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## EC851 Annual Farm Business Report : Franklin, Nuckolls and Webster Counties (Republican Valley) Nebraska 13 Farms

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ANNUAL FARM BUSINESS REPORT

FRANKLIN, NUCKOLLS AND WEBSTER COUNTIES

(Republican Valley)

NEBRASKA

13 Farms

Nebraska

COOPERATIVE EXTENSION WORK

IN AGRICULTURE AND HOME ECONOMICS

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FARM BUSINESS REPORT  
FRANKLIN, NUCKOLLS AND WEBSTER COUNTIES  
Republican Valley, Nebraska  
1947

Arthur G. George, Department of Rural Economics\*

This report is made from farm business records kept by 13 farmers in Franklin, Nuckolls, and Webster counties in the Republican river valley covering the 1947 calendar year. This area is located in south central Nebraska just north of the Kansas-Nebraska state line. It contains bottom land on both sides of the Republican river and some bench land adjacent thereto. This area is earmarked for the early development of an irrigation system. The soil is fairly fertile, the climate is favorable, but inadequate rainfall results in erratic crop yields. Corn is the most important single crop followed by wheat, alfalfa, and oats. Cattle and hog production are the leading livestock enterprises.

Excessive rainfall in the spring and early summer of 1947 prevented timely planting and cultivation of corn. Much corn was washed out or the ground was too wet for planting. The greater part of the summer was excessively hot and dry. These circumstances resulted in a much smaller than average corn crop and low yields in other crops as well.

The year was characterized by high industrial activity in the United States, a high level of employment and an active demand for farm products both at home and abroad. Prices received by farmers were high as were prices paid by them. Net dollar returns were higher than normal. The average rate earned on the investment was 14.0 per cent for these 13 farms after paying all operating costs and allowing wages to the operator and other unpaid labor at \$125 per month. These 13 farms returned \$5,301 to the operator for his work and ability as a manager. This amount was the return to the operator after deducting \$125 per month from net receipts for the labor of other members of the family who did field work, and an allowance for interest of 5 per cent on the farm capital.

The 5 most profitable farms of the group had average earnings of 23.2 per cent or an average labor and management wage of \$10,693. The 5 least profitable farms earned an average of 3.5 per cent on the investment, or a labor and management wage of \$839.

The number of records obtained was too few to be representative of all farms in this area, but they give important clues as to the type of organization and management that will result in greatest returns on most farms in the area.

The data from the farm records are presented in 12 tables which follow. Tables 1 through 6 show beginning and closing inventories, summary of land use, both in acres and per cent of total land in farms, summary of income and expenses including inventory changes with resultant earnings, and a comparison of factors

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\*Cooperating agencies: Department of Rural Economics and Agricultural Extension Service of the College of Agriculture, University of Nebraska, and farmers in counties concerned.



that affect farm incomes on farms in this area. Each of these tables show average data for the 13 farms, for the 5 most profitable, and for the 5 least profitable farms. They are presented without further discussion. Tables 7 to 12, inclusive, show the influence of certain important factors on incomes as found on the 13 farms studied. A brief discussion accompanies each table.

The thermometer chart is a device for showing at a glance how an individual farm compares with the average of the group for each of the efficiency factors shown. The rating of each operator is marked on the particular circular received by each farmer who contributed a record.

### Explanations and Definitions

1. Work Unit (Productive Man work unit). The amount of work a man can do 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.
2. Productive man work required for major crops and types of livestock.

<u>Item</u>	<u>Unit</u>	<u>Hours of labor required</u>	
		<u>Eastern Nebraska</u>	<u>Central Nebraska</u>
Milk cow producing butterfat			
More than 160 pounds	1 head	130	130
Less than 160 pounds	1 head	100	100
Feeder cattle	1 head	15	15
Other cattle	1 animal unit	40	40
Hogs	100 lbs. gain	3	3
Sheep, farm flock	1 animal unit	35	35
Poultry	100 head	200	200
Corn, husked	1 acre	8	7
Corn, hogged	1 acre	4	4
Corn, silage	1 acre	14	10
Wheat	1 acre	6	4
Oats, barley	1 acre	6	5
Soybeans	1 acre	9	-
Alfalfa hay	1 acre	12	9
Seed (alfalfa or clover)	1 acre	10	-
Other hay	1 acre	6	3
Temporary pasture	1 acre	3	3
Sorghum (Grain or hay)	1 acre	8	6

3. Animal unit: one cow, one bull, one feeder, 2 stock cattle 1-2 years old, 4 calves under one year, 7 sheep, 1,000 pounds of hogs produced, 100 head of poultry.



Table 1. Summary of beginning inventories on 13 Franklin, Muckolls, and Webster county (Republican Valley), Nebraska, farms, 1947.

Item	Your farm	Averages		
		13 farms	5 most profitable farms	5 least profitable farms
SIZE OF FARM (Acres)		513	576	591
HORSES	\$	\$130	\$180	\$ 96
PRODUCTIVE LIVESTOCK (TOTAL)	\$	\$6,651	\$9,011	\$5,276
Milk cows		378	318	249
Feeder cattle		2,306	3,479	1,750
Other cattle		2,478	3,129	2,383
Hogs		1,337	1,876	825
Sheep		44	115	---
Poultry		108	94	69
MACHINERY AND EQUIPMENT (TOTAL)	\$	\$3,108	\$3,693	\$3,259
Truck		173	242	198
Automobile		570	615	609
Tractor		771	1,071	775
Other machinery		1,594	1,765	1,677
FEEDS GRAIN AND SUPPLIES	\$	\$3,206	\$3,150	\$3,560
PERMANENT IMPROVEMENTS	\$	\$3,324	\$4,963	\$3,013
LAND	\$	\$23,926	\$26,227	\$26,194
TOTALS: BEGINNING INVENTORIES	\$	\$40,345	\$47,224	\$41,398



Table 2. Summary of closing inventories on 13 Franklin, Nuckolls, and Webster county (Republican Valley), Nebraska, farms, 1947.

Item	Your farm	Averages		
		13 farms	5 most profitable farms	5 least profitable farms
SIZE OF FARM (Acres)		513	576	591
HORSES	\$	\$115	\$173	\$83
PRODUCTIVE LIVESTOCK (TOTAL)	\$	\$8,854	\$13,141	\$6,439
Milk cows		443	452	290
Feeder Cattle		3,242	6,049	2,380
Other Cattle		3,803	4,888	2,770
Hogs		1,239	1,590	930
Sheep		30	79	---
Poultry		97	83	69
MACHINERY AND EQUIPMENT (TOTAL)	\$	\$4,429	\$5,979	\$3,857
Truck		79	52	148
Automobile		1,088	1,329	1,050
Tractors		1,161	1,882	810
Other Machinery		2,101	2,716	1,849
FEED GRAIN AND SUPPLIES	\$	\$3,073	\$3,398	\$2,819
PERMANENT IMPROVEMENTS	\$	\$3,355	\$4,904	\$2,903
LAND	\$	\$23,926	\$26,227	\$26,194
TOTALS: CLOSING INVENTORIES	\$	\$43,752	\$53,822	\$42,295

Table 3. Summary of land use by crops on 13 Franklin, Nuckolls, and Webster county (Republican Valley), Nebraska, farms, 1947.

Item	Your farm	Averages		
		13 farms	5 most profitable farms	5 least profitable farms
Corn		137	137	150
Oats		15	20	17
Wheat		32	34	40
Alfalfa		27	18	44
Corn silage		4	9	4
Tilled pasture		11	6	20
Wild hay		2	---	5
Other cropland		53	122	3
Total Cropland		281	346	283
Permanent pasture		207	208	270
Farmstead, roads, waste		25	22	38
Total acres in farm		513	576	591
Per cent of total acreage in each use				
Corn		26.7	23.8	25.4
Oats		2.9	3.5	2.9
Wheat		6.2	5.9	6.8
Alfalfa		5.3	3.1	7.4
Corn silage		.8	1.6	.7
Tilled pasture		2.1	1.0	3.4
Wild hay		.4	---	.8
Other cropland		10.3	21.2	.5
Total cropland		54.7	60.1	47.9
Permanent pasture		40.4	36.1	45.7
Farmstead, roads, waste		4.9	3.8	6.4
Total		100.0	100.0	100.0



Table 4. Summary of cash income and cash expenses on 13 Franklin, Muckolls and Webster county (Republican Valley) farms, Nebraska, 1947.

Item	Your farm	13 farms	Averages	
			5 most profitable farms	5 least profitable farms
Cash Income				
Improvements	\$	--	--	--
Horses		\$ 12	\$ 15	\$ 7
Cattle		5,341	8,683	3,474
Hogs		3,257	4,779	2,609
Sheep		75	195	--
Poultry		498	18	1,225
Egg Sales		292	320	157
Dairy Sales		317	322	123
Machinery and equipment		675	522	1,032
Feed, Grain and Supplies		4,015	3,380	4,105
Labor off farm		35	63	21
Miscellaneous		123	79	239
Total Cash Income	\$	\$14,640	\$18,376	\$12,992
Cash Expenses				
Improvements	\$	\$ 479	\$ 458	\$ 300
Horses		13	24	10
Cattle		1,469	2,003	784
Hogs		270	171	473
Sheep		2	4	-
Poultry		110	34	218
Livestock expense		153	178	153
Supplies		251	156	426
Machinery and equipment		3,615	4,496	3,320
Feed, Grain and Supplies		2,005	1,738	2,648
Crop expense		351	279	524
Hired labor		835	834	1,004
Taxes		493	565	463
Miscellaneous		163	212	186
Total Cash Expense	\$	\$10,209	\$11,152	\$10,509
Net cash gain	\$	\$4,431	\$7,224	\$2,483
Net inventory gain	\$	\$3,407	\$6,597	\$ 897
Net cash loss		--	--	--
Net inventory loss		--	--	--
Net Farm Gain	\$	\$7,838	\$13,821	\$3,380



Table 5. Summary of income and expense including inventory changes on 13 Franklin, Nuckolls and Webster (Republican Valley) county, Nebraska, farms, 1947.

Item	Your farm	Averages		
		13 farms	5 most profitable farms	5 least profitable farms
Receipts and Net Increases				
Improvements	\$	---	---	---
Horses	\$	\$27	---	---
Cattle	\$	6,198	\$11,143	\$3,748
Hogs		2,889	4,322	2,241
Sheep		59	155	---
Poultry		377	---	1,007
Egg sales		292	320	157
Dairy sales		317	322	123
Machinery and equipment		---	---	---
Feed, Grain and Supplies		1,942	1,890	885
Labor off the farm		35	63	21
Miscellaneous		123	79	239
Total receipts and net increases \$		\$12,259	\$18,294	\$8,421
Expenses and Net Decreases				
Improvements	\$	\$491	\$517	\$410
Horses		---	16	16
Cattle		---	---	---
Hogs		---	---	---
Sheep		---	---	---
Poultry		---	28	---
Livestock expense		153	178	153
Supplies		251	156	426
Machinery and equipment		1,684	1,688	1,859
Feed, Grain and Supplies		---	---	---
Crop expense		351	279	524
Hired labor		835	834	1,004
Taxes		493	565	463
Miscellaneous		163	212	186
Total expenses and net decreases \$		\$4,421	\$4,473	\$5,041
Return to capital and operator's family	\$	\$7,838	\$13,821	\$3,380
Value of unpaid labor at \$125 per month	\$	\$1,923	\$2,100	\$1,925
Net income from investment and management	\$	\$5,915	\$11,721	\$1,455
Average investment	\$	\$42,072	\$50,561	\$41,812
Rate earned on investment (%)		14.0	23.2	3.5
Returns to capital and operator's labor and management	\$	\$7,405	\$13,221	\$2,930
5% interest on average investment	\$	\$2,104	\$2,528	\$2,091
Labor and Management Wage	\$	\$5,301	\$10,693	\$839



Table 6. Comparison of factors that affect farm income on 13 Franklin, Nuckolls, and Webster (Republican Valley) county, Nebraska, farms, 1947.

Item	Your farm	Averages		
		13 farms	5 most profitable farms	5 least profitable farms
Labor and Management Wage	\$	\$5,301	\$10,693	\$839
Rate earned on investment	%	14.0%	23.2%	3.5%
Size of Business				
Acres in farm		513	576	591
Average number of men		1.8	1.9	1.8
Productive work units		446	594	395
Animal units (Productive livestock)		62	84	58
Cows milked		4	4	2.4
Litters of pigs weaned		7.3	12	5
Pigs weaned		43	70	27
Volume of Production				
Corn, bushels		1,464	1,697	1,050
Oats, bushels		323	524	301
Wheat, bushels		553	495	741
Alfalfa, tons		19	10	30
Livestock				
Hogs, pounds produced		5,655	8,790	2,589
Dairy sales	\$	\$ 317	\$ 322	\$ 123
Egg sales	\$	\$ 292	\$ 320	\$ 157
Rates of Production				
Corn, bushels per acre		10.7	12.4	7.0
Oats, bushels per acre		21.4	25.9	17.7
Wheat, bushels per acre		17.6	14.5	18.8
Alfalfa, tons per acre		.7	.5	.7
Crop index		100	128	80
Pigs weaned per litter		5.9	5.8	5.6
Dairy sales per cow	\$	\$81	\$80	\$51
Egg sales per hen	\$	\$ 2.67	\$ 3.17	\$ 2.36
Efficiency				
Productive work units per man		252	312	217
Labor, power and machinery cost per work unit	\$	\$9.96	\$7.90	\$11.83
Returns per \$100 worth of feed fed to productive livestock	\$	\$194	\$258	\$133
Balance				
Per cent of productive work on crops	%	39%	27%	56%
Per cent of productive work on livestock	%	61%	73%	44%
Productive livestock units per 100 acres		12	14	10



# Influence of Certain Factors on Farm Income

**SIZE OF BUSINESS.** The volume of sales or the quantity of grain, live-stock and livestock products produced in a year are very important factors in determining farm income. The size of farm business can be measured in number of acres, amount invested, numbers of livestock, days of labor expended, and in other ways. Table 7 considers the number of work units as a measure of size and shows its effect on the labor and management wage. The table shows a tendency for greater incomes to be received on those farms where more work units were used.

Table 7. Relationship between size of business, as measured by work units, and labor and management wage on 13 Franklin, Nuckolls, and Webster county (Republican Valley), Nebraska farms, 1947.

Work units used		Number of farms	Average labor and management wage
Range	Average		
Below 300	204	4	\$4,477
300 to 400	368	4	\$2,600
400 and over	701	5	\$8,122

**CROP YIELDS.** Crop yields have a decided influence on farm incomes. They must be considered in connection with acreage, however, and the kind and number of different crops grown. Table 8 presents crop yield index data and shows that as the index of production per acre increases, incomes increase. The crop yield index is a measure of yields of all crops when the average for all 13 farms was taken as 100.

Table 8. Relation of crop yields to labor and management wage on 13 Franklin, Nuckolls and Webster county (Republican Valley), Nebraska, farms, 1947.

Crop yield index		Number of farms	Average labor and management wage
Range	Average		
Below 100	59	4	\$3,594
100 to 125	107	4	\$6,017
125 and over	172	5	\$6,095



PRODUCTIVE LIVESTOCK. Amount of productive livestock, which is all livestock except horses and mules has a distinct influence on farm returns. Experiences of many farmers in southern Nebraska over a period of years show that livestock farmers obtained greater returns than did crop farmers. For some individual years the opposite may be true. However, Table 9 shows that greater incomes were received in 1947 by those farmers who secured a considerable part of their incomes from the sale of livestock and livestock products than by the farmers who had but little livestock.

Table 9. Relation of number of animal units of productive livestock to labor and management wage on 13 Franklin, Nuckolls, and Webster county (Republican Valley), Nebraska, farms, 1947.

Productive animal units		Number of farms	Average labor and management wage
Range	Average		
Below 50	23	5	\$2,478
50 to 75	64	4	\$3,246
75 and over	109	4	\$10,886

EFFICIENT LIVESTOCK FEEDING. Many things contribute to high or low returns on the feed fed to productive livestock. Prices of feeds in relation to prices of livestock, quality of feed and type and grade of livestock, balancing of rations, sanitary conditions, health of livestock, and perhaps other factors all have an influence on the amount of returns from a given quantity of feed consumed.

Table 10 shows that farm incomes increase as the returns for each \$100 worth of feed fed increases.

Table 10. Relation of returns from feed fed to productive livestock to labor and management wage on 13 Franklin, Nuckolls and Webster county (Republican Valley), Nebraska farms, 1947.

Returns per \$100 worth of feed fed to productive livestock		Number of farms	Average labor and management wage
Range	Average		
Below \$150	\$109	4	\$1,996
\$150 to \$250	\$192	4	\$5,820
\$250 and over	\$299	5	\$7,531



USE OF LABOR.—The number of productive work units used on a farm is usually an indicator as to the relative size of that farm. Table 11 shows that as the number of work units per worker increases, farm returns tend to increase. This does not mean that an increase in number of workers is necessarily advisable but rather an increase in the number of work units that a man performs that is productive of higher returns.

Table 11. Relation of efficient use of labor to labor and management wage on 13 Franklin, Nuckolls, and Webster county (Republican Valley), Nebraska farms, 1947

Productive man work units per man		Number of farms	Average labor and management wage
Range	Average		
Below 200	167	5	\$4,417
200 to 230	216	4	\$4,144
230 and over	370	4	\$7,565

LABOR, POWER, AND MACHINERY COST.—The costs for labor, power, and machinery constituted somewhat more than half the expenses for operating the average of these 13 Republican valley farms in 1947 when net increases and decreases were considered. An appreciable addition to the cost for these items is apparent when the value of unpaid labor is added. These items of cost in relation to productive work units used, and labor and management wage earned are given in Table 12. The table shows an upward trend in returns as costs decrease.

Table 12. Relation of labor, power and machinery cost per productive work unit used to labor and management wage on 13 Franklin, Nuckolls and Webster county (Republican Valley), Nebraska farms, 1947.

Labor, power and machinery cost per productive man work unit used		Number of farms	Average labor and management wage
Range	Average		
Over \$14.00	\$15.56	5	\$4,210
\$14.00 to \$9.10	\$10.74	4	\$3,077
Below \$9.10	\$7.69	4	\$8,890



THERMOMETER CHART. By using the figures in Table 6 for "Your Farm", each operator can determine his standing in comparison with the averages of the farms included in this study. The averages for the 13 records used in this summary are located between the lines across the center of the page.  
13 Franklin, Nuckolls and Webster county (Republican Valley), Nebraska farms, 1947.

Size		Productive rates:				Efficiency		Balance			
Acres per farm	Work units	Live-stock units	Crop yield index	Pigs per litter	Return per \$100 feed fed	Work units per man	Labor, power, machinery cost per work unit	Per cent work on live-stock	Live-stock units per 100 acres	Rate earned on investment	Labor and management wage
913	746	112	160	7.4	\$294	377	\$4.96	81%	22	24.0%	\$12,801
833	686	102	148	7.1	274	352	5.96	77	20	22.0	11,301
753	626	92	136	6.8	254	327	6.96	73	18	20.0	9,801
673	566	82	124	6.5	234	302	7.96	69	16	18.0	8,301
593	506	72	112	6.2	214	277	8.96	65	14	16.0	6,801
Average	513	446	62	100	5.9	194	\$9.96	61%	12	14.0%	\$5,301
433	386	52	88	5.6	174	227	10.96	57	10	12.0	3,801
353	326	42	76	5.3	154	202	11.96	53	8	10.0	2,301
273	266	32	64	5.0	134	177	12.96	49	6	8.0	801
193	206	22	52	4.7	114	152	13.96	45	4	6.0	-699
113	146	12	40	4.4	94	127	14.96	41	2	4.0	-2,199