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Annual Farm Business Report

Fifteen Farms In Washington County

1944

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This report has been prepared by members of the Department of Rural Economics and the Agricultural Extension Service to enable each farmer cooperator to compare his business with other farm businesses in the county. Special emphasis has been placed upon factors that affect returns to the farm operator. By studying the facts about his business presented in this report and comparing his accomplishments with those of other farmers, the operator can get some ideas of changes in farming operations that will increase his earnings.

Cooperative Extension Work in Agriculture and Home Economics University of Nebraska College of Agriculture, and the United States Department of Agriculture cooperating. W. H. Brokaw, Director, Lincoln.

Introduction

This report presents an analysis of farm income, expenses and some important factors that influence labor incomes on Washington county farms.

Farm businesses in this county include a wide diversity of enterprises. Corn, oats and alfalfa are the principal crops. Soybeans and wheat are grown on a few farms. Either hogs and beef cattle or hogs and dairy cattle are the major livestock enterprises on most farms. Poultry flocks ranging from 100 to 500 hens are common.

Topography, Soils and Weather

The soils range from Wabash clay on the level bottoms to Knox silt loam on the rolling upland. A high percentage of the land is used for crop production. Heavy rains in the spring of 1944 caused drainage problems on some of the valley farms.

No unusually high or low temperatures occurred in 1944, but rainy weather in the early spring delayed the planting of crops. As a result yields of oats were below the usual average and the moisture content of corn was high on most farms. Monthly and annual precipitation and the departure from normal at the Blair and Fremont weather stations are given in Table 1.

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Table 1. Monthly and annual precipitation at Blair and Fremont.

	Blair		Fremont	
	Precipitation (inches)	Departure from normal (inches)	Precipitation (inches)	Departure from normal (inches)
1944				
January	0.84	+0.14	0.78	-0.06
February	0.97	+0.03	1.03	+0.05
March	2.75	+1.36	2.91	+1.38
April	6.99	+4.35	7.66	+5.03
May	4.47	+0.39	4.83	+0.98
June	6.51	+1.98	10.53	+5.83
July	3.97	+0.18	4.32	+0.81
August	5.38	+2.06	5.51	+1.78
September	0.60	-2.52	0.54	-2.24
October	1.16	-0.84	0.73	-1.11
November	1.30	+0.06	1.45	+0.20
December	0.58	-0.43	0.84	-0.09
1944 Total	35.52	+6.76	41.13	+12.56
1943 Total	20.14	-8.62	21.64	-6.93
1942 Total	27.19	-1.56	25.35	-3.22
1941 Total	28.91	+0.15	30.05	+1.48
1940 Total	27.33	-1.43	23.05	-5.52
Normal annual precipitation	28.76		28.57	

Table 2. Summary of inventories on Washington county farms where records were kept for analysis in 1944. (Beginning of year).

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
Size of farm (Acres)		219	255	176
Size of business (work units) 1		398	493	322
Horses		$244	$216	$291
Productive livestock		5,532	7,757	4,107
Milk cows		655	1,002	675
Other dairy cattle		266	385	363
Beef cattle including feeders		2,774	4,743	912
Hogs		1,651	1,445	1,957
Poultry		186	182	200
Feed grain and supplies		4,315	5,276	3,103
Machinery and equipment		2,571	2,860	2,056
Truck		113	62	82
Automobile		385	363	412
Tractor		513	748	200
Other machinery		1,560	1,687	1,362
Buildings, fences, and other improvements**		2,330	2,167	2,131
Land		22,163	29,985	15,920
Total farm capital		37,155	48,261	27,608

1. A productive man work unit is the amount of work a man can accomplish in a ten hour day when working on crops and productive livestock at average speed with the type of equipment in most common use in his community. The total work units required to grow and harvest the crops and to care for the productive livestock on any one farm is a measure of the size of that farm business.
**The residence of the operator is not included.

2. A productive livestock animal unit represents one cow, one bull, one feeder steer or heifer, two head of stock cattle 1 to 2 years old, four calves under 1 year old, seven sheep, 1000 pounds of hogs produced, or 100 head of poultry.

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Table 3. Summary of inventories on Washington county farms where records were kept for analysis in 1944. (End of year)

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
Horses		$214	$196	$233
Productive livestock		4,772	6,709	3,301
Milk cows		572	675	760
Other dairy cattle		288	462	295
Beef cattle including feeders		2,676	4,679	616
Hogs		1,059	749	1,439
Poultry		177	144	191
Feed, grain and supplies		4,339	4,930	3,141
Machinery and equipment		2,771	2,927	2,789
Truck		95	53	77
Automobile		346	330	366
Tractor		636	665	709
Other machinery		1,694	1,879	1,637
Buildings, fences, and other improvements**		2,412	1,994	2,354
Land		22,163	29,985	15,920
Total farm capital		36,671	46,741	27,738

Productive man work required for major crops and types of livestock.

Item	Unit	Hours of labor required
Milk cows	1 head	130
Other dairy cattle	1 animal unit-2	40
Feeder cattle	1 head	15
Beef cows	1 head	40
Other beef cattle	1 animal unit	40
Hogs	100 pounds gain	3
Chickens, ducks or gease	100 head	200
Corn, husked	1 acre	8
Corn, hogged	1 acre	4
Corn, silage	1 acre	14
Wheat	1 acre	6
Oats or barley	1 acre	6
Soybeans	1 acre	9
Alfalfa hay	1 acre	12
Seed (Alfalfa or clover)	1 acre	10
Other hay	1 acre	6
Temporary pasture	1 acre	3

2--Foot note on page 4.

Table 4. Summary of land use on Washington county farms where records were kept for analysis in 1944.

Item	Acres on Your farm	Average acres for 15 farms	5 most profitable farms	5 least profitable farms
Corn		90.0	118.5	67.2
Oats		27.6	25.8	25.3
Wheat		3.1	7.0	-
Soybeans		2.7	4.4	1.8
Alfalfa		19.0	14.8	15.0
Corn or sorghum for fodder		0.8	0.4	-
Corn for silage		7.5	18.6	0.8
Legumes and other tame pasture		32.1	30.8	29.9
Tilled fallow		1.5	3.4	-
Wild hay		2.9	-	3.0
Total cropland		187.2	223.7	143.0
Permanent pasture		13.6	9.4	20.4
Farmstead, roads, and wasteland		18.2	21.9	12.6
Total land in farm		219.0	255.0	176.0
Per cent of total acreage in each use				
Corn		41.1	46.5	38.2
Oats		12.6	10.1	14.4
Wheat		1.4	2.7	-
Soybeans		1.2	1.7	1.0
Alfalfa		8.7	5.8	8.5
Corn or sorghum for fodder		.4	.2	-
Corn for silage		3.4	7.3	.5
Legumes and other tame pasture		14.7	12.1	17.0
Tilled farrow		.7	1.3	-
Wild hay		1.3	-	1.7
Total cropland		85.5	87.7	81.3
Permanent pasture		6.2	3.7	11.6
Farmstead, roads, and wasteland		8.3	8.6	7.1
Total land in farm		100.0	100.0	100.0

Table 5. Summary of livestock organization and production on Washington county farms where records were kept for analysis in 1944.

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
Number of horses		3.3	3.1	3.4
Number of colts*		-	-	-
Number of milk cows		6.5	9.8	6.8
Number of other dairy cattle		6.7	12.4	5.2
Number of feeder cattle		34.5	60.4	9.3
Number of beef cows		1.3	-	0.1
Number of other beef cattle		3.2	0.2	4.2
Litters of pigs		12.0	10.2	12.7
Pigs weaned		71.7	62.2	74.8
Pounds of hogs produced		21,888.0	20,788.0	22,412.0
Number of chickens, ducks, and geese		213.0	213.0	198.2
Total number of productive livestock animal units		70.0	97.7	43.9
Per cent of total that are				
Milk cows		9.3	10.0	15.3
Other dairy cattle		3.4	4.4	4.8
Feeder cattle		49.3	61.8	21.2
Beef cows		1.9	-	0.2
Other beef cattle		1.7	0.2	3.0
Hogs produced		31.3	21.3	51.0
Chickens, ducks, and geese		3.1	2.3	4.5

*Colts were raised on a few farms.

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Table 6. Summary of cash income and expenses on Washington county farms where records were kept for analysis in 1944.

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
CASH INCOME				
Horses		$9	$3	$20
Cattle		4,720	8,207	1,805
Hogs		3,437	3,835	2,865
Poultry		169	166	185
Egg sales		543	503	586
Dairy sales		800	1,545	520
Machinery and equipment		112	118	147
Feed, grain and supplies		2,502	4,747	1,411
Labor off farm		41	85	-
Miscellaneous receipts		98	88	81
Total cash income		$12,431	$19,297	$7,620
CASH EXPENSES				
Improvements		$334	$101	$464
Horses		15	16	-
Cattle		2,075	4,231	500
Hogs		213	258	330
Supplies		78	103	101
Miscellaneous		71	76	70
Poultry		65	61	86
Livestock expense, veterinary, etc.		79	83	61
Machinery and equipment		1,584	1,902	2,055
Feed and grain		1,027	1,352	614
Crop expense		253	382	161
Hired labor		459	856	226
Taxes		344	396	187
Total cash expenses		$6,597	$9,817	$4,855
Net cash gain		$5,834	$9,480	$2,765
Net inventory gain		-	-	$129
Net cash loss		-	-	-
Net inventory loss		$483	$1,520	-
Return to capital and operator's family		$5,351	$7,960	$2,894

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Table 7. Summary of farm earnings by enterprises on Washington county farms where records were kept for analysis in 1944.

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
RECEIPTS AND NET INVENTORY INCREASES				
Horses		-	-	-
Cattle	$	$2,486	$3,662	$1,026
Hogs		2,633	2,882	2,017
Poultry		100	73	92
Egg sales		543	503	586
Dairy sales		800	1,545	520
Machinery and equipment		-	-	-
Feed and grain		1,786	3,116	1,232
Labor off farm		41	85	-
Miscellaneous receipts		98	88	81
Total receipts and net increases		$8,487	$11,954	$5,554
EXPENSES AND NET DECREASES				
Improvements		$251	$273	$241
Horses		35	33	38
Cattle		-	-	-
Hogs		-	-	-
Supplies		78	103	101
Poultry		6	7	3
Livestock expense, veterinary, etc.		79	83	61
Machinery and equipment		1,272	1,718	1,174
Feed and grain		288	67	398
Crop expense		253	382	161
Hired labor		459	856	226
Taxes		344	396	187
Miscellaneous		71	76	70
Total expense and net decreases		$3,136	$3,994	$2,660
Return to capital and operator's family		$5,351	$7,960	$2,894
Value of unpaid labor at $100 a month		1,487	1,460	1,440
Net income from investment and management		3,864	6,500	1,454
Average investment		36,913	47,501	27,673
Rate earned on investment		10.5%	13.7%	5.3%
Return to capital and operator's labor and management		$4,979	$7,679	$2,415
5% interest on average investment		1,846	2,375	1,384
Labor and management wage		3,133	5,304	1,031

Table 8. Comparison of some factors that affect farm income, Washington county farms where records were kept for analysis in 1944.

Item	Your farm	Averages for 15 farms	5 most profitable farms	5 least profitable farms
Rate earned on investment		10.5	13.7	5.3
Labor income	$	$3,133	$5,304	$1,031
Size of business:				
Acres in farm		219	255.0	176.0
Acres of cropland		187.2	223.7	143.0
Man equivalent		1.6	1.8	1.4
Productive man work units		398	493	323
Animal units of productive livestock		70.0	97.7	43.9
Rates of production:				
Yields of principal crops				
Corn, bushels		54.9	58.2	55.2
Oats, bushels		27.5	35.2	17.2
Alfalfa, tons		2.7	3.2*	2.5
Crop index**		100.0	110.8	93.6
Dairy sales per cow		$134	$230***	$92
Pigs weaned per litter, head		6.0	6.1	5.9
Pounds of hogs per litter		1,824	2,038	1,765
Eggs per hen, dozen		10.1	11.4	10.5
Efficiency:				
Productive man work units accomplished per worker		265	290	247
Returns from productive livestock per $100 of feed fed	$	$133	$141	$120
Power, machinery and improvement cost per man work unit		$4.26	$4.25	$5.04
Power and machinery cost per acre of cropland		$7.88	$8.48	$9.63
Power, machinery, improvement and labor cost per man work unit		$9.41	$8.99	$10.81
Balance:				
Percentage of productive work spent on crops		34.8	34.7	33.5
Percentage of productive work spent on livestock		65.2	65.3	66.5
Productive livestock units per 100 acres of cropland and pasture		35.2	45.1	27.1

*4 farms. One farm had no alfalfa

**Crop index is used to compare the relative yields of all crops grown on the farms. If an explanation of the procedure in calculating it is desired, write to the Department of Rural Economics, College of Agriculture, Lincoln, 1, Nebraska.

***4 farms. One farm had no dairy sales.

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THERMOMETER CHART. By using the figures for his farm on page the operator can locate his standing with respect to the various measures of farm organization, management efficiency and balance. The average for the 15 records used in the summary are located between the dotted lines across the center of the page.

Size			Rates of production			Efficiency				Balance			
Acres	Productive man work units	Units of productive livestock	Crop yield index	Dairy sales per cow	Pigs weaned per litter	Returns per $100 feed fed	Productive man work units accomplished per worker	Power machinery and building cost per productive man work unit	Power and machinery cost per acre of crop land	Percentage of productive man work units spent on livest.	Productive livestock units per 100 acres	Rate earned on investment (Per cent)	Labor income
400	700	135	152	$255	8.5	$170	515	$1.25	$1.50	78.0	87.0	19.1	$6,900
370	650	125	144	235	8.1	164	475	1.75	2.50	76.0	79.0	17.7	6,300
340	600	115	136	215	7.7	158	435	2.25	3.50	74.0	71.0	16.3	5,700
310	550	105	128	195	7.3	152	395	2.75	4.50	72.0	63.0	14.9	5,100
280	500	95	120	175	6.9	146	355	3.25	5.50	70.0	55.0	13.5	4,500
250	450	85	112	155	6.5	140	315	3.75	6.50	68.0	47.0	12.1	3,900
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219	398	70	100	134	6.0	133	265	4.26	7.88	65.2	35.2	10.5	3,133
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
190	350	65	96	115	5.7	128	235	4.75	8.50	64.0	31.0	9.3	2,700
160	300	55	88	95	5.3	122	195	5.25	9.50	62.0	23.0	7.9	2,100
130	250	45	80	75	4.9	116	155	5.75	10.50	60.0	15.0	6.5	1,500
100	200	35	72	55	4.5	110	115	6.25	11.50	58.0	7.0	5.1	900
70	150	25	64	35	4.1	104	75	6.75	12.50	56.0	-1.0	3.7	300
40	100	15	56	15	3.7	98	35	7.25	13.50	54.0	-9.0	2.3	-

REASONS FOR DIFFERENCES IN LABOR INCOME

The labor income of farm operators who kept records in 1944 varied widely. The average returns of the five operators who earned the highest percentage on the total investment in the farm business were $5,304. The five who earned the lowest percentage received only $1,031 for their labor and management. Some of the causes of these differences are beyond the control of the farmer but many changes can be made that will improve the net income.

Size of business, rates of production, efficiency in the use of labor, feed and equipment and balance in organization are important factors that influence net returns. The relationship between some of these factors and labor income is pointed out in the following analysis.

SIZE OF BUSINESS. This factor can be controlled by the operator. When the price of farm products is greater than the cost of producing them, he can increase the returns for his labor and management by renting additional land or by enlarging the livestock enterprises. If he is operating at a loss, an increase in volume will magnify the deficit, unless savings are introduced that will change the situation. Farmers who have large businesses usually have more flexibility in the organization than do men with small enterprises. For this reason the capable man with a large business usually has the advantage of greater efficiency in the use of available labor, power, machinery and buildings than is found on the small farm.

The size of a farm business can be increased by farming additional land, by increasing the numbers of livestock, by changing from low labor requiring animals such as beef cattle and sheep to dairy cattle and poultry, or by shifting from extensive crops such as hay and pasture to intensive crops like corn and soybeans. All of these procedures have been used in Washington county. As a result there is a wide difference in the organization of farms on which records were kept. In order to get a common measure for all types, productive man work units were used as a measure of size in Table 9.

Table 9. Relation of size of business and labor income.

Productive man work units accomplished		Number of farms	Average labor income
Range	Average		
Below 350	278	6	$2,089
350 to 500	386	4	3,401
500 and above	553	5	4,167

Farms on which the crops and livestock required only 278 units of productive work returned $2,089 labor income. Those requiring 553 units returned $4,167 for the work and management of the operator.

CROP YIELDS. Within the limits of proven practices in a community, high production per acre tends to lower the cost per bushel of grain or per ton of hay. This statement does not mean that a man can increase his net gain on a crop like corn or soybeans by cultivating it five times instead of three in order to get a few additional pounds per acre. The value of the increased yield must exceed the cost of getting it or the added expense will reduce the net return.

Practices that increase crop yields such as systematic crop rotations, getting each type of work done in its proper season, contour planting where the length of rows is satisfactory, the use of proven varieties and the application of barnyard manures should be given careful consideration in planning farm operations for the year. The relationship between crop yields and labor income is shown in Table 10.

Table 10. Relation of crop yields to labor income.

Crop index		Number of farms	Average labor income
Range	Average		
Below 90	82.2	6	$2,198
90 to 110	101.4	5	2,954
110 and above	124.4	4	4,755

Operators whose yields were only 82.2 per cent of the average for all farms received $2,198 for their labor and management. Those who obtained yields 24.4 per cent above average received $4,755 labor income.

LIVESTOCK. The majority of the operators on these farms have enough livestock to consume most of the crops and some additional feed which is purchased. Efficiently managed livestock enterprises usually return a profit. If properly selected as to type, the animals convert grass and crop residues on the farm into salable products. Livestock aid in maintaining soil fertility by leaving manure on the farm. They also help to provide productive employment throughout the year. Enterprises of this type that aid in utilizing the available resources to full capacity usually improve the efficiency of the business and add to the net farm income.

Table 11. Relation of amount of livestock to labor income.

Animal Units		Number of farms	Average labor income
Range	Average		
Below 45	30.7	4	$2,007
45 to 85	61.3	7	2,544
85 and above	127.3	4	5,285

Farmers with fewer than 45 units of productive livestock received an average of $2,007 labor income. Those with 85 or more units received $5,285 for their labor and management.

EFFICIENCY IN THE USE OF FEED. Feed is the major item of cost in livestock production. The cash receipts and net inventory increases from livestock and animal products were enough to leave a margin above the value of feed fed on all of the farms, but the returns ranged from $106 to $166 for each $100 worth of feed used. Operators with reasonably large livestock enterprises who recieve

low returns for their feed usually have small incomes for their labor and management. Some operators with a large number of livestock and average efficiency in the use of feed get satisfactory returns because of the volume of business. The relationship between returns from feed fed and labor income is shown in Table 12.

Table 12. Relation of returns from feed fed to productive livestock and labor income.

Returns per $100 worth of feed fed to productive livestock		Number of farms	Average labor income
Range	Average		
Below $130	$113	4	$1,228
$130 to $140	133	6	3,943
$140 and above	150	5	3,681

Rates of production as shown by dairy sales per cow, number of pigs weaned and pounds of hogs produced per litter, and dozens of eggs laid per hen also have a marked influence upon profits. Each operator can compare his standing in these items with the average of all farms and with the most profitable and the least profitable farms in Table 8. If the production rates and the returns for feed fed are low, particular attention should be given to the kind of feed used, balanced rations, the quality of pasture, disease prevention and parasite control through vaccination and sanitation, and the adequacy of shelter and equipment.

LABOR EFFICIENCY. The labor income usually is higher on those farms where a large amount of work is accomplished per worker than on farms where efficiency is low. A large amount of productive work accomplished per worker reduces the labor charge per unit of business. A high rate of labor accomplishment can be secured in several ways. In the first place the business must be large enough to provide at least sufficient work for the family labor. Enterprises should be selected and organized in a manner that will distribute the labor requirements throughout the year. Proper planning of the farm work and economical use of labor saving machinery help to increase the amount of work accomplished per worker.

Power, machinery and improvement costs used in the efficiency factors presented in Table 8 include depreciation, repairs, fuel, oil, grease and other miscellaneous equipment expenses as well as the value of feed and depreciation on horses. These items reduce the net return to the farm operator. Expenses can be kept low on a farm that is under-equipped, but necessary work will not be done on time, and the net returns often will be unsatisfactory. On a few farms, excessive expenses are the main factor causing net earnings to be low.

Some of the expenses can be kept down by careful management. Power, machinery and labor cost can be held at a minimum by purchasing equipment that fits the job and then using it at seasonal capacity. Quite often necessary repairs and improvements can be made by using the available farm labor rather than by hiring extra help. Repairs and overhauling should be done before spring work begins insofar as possible; or on rainy days or during idle periods. Reducing the number of horses to the minimum required for efficient operation of the farm helps to reduce the power expense. In some cases, the unit cost of operating a specialized machine like a combine or a corn picker can be reduced materially by

doing custom work for neighbors. Some of the farm operators in Washington county used this method of reducing costs in 1944. The power, machinery, improvement and labor cost was $8.99 per productive man work unit on the most profitable farms. It was $10.81 on the least profitable farms (Table 8).

A farm business in Washington county usually includes many enterprises. Very few operators maintain a high rate of efficiency in all departments. Quite often efficient management in one part of the business is offset by poor results in other parts. These farmers get medium returns for their labor and management. Those who fall down all along the line get low returns. The few who attain high efficiency in all parts of their business receive returns well above the average. The thermometer chart on page 11 is presented to aid the farm operator in comparing his business with other in the county. By comparing his accomplishments with other farmers each operator may be able to discover some changes that can profitably be made in his own business.

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