventories	_____	1,963	3,723	----
(3) Family living from farm	_____	602	776	486
(4) TOTAL FARM RECEIPTS (sum 1-3)	$_____	$14,921	$23,613	$ 5,978
FARM EXPENSES				
Auto (farm share)	$_____	$ 235	$ 315	$ 159
Power, mach. & equip. (upkeep)	_____	1,256	1,902	503
Power, mach. & equip. (new)	_____	905	1,481	142
Farm improvements (upkeep)	_____	301	416	110
Farm improvements (new)	_____	282	277	13
Hired labor	_____	830	1,740	301
Crop expenses	_____	717	1,094	356
Feed bought	_____	575	1,038	387
Livestock bought	_____	1,005	816	276
Other livestock expenses	_____	173	176	167
Taxes	_____	371	417	285
Insurance	_____	104	70	50
Miscellaneous farm expenses	_____	78	125	44
(5) TOTAL FARM PURCHASES	$_____	$ 6,832	$ 9,867	$ 2,793
(6) Decrease in inventories	_____	----	----	234
(7) Board furnished hired labor	_____	152	273	42
(8) Unpaid family labor ($100 per mo.)	_____	463	445	245
(9) Interest on farm capital (5%)	_____	1,665	2,293	1,174
(10) TOTAL FARM EXPENSES (sum 5-9)	$_____	$ 9,112	$12,878	$ 4,488
(11) OPERATOR'S LABOR EARNINGS (4)-(10)	$_____	$ 5,809	$10,735	$ 1,490
(12) RETURNS TO CAPITAL & FAMILY LABOR (sum 8+9+11)	$_____	$ 7,937	$13,473	$ 2,909

Table 8. Summary of Farmer's Net Worth, 1945*

	Your farm	Rented farms	Part-owned farms	Owned farms
Number of farms		2	10	5
		Beginning of Year		
Assets				
Total farm capital	$_____	$18,085	$27,003	$20,469
Cash on hand and in bank	_____	1,211	1,129	344
Bonds	_____	575	2,086	569
Other Assets**	_____	---	227	---
Total	$_____	$19,882	$30,445	$21,422
Liabilities				
Real estate mortgages	$_____	$ ----	$ 1,383	$ 1,942
Chattel mortgages	_____	----	830	1,147
Notes & accounts payable	_____	411	381	1,123
Total	$_____	$ 411	$ 2,593	$ 4,211
Farmer's Net Worth	$_____	$19,471	$27,852	$17,211
		End of Year		
Assets				
Total farm capital	$_____	$18,035	$28,340	$22,407
Cash on hand and in bank	_____	1,755	2,165	492
Bonds	_____	863	4,600	726
Other assets**	_____	565	180	187
Total	$_____	$21,218	$35,285	$23,812
Liabilities				
Real estate mortgages	$_____	$ ---	$ 1,342	$ 1,408
Chattel mortgages	_____	---	285	1,122
Notes & accounts payable	_____	80	271	1,166
Total	$_____	$ 80	$ 1,898	$ 3,696
Farmer's Net Worth	$_____	$21,138	$33,387	$20,116
Change in Net Worth	$_____	$ 1,667	$ 5,535	$ 2,905

*This summary includes only the farms for which complete information was available on assets and liabilities.

**Other assets include notes and accounts receivable, postal savings and other assets except household and personal property.

Most of the farmers in this study made considerable progress in reducing their indebtedness and in building up reserves in the form of bonds, cash bank deposits and postal savings during 1945. A few farmers have also made advance payments on real estate mortgages. Many of the owners and part owners have built up reserves in the form of bonds and bank deposits which would be sufficient to completely liquidate their total indebtedness. Others have reduced their debts to a point where they shouldn't have any difficulty in making annual and principal payments.

REASONS FOR VARIATIONS IN FARM EARNINGS

Operator's labor earnings ranged from a high of over $10,000 for the high profit farmers to a low of less than $1,200 for the low profit farms. The farms in these two groups vary considerably in size and productive resources. However, earnings on farms of the same size having about the same productive resources often differ greatly. What are some of the reasons earnings vary so much from farm to farm? Six of the more important factors affecting 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. This is particularly true when prices of farm products are high. A small size farm business may provide an adequate farm income if it is very efficiently operated. However, the size of business will need to be large enough to provide full time productive work for the farm family if high earnings are to be attained. Operator's labor earnings averaged only $2,967 on the farms with less than 475 work units compared with earnings of over $8,000 on the group of farms with 900 or more work units. The size of farm business can be increased by keeping more livestock and by farming more land. This is an excellent time for many farmers to adjust their farming operations to better fit environmental conditions. Many farmers in the North Central area are operating farms which are too small to provide a satisfactory level of income. The relationship of size of business to farm earnings is shown on table 9.

Table 9. Relation of Size of Business to Farm Earnings

Number of work units		No. of	Average operator's
Range	Average	farms	labor earnings
Under 475	402	12	$2,967
475 - 899	648	24	$5,494
900 & over	1,131	16	$8,390

Efficiency in Use of Labor Important

A close relationship exists between the size of farm earnings and the efficiency in use of labor. Earnings are usually higher on the farms on which the greatest amount of work is accomplished per worker. Work units per worker ranged from less than 200 to over 600 for the 52 farms studied. Size of business has a direct bearing on the amount of work accomplished per worker. Labor efficiency can be increased by enlarging the size of business, by distributing labor peaks throughout the season, and by the use of labor saving equipment and practices. The use of self-feeders and automatic waterers and the hogging off of corn are three methods of saving labor. The present shortage of farm labor makes it important to use available labor to the best advantage.

Table 10. Relation of Amount of Work Performed Per Worker to Farm Earnings

Work units per worker		No. of	Average operator's
Range	Average	farms	labor earnings
Under 320	254	13	$3,766
320 - 449	374	26	$6,468
450 & over	517	13	$6,505

High Crop Yields Lower Costs

High yields tend to lower the per bushel or ton cost of crops. Farm earnings are usually higher on farms on which yields are high. Operator's earnings were about 50 percent higher on the farms with the high yields than the farms with the low yields. High 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 11.

Table 11. Relation of Crop Yields to Farm Earnings

Percent crop yields were of average of all 52 farms		No. of	Average operator's
Range	Average	farms	labor earnings
Under 85	67	13	$4,624
85 - 114	98	24	$6,106
115 & over	127	15	$6,337

Crop Selection Important

A balanced livestock program and high earnings are dependent on the choice of crops a farmer makes. 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 is also important. The choice of crops should include legumes which maintain soil fertility. More emphasis on the production of alfalfa hay and small grains such as wheat, oats, and barley, and less emphasis on corn is needed in this area.

Table 12. Relation of Crop Selection to Farm Earnings

Percent selection of high return crops were of average of all 52 farms		No. of	Average operator's
Range	Average	farms	labor earnings
Under 90	80	12	$4,263
90 - 109	103	26	$5,620
110 & over	115	14	$7,460

High Livestock Production Needed

The amount and kinds of productive livestock kept on a farm has an important affect on farm earnings. This is particularly true in the North Central area in which a large proportion of crops are usually marketed through livestock. The farm resources on the farm and the managerial ability of the operator should determine the kinds and amounts of livestock kept. In this area greater emphasis needs to be placed on the production of roughage consuming livestock. The selection of livestock enterprises that help distribute the labor load throughout the year needs consideration.

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

Total animal units		No. of	Average operator's
Range	Average	farms	labor earnings
Under 45	34	15	$3,548
45 - 79	66	23	$5,978
80 & over	123	14	$7,927

Efficient Livestock Feeding Needs Attention

Farmers who produce livestock efficiently usually have higher earnings than inefficient producers. Since such a large proportion of the crops are marketed through livestock in this area, it is extremely important that feed be efficiently used. Livestock returns per $100 feed consumed varied greatly for the 52 farms studied. On a few farms returns were actually less than the cost of feed. 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.

Table 14. 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 $110	$ 83	13	$5,196
$110 - $184	138	23	$5,585
$185 & over	250	13	$6,571

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 about four times as great as for the farmers who were below average in all five factors. Table 15 illustrates the importance of an efficiently organized and operated farm business.

Table 15. 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	3	$____	$2,459
1	6	$____	$2,979
2	15	$____	$3,401
3	14	$____	$7,478
4	8	$____	$7,640
5	6	$____	$9,457

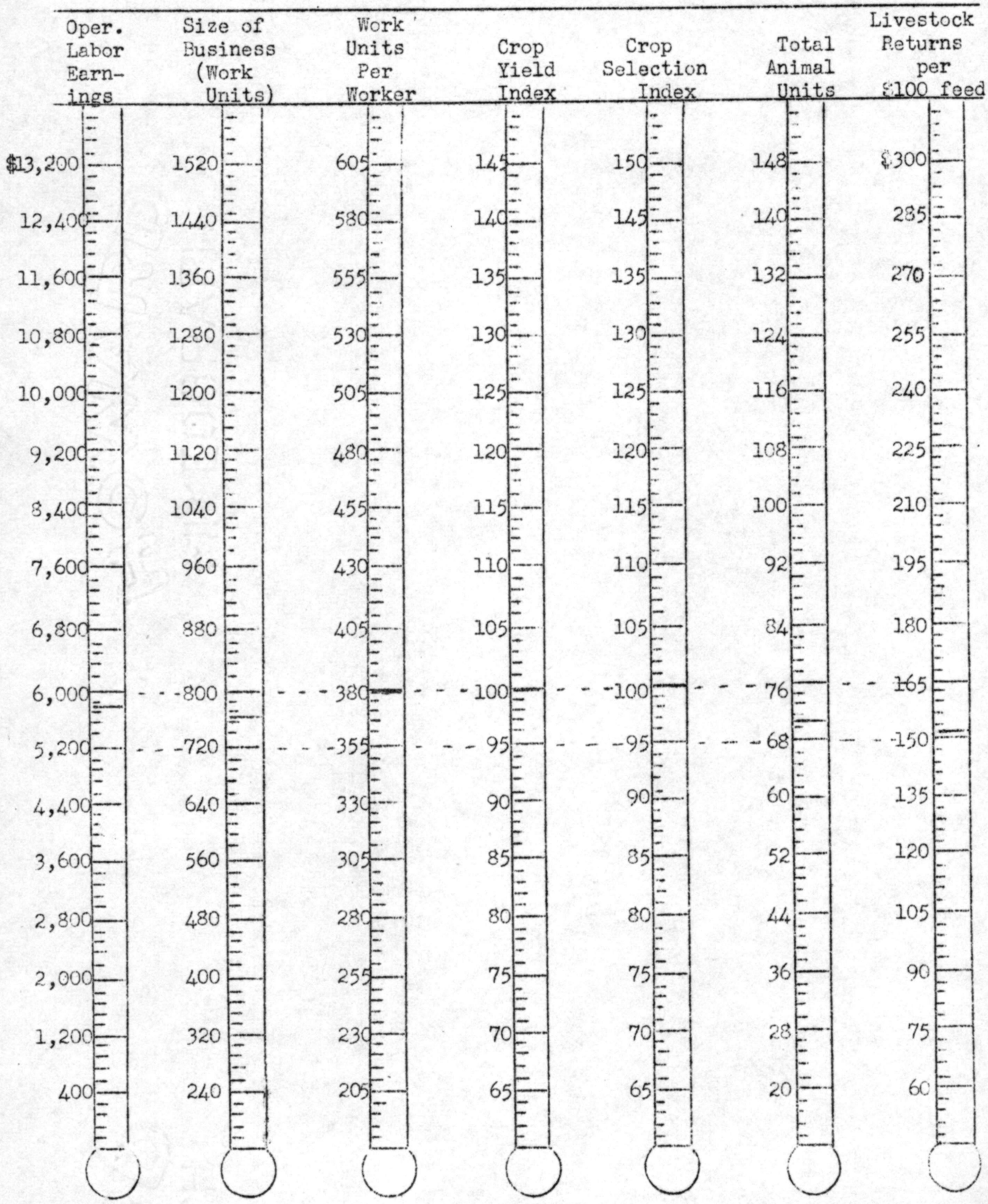
Farmers should study table 16 on page 12, table 17 on page 14, and the thermometer chart on page 13 to determine the weak and strong points in their farm business.

Table 16. Farm Organization and Management Efficiency Factors, 1945

Item	Your farm	Average of 52 farms	11 most profitable farms	11 least profitable farms
Operator's Labor Earnings	$_____	$ 5,802	$10,706	$ 1,488
Acres owned	_____	634	797	428
Acres rented	_____	476	496	356
Total operated	_____	1,110	1,293	784
Capital Investment				
Total capital managed	$_____	$33,125	$45,865	$22,615
Productive livestock	$_____	$ 7,762	$10,112	$ 6,711
Power and machinery	$_____	$ 3,817	$ 5,348	$ 2,109
Rate earned on investment	_____	18.1	25.5	7.6
Size of Business				
*Work units (total)	_____	759	1,017	508
On crops	_____	359	494	205
On livestock	_____	382	508	301
Off farm	_____	18	15	2
Labor Utilization				
Number of workers	_____	2.0	2.6	1.4
*Work units per worker	_____	379	391	363
Crop acres per worker	_____	260	285	196
Animal units per worker	_____	36	36	40
Livestock increase per worker	_____	3,504	4,073	2,908
Crop Organization and Efficiency				
Total acres in crops	_____	520	741	274
*Crop yield index	_____	100	109	89
*Crop selection index	_____	100	108	95
% cropland is of farm	_____	53	60	47
% cropland in row crops	_____	28	26	33
% cropland in small grain	_____	58	67	45
% cropland in hay and past.	_____	7	6	12
Livestock Org. & Efficiency				
Number of beef cows	_____	28	34	18
Number of milk cows	_____	5	6	5
Number of ewes	_____	32	27	43
Number of litters of pigs	_____	11	19	7
Number of hens	_____	144	175	117
*Total productive livestock units	_____	72	93	57
*Livestock returns per $100 feed	$_____	$151	$184	$127
Pounds butterfat per cow	_____	175	181	160
Eggs laid per hen	_____	119	120	102
Pigs saved per litter	_____	4.9	5.1	4.1
% calf crop	_____	84	82	75
% lamb crop	_____	95	101	91
Power, Mach. & Equip.				
Power invest. per crop acre	$_____	$4.00	$3.88	$4.19
Crop mach. inv. per crop acre	$_____	$3.40	$3.24	$3.68

*Measures used in thermometer chart on page 13.

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 17. Comparative Standing of Cooperators on Individual Efficiency Factors

Oper. Labor Earnings	Power: Acres per Farm	Power: & Mach. Inv. per Crop acre	Work units per worker	Crop Efficiency: Crop yield index	Crop Efficiency: Yields: Wheat bu.	Crop Efficiency: Yields: Oats bu.	Crop Efficiency: Yields: Barley bu.	Livestock Efficiency: Return per $100 feed	Livestock Efficiency: B.F. per cow	Livestock Efficiency: Pigs weaned per litter	Livestock Efficiency: Eggs laid per hen	Livestock Efficiency: Livestock Increase Per Man
$13,000			660					290	320	7.8		
12,500			640					280	310	7.6		6000
12,000	3040		620		30		50	270	300	7.4		5800
11,500	2880		600		29		48	260	290	7.2	250	5600
11,000	2720		580	150	28	60	46	250	280	7.0	240	5400
10,500	2560		560	145	27	58	44	240	270	6.8	230	5200
10,000	2400		540	140	26	56	42	230	260	6.6	220	5000
9,500	2240		520	135	25	54	40	220	250	6.4	210	4800
9,000	2080	2.00	500	130	24	52	38	210	240	6.2	200	4600
8,500	1920	3.00	480	125	23	50	36	200	230	6.0	180	4400
8,000	1760	4.00	460	120	22	48	34	190	220	5.8	160	4200
7,500	1600	5.00	440	115	21	46	32	180	210	5.6	150	4000
7,000	1440	6.00	420	110	20	44	30	170	200	5.4	140	3800
6,500	1280	7.00	400	105	19	42	28	160	190	5.2	130	3600
AVERAGE 5,802	1110	7.40	379	100	18	40	26	151	175	4.9	119	3504
5,500	960	9.00	360	95	17	38	24	140	160	4.8	110	3400
5,000	800	10.00	340	90	16	36	22	130	150	4.6	100	3200
4,500	640	11.00	320	85	15	34	20	120	140	4.4	90	3000
4,000	480	12.00	300	80	14	32	18	110	130	4.2	80	2800
3,500	320	13.00	280	75	13	30	16	100	120	4.0	70	2600
3,000	160	14.00	260	70	12	28	14	90	110	3.8	60	2400
2,500		15.00	240	65	11	26	12	80	100	3.6	50	2200
2,000		16.00	220	60	10	24	10	70	90	3.4	40	2000
1,500		17.00	200	55	9	22	8	60	80	3.2	30	1800
1,000		18.00	180	50	8	20	6	50	70	3.0	20	1600
500		19.00		45	7	18	4	40	60	2.8		1400
		20.00		40		16				2.6		1200
		21.00		35		14				2.4		
						12				2.2		

Table 13. Size of Farm Related to Earnings, Farm Organization & Efficiency Factors, 1945

Item	Under 560	640	800	960	1120	1200 & over
Operator's Labor Earnings	$ 3,550	$ 4,137	$ 5,028	$ 5,938	$ 7,590	$ 7,088
Number of farms	11	3	8	5	6	19
Acres owned	237	293	347	496	814	1,020
Acres rented	124	320	437	446	287	788
Total operated	361	613	784	942	1,101	1,808
Capital Investment						
Total capital managed	$16,474	$24,015	$28,886	$30,131	$37,705	$45,329
Productive livestock	$ 3,716	$ 4,305	$ 8,068	$ 7,841	$ 8,039	$10,415
Power and machinery	$ 2,405	$ 2,781	$ 3,632	$ 3,232	$ 4,058	$ 4,953
Rate earned on investment	18.3	18.1	18.5	17.5	22.5	16.4
Size of Business						
Work units (total)	428	479	742	680	762	1,022
On crops	160	249	321	298	342	528
On livestock	258	230	377	370	403	477
Off farm	10	---	44	12	17	17
Labor Utilization						
Number of workers	1.4	1.5	2.0	2.0	1.8	2.4
Work units per worker	305	319	371	340	423	426
Crop acres per worker	165	224	236	216	343	315
Animal units per worker	27	25	30	35	45	37
Livestock inc. per worker	$ 2,727	$ 2,826	$ 3,527	$ 3,576	$ 3,781	$ 3,944
Crop Organization & Efficiency						
Total acres in crops	231	336	471	433	617	756
Crop yield index	102	110	102	83	117	93
Crop selection index	98	102	93	104	101	100
% cropland is of farm	65	55	60	46	56	44
% cropland in row crops	29	40	27	32	23	25
% cropland in small grain	53	53	54	60	63	60
% cropland in hay & pasture	10	4	11	5	5	6
Livestock Org. & Efficiency						
Number of beef cows	9	5	22	21	45	45
Number of milk cows	7	4	7	7	2	5
Number of ewes	10	23	43	30	41	40
Number of litters of pigs	7	7	10	10	13	14
Number of hens	138	115	165	139	218	121
Total prod. livestock units	38	38	60	70	81	89
Livestock ret. per $100 feed	$178	$123	$160	$144	$160	$132
Pounds butterfat per cow	154	264	159	115	175	202
Eggs laid per hen	115	144	119	117	121	118
Pigs saved per litter	5.4	7.7	5.6	5.9	5.7	5.7
% calf crop	84	80	70	82	85	92
% lamb crop	86	110	105	86	114	74
Power, Mach. & Equip.						
Power inv. per crop acre	$6.00	$2.97	$3.31	$4.48	$3.39	$3.36
Crop mach. inv. per crop acre	$4.06	$4.63	$3.23	$2.44	$3.01	$3.26

Table 19. Tenure Related to Earnings, Farm Organization and Efficiency Factors, 1945

Item	Your farm	Tenants	Part-Owners	Owners
Operator's Labor Earnings*	$_____	$ 3,794	$ 5,410	$ 3,911
Number of farms	_____	7	37	8
Acres owned	_____	---	785	496
Acres rented	_____	626	550	---
Total operated	_____	626	1,335	496
Capital Investment				
Total capital owned**	$_____	$10,955	$32,752	$23,041
Productive livestock	$_____	$ 3,813	$ 9,277	$ 4,216
Power and machinery	$_____	$ 3,230	$ 4,055	$ 3,229
Rate earned on investment	_____	26.5	16.7	15.5
Size of Business				
Work units (total)	_____	548	864	460
On crops	_____	275	411	192
On livestock	_____	253	433	260
Off farm	_____	20	20	8
Labor Utilization				
Number of workers	_____	1.8	2.2	1.4
Work units per worker	_____	304	393	329
Crop acres per worker	_____	234	274	205
Animal units per worker	_____	22	36	30
Livestock increase per worker	$_____	$ 2,404	$ 3,744	$ 3,354
Crop Organization & Efficiency				
Total acres in crops	_____	421	603	287
Crop yield index	_____	93	97	112
Crop selection index	_____	98	100	98
% cropland is of farm	_____	67	49	60
% cropland in row crops	_____	26	28	28
% cropland in small grain	_____	59	58	53
% cropland in hay & pasture	_____	3	73	12
Livestock Org. & Efficiency				
Number of beef cows	_____	9	36	10
Number of milk cows	_____	8	5	7
Number of ewes	_____	14	47	6
Number of litters of pigs	_____	7	13	5
Number of hens	_____	161	97	122
Total prod. livestock units	_____	40	80	42
Livestock returns per $100 feed	$_____	$160	$149	$152
Pounds butterfat per cow	_____	169	175	180
Eggs saved per hen	_____	118	122	110
Pigs saved per litter	_____	6.2	5.7	5.3
% calf crop	_____	93	84	71
% lamb crop	_____	106	94	80
Power, Mach. & Equip.				
Power invest. per crop acre	$_____	$4.18	$3.48	$5.63
Crop mach. inv. per crop acre	$_____	$3.49	$3.06	$4.89

*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.