FARM FINANCIAL RECORD STUDIES

1926

ANNUAL FARM BUSINESS REPORTS PREPARED FROM RECORDS KEPT IN THE ILLINOIS FARM FINANCIAL RECORD BOOK FOR 28 AREAS FOR 1926, ARRANGED GEOGRAPHICALLY FROM NORTH TO SOUTH.

Prepared by the Department of Farm Organization and Management of the University of Illinois.

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STATEMENT CONCERNING ENCLOSED DATA

In the year 1926, a larger number of financial records were completed throughout the state than in any other year despite the most discouraging winter period for doing work with farmers that has been experienced for many years. A considerable number of records were completed throughout the state which were not closed and turned into the department to be included in the local area reports. A total of 27 reports, including the farm bureau-farm management service report, were completed for the state covering practically every important farming type area of the state.

The growing interest of farmer cooperators is apparent by the fact that an increased number of records is being secured each year. Approximately 80 counties have cooperated in the accounting work during the year 1926, including in that number those who will take up the project for the first time, giving the prospect for the completion of a larger number of records for the ensuing year. In addition, included in this report is the survey record put on in Bond County to secure a cross section picture of farming in this region, and the summary of all farm financial records.

H. C. M. Case

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UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

JODAVIESS AND STEPHENSON COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-seven Farms

for

1926

Farm account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M60

ANNUAL FARM BUSINESS REPORT

JO DAVIESS AND STEPHENSON COUNTIES, ILLINOIS 1926

Prepared by R. R. Hudelson, P. E. Johnston, K. T. Wright, H. C. M. Case*

The 37 farmers in JoDaviess and Stephenson counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $829 to pay for their labor, management and risk after paying expenses and allowing 5% on their average investment of $188 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,665 while the one-third who were least successful had an average labor and management wage of $35. There was, therefore, an average difference of about $1,630 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 37 farmers earned 5.6 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 8.2 percent and the least successful third 3.2 percent. The average investment on the 37 farms was $34,222 which amounts to $188 an acre. The higher profit third had an average investment of $180 and the lower profit third $204 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $118 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Farms of the higher profit group averaged 9 acres larger than those of the lower profit group but had a smaller percentage of tillable land. It seems evident that size of farm had little effect on the relative earnings of the two groups. There was not much difference between groups in the relative acreage of the chief grain crops.

Corn yields averaged 8 bushels larger on the more profitable farms, but there was less than one bushel difference in oat yields. Wheat yields were of little significance because there were only 2.8 acres of wheat on the average farm covered by this report. These differences in yield are smaller than have usually been found between the high and low profit groups in similar studies. Higher yields are usually one of the most important factors in higher profits. This is to be expected in view of the fact that

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* V. J. Banter and W. A. Herrington, farm advisers in JoDaviess and Stephenson counties respectively cooperated in supervising and collecting the records used in this report.

the cost of operating an acre of land usually does not increase in proportion to the increase in yield.

One of the greatest advantages of operators of the 12 most profitable farms was in their greater efficiency with livestock. The least profitable farms had about five dollars an acre more livestock investment but they realized about five dollars an acre less livestock income. The more profitable farms had a livestock income of $154 for every $100 of livestock investment compared with a corresponding income of $100 for each $100 of livestock investment on the less profitable farms. The livestock feeding efficiency on the more successful farms is further indicated by the fact that while the two groups of farms averaged about the same size and bought about the same amount of feed per farm, yet the more successful operators realized $1,139 per farm more livestock income than their less successful neighbors. Hogs were the largest group followed in order of importance by dairy products and beef cattle. The two groups had exactly the same average investment in hogs per farm but the more successful operators realized an average of $746 more income from hogs. Better sanitation and better feeding seem to be the chief causes of the greater efficiency with hogs on the more profitable farms.

Dairy sales made up more than one-fourth of the income from livestock. The 12 most successful farmers kept an average of 17 cows from which were sold dairy products amounting to $102 per cow. Eleven of the less successful group had 15 cows per farm and the income from dairy products amounted to only $54 per cow. There was a difference of $48 per cow, which makes a difference of $721 per farm in dairy sales of the two groups. The net increase in cattle of the high profit group was only $27 per cow, while the low profit group had an increase of $58 or $31 more per cow. The net difference of the dairy sales and increase in cattle between the two groups is $17 more per cow valued at an average of $76, compared with $87 on the less successful farms. There were more dairy cows on the high profit farms and more beef cows on the low profit farms.

Total operating costs per acre were $2.34 lower on the more successful farms than on the less successful farms. This advantage coupled with a gross income per acre $5.87 larger on the more successful farms gave them an advantage of $8.21 in net income per acre. It is the net income that is left to pay interest and profits.

If we make allowance for changes in territory covered we may make some interesting comparisons of farm earnings for different years in the territory covered by this report. The following table gives such a comparison for the past five years. It is of interest to note that 1925 was the most favorable year for the farms reporting and that average earnings for 1926 were about 2 percent lower than in 1925. For the grain selling sections of the state 1924 was the most favorable year in the last five. There appears to be some increase in the average size of the dairy and hog enterprizes in this area but part of the apparent increase may be due to changes in the farms reporting. Operating costs appear to be increasing somewhat over the period studied.

Comparative Earnings on Farms in the Area Represented by
JoDaviess and Stephenson Counties

	1922[1]	1923[1]	1924[2]	1925[3]	1926[4]
Number of farms included	8	11	51	44	37
Average size of farms in acres	170	172	180	188	182
Average rate earned	5%	3.4%	3.7%	7.5%	5.6%
Average value of land per acre	141	100	120	112	118
Average investment per acre	177	145	157	170	188
Investment in livestock per farm	2,350	2,660	2,781	3,259	4,035
Investment in cattle per farm	1,189	1,414	1,451	1,815	2,238
Investment in hogs per farm	343	623	659	765	1,028
Investment in poultry per farm	139	149	155	141	172
Gross income per acre	19.67	14.32	18.05	24.15	24.70
Operative costs per acre	10.77	9.34	11.49	11.46	14.22
Grain sales less feed purchases	964	---	189	286	---
Miscellaneous income per farm	131	41	65	91	79
Livestock income per farm	2,283	2,298	2,995	4,162	4,425
Gross income per farm	3,345	2,327	3,251	4,539	4,504
Cattle income per farm	890*	363	422	715	712
Dairy sales per farm	*	799	798	957	1,156
Hog income per farm	1,047	864	1,444	2,127	2,195
Poultry income per farm	267	270	257	309	281

* Dairy sales combined with cattle income
1 Only records from JoDaviess County included 1922 and 1923
2 Records from JoDaviess, Stephenson and Ogle counties included 1924
3 Records from JoDaviess, Stephenson and Carroll counties included 1925
4 Records from JoDaviess and Stephenson counties included 1926

Some points of strength and some of weakness may be found in your own business by comparing the factors from your own record in the following tables with the same factors on the average farm as well as on farms of the high and low profit groups.

JoDaviess and Stephenson Counties - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty-seven farms	Twelve most profitable farms	Twelve least profitable farms
Rate earned	%	5.58%	8.25%	3.25%
Labor and management wage	$	$ 829	$ 1,665	$ 35
Size of farm - acres	A	182.4 A	184.5 A	175.5 A
Percent of land area tillable	%	74.3 %	69 %	84.2 %
Acres in Corn	A	38.8 A	36.8 A	42.2 A
Oats	A	24.9 A	22.9 A	26.3 A
Wheat	A	2.8 A	4.4 A	1.4 A
Crop yields - Corn	bu.	42.6 bu.	45.6 bu.	37.2 bu.
Oats	bu.	36.8 bu.	39.5 bu.	40.3 bu.
Wheat	bu.	24.4 bu.	22.3 bu.	26.8 bu.
Percent in high profit crops*				
Returns per $100 invested in all productive livestock	$	$ 125.00	$ 154.00	$ 100.00
For $100 in Cattle	$	$ 85.00	$ 108.00	$ 80.00
Hogs	$	$ 223.00	$ 244.00	$ 155.00
Poultry	$	$ 161.00	$ 173.00	$ 114.00
Investment per acre in productive livestock	$	$ 19.34	$ 17.82	$ 22.45
Receipts per acre from productive livestock	$	$ 24.26	$ 27.45	$ 22.37
Man labor cost per acre	$	$ 6.15	$ 6.23	$ 6.50
Crop acres per man	A	63.5 A	56.7 A	67.2 A
Crop acres per horse (with tractor)	A	22.96 A	24.2 A	22 A
(without tractor)	A	18.1 A	17.2 A	19.5 A
Expense per $100 gross income	$	$ 58	$ 48	$ 71
Machinery cost per acre	$	$ 1.98	$ 2.25	$ 2.12
Building and fencing cost per acre	$	$ 1.11	$ .84	$ 1.46
Gross receipts per acre	$	$ 24.70	$ 28.39	$ 22.52
Total expenses per acre	$	$ 14.22	$ 13.54	$ 15.88
Net receipts per acre	$	$ 10.48	$ 14.85	$ 6.64
Farms with tractor	%	62 %	42 %	75 %
Value of land per acre	$	$ 118.00	$ 114.00	$ 126.00
Total investment per acre	$	$ 188.00	$ 180.00	$ 204.00

*Percent of tillable land in corn, wheat, sweet clover and alfalfa

JoDaviess and Stephenson Counties - 1926

		Your farm	Average of thirty-seven farms	Twelve most profitable farms	Twelve least profitable farms
1	Capital Investment - Total	$____	$34,222	$33,180	$35,869
2	Land		21,548	21,023	22,074
3	Farm improvements		5,289	5,034	5,639
4	Machinery and equipment		1,366	1,400	1,424
5	Feed and supplies		1,984	1,938	2,289
6	Livestock		4,035	3,785	4,443
7	Horses		435	433	467
8	Cattle		2,238	2,005	2,411
9	Hogs		1,028	1,111	1,111
10	Sheep		162	62	298
11	Poultry		172	174	156
12	Receipts-Net Increases - Total	____	4,504	5,237	3,952
13	Feed and grain		--	--	--
14	Miscellaneous		79	172	26
15	Livestock - Total		4,425	5,065	3,926
16	Horses		--	--	--
17	Cattle		712	464	875
18	Hogs		2,195	2,501	1,755
19	Sheep		81	69	96
20	Poultry		107	112	78
21	Egg sales		174	189	113
22	Dairy sales		1,156	1,730	1,009
23	Expenses-Net Decreases - Total	____	1,659	1,587	1,813
24	Farm improvements		202	155	256
25	Livestock		18	18	30
26	Horses		18	18	30
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		361	416	373
32	Feed and supplies		450	369	499
33	Livestock expense other than feed		56	59	44
34	Crop expense		119	88	141
35	Labor hired		188	239	167
36	Taxes, insurance, etc.		238	217	277
37	Miscellaneous		27	26	26
38	Receipts less Expenses	____	2,845	3,650	2,139
39	Operator's and unpaid family labor		935	911	973
40	Net income from investment		1,910	2,739	1,166

Find Your Farm Leaks

JoDaviess and Stephenson Counties - 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
12.6	71	58	38	155	363	301	33.34	38.26	2.65	99	37	32	23	46	322
11.6	67	55	36	145	343	281	31.34	36.26	3.15	94	35	30	28	43	302
10.6	63	52	34	135	323	261	29.34	34.26	3.65	89	33	28	33	40	282
9.6	59	49	32	125	303	241	27.34	32.26	4.15	84	31	26	38	37	262
8.6	55	46	30	115	283	221	25.34	30.26	4.65	79	29	24	43	34	242
7.6	51	43	28	105	263	201	23.34	28.26	5.15	74	27	22	48	31	222
6.6	47	40	26	95	243	181	21.34	26.26	5.65	69	25	20	53	28	202
5.6	43	37	24	85	223	161	19.34	24.26	6.15	64	23	18	58	25	182
4.6	29	34	22	75	203	141	17.34	22.26	6.65	59	21	16	63	22	162
3.6	25	31	20	65	183	121	15.34	20.26	7.15	54	19	14	68	19	142
2.6	21	28	18	55	163	101	13.34	18.26	7.65	49	17	12	73	16	122
1.6	17	25	16	45	143	81	11.34	16.26	8.15	44	15	10	78	13	102
0.6	13	22	14	35	123	61	9.34	14.26	8.65	39	13	8	83	10	82
-0.4	9	19	12	25	103	41	7.34	12.26	9.15	34	11	6	88	7	62
-1.4	-	16	10	15	83	21	5.34	10.26	9.65	29	9	4	93	4	42

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest -

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

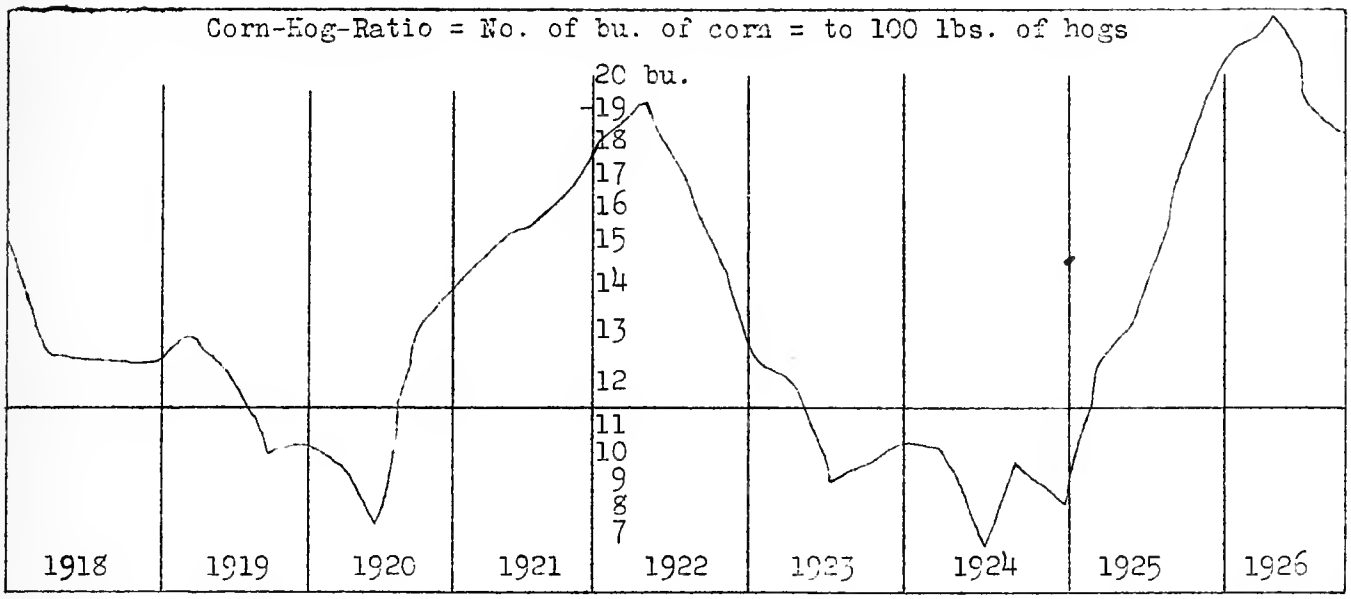
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

DU PAGE, COOK AND MC HENRY COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

and

DAIRY ENTERPRISE COST STUDY

on

Thirty-five Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

June 9, 1927

M61

ANNUAL FARM BUSINESS REPORT

Du Page, Cook and McHenry Counties, Illinois, 1926

Prepared by R. R. Hudelson, K. T. Wright, H. C. M. Case*

The first five pages of this report include a study of the entire farm business on 35 farms, and pages 6-15 a study of the cost of producing dairy products on the same farms.

The 35 farmers in Du Page, Cook and McHenry counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $652 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $226 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,943, while the one-third who were least successful lacked an average of $775 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,718 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 35 farmers earned 4.9 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 8.6 percent and the least successful third .7 percent. The average investment on the 35 farms was $36,429, which amounts to $226 an acre. The higher profit third had an average investment of $221 and the lower profit third $243 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $135 an acre as an average for all farms.

Size of farm had little effect on the relative success of the high and low profit groups since they averaged within 20 acres of the same size. The more profitable group of farms, however, did have about 27 acres more tillable land per farm. The higher profit group had about 16 acres more corn and 2 acres more oats per farm than the low profit group.

The more successful group of farmers had some advantage in yields since they raised 3 bushels more corn, 7 bushels more oats, and 5 bushels more wheat per acre than their less successful neighbors. Since acre costs usually do not increase materially with yield this advantage was enough to increase profits.

The greatest advantage which the 12 most profitable farms had was in their larger amount of livestock and in its more efficient management. They had one-half more livestock income per acre with only one-fourth more livestock investment. Although they were only slightly larger farms they provided feed for more livestock and still purchased less feed than the less profitable farms.

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*E. W. Carncross, O. G. Barrett, and E. M. Phillips, farm advisers in Du Page, Cook and McHenry counties respectively, cooperated in supervising and collecting the records used in this report.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The more successful farm operators took care of more livestock and still had a labor cost per acre smaller than that on the less profitable farms. It appears that the lower profit group should either increase the amount of livestock kept or reduce the amount of labor used by means of better cropping systems, larger and more convenient fields, better plans in using labor or better equipment. They already have a larger investment in equipment than the high profit farms, however.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on the farms of the group making the most profit and the group making the least profit.

DuPage, Cook and McHenry Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of thirty-five farms	Twelve most profitable farms	Twelve least profitable farms
Rate earned	%	4.93%	8.64%	.68%
Labor and management wage	$	$ 652	$ 1,943	$ -775
Size of farm - acres	A	161.2 A	153.4 A	133.3 A
Percent of land area tillable	%	76.8 %	85.0 %	78.5 %
Acres in Corn	A	37.8 A	44.0 A	28.2 A
Oats	A	25.3 A	28.6 A	25.9 A
Wheat	A	5.9 A	3.8 A	2.0 A
Crop yields - Corn	bu.	34.7 bu.	35.6 bu.	32.5 bu.
Oats	bu.	46.9 bu.	46.1 bu.	39.2 bu.
Wheat	bu.	23.5 bu.	29.3 bu.	24.6 bu.
Percent in high profit crops*				
Returns per $100 invested in all productive livestock	$	$ 125	$ 146	$ 118
For $100 in Cattle	$	$ 121	$ 145	$ 110
Swine	$	$ 148	$ 152	$ 175
Poultry	$	$ 155	$ 139	$ 157
Investment per acre in productive livestock	$	$ 25.50	$ 27.45	$ 22.67
Receipts per acre from productive livestock	$	$ 31.82	$ 39.99	$ 26.80
Man labor cost per acre	$	$ 10.28	$ 10.99	$ 12.03
Crop acres per man	A	47.8 A	48.4 A	41.5 A
Crop acres per horse (with tractor)	A	22.6 A	21.1 A	23.0 A
(without tractor)	A	18.2 A	17.1 A	16.5 A
Expense per $100 gross income	$	$ 65.00	$ 53.00	$ 94.00
Machinery cost per acre	$	$ 3.82	$ 3.51	$ 5.12
Building and fencing cost per acre	$	$ 1.48	$ 1.22	$ 1.96
Gross receipts per acre	$	$ 32.07	$ 40.42	$ 27.60
Total expenses per acre	$	$ 20.92	$ 21.33	$ 25.90
Net receipts per acre	$	$ 11.15	$ 19.09	$ 1.70
Percent of farms with tractor	%	71.4 %	75 %	66 2/3%
Value of land per acre		$ 135.00	$ 137.00	$ 142.00
Total investment per acre		$ 226.00	$ 221.00	$ 248.00

*Percent of tillable land in corn, wheat, sweet clover and alfalfa

DuPage, Cook, and McHenry Counties, 1926

	Item	Your farm	Average of 35 farms	Twelve most profitable farms	Twelve least profitable farms
1	Capital Investment - Total	$_____	$36,429	$33,902	$33,025
2	Land		21,688	20,971	18,905
3	Farm improvements		6,290	4,586	6,995
4	Machinery and equipment		1,994	1,714	2,240
5	Feed and supplies		2,053	2,247	1,533
6	Livestock		4,404	4,384	3,352
7	Horses		423	459	345
8	Cattle		3,458	3,371	2,636
9	Swine		338	387	195
10	Sheep		21	12	4
11	Poultry		164	155	172
12	Receipts-Net Increases-Total	$_____	$ 5,170	$ 6,200	$ 3,679
13	Feed and grain		--	--	--
14	Miscellaneous		41	66	45
15	Livestock - Total		5,129	6,134	3,634
16	Horses		--	--	--
17	Cattle		484	656	--
18	Swine		601	852	466
19	Sheep		17	15	--
20	Poultry		70	60	48
21	Egg sales		194	153	233
22	Dairy sales		3,763	4,398	2,887
23	Expenses-Net Decreases-Total	$_____	$ 2,285	$ 2,039	$ 2,446
24	Farm improvements		238	187	261
25	Livestock		40	49	92
26	Dairy expense		112	124	85
27	Horses		40	49	30
28	Cattle		--	--	60
29	Swine		--	--	--
30	Sheep		--	--	2
31	Poultry		--	--	--
32	Machinery and equipment		616	539	683
33	Feed and supplies		121	89	161
34	Livestock expense other than feed		36	56	16
35	Crop expense		173	178	184
36	Labor hired		569	453	597
37	Taxes, insurance, etc.		349	332	343
38	Miscellaneous		31	32	24
39	Receipts less Expenses	$_____	$ 2,885	$ 4,161	$ 1,233
40	Operator's and unpaid family labor		1,088	1,233	1,007
41	Net income from investment		1,797	2,928	226

Find Your Farm Leaks

DuPage, Cook and McHenry Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.9	56	75	38	191	218	295	46.50	59.80	3.30	83	30	25	30	67	371
10.9	53	71	36	181	208	275	43.50	55.80	4.30	78	29	24	35	62	341
9.9	50	67	34	171	198	255	40.50	51.80	5.30	73	28	23	40	57	311
8.9	47	63	32	161	188	235	37.50	47.80	6.30	68	27	22	45	52	281
7.9	44	59	30	151	178	215	34.50	43.80	7.30	63	26	21	50	47	251
6.9	41	55	28	141	168	195	31.50	39.80	8.30	58	25	20	55	42	221
5.9	38	51	26	131	158	175	28.50	35.80	9.30	53	24	19	60	37	191
4.9	35	47	24	121	148	155	25.50	31.80	10.30	48	23	18	65	32	161
3.9	32	43	22	111	138	135	22.50	27.80	11.30	43	22	17	70	27	131
2.9	29	39	20	101	128	115	19.50	23.80	12.30	38	21	16	75	22	101
1.9	26	35	18	91	118	95	16.50	19.80	13.30	33	20	15	80	17	71
0.9	23	31	16	81	108	75	13.50	15.80	14.30	28	18	14	85	12	41
-1.9	20	27	14	71	98	55	10.50	11.80	15.30	23	17	13	90	7	11
-2.9	17	23	12	61	88	35	7.50	7.80	16.30	18	16	12	95	2	--
-3.9	14	19	10	51	78	15	5.50	3.80	17.30	13	15	11	100	-	--

DAIRY ENTERPRISE COST STUDY

These farms are almost all strictly dairy farms since they receive 82 percent of their farm income from that source. Dairy sales alone made up 72 percent of their income. Since dairying is the major enterprise and main source of income, it deserves special consideration.

An enterprise cost record has been kept on the dairy on all of these farms, and a detailed study can be made of the reasons for success or failure on every farm.

The table on milk production costs per cow shows that the cost per cow varied from $103 up to $249, or a difference of nearly two and one-half times the low cost.

On farms #25 and #1 the milk production per cow was almost the same, but the expense in the first case was only $154 per cow, while it was nearly $212 in the latter case. Twenty-five dollars of this difference was due to lower feed cost. The part of the tables giving the quantities of feed fed show that considerably less feed was required on the first farm, due either to more efficient feeding or more efficient cows. There was $26 more depreciation per cow on the second farm than on the first farm. Besides these two large items, the man labor charge was $3 more and general farm expense $2 more per cow on the latter farm. While there was not much difference in the man labor cost on these two farms, it varied from nearly $19 up to $72, with the average being slightly over $35 per cow.

The total cost per cow on farms #5 and #3 was nearly the same, but the milk production per cow was 9,539 pounds on farm #5 and only 5,322 pounds on farm #3. This difference of 4,200 pounds at $2.40 per hundredweight, which was the average price received, makes a difference of over $100 per cow in dairy sales.

MILK PRODUCTION COSTS (per cow) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records
Items of Cost and Income per cow compared with the average of 733 cows on these farms.

Farm Number	2	5	25	8	19	7	4	18	12	37
COSTS										
Feed	$102.98	89.11	82.24	103.69	93.33	102.14	97.74	73.03	88.78	66.78
Man labor	36.11	27.68	42.78	46.58	28.67	38.23	22.82	27.92	25.33	23.00
Interest on investment	7.08	6.06	4.86	6.64	6.59	5.00	6.42	5.71	5.85	4.69
Depreciation	.56	----	----	10.75	----	15.33	8.64	11.19	----	----
Shelter	9.63	11.22	7.78	7.00	7.58	4.35	12.73	8.97	4.78	2.27
Equipment	2.65	4.69	2.08	.23	3.35	1.00	.98	.20	2.60	2.28
Veterinary & medicine	1.76	.08	1.39	1.40	1.31	1.06	1.14	2.34	4.61	1.75
Association dues	2.89	4.08	2.67	2.40	2.40	2.67	4.36	2.25	2.35	1.76
General farm expense	10.55	9.18	9.72	11.55	9.51	10.81	9.57	7.97	9.10	7.01
Miscellaneous	.11	1.42	.49	----	1.15	----	1.55	.76	.28	.12
TOTAL COST	$174.32	153.52	154.01	190.24	153.89	180.59	165.95	140.34	143.68	109.66
INCOME										
Dairy sales	$307.70	214.08	241.50	250.00	206.65	246.05	223.74	188.46	190.22	142.94
Milk and cream used	12.77	6.20	4.48	6.31	2.30	8.95	3.62	5.70	3.84	5.04
Milk fed calves	4.33	4.00	1.73	31.56	19.80	7.80	4.82	6.80	5.65	12.19
Appreciation	----	47.61	.39	----	7.08	----	----	----	6.74	8.16
Manure	12.78	17.69	15.61	11.45	19.11	11.00	21.90	14.84	10.22	13.37
TOTAL INCOME	$337.58	289.58	263.71	299.32	254.94	273.80	254.08	215.80	216.67	181.70
NET PROFIT, per cow	$163.26	136.06	109.70	109.08	101.05	93.21	88.13	75.46	72.99	72.04
MILK, per cow (in lbs.)	7,100	9,539	9,896	9,793	8.455	10,072	9,873	7,290	7,580	6,943
FEEDS, (in lbs.)										
Corn	169	1,214	587	1,415	1,251	211	596	694	125	
Oats	1,260	637	587	174	1,220	1,352	1,165	624	666	
Barley	1,078	---	---	459	326	930	456	---	518	
Total grain	2,507	1,851	1,174	2,048	2,797	2,493	2,217	1,318	1,309	
Mill feeds	513	770	1,065	1,306	974	824	727	623	834	
Malt	---	---	2,974	---	---	---	---	---	---	
Hay	2,688	2,648	1,514	2,728	2,167	2,375	2,547	1,504	1,636	
Silage	8,888	7,202	3,888	8,575	3,911	7,242	10,339	6,515	5,290	
Other roughage	---	-----	839	750	1,269	---	---	1,205	2,332	
Pasture days	144	133	150	169	181	173	160	149	150	
Man hours	144	111	171	186	115	153	91	112	101	92
COWS per farm	18	13	18	20	26	18	11	26	23	32

Continued

MILK PRODUCTION COSTS (per cow) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per cow compared with the average of 733 cows on these farms.

Farm Number	22	17	1	9	15	24	10	30	21	20
COSTS										
Feed	$ 79.00	83.32	107.20	66.24	107.77	65.11	83.03	81.05	81.02	82.99
Man labor	34.36	24.08	45.93	37.33	32.86	18.78	26.85	26.81	34.71	24.01
Interest on investment	4.18	5.00	6.64	5.89	7.21	5.50	5.25	8.29	5.84	4.26
Depreciation	8.27	8.13	26.78	2.25	13.69	10.75	6.80	7.50	14.54	19.58
Shelter	1.55	2.34	3.79	10.13	3.84	4.58	2.78	7.66	3.71	3.68
Equipment	.17	.67	3.21	.50	1.21	2.10	.91	1.31	2.70	2.00
Veterinary & medicine	5.08	.20	2.42	2.58	2.30	2.85	.30	2.49	1.20	1.32
Association dues	2.18	4.20	2.79	4.00	5.39	2.65	5.30	2.56	4.36	4.21
General farm expense	9.05	8.39	11.96	8.30	11.13	6.70	8.66	8.51	9.12	8.45
Miscellaneous	----	----	1.11	.50	----	----	----	.56	.30	.16
TOTAL COST	$143.84	136.33	211.83	137.72	185.40	119.02	139.88	146.74	157.60	150.66
INCOME										
Dairy sales	$198.28	182.53	249.88	163.41	211.35	163.68	159.70	187.72	200.55	191.05
Milk and cream used	3.67	2.69	4.32	6.72	3.60	4.03	8.07	3.51	1.79	4.24
Milk fed calves	2.74	4.48	7.25	9.94	14.00	2.60	25.86	7.80	----	2.96
Appreciation	----	----	----	----	----	----	----	----	----	----
Manure	10.36	16.33	16.00	22.17	20.85	11.70	8.40	8.68	15.45	6.10
TOTAL INCOME	$215.05	206.03	277.45	202.24	249.80	182.01	202.03	207.71	217.79	204.35
NET PROFIT, per cow	$ 71.21	69.70	65.62	64.52	64.40	62.99	62.15	60.97	60.19	53.69
MILK, per cow (in lbs.)	6,734	7,266	9,938	5,831	8,293	6,452	6,335	8,779	7,058	7,552
FEEDS (in lbs.)										
Corn	1,105	260	228	118	1,279	607	----		389	335
Oats	239	1,040	1,516	963	1,108	487	1,085		27	711
Barley	---	615	784	---	241	81	662		27	865
Total grain	1,344	1,915	2,528	1,081	2,628	1,175	1,747	1,850	443	1,911
Mill feeds	1,073	476	1,252	80	1,205	662	535		492	410
Malt	----	---	---	1,500	---	---	---	---	7,174	695
Hay	907	1,524	2,157	1,897	2,514	474	2,025	2,446	390	1,616
Silage	8,208	7,917	8,603	7,704	7,809	3,661	8,369	6,901	5,147	7,047
Other roughage	1,918	----	629	----	----	2,575	990	----	3,209	----
Pasture days	119	128	164	149	108	145	107	129	153	82
Man hours	137	96	184	149	131	75	107	107	139	96
COWS per farm	11	11	28	12	13	20	10	40	11	19

Continued

MILK PRODUCTION COSTS (per cow) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per cow compared with the average of 733 cows on these farms

Farm Number	28	27	35	6	16	38	32	13	31
COSTS									
Feed	$ 77.73	96.42	66.54	91.20	74.69	78.17	80.33	87.00	66.73
Man labor	48.81	50.55	34.99	72.54	32.67	38.02	45.38	23.58	39.15
Interest on investment	6.55	8.46	5.65	4.67	6.79	6.08	8.61	5.66	4.06
Depreciation	6.29	33.96	----	8.54	35.34	18.67	10.89	30.10	35.09
Shelter	6.25	4.24	3.29	5.38	6.96	4.20	8.47	3.50	1.52
Equipment	.44	1.33	1.05	1.52	3.22	1.03	2.58	2.74	1.98
Veterinary & medicine	----	2.36	2.00	----	1.04	1.44	2.26	----	1.37
Association dues	2.62	3.43	3.94	4.08	2.66	3.93	2.59	3.55	2.68
General farm expense	9.70	11.46	8.12	12.58	8.34	9.12	9.81	8.60	8.25
Miscellaneous	.19	----	.78	----	.11	----	.23	.46	----
TOTAL COST	$ 158.58	212.21	126.36	200.51	171.82	160.66	171.15	165.19	160.83
INCOME									
Dairy sales	$ 180.37	240.45	139.00	221.69	187.88	168.47	166.73	177.10	178.17
Milk and cream used	3.84	2.60	2.99	6.20	3.25	5.38	3.08	8.07	4.10
Milk fed calves	14.26	6.50	12.52	----	7.91	12.13	11.56	----	----
Appreciation	----	----	11.63	----	----	----	----	----	----
Manure	11.14	11.88	6.04	18.00	14.87	14.20	28.37	17.25	14.52
TOTAL INCOME	$ 209.61	261.43	172.18	245.89	213.91	200.18	209.74	202.42	196.79
NET PROFIT, per cow	$ 51.03	49.22	45.82	45.38	42.09	39.52	38.59	37.23	35.96
MILK, per cow (in lbs.)	8,642	11,100	5,806	7,898	6,676	8,191	8,695	7,326	7,219
FEEDS, (in lbs.)									
Corn				658	468			140	
Oats				1,168	831			1,378	
Barley				1,011	132			372	
Total grain	(2,228		(1,398	2,837	1,431	(1,533	(2,109	1,890	(1,826
Mill feeds	(		(	325	532	(	(	582	(
Malt	---		---	---	---	---	---	---	---
Hay	1,381		1,815	3,502	2,547	2,533	2,648	1,602	1,861
Silage	5,952		5,700	5,021	4,772	6,268	6,915	5,290	7,390
Other roughage	---		---	---	---	---	383	1,961	----
Pasture days	138		152	118	95	153	169	167	160
Man hours	195	202	180	290	131	152	182	94	157
COWS per farm	21	24	27	13	23	15	27	20	23

Continued

MILK PRODUCTION COSTS (per cow) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per cow compared with the average of 733 cows on these farms

Farm Number	33	36	29	14	23	3	11	26	Average 37 farms
COSTS									
Feed	$ 69.85	70.57	81.70	83.66	99.39	68.93	93.72	107.89	83.66
Man labor	36.50	49.92	30.00	50.85	50.84	38.59	25.33	42.21	35.63
Interest on investment	4.33	7.65	5.28	6.36	6.95	5.62	7.17	4.50	6.10
Depreciation	27.23	26.54	36.72	11.50	60.91	21.54	87.17	22.39	17.49
Shelter	3.21	2.69	4.39	12.14	6.87	4.04	7.37	4.03	5.54
Equipment	1.15	.42	3.39	6.24	.82	.22	1.05	2.67	1.83
Veterinary & medicine	1.37	.15	.17	----	7.09	1.42	3.67	1.78	1.74
Association dues	1.67	4.96	3.06	4.37	4.82	3.69	2.08	2.66	3.10
General farm expense	8.20	9.42	8.62	10.42	12.16	8.45	9.36	11.59	9.33
Miscellaneous	----	----	.07	.14	----	----	.05	----	.30
TOTAL COST	$ 153.51	172.32	173.40	185.68	249.85	152.50	236.97	199.72	164.72
INCOME									
Dairy sales	$ 161.58	177.60	167.33	186.50	233.60	135.70	173.86	138.28	191.35
Milk and cream used	4.65	4.45	7.64	2.52	3.67	3.12	14.55	4.48	4.98
Milk fed calves	10.40	12.00	13.00	8.13	4.73	----	4.15	3.31	8.39
Appreciation	----	----	----	----	----	----	----	----	2.10
Manure	9.13	9.39	14.22	11.44	12.45	16.15	10.17	13.50	13.58
TOTAL INCOME	$ 185.76	203.44	202.19	208.59	254.45	154.97	202.73	159.57	220.40
NET PROFIT, per cow	$ 32.25	31.12	28.79	22.91	4.60	2.47	-34.24	-40.15	55.68
MILK, per cow (in lbs.)	6,975	7,865	7,554	7,358	8,323	5,322	7,450	6,635	7,889
FEEDS, (in lbs.)									
Corn				674	507	1,120	707	882	* 601
Oats				548	93	1,024	712	84	822
Barley				241	---	----	712	40	390
Total grain		(1,788	(2,238	1,463	600	2,144	2,131	1,006	1,813
Mill feeds		(	(	1,255	1,911	230	490	781	774
Malt		---	---	---	3,060	---	---	978	478
Hay		2,019	1,600	1,860	273	3,602	1,919	1,060	1,917
Silage		5,076	5,166	5,054	7,720	1,622	7,680	5,630	6,393
Other roughage		558	422	----	3,420	1,881	----	2,392	951
Pasture days		161	128	125	110	177	166	120	143
Man hours	146	200	120	203	203	154	101	169	143
COWS per farm	30	26	18	16	11	13	24	18	20

*The quantities of feed used are the average of 26 farms.

A farmer might keep his costs per cow down very low, but low production would make the cost per 100 pounds of milk produced very high. The second table showing milk production costs per 100 pounds produced, places more emphasis upon efficiency of production. The cost of producing 100 pounds of milk varied from $1.56 on farm #25 up to $3.18 on farm #11, with an average of $2.08 for the 37 farms.

The principal reasons for the cost being so high on the last farm are: very high depreciation on cows and high feed cost. The production per cow on farms #37 and #26 was nearly the same, but the cost per 100 pounds of milk produced was $1.58 on the first farm and $3.01 on the last farm. The first farm made a profit of $1.04 per 100 pounds of milk produced, whereas the latter farm lost $.60. The feed cost was $.66 more per 100 pounds on farm #26; the man labor charge was $.31 more and there was depreciation amounting to $.34 per 100 pounds on farm #26 and none on farm #37. The difference between these two farms in these items amounts to $1.31 per 100 pounds of milk produced. The three items of cost just mentioned, feed, labor, and depreciation, are those over which the producer has most control.

It is evident with these wide differences existing that there is much opportunity to improve efficiency in production on many farms.

MILK PRODUCTION COSTS (100 lbs. basis) 1926
On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records
Items of Cost and Income per cwt. of Milk produced by 733 cows on these farms

Farm Number	5	25	37	30	4	7	19	28	24	17
COSTS										
Feed	$ .93	.83	.96	.92	.99	1.01	1.10	.90	1.01	1.15
Man labor	.29	.43	.33	.31	.23	.38	.34	.57	.29	.33
Interest on cows	.06	.05	.07	.09	.07	.05	.08	.08	.09	.07
Depreciation	---	---	---	.09	.09	.15	---	.07	.17	.11
Shelter	.12	.08	.03	.09	.13	.04	.09	.07	.07	.03
Equipment	.05	.02	.03	.01	.01	.01	.04	.01	.03	.01
Veterinary & medicine	---	.01	.03	.03	.01	.01	.02	---	.04	---
Association dues	.04	.03	.03	.03	.04	.03	.03	.03	.04	.06
General farm expense	.10	.10	.10	.10	.10	.11	.11	.11	.10	.12
Miscellaneous	.02	.01	---	.01	.02	---	.01	---	---	---
TOTAL COST	$ 1.61	1.56	1.58	1.68	1.69	1.79	1.82	1.84	1.84	1.88
INCOME										
Dairy sales	$ 2.24	2.44	2.06	2.14	2.27	2.44	2.45	2.09	2.54	2.51
Milk and cream used	.07	.05	.07	.04	.04	.09	.03	.04	.06	.04
Milk fed calves	.04	.02	.18	.09	.05	.08	.23	.17	.04	.06
Appreciation	.50	---	.12	---	---	---	.08	---	---	---
Manure	.19	.16	.19	.10	.22	.11	.23	.13	.18	.23
TOTAL INCOME	$ 3.04	2.67	2.62	2.37	2.58	2.72	3.02	2.43	2.82	2.84
NET PROFIT per 100 lbs.	$ 1.43	1.11	1.04	.69	.89	.93	1.20	.59	.98	.96
MILK per cow (lbs.)	9,539	9,896	6,943	8,779	9,873	10,072	8,455	8,642	6,452	7,266
FEED, in lbs.										
Corn	12.7	5.9	*		6.0	2.1	14.8		9.4	3.6
Oats	6.7	5.9			11.8	13.4	14.4		7.5	14.3
Barley	---	---		**	4.6	9.2	3.9		1.3	8.5
Total grain	19.4	11.8		(21.1	22.4	24.7	33.1	(25.7	18.2	26.4
Mill feeds	8.1	10.8		(	7.4	8.2	11.5	(	10.3	6.6
Malt	---	30.0		----	---	---	----		----	----
Hay	27.8	15.3		27.9	25.8	23.6	25.6	1.60	7.4	21.0
Silage	75.5	39.3		78.6	104.7	71.9	46.3	68.9	56.7	109.0
Other roughage	----	8.5		----	----	----	15.0	----	39.9	----
Pasture days	1.4	1.5		1.5	1.6	1.7	2.1	1.6	2.3	1.8
Man hours	1.16	1.73	1.33	1.22	.92	1.52	1.36	2.26	1.16	1.33
COWS per farm	13	18	32	40	11	18	26	21	20	15

*The quantities of feed fed were not available on 3 of the farms.
**In some cases the total grain and mill feed was reported as concentrates so could not be separated.

Continued

MILK PRODUCTION COSTS (100 lbs. basis) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per hundredweight of Milk produced by 733 cows on these farms

Farm Number	12	27	18	8	38	32	20	1	22	35
COSTS										
Feed	$ 1.17	.87	1.00	1.06	.96	.92	1.10	1.08	1.17	1.15
Man labor	.34	.46	.38	.48	.46	.52	.32	.46	.51	.60
Interest on cows	.08	.08	.08	.07	.07	.10	.06	.07	.06	.10
Depreciation	---	.31	.16	.11	.23	.13	.26	.27	.12	---
Shelter	.06	.04	.12	.07	.05	.10	.05	.04	.02	.06
Equipment	.04	.01	---	---	.01	.03	.03	.03	---	.02
Veterinary & medicine	.06	.02	.03	.01	.02	.03	.02	.02	.08	.03
Association dues	.03	.03	.03	.03	.05	.03	.05	.03	.03	.07
General farm expense	.12	.10	.11	.12	.11	.11	.11	.12	.14	.14
Miscellaneous	---	---	.01	---	---	---	---	.01	---	.01
TOTAL COST	$ 1.90	1.92	1.92	1.95	1.96	1.97	2.00	2.13	2.13	2.18
INCOME										
Dairy sales	$ 2.51	2.17	2.59	2.55	2.05	1.91	2.53	2.52	2.94	2.40
Milk and cream used	.05	.02	.08	.07	.07	.04	.06	.04	.06	.05
Milk fed calves	.08	.06	.09	.32	.15	.13	.04	.07	.04	.22
Appreciation	.09	---	---	---	---	---	---	---	---	.20
Manure	.13	.11	.20	.12	.17	.33	.08	.16	.15	.10
TOTAL INCOME	$ 2.86	2.36	2.96	3.06	2.44	2.41	2.71	2.79	3.19	2.97
NET PROFIT per 100 lbs.	$ .96	.44	1.04	1.11	.48	.44	.71	.66	1.06	.79
MILK per cow (lbs.)	7,580	11,100	7,290	9,793	8,191	8,695	7,552	9,938	6,734	5,806
FEED, in lbs.										
Corn	1.7		9.5	14.4			4.4	2.3	16.4	
Oats	8.8		8.6	1.8			9.4	15.3	3.5	
Barley	6.8		---	4.7			11.4	7.9	---	
Total grain	17.3		18.1	20.9	(26.9	(24.3	25.2	25.5	19.9	(24.1
Mill feeds	11.0		8.6	13.3	(	(	5.4	12.6	15.9	(
Malt	----		----	----			9.2	----	----	
Hay	21.6		20.6	27.8	30.9	30.5	21.4	21.7	13.5	31.3
Silage	69.8		89.4	87.6	76.5	79.5	93.3	86.6	121.9	98.1
Other roughage	30.8		16.5	7.7	----	4.0	----	6.3	28.5	----
Pasture days	2.0		2.0	1.7	1.9	1.9	1.1	1.6	1.8	2.6
Man hours	1.34	1.82	1.53	1.90	1.86	2.09	1.27	1.85	2.04	2.41
COWS per farm	23	24	26	20	15	27	19	28	11	27

Continued

MILK PRODUCTION COSTS (100 lbs. basis) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per hundredweight of Milk produced by 733 cows on these farms

Farm Number	36	33	10	31	21	15	13	29	9
COSTS									
Feed	$ .90	1.00	1.31	.92	1.15	1.30	1.19	1.08	1.14
Man labor	.64	.52	.42	.54	.49	.40	.32	.40	.64
Interest on cows	.10	.06	.08	.06	.08	.09	.08	.07	.10
Depreciation	.34	.39	.11	.49	.21	.16	.41	.49	.04
Shelter	.03	.05	.04	.02	.05	.05	.05	.06	.18
Equipment	---	.02	.01	.03	.04	.01	.04	.04	---
Veterinary & medicine	---	.02	.01	.02	.02	.03	---	---	.04
Association dues	.06	.02	.08	.04	.06	.07	.05	.04	.07
General farm expense	.12	.12	.14	.11	.13	.13	.12	.11	.14
Miscellaneous	---	---	---	---	---	---	---	---	.01
TOTAL COSTS	$ 2.19	2.20	2.20	2.23	2.23	2.24	2.26	2.29	2.36
INCOME									
Dairy sales	$ 2.26	2.31	2.52	2.47	2.84	2.55	2.42	2.21	2.80
Milk and cream used	.06	.07	.12	.06	.02	.04	.11	.10	.12
Milk fed calves	.15	.15	.41	---	---	.17	---	.17	.17
Increase	---	---	---	---	---	---	---	---	---
Manure	.12	.13	.13	.20	.22	.25	.24	.19	.38
TOTAL INCOME	$ 2.59	2.66	3.18	2.73	3.08	3.01	2.77	2.67	3.47
NET PROFIT	$ .40	.46	.98	.50	.85	.77	.51	.38	1.11
MILK, per cow (lbs.)	7,865	6,975	6,335	7,219	7,058	8,293	7,326	7,554	5,831
FEED, in lbs.									
Corn			---		5.5	15.4	1.9		2.0
Oats			17.1		.4	13.4	18.8		16.5
Barley			10.5		.4	2.9	5.1		----
Total grain	(22.7		27.6	(25.3	6.3	31.7	25.8	31.6	18.5
Mill feeds	(		8.4	(	7.0	14.5	8.0		1.4
Malt			----		101.6	----	----		25.7
Hay	25.7		32.0	25.8	5.5	30.3	21.9	21.2	32.5
Silage	64.6		132.1	102.4	72.9	94.2	72.3	68.4	132.1
Other roughage	----		15.6	----	45.5	----	26.8	5.6	----
Pasture days	2.1		1.7	2.2	2.2	1.3	2.3	1.7	2.6
Man hours	2.54	2.09	1.69	2.17	1.97	1.59	1.29	1.59	2.56
COWS, per farm	26	30	10	23	11	13	20	18	12

Continued

MILK PRODUCTION COSTS (100 lbs. basis) 1926

On 37 farms in DuPage, Cook and McHenry Counties keeping Dairy Enterprise Records

Items of Cost and Income per hundredweight of Milk produced by 733 cows on these farms

Farm Number	2	14	6	16	3	23	26	11	Average 37 farms
COSTS									
Feed	$ 1.45	1.14	1.15	1.12	1.30	1.19	1.62	1.26	1.06
Man labor	.51	.69	.92	.49	.73	.61	.64	.34	.45
Interest on cows	.10	.09	.06	.10	.11	.08	.07	.09	.08
Depreciation	---	.16	.11	.53	.40	.73	.34	1.17	.22
Shelter	.14	.16	.07	.10	.07	.08	.06	.10	.07
Equipment	.04	.08	.02	.05	---	.01	.04	.01	.02
Veterinary & medicine	.02	---	---	.02	.03	.09	.03	.05	.02
Association dues	.04	.06	.05	.04	.07	.06	.04	.03	.04
General farm expense	.15	.14	.16	.12	.16	.15	.17	.13	.12
Miscellaneous	---	---	---	---	---	---	---	---	---
TOTAL COSTS	$ 2.45	2.52	2.54	2.57	2.87	3.00	3.01	3.18	2.08
INCOME									
Dairy sales	$ 4.33	2.53	2.81	2.81	2.55	2.81	2.09	2.33	2.42
Milk and cream used	.18	.03	.08	.05	.06	.04	.07	.19	.06
Milk fed calves	.06	.11	---	.12	---	.06	.05	.06	.11
Increase	---	---	---	---	---	---	---	---	.03
Manure	.18	.16	.23	.22	.30	.15	.20	.14	.17
TOTAL INCOME	$ 4.75	2.83	3.12	3.20	2.91	3.06	2.41	2.72	2.79
NET PROFIT	$ 2.30	.31	.58	.63	.04	.06	-.60	-.46	.71
MILK, per cow (lbs.)	7,100	7,358	7,898	6,675	5,322	8,323	6,635	7,450	7,889
FEED, in lbs.									***
Corn	2.4	9.2	8.3	7.0	21.0	6.1	13.3	9.5	7.7
Oats	17.7	7.4	14.8	12.4	19.2	1.1	1.3	9.6	10.5
Barley	15.2	3.3	12.8	2.0	---	---	.6	9.5	4.9
Total grain	35.3	19.9	35.9	21.4	40.2	7.2	15.2	28.6	23.1
Mill feeds	7.2	17.1	4.1	8.0	4.3	23.0	11.8	6.6	9.8
Malt	---	---	---	---	---	36.8	14.7	---	6.1
Hay	37.9	25.3	44.4	38.2	67.7	3.3	16.0	25.8	24.4
Silage	125.2	68.7	63.6	71.5	30.5	92.8	84.8	103.1	81.5
Other roughage	----	----	----	----	35.3	41.1	36.1	----	12.1
Pasture days	2.0	1.7	1.5	1.4	3.3	1.3	1.8	2.2	1.8
Man hours	2.03	2.77	3.67	1.96	2.90	2.44	2.55	1.36	1.81
COWS, per farm	18	16	13	23	13	11	18	24	20

***The quantities of feed fed are the average on 26 farms.

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high

percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil, and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not de-

ficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed, red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to any one who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times

may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies,

the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

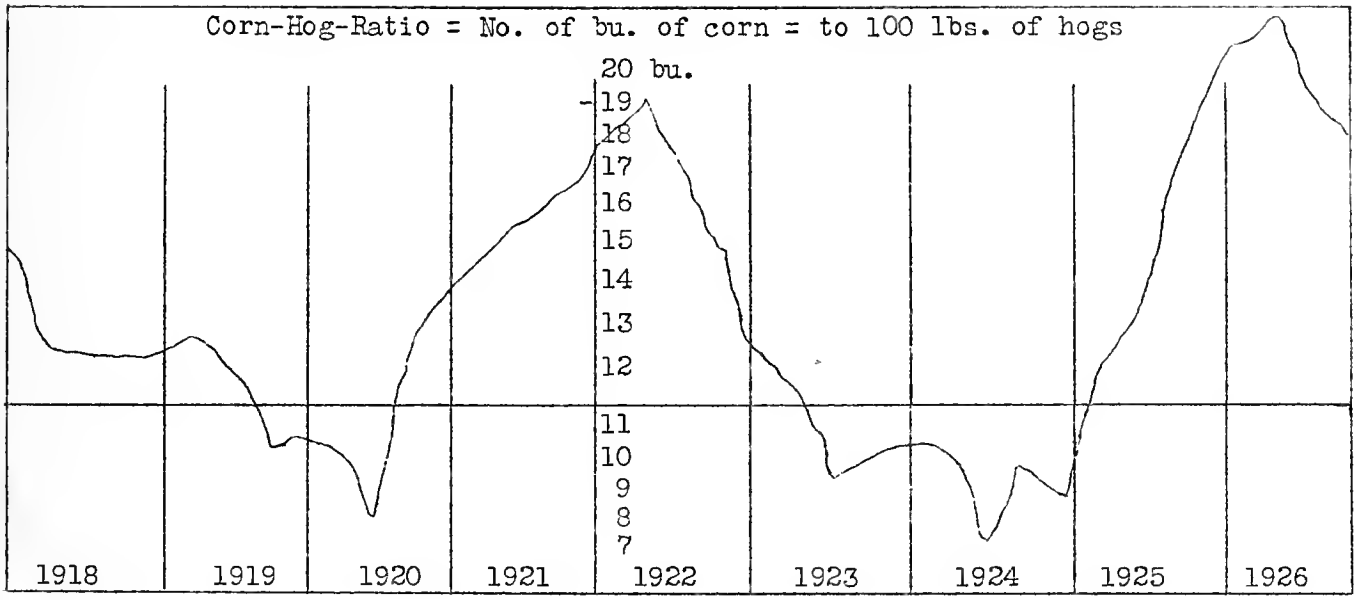
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

CARROLL, WHITESIDE AND ROCK ISLAND COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-two Farms

for

1926

Farm Account keepers say:
"Farm accounts become more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M58

ANNUAL FARM BUSINESS REPORT

Carroll, Whiteside, Rock Island Counties, Illinois 1926

Prepared by R.R. Hudelson, P.E. Johnston, H.A. Berg and H. C. M. Case*

The 32 farmers in Carroll, Whiteside and Rock Island counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $595 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $196 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,713, while the one-third who were least successful lacked an average of $451 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,164 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 32 farmers earned 4.7 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 8.1 percent and the least successful third 1.3 percent. The average investment on the 32 farms was $38,134, which amounts to $196 an acre. The higher profit third had an average investment of $173 and the lower profit third $109 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $131 an acre as an average for all farms.

In addition to the above earnings, each farm family secures certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The farms of the higher profit group averaged nearly 40 acres larger than those of the lower profit group. About half of these extra acres were non-tillable land, however. It is doubtful whether the larger size had any important effect on relative earnings. Similar studies in other areas for 1926 and the report covering this same area for 1925 indicate that within ordinary limits size of farm is a minor factor in determining profits. Individual cases of very small or very large farms are exceptions to this rule. The more profitable farms had nearly 20 more acres of corn and 10 acres less oats. The less profitable farms had no wheat and the more profitable farms only averaged about 10 acres of wheat per farm.

The more successful farmers raised about 5 bushels more corn to the acre and 12 bushels more oats than their less successful neighbors. In similar

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* M. P. Roske, L. O. Wise and S. S. Carney, farm advisers in Carroll, Whiteside and Rock Island counties respectively, cooperated in supervising and collecting the records used in this report.

studies we have usually found even larger differences in crop yields in favor of the more profitable farms. Good yields are one of the important factors determining farm profits. Operating costs per acre usually do not rise in proportion to increased yields. The margin of profit is therefore increased.

The farms covered by this report are primarily livestock farms and derive almost their entire income from livestock sources. The biggest advantage of the ten most profitable farms was in their greater livestock efficiency. They realized a livestock income of $147 for each $100 invested in livestock compared with $116 income per $100 invested in livestock on the lower profit farms. With a livestock investment only $3 an acre larger the more successful farm operators realized an income from livestock $10 an acre larger. Still another proof of livestock efficiency is seen in the fact that the more profitable farms although only 40 acres larger and with feed purchases only $235 larger on the average had livestock incomes $2,764 per farm larger than the less profitable farms.

Hogs constituted the largest single enterprise on the farms of both groups. They produced 64 percent of the gross income on the more profitable farms and 55 percent on the less profitable farms. Beef cattle and dairy cattle stood next in order of importance. It was in the hog enterprize that the more successful farm operators showed the greatest advantage in efficiency. Cost studies on hog production indicate that the average farm can gain in efficiency with hogs by sanitary methods that result in a larger number of thrifty pigs per litter at weaning time and by a continuation of sanitation and balanced feeding which will prevent runts and unthriftiness.

The more successful farmers whose records are included in this report used their labor more efficiently as shown by the fact that they cared for more livestock, worked eight more crop acres per man and had a labor cost per acre $1.50 an acre smaller than the less successful farmers. That their other expenses were handled with good judgment is indicated in their having an operating cost per acre $1.30 smaller and a gross income per acre ten dollars larger than their less successful neighbors.

It is of interest to note that farm earnings in western Illinois were generally smaller for 1926 than 1925. The reduction for the area covered by this report was not so great, however, as for most other areas in the western part of the state. A report covering approximately the same area and a number of the same farms for 1925 showed an average rate earned of 5.3 percent compared with 4.7 percent for the farms included in this report for 1926. Some reasons for the lower level of earnings are : lower corn yields, lower quality of grain due to wet weather, a severe outbreak of hog cholera, less satisfactory prices for heavy cattle and lower farm prices for corn and wheat.

Some points of strength and some of weakness may be found in your own farm business by comparing the factors from your own record in the following tables with the same factors for the average farm and for farms of the high and low profit groups.

Carroll, Whiteside and Rock Island Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 32 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	4.74%	8.09%	1.30%
Labor and management wage	$	$ 595	$1,713	$ -451
Size of farm - acres	A	194.4 A	197.3 A	157.9 A
Percent of land area tillable	%	85.3 %	77.7 %	85.8 %
Acres in Corn	A	61.6 A	66.3 A	47.2 A
Oats	A	31.8 A	24.1 A	34.9 A
Wheat	A	5.6 A	9.5 A	-
Crop yields - Corn	bu.	43.5 bu.	44.8 bu.	40.2 bu.
Oats	bu.	29.9 bu.	34.4 bu.	22.4 bu.
Wheat	bu.	23.6 bu.	20.5 bu.	-
Returns per $100 invested in all productive livestock	$	$ 139	$ 147	$ 116
For $100 in Cattle	$	$ 85	$ 85	$ 72
Hogs	$	$ 202	$ 213	$ 185
Poultry	$	$ 172	$ 171	$ 156
Investment per acre in productive livestock	$	$ 17.77	$ 20.55	$ 17.44
Receipts per acre in productive livestock	$	$ 24.75	$ 30.17	$ 20.19
Man labor cost per acre	$	$ 6.91	$ 5.59	$ 7.09
Crop acres per man	A	70.1 A	74.1 A	66 A
Crop acres per horse (with tractor)	A	28.2 A	32.4 A	27.1 A
(without tractor)	A	19.1 A	19.3 A	20.1 A
Expense per $100 gross income	$	$ 63	$ 54	$ 87
Machinery cost per acre	$	$ 2.12	$ 1.91	$ 1.89
Building and fencing cost per acre	$	$ 1.62	$ 1.41	$ 1.62
Gross receipts per acre	$	$ 24.96	$ 30.49	$ 20.34
Total expenses per acre	$	$ 15.66	$ 16.46	$ 17.76
Net receipts per acre	$	$ 9.30	$ 14.03	$ 2.58
Percent of farms with tractor		44%	20%	50%
Value of land per acre	$	$ 131	$ 109	$ 133
Total investment per acre	$	$ 196	$ 173	$ 199

Carroll, Whiteside and Rock Island Counties, 1926

	Item	Your farm	Average of 32 farms	Ten most profitable farms	Ten least profitable farms
1.	Capital Investment - Total	$_____	$38,134	$34,219	$31,348
2	Land		25,447	21,521	21,018
3	Farm improvements		5,238	5,008	4,426
4	Machinery and equipment		1,392	1,265	1,091
5	Feed and supplies		2,140	1,908	1,768
6	Livestock		3,917	4,517	3,045
7	Horses		538	629	318
8	Cattle		1,594	1,731	1,485
9	Hogs		1,532	1,912	980
10	Sheep		75	50	109
11	Poultry		178	195	153
12	Receipts-Net Increases-Total	$_____	$ 4,852	$ 6,017	$ 3,212
13	Feed and grain		--	--	--
14	Miscellaneous		41	64	23
15	Livestock - Total		4,811	5,953	3,189
16	Horses		--	9	--
17	Cattle		796	970	569
18	Hogs		2,991	3,875	1,779
19	Sheep		48	39	71
20	Poultry		147	204	81
21	Egg sales		171	144	160
22	Dairy sales		658	712	529
23	Expenses-Net-Decreases-Total	$_____	$ 2,040	$ 2,441	$ 1,805
24	Farm improvements		315	279	256
25	Livestock		18	-	27
26	Horses		18	-	27
27	Cattle		-	-	-
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		413	376	298
32	Feed and supplies		348	861	626
33	Livestock expense other than feed		88	93	61
34	Crop expense		177	158	160
35	Labor hired		340	351	120
36	Taxes, insurance, etc.		315	297	240
37	Miscellaneous		26	26	17
38	Receipts less Expenses	$_____	$ 2,812	$ 3,576	$ 1,407
39	Operator's and unpaid family labor		1,004	806	999
40	Net income from investment		1,808	2,770	408

Carroll, Whiteside and Rock Island Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.7	72	51	38	155	342	312	31.75	38.75	3.40	105	42	34	28	46	324
10.7	68	48	36	145	322	292	29.75	36.75	3.90	100	40	32	33	43	314
9.7	64	45	34	135	302	272	27.75	34.75	4.40	95	38	30	38	40	294
8.7	60	42	32	125	282	252	25.75	32.75	4.90	90	36	28	43	37	274
7.7	56	39	30	115	262	232	23.75	30.75	5.40	85	34	26	48	34	254
6.7	52	36	28	105	242	212	21.75	28.75	5.90	80	32	24	53	31	234
5.7	48	33	26	95	222	192	19.75	26.75	6.40	75	30	22	58	28	214
4.7	44	30	24	85	202	172	17.75	24.75	6.90	70	28	20	63	25	194
3.7	40	27	22	75	182	152	15.75	22.75	7.40	65	26	18	68	22	174
2.7	36	24	20	65	162	132	13.75	20.75	7.90	60	24	16	73	19	154
1.7	32	21	18	55	142	112	11.75	18.75	8.40	55	22	14	78	16	134
0.7	28	18	16	45	122	92	9.75	16.75	8.90	50	20	12	83	13	114
-0.3	24	15	14	35	102	72	7.75	14.75	9.40	45	18	10	88	10	94
-1.3	20	12	12	25	82	52	5.75	12.75	9.90	40	16	8	93	7	74
-2.3	16	9	10	15	62	32	3.75	10.75	10.40	35	14	6	98	4	54

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

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Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

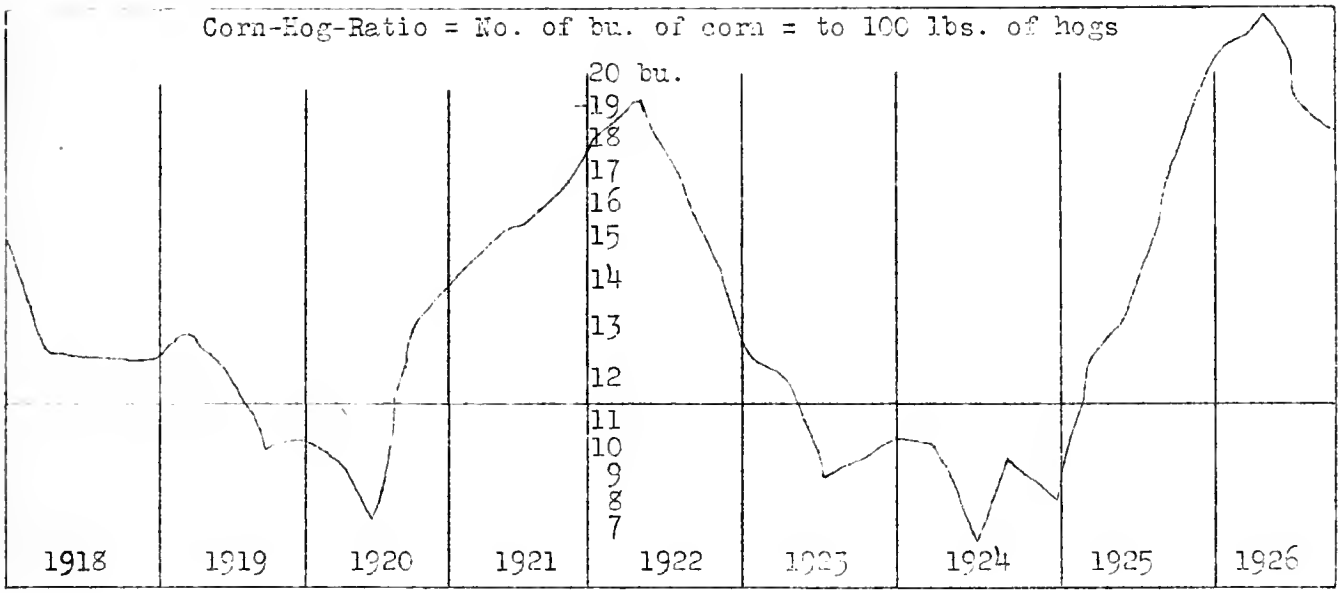
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

WILL COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April 20, 1927

M44

ANNUAL FARM BUSINESS REPORT

Will County, Illinois - 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 30 farmers in Will County who kept financial records in the Illinois Farm Account Project for 1926 had an average of $391 to pay for their labor, management and risk after paying expenses and allowing 5 percent interest on their average investment of $227 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,453, while the one-third who were least successful lacked an average of $492 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,945 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 30 farmers earned 4.31 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.97 percent and the least successful third 1.88 percent. The average investment on the 30 farms was $40,564, which amounts to $227 an acre. The higher profit third had an average investment of $221 and the lower profit third $223 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $166 an acre as an average for all the farms.

In addition to the above earnings, each family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

There was less than 5 acres difference in size between the farms of the higher and lower profit groups covered by this report, but the farms in the first group had about 43 acres more tillable land per farm. They had about 7 acres more corn, 2 acres more oats, and 8 acres more wheat than their less successful neighbors.

In yields the more successful farms had an advantage of about 2 bushels of corn, and 7 bushels of wheat per acre with no advantage in oat yield. This is less difference than previous reports have shown. As a rule yields constitute one of the chief differences between the high and low profit groups.

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*J. F. Hedgcock, farm adviser in Will County, cooperated in supervising and collecting the records used in this report.

One of the greatest differences between the 10 most profitable farms and the 10 least profitable farms covered by this report is in their livestock efficiency. They had about the same livestock investment per acre, but the high profit group received $17.42 livestock income per acre against $9.71 received by the low profit group. The former took in $157 income for each $100 of livestock investment, while the latter took in only $86. The more successful farms fed their livestock and still had net crop sales $775 a farm larger than the less successful farms. Labor costs were only fifty-five cents an acre larger on the farms with the greater livestock income and the greater net earnings. They handled about 8 more crop acres per man but slightly less crop acres per horse.

On the expense side of the business the more successful group had machinery and equipment costs about 60 cents an acre higher and farm improvement costs 15 cents an acre higher than the less successful group. The more profitable farms had total operating costs almost a dollar an acre higher than the less profitable farms. Their higher gross income much more than overcame this handicap, however, leaving them a net operating income per acre nearly four times as large as that of the low profit farms.

Since the Will County records were kept on practically the same farms for 1924, 1925, and 1926, some interesting comparisons can be made between these years.

The following table gives a good three-year comparison of investments and earnings on these farms. The higher average of earnings for 1925 was due chiefly to the higher grain prices prevailing that year. It will be remembered that the higher grain prices were due to a short corn crop in the United States and to a short world crop of wheat. Operating costs apparently are not decreasing.

Comparative Earnings on Will County Farms

Item	1924	1925	1926
Number of farm records	34	33	30
Average size of farm in acres	188	186	179
Average rate earned	6.26%	4.13%	4.31%
Average value of land per acre	167	165	166
Average investment per acre	227	230	227
Investment in livestock per farm	2,738	2,844	2,690
Investment in cattle per farm	1,425	1,520	1,487
Investment in hogs per farm	539	610	501
Investment in poultry per farm	158	147	157
Gross income per acre	28.74	22.89	23.26
Operating cost per acre	14.50	13.40	13.48
Grain sales less feed purchases per farm	2,379	1,169	1,319
Miscellaneous income per farm	174	131	105
Livestock income per farm	2,856	2,949	2,739
Gross income per farm	5,409	4,249	4,163

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm, as well as on the farms of the group making the best profits and the group making the least profits.

Will County - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	4.31%	6.97%	1.88%
Labor and management wage	$	$ 391	$ 1,453	$ -492
Size of farm - acres	A	179.0 A	176.8 A	172.1 A
Percent of land area tillable	%	88.2 %	92.8 %	70.5 %
Acres in Corn	A	51.4 A	52.4 A	45.3 A
Oats	A	32.2 A	32.7 A	30.9 A
Wheat	A	24.3 A	27.5 A	19.1 A
Crop yields - Corn	bu.	41.9 bu.	42.1 bu.	39.7 bu.
Oats	bu.	45.5 bu.	45.8 bu.	46.1 bu.
Wheat	bu.	26.6 bu.	29.3 bu.	22.4 bu.
Returns per $100 invested in all productive livestock	$	$ 124.00	$ 157.00	$ 86.00
For $100 in Cattle	$	$ 102.00	$ 132.00	$ 66.00
Hogs	$	$ 164.00	$ 190.00	$ 135.00
Poultry	$	$ 187.00	$ 191.00	$ 165.00
Investment per acre in productive livestock	$	$ 12.34	$ 11.09	$ 11.25
Receipts per acre from productive livestock	$	$ 15.30	$ 17.42	$ 9.71
Man labor cost per acre	$	$ 6.54	$ 6.78	$ 6.23
Crop acres per man	A	87.0 A	87.3 A	79.1 A
Crop acres per horse (with tractor)	A	30.9 A	30.6 A	35.8 A
(without tractor)	A	20.5 A	16.9 A	22.2 A
Expense per $100 gross income	$	$ 58.00	$ 47.00	$ 75.00
Machinery cost per acre	$	$ 2.60	$ 2.69	$ 2.10
Building and fencing cost per acre	$	$ 1.22	$ 1.10	$ .95
Gross receipts per acre	$	$ 23.26	$ 29.10	$ 17.00
Total expenses per acre	$	$ 13.48	$ 13.69	$ 12.80
Net receipts per acre	$	$ 9.78	$ 15.41	$ 4.20
Percent of farms with tractor	%	61.7 %	70 %	50 %
Value of land per acre	$	$ 166.00	$ 162.00	$ 168.00
Total investment per acre	$	$ 227.00	$ 221.00	$ 223.00

Will County - 1926

	Item	Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$40,564	$39,108	$38,429
2	Land		29,700	28,712	28,875
3	Farm improvements		4,208	3,941	3,686
4	Machinery and equipment		1,611	1,469	1,602
5	Feed and supplies		2,355	2,418	1,998
6	Livestock		2,690	2,568	2,268
7	Horses		519	510	436
8	Cattle		1,487	1,137	1,395
9	Hogs		501	653	302
10	Sheep and bees		26	35	15
11	Poultry		157	233	120
12	Receipts-Net Increases - Total	_____	4,163	5,144	2,925
13	Feed and grain		1,319	1,919	1,144
14	Miscellaneous		105	128	23
15	Livestock - Total		2,739	3,097	1,758
16	Horses		-	17	-
17	Cattle		481	445	-
18	Hogs		890	1,185	431
19	Sheep and bees		35	37	45
20	Poultry		131	179	102
21	Egg sales		168	263	117
22	Dairy sales		1,034	971	1,063
23	Expenses-Net Decreases - Total	_____	1,513	1,467	1,272
24	Farm improvements		219	195	163
25	Livestock		4	-	101
26	Horses		4	-	14
27	Cattle		-	-	87
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		465	475	361
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		66	72	59
34	Crop expense		176	181	157
35	Labor hired		271	245	141
36	Taxes, insurance, etc.		279	260	268
37	Miscellaneous		33	39	22
38	Receipts less Expenses	_____	2,650	3,677	1,653
39	Operator's and unpaid family labor		900	953	931
40	Net income from investment		1,750	2,724	722

Find Your Farm Leaks

Will County - 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horses				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.31	63	66	41	172	304	327	26.34	29.30	3.00	122	45	34	23	51	319
10.31	60	63	39	162	284	307	24.34	27.30	3.50	117	43	32	28	47	299
9.31	57	60	37	152	264	287	22.34	25.30	4.00	112	41	30	33	43	279
8.31	54	57	35	142	244	267	20.34	23.30	4.50	107	39	28	38	39	259
7.31	51	54	33	132	224	247	18.34	21.30	5.00	102	37	26	43	35	239
6.31	48	51	31	122	204	227	16.34	19.30	5.50	97	35	24	48	31	219
5.31	45	48	29	112	184	207	14.34	17.30	6.00	92	33	22	53	27	199
4.31	42	45	27	102	164	187	12.34	15.30	6.50	87	31	20	58	23	179
3.31	39	42	25	92	144	167	10.34	13.30	7.00	82	29	18	63	19	159
2.31	36	39	23	82	124	147	8.34	11.30	7.50	77	27	16	68	15	139
1.31	33	36	21	72	104	127	6.34	9.30	8.00	72	25	14	73	11	119
0.31	30	33	19	62	84	107	4.34	7.30	8.50	67	23	12	78	7	99
-0.69	27	30	17	52	64	87	2.34	5.30	9.00	62	21	10	83	3	79
-1.69	24	27	15	42	44	67	----	3.30	9.50	57	19	8	88	-	59
-2.69	21	24	13	32	24	47	----	1.30	10.00	52	17	6	93	-	39

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

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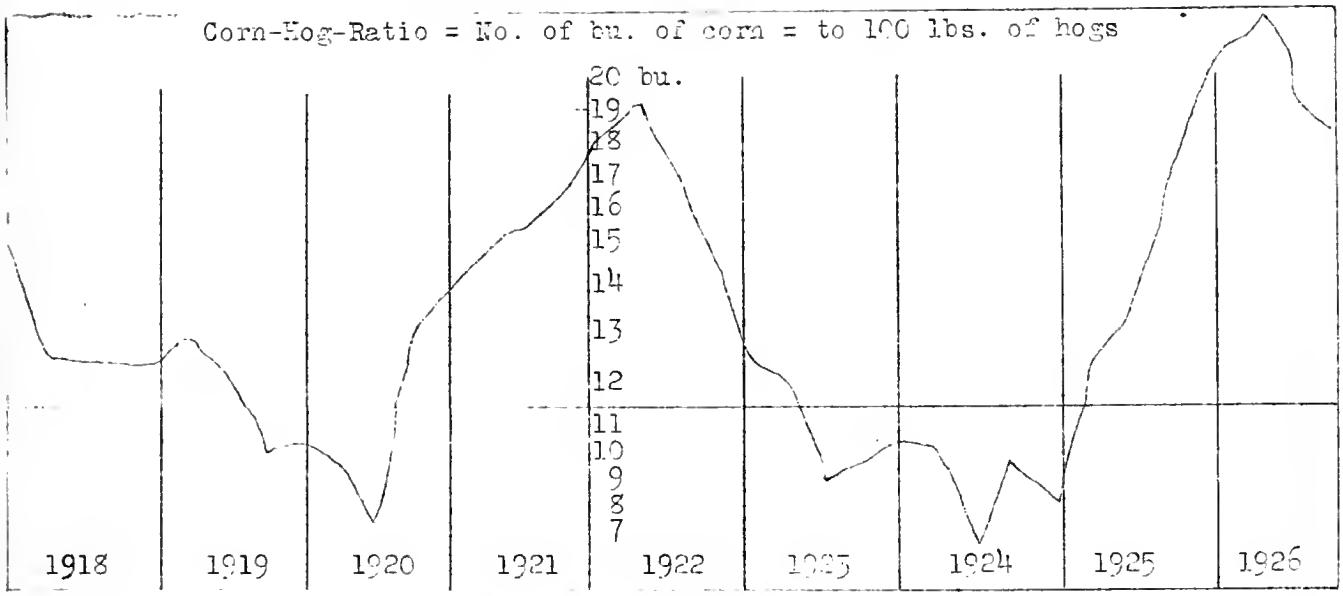

The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

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UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

KENDALL AND GRUNDY COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-four Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April 20, 1927

M43

ANNUAL FARM BUSINESS REPORT

Kendall and Grundy Counties, Illinois - 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 34 farmers in Kendall and Grundy counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $535 to pay for their labor, management and risk after paying expenses and allowing 5 percent interest on their average investment of $223 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,521, while the one-third who were least successful lacked an average of $949 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,470 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 34 farmers earned 4.2 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.9 percent and the least successful third 1.1 percent. The average investment on the 34 farms was $45,093, which amounts to $223 an acre. The higher profit third had an average investment of $214 and the lower profit third $217 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $161 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Size of farm had little effect on the relative success of the high and low profit groups since they averaged within 12 acres of the same size. The more profitable group of farms, however, did have about 30 acres more tillable land per farm. The higher profit group had about 15 acres more corn and 8 acres more wheat but 5½ acres less oats per farm than the low profit group.

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*F. E. Longmire, and M. H. Watson, farm advisers in Grundy and Kendall counties respectively cooperated in supervising and collecting the records used in this report.

The more successful group of farmers had some advantage in yields since they raised 5 bushels more corn, 8 bushels more oats, and 2 bushels more wheat per acre than their less successful neighbors. Since acre costs usually do not increase materially with yield this advantage was enough to increase profits.

The greatest advantage which the 12 most profitable farms had was in their larger amount of livestock and in its more efficient management. They had almost twice as much livestock income per acre with only about 50 percent more livestock investment. Although they were only slightly larger farms they provided feed for more livestock and still had about $250 more crop sales than the less profitable farms. Each group of farms derived about half their total livestock income from hogs. Beef cattle stood next in importance.

The more successful farm operators took care of more livestock and still had a labor cost per acre smaller than that on the less profitable farms. It appears that the lower profit group should either increase the amount of livestock kept or reduce the amount of labor used by means of better cropping systems, larger and more convenient fields, better plans in using labor or better equipment. They already have a larger investment in equipment than the high profit farms, however.

Although there was a considerable shift in individual farms reported, chiefly due to new farms entering the project, it is interesting to compare this report with the 1925 "Farm Business Report" for Kendall and Grundy counties. The average rate earned was 4.74 percent in 1925 and 4.25 percent in 1926. The slight reduction in earnings was due to lower yields and slightly less income from livestock. Average operating costs per acre were $1.59 less in 1926 than in 1925.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on the farms of the group making the most profit and the group making the least profit.

Kendall and Grundy Counties - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty-four farms	Twelve most profitable farms	Eleven least profitable farms
Rate earned	%	4.25%	6.97%	1.10%
Labor and management wage	$	$ 535.	$ 1,521.	$ -949.
Size of farm - acres	A	202.3 A	204.7 A	193.0 A
Percent of land area tillable	%	90.9 %	93.2 %	88.6 %
Acres in Corn	A	79.2 A	83.6 A	69.1 A
Oats	A	47.0 A	45.1 A	50.6 A
Wheat	A	12.6 A	15.5 A	7.4 A
Crop yields - Corn	bu.	42.1bu.	44.1bu.	39.2 bu.
Oats	bu.	41.1bu.	45.5bu.	37.6 bu.
Wheat	bu.	23.4bu.	25.2bu.	23.0 bu.
Returns per $100 invested in all productive livestock	$	$ 122.00	$ 135.00	$ 102.00
For $100 in Cattle	$	$ 76.00	$ 90.00	$ 65.00
Hogs	$	$ 185.00	$ 185.00	$ 177.00
Poultry	$	$ 214.00	$ 229.00	$ 184.00
Investment per acre in productive livestock	$	$ 12.04	$ 15.20	$ 10.84
Receipts per acre from productive livestock	$	$ 14.66	$ 20.54	$ 11.40
Man labor cost per acre	$	$ 6.10	$ 5.93	$ 6.70
Crop acres per man	A	91.5 A	96.8 A	91.9 A
Crop acres per horse (with tractor)	A	26.4 A	30.7 A	31.3 A
(without tractor)	A	21.3 A	22.6 A	21.6 A
Expense per $100 gross income	$	$ 57.00	$ 44.00	$ 86.00
Machinery cost per acre	$	$ 1.86	$ 1.75	$ 2.23
Building and fencing cost per A.	$	$ 1.25	$ 1.08	$ 1.64
Gross receipts per acre	$	$ 22.09	$ 26.91	$ 16.63
Total expenses per acre	$	$ 12.61	$ 11.96	$ 14.24
Net receipts per acre	$	$ 9.48	$ 14.95	$ 2.39
Percent of farms with tractor	%	56 %	66 %	44 %
Value of land per acre	$	$ 161.00	$ 155.00	$ 149.00
Total investment per acre	$	$ 223.00	$ 214.00	$ 217.00

Kendall and Grundy Counties - 1926

	Item	Your farm	Average of thirty-four farms	Twelve most profitable farms	Eleven least profitable farms
1	Capital Investment - Total	$_____	$45,093	$43,893	$41,941
2	Land		32,664	31,697	28,789
3	Farm improvements		5,307	4,739	6,628
4	Machinery and equipment		1,591	1,491	1,582
5	Feed and supplies		2,631	2,541	2,574
6	Livestock		2,900	3,425	2,368
7	Horses		674	615	658
8	Cattle		1,205	1,490	802
9	Hogs		776	1,073	603
10	Sheep and bees		105	87	131
11	Poultry		140	160	116
12	Receipts-Net Increases-Total	_____	4,469	5,509	3,210
13	Feed and grain		1,454	1,236	988
14	Miscellaneous		50	69	21
15	Livestock - Total		2,965	4,204	2,201
16	Horses		--	--	--
17	Cattle		629	1,037	372
18	Hogs		1,503	2,186	1,117
19	Sheep and bees		117	203	98
20	Poultry		224	343	144
21	Egg sales		128	126	105
22	Dairy sales		364	309	365
23	Expenses-Net Decreases-Total	_____	1,700	1,604	1,864
24	Farm improvements		252	221	317
25	Livestock		46	15	67
26	Horses		46	15	67
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		376	359	431
32	Feed and supplies		--	--	--
33	Livestock expense other than feed		43	45	39
34	Crop expense		214	212	202
35	Labor hired		383	368	408
36	Taxes, insurance, etc.		359	365	368
37	Miscellaneous		27	19	32
38	Receipts less Expenses	_____	2,769	3,905	1,346
39	Operator's and unpaid family labor		851	845	885
40	Net income from investment		1,918	3,060	461

Find Your Farm Leaks

Kendall and Grundy Counties - 1926

The numbers between the lines across the middle of the page are the approximate average for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Investment per acre in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No Tractor			
11.25	63	62	37	146	325	354	26.04	28.66	2.60	126	40	35	22	36	342
10.25	60	59	35	136	305	334	24.04	26.66	3.10	121	38	33	27	34	322
9.25	57	56	33	126	285	314	22.04	24.66	3.60	116	36	31	32	32	302
8.25	54	53	31	116	265	294	20.04	22.66	4.10	111	34	29	37	30	282
7.25	51	50	29	106	245	274	18.04	20.66	4.60	106	32	27	42	28	262
6.25	48	47	27	96	225	254	16.04	18.66	5.10	101	30	25	47	26	242
5.25	45	44	25	86	205	234	14.04	16.66	5.60	96	28	23	52	24	222
4.25	42	41	23	76	185	214	12.04	14.66	6.10	91	26	21	57	22	202
3.25	39	38	21	66	165	194	10.04	12.66	6.60	86	24	19	62	20	182
2.25	36	35	19	56	145	174	8.04	10.66	7.10	81	22	17	67	18	162
1.25	33	32	17	46	125	154	6.04	8.66	7.60	76	20	15	72	16	142
0.25	30	29	15	36	105	134	4.04	6.66	8.10	71	18	13	77	14	122
-0.75	27	26	13	26	85	114	2.04	4.66	8.60	66	16	11	82	12	102
-1.75	24	23	11	16	65	94	----	2.66	9.10	61	14	9	87	10	82
-2.75	21	20	9	6	45	74	----	0.66	9.60	56	12	7	92	8	62

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

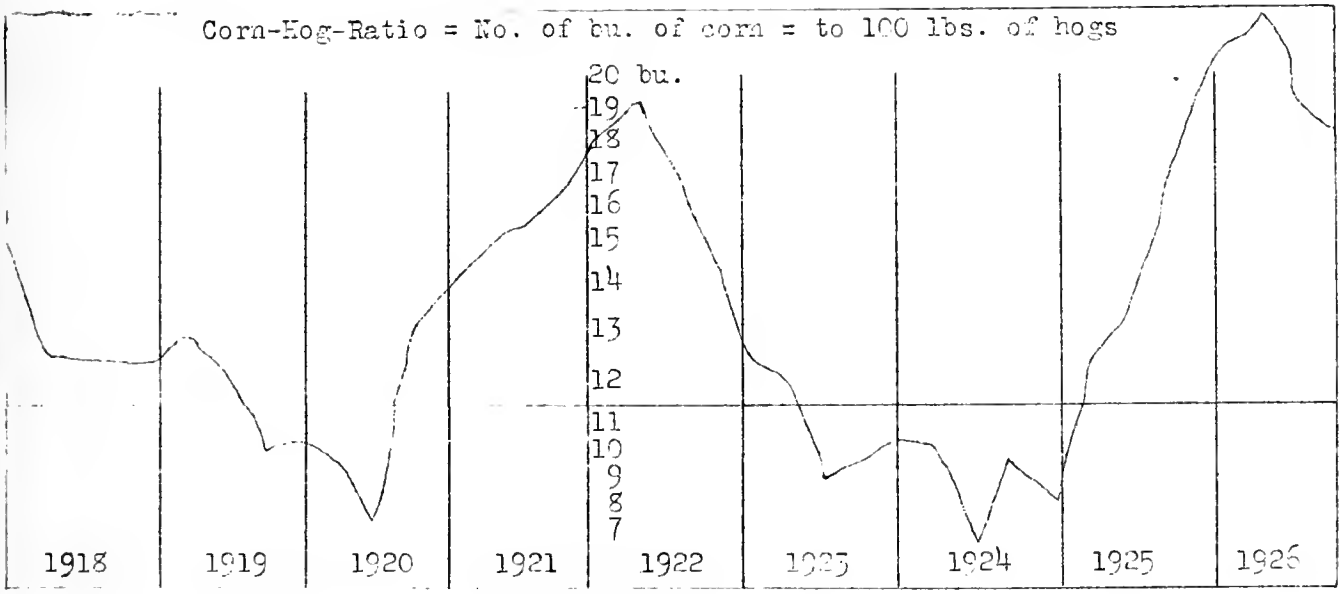
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

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Forty Farms

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Farm Account keepers say:
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Urbana, Illinois

May, 1927

M55

ANNUAL FARM BUSINESS REPORT

La Salle County, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston,
H. A. Berg, H. C. M. Case*

The 40 farmers in La Salle County who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $742 of having enough income to pay operating costs and 5 percent interest on their average investment of $283 an acre, allowing nothing for their labor, management and risk. The one-third of these farmers who made the best profits had an average labor and management wage of $333 after paying operating costs and 5 percent interest on their investment, while the one-third who were least successful lacked an average of $1,920 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,253 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 40 farmers earned 2.5 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 4.4 percent and the least successful third 0.6 percent. The average investment on the 40 farms was $57,649, which amounts to $283 an acre. The higher profit thirds each had an average investment of $277 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $217 an acre as an average of all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in this county. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The farms of the more successful group averaged about 20 acres larger than those of the low profit group. It is doubtful whether this had any significant effect on relative profits however. Both groups averaged a little over 200 acres in size, and records for past years in different sections of the state indicate little advantage in size between 200 and 240 acres. This size provides profitable employment for two men allowing about 100 crop acres per man. The more profitable farms averaged about 20 acres more corn, 14 acres more oats, and 3½ acres less wheat per farm than the less profitable farms.

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*R. W. Cross and W. W. McLaughlin, farm advisers in La Salle County, cooperated in supervising and collecting the records used in this report.

There was very little difference in crop yields between the two groups which was unusual. In past years one of the big differences between the high and low profit groups usually has been in yields. Acre costs usually do not rise materially with larger yields and the extra produce per acre goes to increase profits. Last year yields were very much dependent on the weather and other efficiency factors dominated.

The biggest single advantage of the more successful farm operators whose records are included in this report was in their greater efficiency with livestock. They had more livestock, too, which was an advantage under 1926 price conditions. Farms of the more profitable group had a livestock investment of $11.25 an acre and a livestock income of $16.76 an acre compared with a livestock investment of $9.02 an acre and a livestock income of $8.14 an acre on the less profitable farms. From this it is evident that the more successful operators with an investment in livestock about 25 percent greater secured a livestock income twice as large as their less successful neighbors. The advantage in efficiency is also reflected in the fact that the more profitable farms had a livestock income of $149 for every $100 of livestock investment compared with a livestock income of $91 for every $100 of livestock investment on the less profitable farms. Still another way of showing the greater efficiency with livestock on the more successful group of farms is to note that although they were only slightly larger in size they handled their feeding so as to sell more than twice as much livestock products and still had a little larger average income from crops than farms of the less successful group. In this case any purchased feeds were deducted from crop sales.

It is interesting to note that dairying was the largest livestock enterprise on the more profitable farms with hogs next in order. These two enterprises were reversed in order on the less profitable farms. Crop sales were an important source of income to both groups constituting almost half of the average gross income on the less profitable farms and nearly one-third of the average gross income on the more profitable farms.

Labor was used more effectively on the more profitable farms. They had about 12 more crop acres per man and a labor cost slightly less per acre in spite of the fact that they had more livestock and realized a gross income per acre 60 percent larger than that of the low profit farms. They also used their power with greater efficiency as indicated by their handling 5 more crop acres per horse on tractor farms and 6 more crop acres per horse on farms without tractors. Equipment costs were slightly larger on the more profitable farms probably due to larger amounts of dairy equipment. That other cost items were used with better judgment by the more successful operators is indicated by their operating costs per acre being slightly less than those of their less successful neighbors in spite of the fact that the latter group realized much smaller gross incomes per acre.

As we now have three years of records on almost the same group of La Salle County farms a very interesting comparison can be made between earnings, investments and costs for different years. The following table shows such a comparison. During the three years land values have been carried at almost exactly the same level and the average total investment per acre has changed only slightly. The average rate earned on the investment was highest for 1924. This was due to the fact that grain prices were higher for that year than for any other year since 1919. The causes of these higher prices were a short

corn crop in the United States and a short wheat crop for the world. There appears to have been a tendency for the operating cost per acre to increase during the three years. One cause of this increase was the tendency to increase the amount of dairying on these farms. Evidently these farm operators have been replacing a declining crop income with an increased income from dairy products. This appears to be a move in the right direction since for each of the three years since this project was started in the county the more profitable group of farms has shown a considerably larger dairy income than the low profit group.

Like any other farm enterprise dairying may eventually be increased to the point that markets may be over supplied and prices depressed. La Salle County, however, appears to be in a district of increasing industrial population which would justify a gradual increase in supplies of dairy products.

Comparative Earnings on Some LaSalle County Farms

Item	1924	1925	1926
Number of farms included	34	32	40
Average size of farms in acres	247	242	204
Average rate earned on investment	7.2%	2.7%	2.5%
Average value of land per acre	$ 217	$ 216	$ 217
Average investment per acre	274	279	283
Investment in livestock per farm	2,848	3,304	2,836
Investment in cattle per farm	1,101	1,345	1,335
Investment in hogs per farm	551	728	469
Investment in poultry per farm	120	143	121
Gross income per acre	32.67	20.81	22.30
Operating cost per acre	12.91	13.28	15.25
Grain sales less feed purchases per farm	5,347	1,891	1,769
Miscellaneous income per farm	82	65	27
Livestock income per farm	2,650	3,075	2,749
Gross income per farm	8,079	5,031	4,545
Cattle income per farm	464	617	356
Dairy sales per farm	644	743	1,148
Hog income per farm	1,103	1,211	953
Poultry income per farm	180	229	193

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm as well as for the farms of the high and low profit groups.

La Salle County, 1926

Factors helping to analyze the farm business	Your farm	Average of 40 farms	Fifteen most profitable farms	Fifteen least profitable farms
Rate earned	%	2.49%	4.40%	0.60%
Labor and management wage	$	$ -742	$ 333	$-1,920
Size of farm - acres	A	203.8 A	231.2 A	212.4 A
Percent of land area tillable	%	91 %	94.3 %	89.1 %
Acres in Corn	A	79.6 A	95.7 A	75.8 A
Oats	A	46.5 A	58.9 A	44.3 A
Wheat	A	12.1 A	12.9 A	16.4 A
Crop yields - Corn	bu.	46.6 bu.	47.6 bu.	46.4 bu.
Oats	bu.	38.1 bu.	38.3 bu.	35.3 bu.
Wheat	bu.	19.6 bu.	21.1 bu.	17.3 bu.
Returns per $100 invested in all productive livestock	$	$ 123.	$ 149	$ 91
For $100 in Cattle	$	$ 115	$ 155	$ 75
Hogs	$	$ 165	$ 158	$ 155
Poultry	$	$ 151	$ 125	$ 193
Investment per acre in productive livestock	$	$ 10.96	$ 11.25	$ 9.02
Receipts per acre from productive livestock	$	$ 13.49	$ 16.76	$ 8.17
Man labor cost per acre	$	$ 6.91	$ 6.21	$ 6.49
Crop acres per man	A	81.9 A	93.4 A	81 A
Crop acres per horse (with tractor)	A	25.7 A	28.6 A	23.7 A
(without tractor)	A	19.7 A	23.2 A	17.1 A
Expense per $100 gross income	$	$ 68	$ 54	$ 90
Machinery cost per acre	$	$ 2.92	$ 3.33	$ 2.81
Building and fencing cost per acre	$	$ 1.63	$ 1.52	$ 1.55
Gross receipts per acre	$	$ 22.30	$ 26.63	$ 16.25
Total expenses per acre	$	$ 15.25	$ 14.44	$ 14.60
Net receipts per acre	$	$ 7.05	$ 12.19	$ 1.65
Percent of farms with tractor	%	70 %	80 %	87 %
Value of land per acre	$	$ 217	$ 217	$ 214
Total investment per acre	$	$ 283	$ 277	$ 277

La Salle County, 1926

		Your farm	Average of 40 farms	Fifteen most profitable farms	Fifteen least profitable farms
1	Capital Investment - Total	$_____	$57,649	$64,046	$58,910
2	Land		44,181	50,267	45,551
3	Farm improvements		5,476	4,845	5,387
4	Machinery and equipment		2,004	2,339	2,121
5	Feed and supplies		3,152	3,351	3,381
6	Livestock		2,836	3,244	2,470
7	Horses		670	667	690
8	Cattle		1,335	1,695	873
9	Hogs		469	556	359
10	Sheep		241	187	437
11	Poultry		121	139	111
12	Receipts-Net Increases-Total	$_____	$ 4,545	$ 6,156	$ 3,451
13	Feed and grain		1,769	2,223	1,705
14	Miscellaneous		27	59	10
15	Livestock - Total		2,749	3,874	1,736
16	Horses		-	-	-
17	Cattle		356	601	238
18	Hogs		953	1,153	698
19	Sheep		99	135	86
20	Poultry		104	93	130
21	Egg sales		89	82	108
22	Dairy sales		1,148	1,810	476
23	Expenses-Net Decreases-Total	$_____	$ 2,150	$ 2,412	$ 2,167
24	Farm improvements		331	352	329
25	Livestock		25	16	29
26	Horses		25	16	29
27	Cattle		-	-	-
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		596	769	597
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		53	68	48
34	Crop expense		202	204	210
35	Labor hired		450	506	444
36	Taxes, insurance, etc.		429	425	471
37	Miscellaneous		36	43	33
38	Dairy expense		28	29	6
39	Receipts less Expenses	$_____	$ 2,395	$ 3,744	$ 1,284
40	Operator's and unpaid family labor		958	929	934
41	Net income from investment		1,437	2,815	350

Find Your Farm Leaks

La Salle County, 1926

The numbers between the lines across the middle of the page are the approximate averages for your County of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
9.5	74	59	34	255	305	291	24.96	27.50	3.40	117	39	34	33	43	344
8.5	70	56	32	235	285	271	22.96	25.50	3.90	112	37	32	38	40	324
7.5	66	53	30	215	265	251	20.96	23.50	4.40	107	35	30	43	37	304
6.5	62	50	28	195	245	231	18.96	21.50	4.90	102	33	28	48	34	284
5.5	58	47	26	175	225	211	16.96	19.50	5.40	97	31	26	53	31	264
4.5	54	44	24	155	205	191	14.96	17.50	5.90	92	29	24	58	28	244
3.5	50	41	22	135	185	171	12.96	15.50	6.40	87	27	22	63	25	224
2.5	46	38	20	115	165	151	10.96	13.50	6.90	82	25	20	68	22	204
1.5	42	35	18	95	145	131	8.96	11.50	7.40	77	23	18	73	19	184
0.5	38	32	16	75	125	111	6.96	9.50	7.90	72	21	16	78	16	164
-0.5	34	29	14	55	105	91	4.96	7.50	8.40	67	19	14	83	13	144
-1.5	30	26	12	35	85	71	2.96	5.50	8.90	62	17	12	88	10	124
-2.5	26	23	10	15	65	51	0.96	3.50	9.40	57	15	10	93	7	104
-3.5	22	20	8	-	45	31	-	1.50	9.90	52	13	8	98	4	84
-4.5	-	-	-	-	25	-	-	-	10.40	47	11	6	103	-	64

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

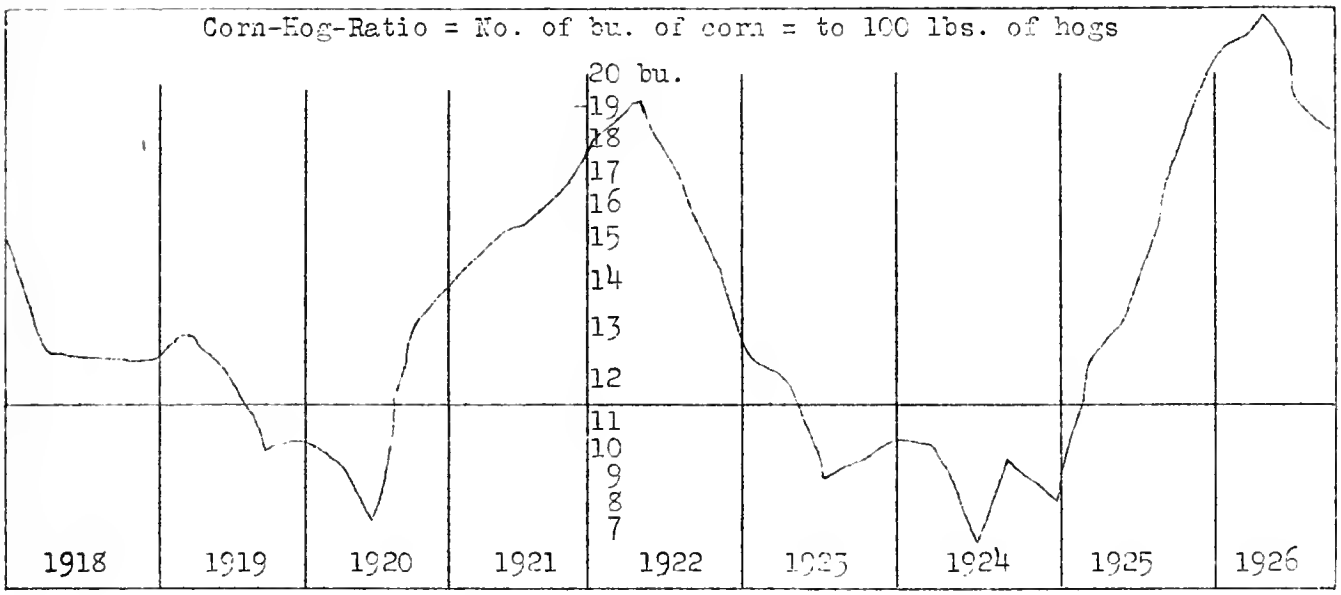
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS
COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

HENRY COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Fifty-nine Farms

for

1926

Farm account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April 20, 1927

M41

ANNUAL FARM BUSINESS REPORT

Henry County, Illinois-1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 59 farmers in Henry county who kept financial records in the Illinois Farm Account Project for 1926 had an average of $378 to pay for their labor, management and risk after paying expenses and allowing 5 percent interest on their average investment of $239 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,718, while the one-third who were least successful lacked an average of $918 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,636 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 59 farmers earned 4.29 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 7.29 percent and the least successful third 1.58 percent. The average investment on the 59 farms was $47,547, which amounts to $239 an acre. The higher profit third had an average investment of $249 and the lower profit third $254 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $169 on the average farm.

In addition to the above earnings, each family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The 20 least profitable farms averaged about 12 acres larger than the 20 most profitable farms and each group had about the same percentage of tillable land. Size of farm was therefore not a factor in determining the relative profits of these groups. The more profitable farms had slightly more acres of the chief grain crops, but the difference was small.

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*J. W. Whisenand and H. K. Danforth, farm advisers in Henry County, cooperated in supervising and collecting the records used in this report.

All farms included in this report averaged 16 bushels less corn and 19 bushels less oats per acre in 1926 than the average of all farms included for 1925. This had a big influence in reducing earnings. The 20 most profitable farms included in this report had about 6 bushels more corn and 3 bushels more oats per acre than the 20 least profitable farms. There was less difference in yields between these groups than in former reports.

One of the biggest advantages of the high profit group was in their greater amount of livestock and especially in their greater efficiency with livestock. They averaged $2.67 per acre more livestock investment but they received $13.46 per acre more livestock income than the less successful group. This larger amount of livestock was handled with a man labor cost only 21 cents an acre larger than on the less successful farms. On the average the crop sales and feed purchases just about balanced on the farms of both the high and low profit groups. The feed bill was larger by an average of $94 a farm for the less successful farms and by $47 a farm for the more successful farms. Practically the entire income on the average farm covered by this report was from livestock or livestock products. The 20 most profitable farms had a livestock income of $149 for every $100 of livestock investment while the corresponding income for the 20 least profitable farms was $101 income for each $100 investment.

The two groups did not differ much in labor and power efficiency expressed on the acre basis but the more profitable farms really had a greater labor efficiency as shown by their larger livestock income with only a slightly larger man labor cost. Building and fencing costs were about the same for both groups, but the lower profit farms had 62 cents an acre more equipment costs.

The 20 most profitable farms spent only $46 out of each $100 of income in paying operating expenses, while the 20 least profitable farms spent $80 out of every $100 income. This difference was chiefly due to a much larger gross income on the more profitable farms. The two groups had operating expenses nearly equal but the more successful operators had $33.55 an acre gross income while the less successful ones took in only $19.99 an acre.

Although there was a large increase in the number of accounts included for 1926, it is interesting to make a comparison of farm earnings in Henry County for 1925 and 1926. For 1926 the rate earned dropped from 7 percent to 4.29 percent on about the same average investment. This drop appears to be due to lower crop yields, smaller margins between costs and selling prices of heavy cattle, and severe losses from hog cholera. The quality of crops harvested was lower for 1926, due to excessively wet weather in late summer, fall and winter.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on farms of the group making the best profits and the group making the least profits.

Henry County - 1926

Factors helping to analyze the farm business	Your farm	Average of fifty-nine farms	Twenty most profitable farms	Twenty least profitable farms
Rate earned	%	4.29%	7.29%	1.58%
Labor and management wage	$	$ 378.00	$1,718.	$ -918.
Size of farm - acres	A	198.9 A	175.7 A	188 A
Percent of land area tillable	%	86.0 %	89.9 %	88.2%
Acres in Corn	A	76.3 A	74.8 A	68.5A
Oats	A	31.9 A	29.3 A	30.0A
Wheat	A	7.8 A	3.2 A	7.9A
Crop yields - Corn	bu.	49.0 bu.	52.7bu.	46.8 bu.
Oats	bu.	38.9 bu.	41.9bu.	38.8 bu.
Wheat	bu.	23.8 bu.	22.2bu.	21.0 bu.
Percent in high profit crops*	%	54.4 %	58.3 %	49.4 %
Returns per $100 invested in all productive livestock	$	$ 124.00	$ 149.00	$ 101.00
For $100 in Cattle	$	$ 83.00	$ 99.00	$ 75.00
Hogs	$	$ 171.00	$ 187.00	$ 139.00
Poultry	$	$ 170.00	$ 196.00	$ 144.00
Investment per acre in productive livestock	$	$ 19.45	$ 22.24	$ 19.57
Receipts per acre from productive livestock	$	$ 24.18	$ 33.23	$ 19.77
Man labor cost per acre	$	$ 7.49	$ 8.03	$ 7.82
Crop acres per man	A	79.4 A	79.6 A	71.9 A
Crop acres per horse (with tractor)	A	25.2 A	23.8 A	21.6 A
(without tractor)	A	17.8 A	17.8 A	16.6 A
Expense per $100 gross income	$	$ 59.00	$ 46.00	$ 80.00
Machinery cost per acre	$	$ 2.36	$ 2.20	$ 2.82
Building and fencing cost per acre	$	$ 1.22	$ 1.22	$ 1.24
Gross receipts per acre	$	$ 24.80	$ 33.55	$ 19.99
Total expenses per acre	$	$ 14.54	$ 15.41	$ 15.98
Net receipts per acre	$	$ 10.26	$ 18.14	$ 8.59
Farms with tractor (percent)	%	64.4 %	65.0 %	55.9 %
Value of land per acre	$	$ 169.00	$ 173.00	$ 182.00
Total investment per acre	$	$ 239.00	$ 249.00	$ 254.00

*Percent of tillable land in corn, wheat, sweet clover, and alfalfa

Henry County - 1926

	Item	Your farm	Average of fifty-nine farms	Twenty most profitable farms	Twenty least profitable farms
1	Capital Investment - Total	$_____	$47,547	$43,699	$47,835
2	Land		33,556	30,338	34,281
3	Farm improvements		4,792	4,710	4,260
4	Machinery and equipment		1,668	1,316	1,933
5	Feed and supplies		3,143	3,114	2,959
6	Livestock		4,388	4,221	4,402
7	Horses		517	482	580
8	Cattle		1,917	1,621	1,970
9	Hogs		1,744	1,900	1,618
10	Sheep		46	40	75
11	Poultry		164	178	159
12	Receipts-Net Increases-Total	$_____	4,933	5,895	3,759
13	Feed and grain		68	---	---
14	Miscellaneous		55	56	43
15	Livestock - Total		4,810	5,839	3,716
16	Horses		--	--	--
17	Cattle		1,178	1,101	1,144
18	Hogs		2,894	3,891	1,924
19	Sheep		36	29	61
20	Poultry		156	181	139
21	Egg sales		119	150	92
22	Dairy sales		427	487	356
23	Expenses-Net Decreases-Total	$_____	1,961	1,825	2,144
24	Farm improvements		243	215	233
25	Livestock		20	9	27
26	Horses		20	9	27
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		470	386	530
32	Feed and supplies		--	47	94
33	Livestock expense other than feed		83	113	70
34	Crop expense		208	187	192
35	Labor hired		558	527	610
36	Taxes, insurance, etc.		345	316	354
37	Miscellaneous		29	25	34
38	Receipts less Expenses	$_____	2,972	4,070	1,615
39	Operator's and unpaid family labor		932	883	861
40	Net income from investment		2,040	3,187	754

Find Your Farm Leaks
Henry County - 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per A. in L.S.	Receipts per acre from L.S.	Man lab. cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No Tractor			
11.29	70	60	38	153	311	310	33.45	38.18	4.00	115	39	32	24	46	369
10.29	67	57	36	143	291	290	31.45	36.18	4.50	110	37	30	29	43	339
9.29	64	54	34	133	271	270	29.45	34.18	5.00	105	35	28	34	40	309
8.29	61	51	32	123	251	250	27.45	32.18	5.50	100	33	26	39	37	279
7.29	58	48	30	113	231	230	25.45	30.18	6.00	95	31	24	44	34	259
6.29	55	45	28	103	211	210	23.45	28.18	6.50	90	29	22	49	31	239
5.29	52	42	26	93	191	190	21.45	26.18	7.00	85	27	20	54	28	219
4.29	49	39	24	83	171	170	19.45	24.18	7.50	80	25	18	59	25	199
3.29	46	36	22	73	151	150	17.45	22.18	8.00	75	23	16	64	22	179
2.29	43	33	20	63	131	130	15.45	20.18	8.50	70	21	14	69	19	159
1.29	40	30	18	53	111	110	13.45	18.18	9.00	65	19	12	74	16	139
0.29	37	27	16	43	91	90	11.45	16.18	9.50	60	17	10	79	13	119
-0.71	34	24	14	33	71	70	9.45	14.18	10.00	55	15	8	84	10	99
-1.71	31	21	12	23	51	50	7.45	12.18	10.50	50	13	6	89	7	79
-2.71	28	18	10	13	31	30	5.45	10.18	11.00	45	11	4	94	4	59

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

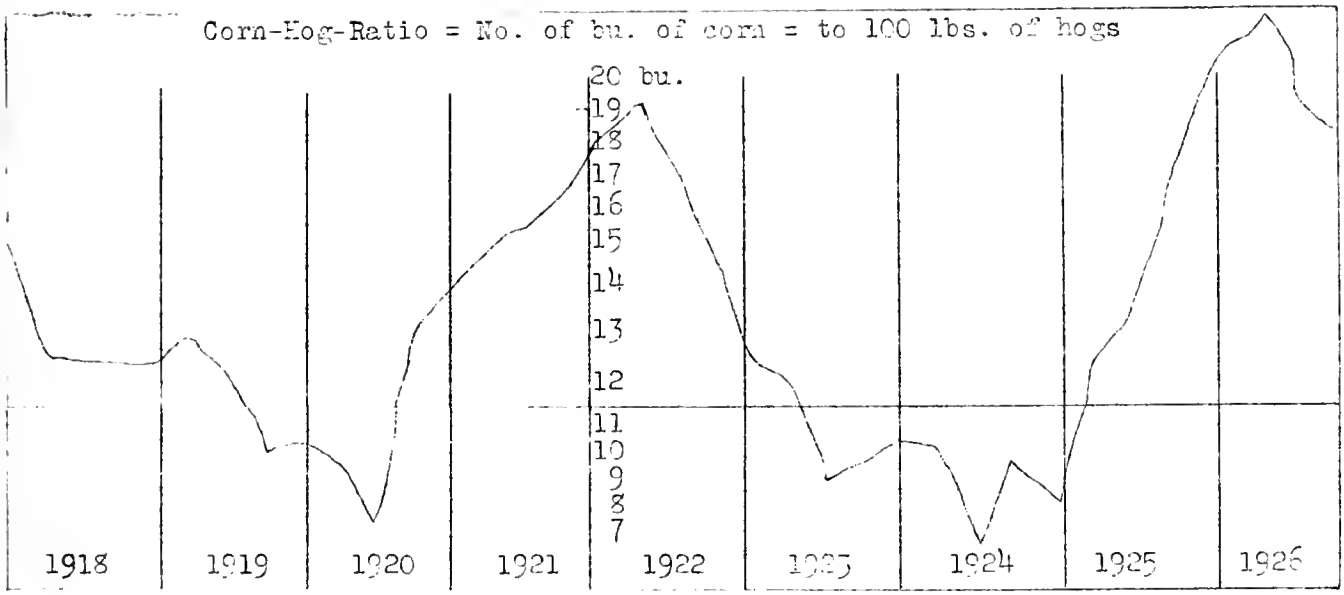
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

8

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

MARSHALL-PUTNAM AND STARK COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Forty-one Farms

for

1926

Farm Account keepers say:
"Farm accounts are more valuable the longer they are kept."

Urbana, Illinois

May, 1927

M52

ANNUAL FARM BUSINESS REPORT

Marshall-Putnam and Stark Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 41 farmers in Marshall-Putnam and Stark counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $329 to pay for their labor, management and risk after paying expenses and allowing 5 percent interest on their average investment of $258 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,730, while the one-third who were least successful lacked an average of $918 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,648 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 41 farmers earned 4.4 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 7.3 percent and the least successful third 1.9 percent. The average investment on the 41 farms was $50,361, which amounts to $258 an acre. The higher profit third had an average investment of $250 and the lower profit third $266 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $195 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

There was practically no difference in average size between farms of the low and high profit groups. Neither was there any significant difference in the percentage of land tillable. Both groups had the same number of acres of corn but the low profit farms averaged thirteen more acres of oats and four less acres of wheat. It is clear that size of farm had little influence on the relative earnings of these groups.

The more profitable farms averaged only a little higher yields than the less profitable farms, the difference consisting of about two bushels more corn, seven bushels more oats, and four bushels more wheat. As a rule,

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*F. E. Fuller and E. E. Brown, farm advisers in Marshall-Putnam and Stark counties respectively, cooperated in supervising and collecting the records used in this report.

in similar studies we have found differences in yields to be one of the large factors causing a difference in profits. Higher yields usually mean lower costs per bushel or ton of crop and therefore larger profits.

The greatest advantage of the high profit farms over the low profit farms covered by this report was in having more livestock and in handling their livestock more efficiently. The 15 most profitable farms had an average livestock investment of $18.22 an acre, compared with an investment of $14.24 an acre on the 15 least profitable farms. The difference in livestock income was even greater, the more profitable farms having a livestock income of $27.16 an acre compared with about half that amount or $13.72 an acre on the less profitable farms. The difference in livestock efficiency is shown in the fact that the operators of the more successful farms secured $149 income from each $100 invested in livestock, compared with $95 income from each $100 livestock investment on the less successful farms. Further evidence of more efficient feeding is seen in the fact that, although the more profitable farms were no larger and raised only slightly larger yields, they fed out and marketed about twice as much livestock and still had almost as much income from crop sales as the less profitable farms. Hogs were the source of 65 percent of the income on the more profitable farms and 53 percent of the income on the less profitable farms. The fact that hogs form the largest enterprise on these farms leads to a big advantage for those operators who grow hogs most efficiently. Cost accounting studies on hog production have shown that the man who can save a high percentage of pigs farrowed, keep his herd thrifty throughout the period from birth to market, and feed efficiently, will make money on hogs even when prices are much less favorable than they were in 1926.

Operating costs per acre were practically the same on farms of the high and low profit groups. Labor, power and other expenses were used more efficiently on the high profit farms, however, for at the same acre cost they secured a gross income per acre of $30.99 as compared with $17.84 on farms of the low profit group.

It is of some interest to compare farm earnings in the area covered by this report for 1926 with similar figures for preceding years. For 1924 forty-one farms in Henry, Marshall-Putnam, and Whiteside Counties averaged 7.4 percent on their investments. For 1925 twenty-seven farms in Marshall-Putnam Counties averaged 4.3 percent and 30 farms in Stark, Peoria, and eastern Henry counties averaged 6 percent on their investments. For 1926 forty-one farms in Marshall-Putnam and Stark counties averaged 4.3 percent on their investments. These figures agree with those from other areas of western Illinois in indicating lower earnings for 1926 than 1925. The year 1924 was the most satisfactory since 1919 on most Central Illinois farms, the chief cause being higher grain prices. Some causes of lower earnings for 1926 than in 1925 were lower corn yields, lower quality of grain, less satisfactory prices on heavy beef cattle, and losses from hog cholera. Corn and wheat prices at the farm ranged somewhat lower also.

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your record in the following tables with the same factors for the average farm as well as for farms of the high and low profit groups.

Marshall-Putnam and Stark Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 41 farms	Fifteen most profitable farms	Fifteen least profitable farms
Rate earned	%	4.38%	7.34%	1.91%
Labor and management wage	$	$ 329	$1,730	$ -918
Size of farm - acres	A	195.4 A	189 A	191.6 A
Percent of land area tillable	%	89.7 %	88.1 %	89.5 %
Acres in Corn	A	85.5 A	83.5 A	83.2 A
Oats	A	36.4 A	31.4 A	44.3 A
Wheat	A	6.4 A	6.4 A	2.2 A
Crop yields - Corn	bu.	48.6 bu.	48.9 bu.	46.5 bu.
Oats	bu.	34.3 bu.	36.9 bu.	29.6 bu.
Wheat	bu.	23.3 bu.	21.9 bu.	18.2 bu.
Returns per $100 invested in all productive livestock	$	$ 124	$ 149	$ 95
For $100 in Cattle	$	$ 76	$ 95	$ 56
Swine	$	$ 172	$ 190	$ 153
Poultry	$	$ 164	$ 156	$ 138
Investment per acre in productive livestock	$	$ 15.17	$ 18.22	$ 14.24
Receipts per acre from productive livestock	$	$ 18.86	$ 27.16	$ 13.72
Man labor cost per acre	$	$ 6.28	$ 6.08	$ 6.46
Crop acres per man	A	91.3 A	91.0 A	87.3 A
Crop acres per horse (with tractor)	A	23.4 A	24.2 A	19.6 A
(without tractor)	A	21.5 A	19.9 A	22.7 A
Expense per $100 gross income	$	$ 54	$ 41	$ 72
Machinery cost per acre	$	$ 2.15	$ 1.83	$ 1.96
Building and fencing cost per acre	$	$ 1.15	$ 1.19	$ 1.09
Gross receipts per acre	$	$ 24.32	$ 30.99	$ 17.84
Total expenses per acre	$	$ 13.03	$ 12.63	$ 12.77
Net receipts per acre	$	$ 11.29	$ 18.36	$ 5.07
Farms with tractor - percent	%	62.2 %	60 %	56.7 %
Value of land per acre	$	$ 195	$ 184	$ 204
Total investment per acre	$	$ 258	$ 250	$ 266

Marshall-Putnam and Stark Counties, 1926

	Item	Your farm	Average of 41 farms	Fifteen most profitable farms	Fifteen least profitable farms
1	Capital Investment - Total	$_____	$50,361	$47,265	$50,910
2	Land		38,008	34,792	39,052
3	Farm improvements		4,191	4,479	3,902
4	Machinery and equipment		1,454	1,530	1,239
5	Feed and supplies		3,423	2,884	3,530
6	Livestock		3,285	3,580	3,187
7	Horses		649	653	650
8	Cattle		1,112	1,204	1,055
9	Swine		1,333	1,575	1,213
10	Sheep		75	25	161
11	Poultry		116	123	108
12	Receipts-Net Increases-Total	$_____	$ 4,752	$ 5,857	$ 3,418
13	Feed and grain		1,018	664	762
14	Miscellaneous		48	49	28
15	Livestock - Total		3,686	5,144	2,628
16	Horses		--	11	29
17	Cattle		622	886	360
18	Swine		2,599	3,834	1,801
19	Sheep		67	42	88
20	Poultry		95	73	88
21	Egg sales		97	99	74
22	Dairy sales		206	199	188
23	Expenses-Net Decreases-Total	$_____	$ 1,779	$ 1,626	$ 1,671
24	Farm improvements		225	225	210
25	Livestock		4	-	-
26	Horses		4	-	-
27	Cattle		-	-	-
28	Swine		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		420	346	373
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		73	98	52
34	Crop expense		171	171	171
35	Labor hired		462	389	461
36	Taxes, insurance, etc.		402	379	382
37	Miscellaneous		22	18	22
38	Receipts less Expenses	$_____	$ 2,973	$ 4,231	$ 1,747
39	Operator's and unpaid family labor		766	761	776
40	Net income from investment		2,207	3,470	971

Marshall-Putnam and Stark Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man Labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.4	76	55	37	146	312	304	29.17	32.86	2.75	125	37	35	19	38	335
10.4	72	52	35	136	292	284	27.17	30.86	3.25	120	35	33	24	36	315
9.4	68	49	33	126	272	264	25.17	28.86	3.75	115	33	31	29	34	295
8.4	64	46	31	116	252	244	23.17	26.86	4.25	110	31	29	34	32	275
7.4	60	43	29	106	232	224	21.17	24.86	4.75	105	29	27	39	30	255
6.4	56	40	27	96	212	204	19.17	22.86	5.25	100	27	25	44	28	235
5.4	52	37	25	86	192	184	17.17	20.86	5.75	95	25	23	49	26	215
4.4	48	34	23	76	172	164	15.17	18.86	6.25	90	23	21	54	24	195
3.4	44	31	21	66	152	144	13.17	16.86	6.75	85	21	19	59	22	175
2.4	40	28	19	56	132	124	11.17	14.86	7.25	80	19	17	64	20	155
1.4	36	25	17	46	112	104	9.17	12.86	7.75	75	17	15	69	18	135
0.4	32	22	15	36	92	84	7.17	10.86	8.25	70	15	13	74	16	115
-0.6	28	19	13	26	72	64	5.17	8.86	8.75	65	13	11	79	14	95
-1.6	24	16	11	16	52	44	3.17	6.86	9.25	60	11	9	84	12	75
-2.6	20	--	9	6	32	24	1.17	4.86	9.75	55	9	7	89	10	55

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

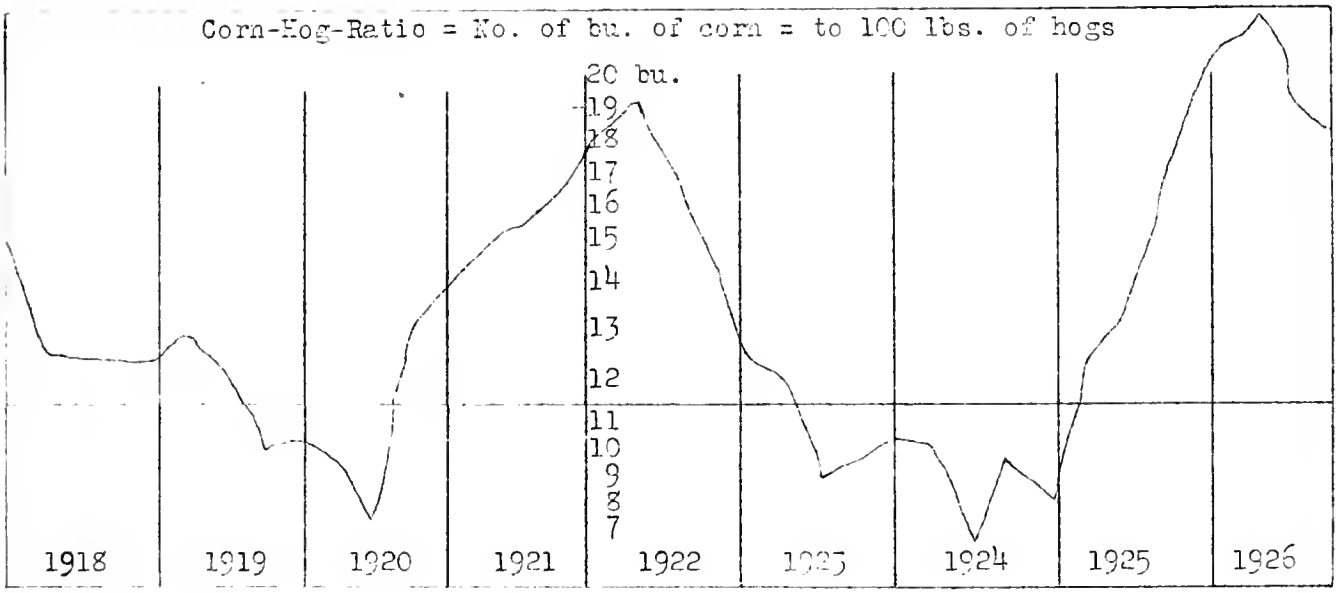
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

9

UNIVERSITY OF ILLINOIS
Department of Farm Organization and Management
and the
Farm Bureaus of
Livingston, McLean, Tazewell and Woodford Counties
Cooperating

SECOND ANNUAL REPORT

of the

FARM BUREAU-FARM MANAGEMENT SERVICE

for the year

1926

This report prepared for the farm operated by

_____

Farm account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois
April 22, 1927

SECOND ANNUAL REPORT

For the Cooperators in the
Farm Bureau-Farm Management Service
For the Year 1926

Prepared by M. L. Mosher, and H. C. M. Case

An average of 2.8 percent on the entire farm investment, after deducting all expenses and $720 allowance for the value of the operator's labor, was made by the 210 farmers who are cooperators in the Farm Bureau-Farm Management Service and whose records were used in preparing this report. The average investment in land, buildings, livestock, and other equipment was $255.93 per acre with land valued at $192.24. Expressing the earnings in another way, these men after paying all expenses of operating their farms and allowing 5 percent interest charge on the investment lacked $616 of getting any return for their own labor.

In addition to the above earnings each family secured produce from the farm which, based on records kept on 181 farms, amounted to $466.70 at farm prices. Also the house they lived in was worth $470.35 per farm each year, based on depreciation, upkeep, and interest charges. The total value of these two items amounted to $937.05 at farm prices.

The income figures given in this report should not be considered as representative of all farms in these counties. A survey study of all farms in one township in McLean County in 1925 in about the center of the four counties included in this project, and a similar study of farm incomes in a township in Bond County in 1926 indicate that the farms on which the records were kept in this project earned about 2 percent higher rate on the investment than the average of all farms in the same part of the state.

Differences in Earnings Between Farms

There are wide variations in the earnings on the most successful and the least successful farms. The 42 most profitable of the 210 farms made 5 percent interest on the investment and had $1,410 to pay the operator for his own labor and management while the 42 least profitable farms lacked $2,311 of making 5 percent on the investment, and left nothing to the operator for his own labor and management.

This amounts to a total difference of $3,710 in the return for the labor and management of the operators between the high and low groups of farms. This may be expressed in another way by saying, after all expenses were paid and the operator allowed $720 for his own labor, the most profitable group made 6.28 percent on the investment, while the least profitable group lacked .01 of 1 percent of getting any return for the money invested.

What Accounted for the Difference in Farm Earnings

The one-fifth most profitable farms (42 farms) had an income of $29.59 an acre, while the one-fifth least profitable farms had an income of only $14.74 per acre (see Table 2). The total expenses per acre on the two groups of farms were $13.71 and $14.77 per acre respectively. In other words, the most profitable group of farms with $1.06 less expense per acre received two times as large returns per acre. The same table shows that the least profitable farms were a little larger in size on the average and that they had a little larger investment per acre due mainly to a larger investment in farm improvements.

Factors Affecting Farm Income

Crop yields. The yields per acre on the most profitable farms were as follows: Corn 55.8; oats 43.5; wheat 25.5 bushels. On the least profitable group the yields were: Corn 47; oats 35.6; and wheat 18.3 bushels. The difference in the yield of corn, wheat, and oats shown between the most profitable and the least profitable groups of farms, when applied to the acreage of these crops grown on the average of all farms, would amount to a difference of $869.28 with corn valued at 60 cents, oats 35 cents, and wheat $1.25 per bushel. The effect of yields on the farm income is greater than is indicated by this figure if the comparison had been worked out for all the other crops grown.

Kinds of crops grown. The most profitable group of farms grew a larger acreage of corn, wheat, alfalfa, sweet clover, red clover, and canning crops, but a smaller acreage of oats, bluegrass, timothy, and other crops. The most profitable group of farms grew a larger proportion of the more profitable crops, as discussed later. The difference in the proportion of land in corn, oats, and wheat shown between the most profitable and the least profitable groups of farms when applied to the average size farm would account for a difference of $412.49 with the crops valued at the same prices given above.

The amount and efficiency of livestock. The most profitable group of farms with an investment of $12.04 an acre in productive livestock received a livestock return of $19.07 per acre, while the least profitable group of farms had $9.04 invested and received a return of $10.10 per acre. Also the most profitable group of farms received $185.09 returns for each $100 worth of feed fed compared with a return of $129.95 for the least profitable group. The return for $100 worth of feed fed was greater for beef cattle, mixed cattle, dairy cattle, hogs, sheep, and poultry on the most profitable farms. The difference in the return for $100 worth of feed fed between the most profitable and the least profitable farms amounted to a difference of $1,049.44 with the amount of $1,903.23 worth of feed fed on the average farm. This does not include the difference in cost of keeping horses on the two groups of farms.

Use of man labor. The most profitable group of farms had the same man labor expense ($6.87) per acre as the least profitable group ($6.86). This is significant when one recognizes that the returns were twice as high on the most profitable farms.

Power and machinery costs. The total cost of horse and tractor power and machinery cost per acre on the most profitable farms amounted to only $4.24 per acre compared with a cost of $4.96 per acre on the least profitable farms. This difference in cost of power and machinery of 72 cents per acre would amount to a difference of $167 less cost per farm in favor of the most profitable farms.

Relation of expense to income. The most profitable farms had a total expense of $46.32 for every $100 taken in compared with the expense of $100.17 on the least profitable farms. These expenses did not include interest on the investment in the farm business. As shown in the previous discussion, this difference is due largely to the larger income per acre on the most profitable farms. It illustrates, however, the necessity of keeping the right relationship between expenses and income. Many farms with a good income failed to make a good profit because of large expenses.

Table 1. SUMMARY OF THE YEAR'S FARM BUSINESS

Your summary as shown on pages 34 and 35 of your book compared with 210 farms, the forty-two most profitable and the forty-two least profitable farms.

	Items	Your farm	Average of 210 farms	42 most profitable farms	42 least profitable farms
1	Capital Investments - Total	$_____	$59,403	$55,390	$59,701
2	Land		44,620	42,230	43,770
3	Farm improvements		5,840	4,637	7,055
4	Machinery and equipment		1,883	1,699	2,004
5	Feed, grain and supplies		3,809	3,393	3,917
6	Livestock - Total		3,251	3,431	2,955
7	Horses		820	707	845
8	Cattle		1,131	1,032	967
9	Hogs		931	1,261	855
10	Sheep		203	243	151
11	Poultry		152	142	123
12	Bees		14	46	14
13	Receipts and Net Increases - Total	$_____	$ 4,813	$ 6,483	$ 3,383
14	Farm improvements		---	---	---
15	Feed, grain and supplies		1,961	2,457	1,339
16	Labor off the farm		63	106	44
17	Miscellaneous		6	6	7
18	Livestock - Total		2,783	3,914	1,993
19	Horses		--	33	--
20	Cattle		454	467	418
21	Hogs		1,689	2,669	1,182
22	Sheep		32	41	--
23	Poultry		121	115	97
24	Egg sales		130	141	87
25	Dairy sales		353	427	208
26	Bees		4	21	1
27	Expenses and Net Decreases - Total	$_____	$ 2,234	$ 2,127	$ 2,520
28	Farm improvements		259	201	347
29	Machinery and equipment		481	474	549
30	Feed, grain and supplies		---	---	---
31	Miscellaneous livestock expense		52	61	61
32	Miscellaneous crop expense		250	254	258
33	Hired labor		634	630	704
34	Taxes, insurance, etc.		500	460	518
35	Miscellaneous expenses		50	47	61
36	Horses - decreases		8	--	22
37	Miscellaneous livestock decreases		--	--	--
38	Receipts less expenses	$_____	$ 2,579	$ 4,356	$ 863
39	Operator's and family labor		914	876	869
40	Net income from investment		1,665	3,480	- 6

Table 2 - IMPORTANT FACTORS BY WHICH THE FARM BUSINESS MAY BE STUDIED
Underlined factors are the ones used on the chart, Page 6

Item	Your farm	Average of 210 farms	42 most profitable high farms	42 least profitable low farms
Rate earned on investment	_____%	2.80%	6.28%	- 0.01%
Labor and management wage	$	$-616.	$1,410.	$-2,311.
Gross receipts per acre	_____	20.74	29.59	14.74
Total expense per acre		13.57	13.71	14.77
Net receipts per acre		7.17	15.88	- .03
Size of farm	_____	232.1	219.1	229.4
Total investments per acre	$	$ 255.93	$ 252.80	$ 260.28
Land		192.24	192.74	190.83
Farm improvements		25.16	21.16	30.76
Machinery and equipment		8.11	7.75	8.74
Feed, grain and supplies		16.41	15.49	17.07
Horses		3.53	3.23	3.68
Productive livestock		10.48	12.43	9.20
Corn - Bushels per acre	_____	51.3	55.8	47.0
Oats - Bushels per acre		37.1	43.5	35.6
Wheat - Bushels per acre		20.6	25.5	18.3
Hay - Tons per acre		1.3	1.4	1.3
Percent of farm tillable		90.3	90.0	91.4
Percent of tillable land in Higher profit crops	_____	60.1	66.8	55.7
Corn		45.6	48.3	42.8
Wheat		7.0	10.2	7.3
Alfalfa		2.7	2.1	2.0
Sweet clover		3.7	4.6	3.6
Canning crops		1.1	1.6	0.0
Medium profit crops		7.4	6.1	8.3
Clover		1.7	1.5	1.4
Clover and timothy mixed		3.2	2.1	4.1
Barley, soybeans, etc.		2.5	2.5	2.8
Low profit crops		32.5	27.1	36.0
Oats		25.5	22.1	25.8
Timothy		2.8	2.6	3.3
Bluegrass		4.2	2.4	6.9
All legumes		12.8	12.2	12.7
All grain and hay crops		88.6	90.9	85.1

Table 2 - (Continued)

Item	Your farm	Average of 210 farms	42 most profitable farms	42 least profitable farms
Productive livestock				
Investment per acre	$_____	$ 10.43	$ 12.04	$ 9.04
Returns per acre		13.38	19.07	10.10
Value of feed fed to all productive livestock		1,903.23	2,321.00	1,857.72
Returns per $100 feed fed to All productive livestock		159.70	185.09	129.95
Beef cattle	_____	84.84	135.81	53.29
Mixed cattle	_____	108.54	121.45	100.54
Dairy cattle	_____	137.61	153.74	108.09
Hogs	_____	196.41	206.10	179.96
Sheep	_____	47.00	120.75	- 5.89
Poultry		280.03	302.73	261.66
Pounds of pork produced		14,848	22,563	10,598
Feed cost per 100 pounds of pork		$ 6.10	$ 5.90	$ 6.77
Returns per 100 pounds of pork		11.96	12.20	11.96
Pounds of pork per acre		64.0	103.0	46.2
Returns per $100 invested in poultry	_____	$ 207.11	$ 226.43	$ 202.48
Average number of hens kept		107.0	100.9	104.3
Number of eggs per hen		85.4	96.7	78.0
Labor and power				
Percent of farms with tractors		65.2	71.4	66.7
Percent of farms with trucks		29.5	21.4	33.3
Percent with tractors and trucks		24.8	19.0	28.6
Percent without tractors or trucks		30.0	26.2	28.6
Crop acres per man		92.5	90.6	89.6
Crop acres per horse		24.7	26.6	23.4
Hired and home labor per acre of farm		$ 6.67	$ 6.87	$ 6.86
Horse feed and depreciation per acre of farm		2.35	2.08	2.57
Machinery cost per acre of farm		2.07	2.16	2.39
Horse and machinery cost per acre		4.42	4.24	4.96
Expenses per $100 gross income	$_____	$ 65.40	$ 46.32	$ 100.17
Expenses per acre of whole farm		13.57	13.71	14.77
Farm improvements		1.12	.92	1.51
Horses		.03	--	.10
Machinery and equipment		2.07	2.16	2.39
Feed, grain and supplies		----	----	----
Miscellaneous livestock expense		.22	.28	.27
Miscellaneous crop expense		1.08	1.16	1.12
Hired and home labor		6.67	6.87	6.86
Taxes, insurance, etc.		2.16	2.10	2.26
Miscellaneous expenses		.22	.22	.26
Family living furnished by 181 farms				
Farm produce used in home		$ 466.70	$ 450.72	$ 481.94
House rent (10 percent of value)		470.35	457.64	502.21
Total living furnished by farm		937.05	908.36	984.15
Size of family		5.0	4.8	5.0

Table 3 - FIND YOUR FARM LEAKS

The numbers above the double line across the middle of the page are the averages for the 210 farms used in this summary of the factors named at the tops of the columns. By drawing a line across each column at the number measuring the efficiency of your farm as shown in Table 2, you can compare your efficiency with that of the other farms in the project.

Rate earned on investment	Bushels per acre			Percent land in high profit crops	Livestock returns per $100 feed				Investment in L.S. per acre	Size of farm	Percent efficiency		Expense per $100 gross income	Gross income per acre
	Corn	Oats	Wheat		Cattle	Hogs	Sheep	(1) Hens			Man labor	Horse and machinery		
10.8	91	77	53	100		276	207	367	26	552	180	180	25	45
9.8	86	72	49	95		266	187	347	24	512	170	170	30	42
8.8	81	67	45	90		256	167	327	22	472	160	160	35	39
7.8	76	62	41	85		246	147	307	20	432	150	150	40	36
6.8	71	57	37	80		236	127	287	18	392	140	140	45	33
5.8	66	52	33	75		226	107	267	16	352	130	130	50	30
4.8	61	47	29	70		216	87	247	14	312	120	120	55	27
3.8	56	42	25	65		206	67	227	12	272	110	110	60	24
2.8	51	37	21	60		196	47	207	10	232	100	100	65	21
1.8	46	32	17	55		186	27	187	8	192	90	90	70	18
.8	41	27	13	50		176	7	167	6	152	80	80	75	15
- .2	36	22	9	45		166	-13	147	4	112	70	70	80	12
-1.2	31	17	5	40		156	-33	127	2	72	60	60	85	9
-2.2	26	12	1	35		146	-53	107	0	32	50	50	90	6
-3.2	21	7	--	30		136	-73	87	-	-	40	40	95	3

(1) Returns per $100 invested used for poultry.

Profitable Farming Requires Balanced Farming

Weaknesses in some parts of the farm business often offset the advantages gained at other points. In an efficiency study of an ordinary corn-belt farm the more important points to be considered, most of which are well illustrated in the data in this report, include the following:

1. Crop yields
2. Kinds of crops grown
3. Efficiency with which livestock is produced
4. Use of man labor
5. Use of horse labor and farm power
6. Relationship of expenses to receipts

Two other factors which are important in some areas but not used in the analysis on this page are "amount of livestock" and "size of farm."

In Chart 1 is shown the value of doing at least fairly well in each line of farm work. Farms on which complete records were kept in 1925 were divided into seven groups according to the number of the six factors named above in which each farm did more efficient work than the average of all the farms studied.

Chart 1 - Relation of Rate Earned on the Total Farm Investment to the Number of Factors in Which Farms Excel. Data from 1925 Records.

Number of factors in which farms excel	Number of farms	Your farm	The lengths of the shaded lines are in proportion to the average rates earned on the total farm investments.	Rate earned	Average net income
0	7		XXXX	.9	$ 539
1	30		XXXXXX	1.1	659
2	44		XXXXXXXXXXXX	2.4	1,437
3	57		XXXXXXXXXXXXXXX	3.0	1,797
4	42		XXXXXXXXXXXXXXXXXXXXXXXXX	4.9	2,935
5	27		XXXXXXXXXXXXXXXXXXXXXXXXX	4.9	2,935
6	7		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	7.6	4,552

It may well be noted that those few farms which were doing better than the average along all six lines of farm work earned 7.6 percent on their total farm investments, while those which were below the average in all factors earned only .9 percent. Applied to the average farm investment, this meant a difference of over $4,000. With considerable regularity, the rates earned on the seven groups of farms increased as the number of factors in which the farms excelled increased.

Each operator may well study this report, first, to determine how his efficiency compares with the average in each particular; and, second, to learn the methods used on those farms which are operated more efficiently in each factor. Each of the above factors is discussed briefly on the following pages.

Crop Yields

Good crop yields are, as a general rule, essential for good net farm incomes. Chart 2 shows the relation found in 1925 between the yields of corn on the farms of the cooperators and the rates earned on the total farm investments. It should be understood that not all of the indicated increase of net income on the farms having higher yields of corn is due to the increased corn yield. The tendency is for the same farms which have good corn yields to have good yields of other crops, larger proportions of tillable land in the higher profit crops, and to have higher returns for feed fed to livestock.

Chart 2 - Rate Earned as Related to the Yield of Corn

The rates earned on the different groups of farms were affected more or less by other factors such as percent of land in higher profit crops and efficiency in feeding livestock.

Yield of corn	Number of farms	Your farm	The lengths of the shaded bars are in proportion to the rates earned on the total farm investments	Rate earned	Average net incomes
30-40	8		XXXXXXXXXXXX	1.3	$ 779
40-50	51		XXXXXXXXXXXXXXXXXXXXXXX	2.3	1,377
50-60	94		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	3.2	1,916
60-70	55		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	4.0	2,396
70-80	9		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	4.9	2,935

It may well be noted that each increase of ten bushels per acre of corn was accompanied by an increase of about nine-tenths of one percent in the rate earned on the investment. On the average farm this meant that with each ten bushels increase in yield of corn there was about $500 increase in the total net return for the farm.

What Cooperators Do To Secure Good Crop Yields

1. Use varieties and strains of corn, wheat, oats, etc., which long-time investigations of the experiment stations have proved to be high-yielding and adapted to the conditions. (Chart 3 on page 9)
2. Make germination tests of representative samples of all seeds.
3. Test for disease at least enough seed corn to plant a small field on which no corn had been grown for two or more years from which to select the next year's seed. (Chart 3) Treat seed oats and wheat for smut each year.

Any tenant or landowner in difficult financial condition can do the above things almost as easily as the most prosperous landowner.

4. Use a cropping system which provides that each field is left in some deep-rooted legume at least once in four or five years.
5. Use a definite plan for the efficient use of all available manure.
6. Use limestone and rock phosphate on soil types where investigations show that they can be profitably used.

Crop Yields (Continued)

The data given in Chart 3 are only for fields of ten acres or larger planted on the brown silt loam and black clay loam soil types. It may well be noted that, for the cooperators in this project, the use of high yielding, utility strains of seed corn added seven to eight bushels per acre and that the ear testing of seed added from two and one-half to four bushels. Clover used in the rotation added about seven bushels, manure added about eight bushels, and rock phosphate increased the yield from six to eight bushels.

The twenty-nine fields planted with tested, utility seed on soil which had had rock phosphate in addition to clover or manure yielded an average of thirty bushels more than seventeen fields planted with untested, old type corn on land which had had no phosphate and had not had any manure nor clover left stand for at least four years.

Chart 3 - Corn Yields as Related to Seed Practices and Soil Treatments - 1925 data

Practice or treatment	Number of fields	The lengths of the shaded bars are in proportion to the yields secured from fields treated as indicated	Bushels per acre
Yields as related to seed practices			
Old type untested	30	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	49.9
Old type ear tested	131	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	53.9
Utility untested	30	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	58.3
Utility ear tested	133	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	60.8
Yields as related to soil treatments			
None	76	XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	46.7
Manure	43	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	53.3
Clover	54	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	54.7
Manure - clover	56	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	58.7
Manure - rock phos.	6	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	60.6
Clover - rock phos.	24	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	60.9
Man.-clo. rock phos.	35	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	66.4
Yields as related to seed practices and soil treatments			
Both poor	17	XXXXXXXXXXXXXXXXXXXXXXXXXX	42.3
Both good	29	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	72.5

Value of Growing Profitable Kinds of Crops

It often happens that a farm which has good crop yields and where efficient work with livestock is done is relatively unprofitable because a large part of the tillable land is used in growing crops which do not give as good returns for the land, labor, power, and machinery as do other crops which might be grown.

Chart 3 shows the relation of the rates earned on these farms and the percent of tillable land in the combined acreage of the higher profit crops of corn, wheat, alfalfa, sweet clover and canning crops of sweet corn, peas, and pumpkin. The selection of corn and wheat as the higher profit grain crops, of alfalfa as the higher profit hay crop, and of sweet clover as the higher profit pasture crop for tillable land was based on long-time investigations of the Departments of Farm Organization and Management and Animal Husbandry of the University of Illinois.

Chart 3 - Rate Earned as Related to the Percent of Land in the Higher Profit Crops

It should be understood that part of the increased net income was due to better crop yields, better handled livestock, etc., on the same farms. Data is from 1925 records.

Percent land in higher profit crops	Number of farms	Your farm	The lengths of the shaded bars are in proportion to the rates earned on the total farm investments	Rate earned	Average net income
30 - 40	8		XXXXXXXXXXXX	1.4	$ 838
40 - 50	35		XXXXXXXXXXXXXXXXXXXXX	2.5	1,497
50 - 60	82		XXXXXXXXXXXXXXXXXXXXXXXXX	2.9	1,737
60 - 70	65		XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	3.5	2,096
70 - 80	25		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	4.1	2,455
80 - 90	9		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	5.8	3,474

It will be noted in Table 2 that 48.3 percent of the tillable land on the 42 most profitable farms was in corn. It is doubtful if it is ever wise to have more than fifty percent of the tillable land in corn or any other one crop, because of the uneven distribution of labor, difficulty of maintaining soil fertility, difficulty of controlling weeds and insects and the risk of storms or other uncontrolable conditions which may seriously injure one crop but do little damage to others.

It is apparent that those cooperators who are farming most profitably are, in most cases, men who have almost done away with timothy and blue-grass on tillable land and have reduced the acreage of oats.

Relation of Amount and Efficiency of Livestock to Farm Incomes

Efficient care and feeding of livestock is essential for the best net farm incomes. Those farms having a small amount of livestock well handled had larger net incomes than farms having large amounts of livestock poorly handled. With the present favorable prices of livestock in relation to prices of grain the farms which fed most of their grain to well handled livestock had net incomes about $2,000 higher than farms having small amounts of livestock poorly handled.

Chart 4 - Relation of the Rate Earned and the Amount and Efficiency of Livestock

It should be understood that the rates earned were affected also by the crop yields, percent of land in higher profit crops, etc., - 1925 data.

Returns for $100 feed	Number of farms	Your farm	The lengths of the shaded bars are in proportion to the rates earned by the different groups of farms.	Rate earned	Average net income
Less than $6.00 invested in productive livestock per acre - $4.00 average					
$100-150	21		XXXXXXXXXXX	1.7	$1,018
$150-200	29		XXXXXXXXXXXXXXXXXXXX	3.1	1,857
$200-250	8		XXXXXXXXXXXXXXXXXXXXXXX	3.4	2,036
From $6.00 to $11.00 invested in productive livestock per acre - $8.25 average					
$100-150	26		XXXXXXXXXXXXXX	2.2	$1,318
$150-200	31		XXXXXXXXXXXXXXXXXXXXXXXX	3.7	2,216
$200-250	6		XXXXXXXXXXXXXXXXXXXXXXXXXXX	4.1	2,455
More than $11.00 invested in productive livestock per acre - $18.50 average					
$100-150	29		XXXXXXXXXXXXXXXXXXX	3.1	$1,857
$150-200	27		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	5.2	3,114
$200-250	6		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	6.0	3,593

Those farms in the first three groups which had an average of only four dollars per acre invested in productive livestock sold a large portion of their crops while those in the last three groups which had an average of $18.50 per acre invested in livestock fed most of their grain.

A few of the more important things the cooperators do to get high returns for feed fed to livestock are:

1. Use the best types of breeding stock.
2. Study market conditions carefully as a guide to the purchase and sale of cattle, sheep, and hogs.
3. Follow proved plans for keeping livestock healthy, such as the McLean County System of Swine Sanitation and the growing of chicks on clean ground.
4. Use rotated legume pastures which provide clean feeding grounds and the necessary protein and minerals in the rations.
5. Grow their own feeds, especially legumes, for the proper feeding of livestock.
6. Purchase sufficient unmixed high protein products, such as tankage, oil meal, and cottonseed meal to balance the home-grown feeds.

Efficiency in the Use of Man Labor and Horse Power and Machinery

While the efficient use of man labor and of horse power and machinery are important as they affect the net farm incomes, no divisions of the farms into groups according to such efficiencies have yet been made. In Table 2, page 4, it is shown that with more than double the gross income per acre, the 42 most profitable farms had the same labor cost per acre and somewhat lower horse power and machinery costs than were found on the 42 least profitable farms. This statement appears more significant since these records show that the actual value of man labor and the cost of horse and tractor power and machinery amounted to over $11.00 an acre on the average farm, while the income amounted to only $20.74 an acre.

What Cooperators Do To Make Good Use of Man Labor

1. Adopt cropping systems which will tend to make use of labor evenly throughout the year.

2. Grow and feed such livestock as will make use of available labor throughout the year and especially to provide productive winter work.

3. Fit the cropping system to the available labor supply. For illustration, farmers having boys in High School and College coming home for summer vacations may safely increase the alfalfa and wheat acreage above what could ordinarily be grown.

4. Plan ahead so as to have odd jobs and other work out of the way when the rush seasons for field work come.

5. Arrange the size, shape, and location of fields so as to save time in taking livestock to pasture and in doing the field work.

What Cooperators Do To Make Good Use of Horse Power and Machinery

1. Keep machinery under cover and protected from poultry and other livestock.

2. Clean, repair, paint, and oil machinery and harness regularly. On many of the more profitable farms this work is done in the winter with farm labor.

3. Study the use and care of expensive and more complicated machines such as tractors, trucks, threshing machines, corn huskers, combines, etc. On many farms the saving of labor by the use of labor saving machinery is overbalanced by the heavy depreciation and repair bills.

4. Keep only as many workable horses as are needed under ordinary conditions.

5. Feed horses according to the work done.

Thrift - The Keeping of Expenses Low in Proportion to Receipts

Some farms which produced good crop yields had a large proportion of the land in higher profit crops and made a good return for the feed fed to livestock, and had low net incomes because the expenses were high in proportion to the income.

In chart 6 the farms are grouped according to the total expense including the operator's and family labor for each $100 of gross income. As was to be expected, there was a regular decrease in the rate earned on the investment as the expenses in proportion to receipts increased.

Chart 6 - Rate Earned in Relation to the Proportion of Expenses to Receipts, 1925 Data

Expense for $100 gross income	Number of farms	Your farm	The lengths of the shaded bars are in proportion to the rates earned in the total farm investments.	Rate earned	Net farm income
$30-50	41		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	6.6	$3,953
$50-60	46		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	4.8	2,875
$60-70	53		XXXXXXXXXXXXXXXXXXXXX	3.2	1,916
$70-80	31		XXXXXXXXXXXX	2.0	1,198
$80-90	23		XXXXXXX	1.2	719
$90-100	19		XX	.3	180
Over $100	12	XXXXXXXXX		-1.4	-838

What Cooperators Do To Keep Expenses Low in Proportion to Receipts

1. Select and prepare most of the seed used, buying a little improved seed occasionally as more valuable strains are discovered or developed.
2. Repair machinery, harness, fences, and buildings with the farm labor.
3. Grow enough crops high in protein and minerals, such as alfalfa, sweet clover, and soybeans, to balance the grain ration, saving much of the purchase price of expensive protein supplements.
4. Use home-grown feeds as far as possible.
5. Plan work so as to make as few trips to town as possible, thus saving time and gas.
6. Feed work horses in accordance with the work done. On some farms much feed goes to idle horses which could more profitably go to cattle or hogs or be sold.
7. Purchase inexpensive but serviceable equipment. As an illustration, many cooperators are building individual hog houses costing about $10 each which are as useful and will last as long as other houses costing three times as much.

Size of Farms

The farms in this project vary from 40 to 640 acres in size. The type of soil is similar on most of the farms, except a few more farms between 141 and 180 acres in size were on a lighter type of soil. The average rate earned on the investment by the different groups of farms varied only from 2.6 percent to 3.1 percent in 1926. With the exception of the farms from 141 to 180 acres in size the average rate earned in 1925 varied from 3.0 percent to 3.9 percent (See Table 4).

Table 4 - FARM INCOME AS RELATED TO SIZE OF FARMS

Size of farm	1926		1925	
	Number of farms	Rate earned	Number of farms	Rate earned
40-140 acres	28	2.9	33	3.6
141-180 "	45	3.1	47	2.5
181-220 "	37	3.1	34	3.9
221-260 "	39	2.6	41	3.2
261-320 "	36	2.6	43	3.3
321-640 "	25	2.7	27	3.0
Total	210	2.8	225	3.2

The most favorable size of farm for both years based on the rate earned are the farms between 181-220 acres in size. In general the farms of this size or smaller make a larger rate on the investment than larger farms. Small farms usually have a larger income per acre and also due to the disadvantage of a small size these farms have a larger expense per acre. Even tho a good return on the investment is secured, a good sized farm is necessary to give a large return to the individual.

There are some disadvantages of the smaller sized farms which are clearly brought out in records on some of these farms. The number of acres of crops worked with one man and one horse gradually increase with the larger sized farm. Also the expense per acre for farm improvements, machinery and equipment, the value of all labor, and other expenses are higher on the small sized farms and gradually decrease as the acreage increases. This is to be expected since many of the farm improvements and much of the machinery and equipment have to be provided even with a small acreage and the cost is not increased proportionately as the size of farms increases. The small farm to be successful must have a good sized business. Some of the ways the operators of small farms are overcoming this disadvantage include:

1. Keeping more livestock, especially dairy cows and poultry
2. Selecting crops that give a large return per acre
3. Canning crops, or, especially in some localities near good markets, truck crops are grown to advantage
4. Renting additional land

Many large farms are less successful because they are not so carefully organized and operated. Some of the common faults of large farms are:

1. Land is badly scattered and not readily reached from the farmstead
2. Usually less livestock per acre is kept on large farms
3. A smaller percentage of the land is in legumes and too large a percentage of land is grown to oats or other low profit crops on many large farms
4. Yields are lower because less care is given the soil and work is not as well done on many farms where much of the labor is hired

ORGANIZATION AND PURPOSE OF THE FARM BUREAU-

FARM MANAGEMENT SERVICE PROJECT

The Farm Bureau-Farm Management Service Project was organized during the latter part of the year 1924. Its purpose is to assist the farmers cooperating in it to keep such farm accounts as will enable them to study the efficiency with which they are conducting their farm business and to help them to apply to their individual farms the practices in farm organization and operation which have proved profitable on other farms of a similar type. The cooperators in the project are farm bureau members of Livingston, McLean, Tazewell, and Woodford counties. The project is an outgrowth of the regular farm management extension work. The extension work in Farm Management was begun in Tazewell county in 1915 and some work was done in all of the four counties in 1916.

In Woodford county from 30 to 100 farmers completed farm accounts from 1916 to 1921 and beginning in 1921 over 100 records have been closed each year. Farm management tours have played an important part in developing interest in the work. The growing number of farmers keeping records made it impossible for the College of Agriculture to give as much assistance through the regular extension work as was desired by the farmers cooperating in the extension project. This was the situation that led to the organization of the Farm Bureau-Farm Management Service.

About sixty farm bureau members in each of the four counties agreed to cooperate in the project for the three years of 1925, 1926, and 1927. The total average cost is about twenty-five dollars per farm per year. One-third of the expense is borne by the University of Illinois. This leaves a cost per farm of about seventeen dollars per year. The fee per farm varies from ten to twenty dollars per year, depending on the size of the farm. In two of the counties the farm bureaus pay a portion of each fee, while in two counties the cooperators pay the entire fee of ten to twenty dollars.

The entire time of M. L. Mosher, one of the authors of this report, is given to the project. Each cooperator is being visited on his farm at least three times during each year.

The work is under the direction of H. C. M. Case, in charge of the Department of Farm Organization and Management acting in cooperation with an advisory committee consisting of one representative of each farm bureau. This committee consists of G. F. Bennett, Livingston County, Chairman, E. D. Lawrence, McLean County, W. C. Somer, Tazewell County, and J. Frank Felter, Woodford County, who is secretary-treasurer. This committee is responsible to the cooperating farm bureau for the custody and expenditure of the funds raised by the collection of the cooperators' fees. Each Farm Bureau collects the fees from its cooperating members and pays them over to the committee.

The organization of the project was made possible by the hearty support and assistance of the four Farm Advisers and their assistants. The Farm Advisers who were in charge of their counties when the work was organized are H. O. Allison, Livingston County, H. Fahrnkopf, McLean County, Ralph E. Arnett, Tazewell County, and P. E. Johnston, Woodford County. Mr. Johnston left the county in January 1925 to specialize in Farm Management and H. A. deWerff, the present Farm Adviser, has cooperated since the work was started.

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H. W. Mumford, Director

UNIVERSITY OF ILLINOIS
COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

WOODFORD COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Fifty-five Farms

for

1926

Farm account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois
April 20, 1927
M40

ANNUAL FARM BUSINESS REPORT

Woodford County, Illinois-1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 55 farmers in Woodford county who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $261 each of having enough income to pay operating costs and 5 percent interest on their average investment of $250 an acre, allowing nothing for their labor management and risk. The one-third of these farmers who made the best profits paid operating expenses and 5 percent on their investments and had left an average labor and management wage of $977, while the one-third who were least successful lacked an average of $1,368 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,345 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 55 farmers earned 2.95 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 5.64 percent and the least successful third 1.04 percent. The average investment on the 55 farms was $47,787, which amounts to $250 an acre. The higher profit third had an average investment of $230 and the lower profit third $261 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $200 an acre on the average farm.

In addition to the above earnings each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept make an average of about 2 percent higher rate on the investment than the average of all farms in the same locality.

The 20 least profitable farms averaged 27 acres larger in size and had 10 percent more tillable land than the 20 most profitable farms. The average farm in either group was large enough to be farmed economically and size apparently had no influence on the relative earnings of the two groups. The less successful farms had 26 acres more corn, 18 acres more oats, and 6 acres less wheat per farm than their more successful neighbors

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*H. A. deWerff, farm adviser in Woodford County, cooperated in supervising and collecting the records used in this report.

As to yields the more profitable farms averaged 4 bushels more corn, 6 bushels more oats, and 6 bushels more wheat than the low profit group. The acreage of wheat was so small that the advantage in wheat yield had little effect on earnings, however.

The biggest advantage of the high profit over the low profit group was in the larger amount and greater efficiency of their livestock. The more successful farmers had $4.57 more livestock investment per acre and they secured $10.77 more livestock income per acre. With prices for livestock relatively better than for grain during 1926, it was an advantage to have more livestock, particularly if the livestock were kept thrifty and fed efficiently. The more profitable farms averaged $167 and the less profitable farms $120 livestock income for every $100 of livestock investment. The total livestock income per farm was twice as large on the high profit as on the low profit farms. The hog enterprise contributed about half of the income on the more profitable group of farms.

The larger amount of livestock on the 20 most profitable farms was handled with the same labor cost per acre as on the 20 least profitable farms. The less successful group did handle slightly more crop acres per man and per horse, but they lost this advantage in other ways.

The 20 most profitable farms show a better utilization of feed, for with smaller farms they sold about twice as much livestock and two-thirds as much crops as the lower profit farms.

It may be noted that the less profitable group of farms shows a smaller investment per acre. This is due to a lower land value. In Woodford county the timber soil farms tend to have more livestock because they have more non-tillable land. The advantage in having more livestock under 1926 price conditions was enough to put a number of timber soil farms into the higher profit group. As these farms are generally held at lower values than the prairie soil farms, this tended to reduce the average land value in the high profit group.

The following table, giving comparative earnings on Woodford County farms for the last 5 years, reflects the influence of price and other seasonal conditions. It shows no progress in average rates earned, in gross incomes, or in reduction of operating costs. The effect of higher grain prices in 1924 is strikingly brought out in the higher rates earned and in the larger volume of crop sales for that year. Following 1924, however, these Woodford County farmers dropped back to about the same level of earnings as they experienced in 1922 and 1923. Of course, the higher grain prices of 1924 were due to accidental causes, a fact which is generally accepted now but which was denied by a large section of the public press at that time. The accidental causes were primarily a relatively short corn crop for the United States and a short wheat crop for the world with a fairly good crop in the United States.

Comparative Earnings on Woodford County Farms

ITEM	1922	1923	1924	1925	1926
Number of farms included	99	95	101	44*	55*
Average size of farms in acres	233	204	208	190	191
Average rate earned	3.1%	3.1%	7.2%	3.3%	2.9%
Average value of land per acre	$ 236	$ 215	$ 223	$ 211	$ 200
Average investment per acre	282	271	281	266	250
Investment in livestock per farm	2,758	2,863	2,655	2,223	2,234
Investment in cattle per farm	872	858	910	740	730
Investment in hogs per farm	716	848	697	530	639
Investment in poultry per farm	141	148	141	123	147
Gross income per acre	20.72	21.48	32.58	22.06	19.96
Operating cost per acre	11.74	12.94	12.21	13.16	12.59
Grain sales less feed purchases per farm	2,567	2,372	4,399	1,996	1,440
Miscellaneous income per farm	162	79	80	48	34
Livestock income per farm	2,098	1,902	2,300	2,148	2,340
Gross income per farm	4,827	4,353	6,779	4,192	3,814
Cattle income per farm	531	687	662	580	626
Hog income per farm	1,237	948	1,328	1,271	1,434
Poultry income per farm	245	224	233	254	249

*Beginning in 1925 a new accounting project was organized in which 62 Woodford County farms were included, thus reducing the number in this project. This change was also responsible for the decrease in the average size of farms.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm, as well as on the farms of the group making the best and the group making the least profits.

Woodford County - 1926

Factors helping to analyze the farm business	Your farm	Average of fifty-five farms	Twenty most profitable farms	Twenty least profitable farms
Rate earned	%	2.95%	5.64%	1.04%
Labor and management wage	$	$ -261	$ 977	$-1,368
Size of farm - acres	A	191 A	175 A	202 A
Percent of land area tillable	%	85 %	80 %	90 %
Acres in Corn	A	75 A	62 A	88 A
Oats	A	51 A	41 A	59 A
Wheat	A	5 A	9 A	1 A
Crop yields - Corn	bu.	51 bu.	53 bu.	49 bu.
Oats	bu.	32 bu.	34 bu.	28 bu.
Wheat	bu.	22 bu.	22 bu.	16 bu.
Returns per $100 invested in all productive livestock	$	$ 140	$ 167	$ 120
For $100 in Cattle	$	$ 87	$ 89	$ 98
Hogs	$	$ 192	$ 232	$ 149
Poultry	$	$ 163	$ 175	$ 132
Investment per acre in productive livestock	$	$ 8.75	$ 11.23	$ 6.66
Receipts per acre from productive livestock	$	$ 12.25	$ 18.77	$ 8.00
Man labor cost per acre	$	$ 6.47	$ 6.64	$ 6.62
Crop acres per man	A	85 A	73 A	93 A
Crop acres per horse (with tractor)	A	22 A	21 A	23 A
(without tractor)	A	19 A	19 A	20 A
Expense per $100 gross income	$	$ 63	$ 48	$ 83
Machinery cost per acre	$	$ 1.86	$ 1.52	$ 2.21
Building and fencing cost per acre	$	$ .73	$ .67	$ .75
Gross receipts per acre	$	$ 19.96	$ 25.01	$ 15.96
Total expenses per acre	$	$ 12.59	$ 12.01	$ 13.24
Net receipts per acre	$	$ 7.37	$ 13.00	$ 2.72
Percent of farms with tractor	%	67 %	65 %	75 %
Value of land per acre	$	$ 200	$ 181	$ 213
Total investment per acre	$	$ 250	$ 230	$ 261

Woodford County - 1926

	Item	Your farm	Average of fifty-five farms	Twenty most profitable farms	Twenty least profitable farms
1	Capital Investment - Total	$	$47,787	$40,307	$52,719
2	Land		38,088	31,650	42,966
3	Farm improvements		3,437	2,921	3,491
4	Machinery and equipment		1,400	1,184	1,452
5	Feed and supplies		2,628	2,297	2,693
6	Livestock		2,234	2,255	2,117
7	Horses		663	626	671
8	Cattle		730	710	709
9	Hogs		639	720	542
10	Sheep		55	36	42
11	Poultry		147	163	153
12	Receipts-Net Increases-Total		3,814	4,378	3,221
13	Feed and grain		1,440	1,064	1,581
14	Miscellaneous		34	30	26
15	Livestock - Total		2,340	3,284	1,614
16	Horses		--	--	--
17	Cattle		283	296	246
18	Hogs		1,434	2,278	787
19	Sheep		31	23	16
20	Poultry		102	111	74
21	Egg sales		147	186	125
22	Dairy sales		343	390	366
23	Expenses-Net Decreases-Total		1,510	1,203	1,714
24	Farm improvements		139	118	153
25	Livestock		17	12	25
26	Horses		17	12	25
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		356	265	446
32	Feed and supplies		---	---	---
33	Livestock expense other than feed		54	43	38
34	Crop expense		171	133	190
35	Labor hired		342	282	375
36	Taxes, insurance, etc.		402	349	449
37	Miscellaneous		29	21	38
38	Receipts less Expenses		2,304	3,175	1,507
39	Operator's and unpaid family labor		895	900	959
40	Net income from investment		1,409	2,275	548

Find Your Farm Leaks
Woodford County - 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per A. in L.S.	Receipts per acre from L.S.	Man lab. cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No Tractor			
10.95	86	53	36	157	332	303	22.75	26.25	3.00	120	36	33	28	41	401
9.95	81	50	34	147	312	283	20.75	24.25	3.50	115	34	31	33	38	381
8.95	76	47	32	137	292	263	18.75	22.25	4.00	110	32	29	38	35	361
7.95	71	44	30	127	272	243	16.75	20.25	4.50	105	30	27	43	32	341
6.95	66	41	28	117	252	223	14.75	18.25	5.00	100	28	25	48	29	321
4.95	61	38	26	107	232	203	12.75	16.25	5.50	95	26	23	53	26	301
3.95	56	35	24	97	212	183	10.75	14.25	6.00	90	24	21	58	23	281
2.95	51	32	22	87	192	163	8.75	12.25	6.50	85	22	19	63	20	261
1.95	46	29	20	77	172	143	6.75	10.25	7.00	80	20	17	68	17	241
0.95	41	26	18	67	152	123	4.75	8.25	7.50	75	18	15	73	14	221
-0.05	36	23	16	57	132	103	2.75	6.25	8.00	70	16	13	78	11	201
-1.05	31	20	14	47	112	83	0.75	4.25	8.50	65	14	11	83	8	181
-2.05	26	17	12	37	92	63	----	2.25	9.00	60	12	9	88	5	161
-3.05	21	14	10	27	72	43	----	----	9.50	55	10	7	93	--	141
-4.05	16	11	8	17	52	23	----	----	10.00	50	8	5	98	--	121

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

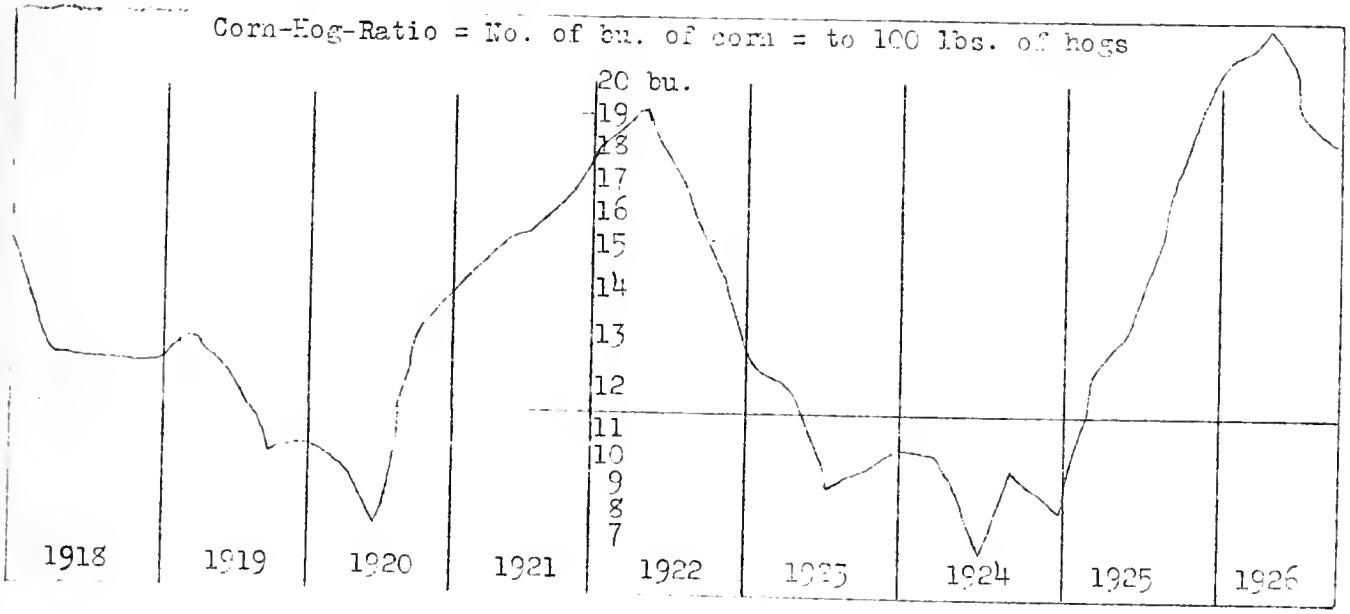
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

11

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

FORD AND IROQUOIS COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-one Farms

for

1926

Farm Account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M54

ANNUAL FARM BUSINESS REPORT

Ford and Iroquois Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnstone, H. C. M. Case*

The 31 farmers in Ford and Iroquois counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $53 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $245 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $980, while the one-third who were least successful lacked an average of $935 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,915 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 31 farmers earned 3.9 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 5.4 percent and the least successful third 2.1 percent. The average investment on the 31 farms was $56,731, which amounts to $245 an acre. The higher profit third had an average investment of $244 and the lower profit third $246 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $199 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Farms of the higher profit group averaged 40 acres larger than those of the low profit group. It is probable, however, that this had little influence on relative profits since both groups were large enough to farm economically. Our accounting studies usually show that under average conditions there is little advantage in size beyond about 200 acres, particularly when nearly all the land is tillable. Any size from 200 to 240 acres provides about 100 crop acres per man and makes a good two-man farm.

The more profitable farms averaged 27 acres more corn and 12 acres more wheat than the low profit farms. They had about the same acreage of oats. The lower percentage of land in oats was a distinct advantage since oats are

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*G. T. Swaim, L. W. Wise and C. E. Johnson, farm advisers in Ford and Iroquois counties respectively, cooperated in supervising and collecting the records used in this report.

are not very profitable especially when used as a cash crop. They do help to distribute labor and up to the quantity that can be fed on the farm they have a place in the cropping system.

The more successful farmers raised about 7 bushels more corn and 5 bushels more oats to the acre than their less successful neighbors. The latter group raised a little larger average yields of wheat, but they had only 8 acres of wheat per farm. Higher yields are a distinct advantage in securing profits because acre costs usually do not rise in proportion to yield.

One of the biggest advantages of the more successful farm operators was in having more livestock and in handling it more efficiently. They had a livestock investment of $8.25 and a livestock income of $11.00 per acre compared with a livestock investment of $5.55 and a livestock income of $5.48 on the low profit farms. Their livestock income was therefore twice that on the low profit farms. The less successful operators had only $99 livestock income per $100 of livestock investment, while those in the more successful group had $133 income per $100 of livestock investment. Comparing income figures it is evident that the chief sources of larger livestock incomes on the more profitable farms were sales of hogs and dairy products.

Labor and power, particularly tractor power, were used more efficiently on the more profitable farms. The man labor cost per acre was about the same for both groups but the more successful farmers took care of more livestock, handled them more efficiently and cultivated more crop acres per man. On farms having tractors the more successful farm operators worked 5 more crop acres per horse than the less successful operators.

Operating costs were only slightly lower on the more profitable farms. Their advantage in profits came chiefly from using their land, labor, power, equipment and feed in such a way as to return a larger gross income. This reduced the cost per $100 of income. The more successful operators spent $45 from each $100 income in paying operating costs while the less successful ones spent $69 for operating costs out of each $100 of income.

If we make allowance for the fact that the territory covered by these reports has shifted somewhat during the last four years but note that most of the records included have come from Ford County we can safely make a comparison of earnings and investments on farms in the vicinity of Ford County. This comparison is made in the following table. The inclusion of records from counties adjoining Ford for 1924 and 1926 seems to have reduced the investment in livestock per farm for those years. Since 1923 when the number of farms included in the report was too small to give a reliable average the operating cost per acre has remained quite uniformly between $11.10 and $11.50. Higher grain prices for 1924 are reflected in much larger crop sales per farm that year and in the larger average rate earned on the investment. It will be remembered that the higher grain prices of 1924 were due to a short world crop of wheat and a short corn crop in the United States. It is clear that excluding 1924 the level of earnings has ranged between $2\frac{1}{2}$ and 4 percent on these accounting farms. If they averaged about two percent more on their investments than the rank and file of all farmers as we have found to be true in other cases the average farmer must have earned from one to two percent during these years.

Comparative Earnings on Farms in the Vicinity of Ford County, 1923 to 1926

Item	1923(1)	1924(2)	1925(1)	1926(3)
Number of farm records	9	52	31	31
Average size of farm, acres	231	223	251	231
Average rate earned	4.1%	7.4%	2.5%	3.9%
Average value of land per acre	$ 207	$ 198	$ 200	$ 199
Average investment per acre	260	242	253	245
Investment in livestock per farm	3,371	2,210	2,461	2,181
Investment in cattle per farm	1,266	675	734	778
Investment in hogs per farm	886	548	581	484
Investment in poultry per farm	166	151	165	184
Gross income per acre	21.15	29.44	17.45	20.96
Operating costs per acre	8.40	11.43	11.12	11.39
Crop sales less feed purchases per farm	2,318	4,620	2,293	2,819
Miscellaneous income per farm	28	83	66	73
Livestock income per farm	2,545	1,873	2,032	1,953
Gross income per farm	4,892	6,576	4,391	4,845
Cattle income per farm	736	358	327	228
Dairy sales per farm	157	268	327	391
Hog income per farm	1,299	886	1,003	966
Poultry income per farm	278	233	302	330

Some points of strength and some of weakness may be found in your business by comparing the factors from your own record in the following tables with the same factors on the average farm as well as with these factors for the farms in high and low profit groups.

(1) All records from Ford County 1923 and 1925.
(2) Reports include records from Champaign and Ford Counties and from the eastern half of McLean County.
(3) Includes records from Ford and Iroquois Counties.

Ford and Iroquois Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 31 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.90%	5.42%	2.10%
Labor and management wage	$	$ 53	$ 980	$- 935
Size of farm - acres	A	231.2 A	266.5 A	226.6 A
Percent of land area tillable	%	94.9 %	95.3 %	93.1 %
Acres in Corn	A	96.6 A	117.1 A	89.9 A
Oats	A	60.9 A	65.4 A	63.1 A
Wheat	A	12.0 A	20.0 A	8.3 A
Crop yields - Corn	bu.	52.1 bu.	56.3 bu.	49.5 bu.
Oats	bu.	34.4 bu.	37.4 bu.	31.9 bu.
Wheat	bu.	25.5 bu.	25.9 bu.	28.7 bu.
Returns per $100 invested in all productive livestock	$	$ 121	$ 133	$ 99
For $100 in Cattle	$	$ 78	$ 86	$ 53
Hogs	$	$ 172	$ 208	$ 149
Poultry	$	$ 172	$ 148	$ 160
Investment per acre in productive livestock	$	$ 6.99	$ 8.25	$ 5.55
Receipts per acre in productive livestock	$	$ 8.45	$ 10.99	$ 5.48
Man labor cost per acre	$	$ 5.62	$ 5.50	$ 5.45
Crop acres per man	A	109.4 A	115.3 A	104.0 A
Crop acres per horse (with tractor)	A	30.9 A	34.3 A	29.4 A
(without tractor)	A	21.7 A	20.9 A	20.3 A
Expense per $100 gross income	$	$ 54	$ 45	$ 69
Machinery cost per acre	$	$ 1.62	$ 1.61	$ 1.65
Building and fencing cost per acre	$	$ .93	$ .77	$ 1.35
Gross receipts per acre	$	$ 20.96	$ 24.15	$ 16.68
Total expenses per acre	$	$ 11.39	$ 10.93	$ 11.50
Net receipts per acre	$	$ 9.57	$ 13.22	$ 5.18
Farms with tractor	%	67.7 %	80 %	80 %
Value of land per acre	$	$ 199	$ 201	$ 193
Total investment per acre	$	$ 245	$ 244	$ 246

Ford and Iroquois Counties, 1926

	Item	Your farm	Average of 31 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$56,731	$65,049	$55,715
2	Land		45,985	53,540	43,780
3	Farm improvements		4,086	4,023	5,474
4	Machinery and equipment		1,547	1,681	1,566
5	Feed and supplies		2,932	3,113	3,050
6	Livestock		2,181	2,692	1,845
7	Horses		672	776	598
8	Cattle		778	984	720
9	Hogs		484	608	376
10	Sheep		63	110	12
11	Poultry		184	214	139
12	Receipts-Net Increases-Total	$_____	$ 4,845	$ 6,437	$ 3,779
13	Feed and grain		2,819	3,448	2,528
14	Miscellaneous		73	61	9
15	Livestock - Total		1,953	2,928	1,242
16	Horses		-	-	-
17	Cattle		228	348	211
18	Hogs		966	1,566	666
19	Sheep		38	69	12
20	Poultry		162	156	94
21	Egg sales		168	181	112
22	Dairy sales		391	608	147
23	Expenses-Net Decreases-Total	$_____	$ 1,666	$ 1,866	$ 1,695
24	Farm improvements		215	206	306
25	Livestock		32	14	48
26	Horses		32	14	48
27	Cattle		-	-	-
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		374	430	375
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		35	36	32
34	Crop expense		189	218	139
35	Labor hired		333	420	324
36	Taxes, insurance, etc.		465	520	451
37	Miscellaneous		23	22	20
38	Receipts less Expenses	$_____	$ 3,179	$ 4,571	$ 2,084
39	Operator's and unpaid family labor		967	1,047	911
40	Net income from investment		2,212	3,524	1,173

Find Your Farm Leaks

Ford and Iroquois Counties, 1926

The numbersbetween the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.9	80	55	39	148	312	312	14.00	15.45	2.12	145	45	36	19	35	371
9.9	76	52	37	138	292	292	13.00	14.45	2.62	140	43	34	24	33	351
8.9	72	49	35	128	272	272	12.00	13.45	3.12	135	41	32	29	31	331
7.9	68	46	33	118	252	252	11.00	12.45	3.62	130	39	30	34	29	311
6.9	64	43	31	108	232	232	10.00	11.45	4.12	125	37	28	39	27	291
5.9	60	40	29	98	212	212	9.00	10.45	4.62	120	35	26	44	25	271
4.9	56	37	27	88	192	192	8.00	9.45	5.12	115	33	24	49	23	251
3.9	52	34	25	78	172	172	7.00	8.45	5.62	110	31	22	54	21	231
2.9	48	31	23	68	152	152	6.00	7.45	6.12	105	29	20	59	19	211
1.9	44	28	21	58	132	132	5.00	6.45	6.62	100	27	18	64	17	191
0.9	40	25	19	48	112	112	4.00	5.45	7.12	95	25	16	69	15	171
-0.1	36	22	17	38	92	92	3.00	4.45	7.62	90	23	14	74	13	151
-1.1	32	19	15	28	72	72	2.00	3.45	8.12	85	21	12	79	11	131
-2.1	28	16	13	18	52	52	1.00	2.45	8.62	80	19	10	84	9	111
-3.1	24	13	11	8	32	32	-	1.45	9.12	75	17	8	89	7	91

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

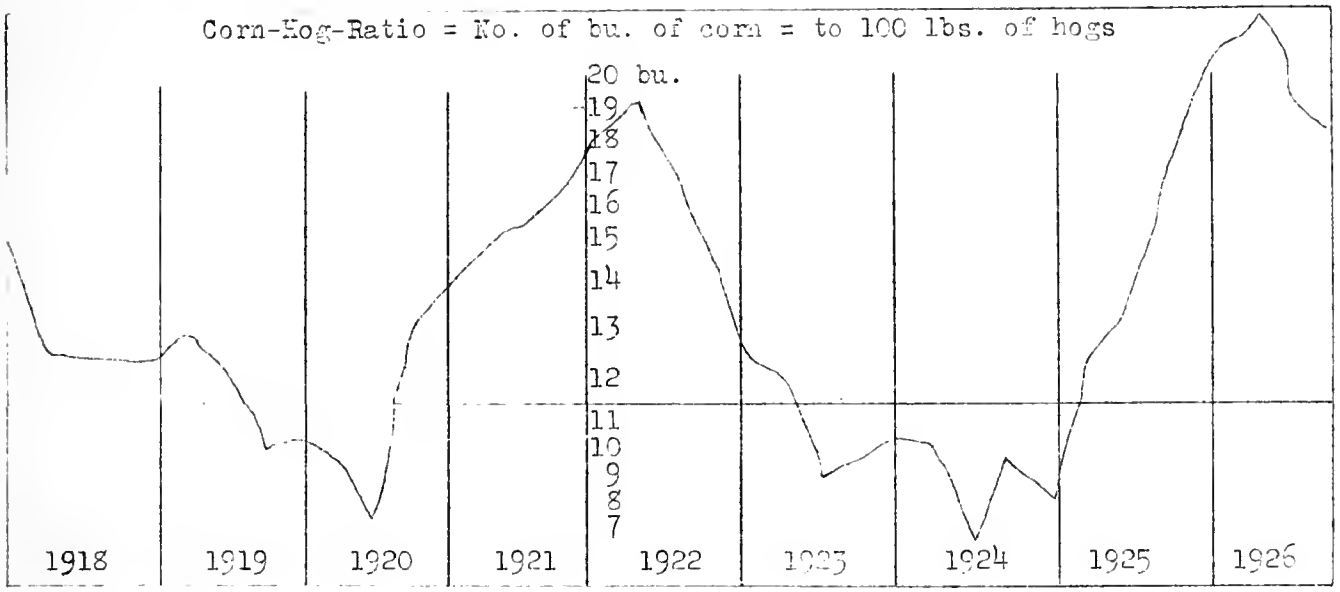
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

HENDERSON, KNOX AND WARREN COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-two Farms

for

1926

Farm Account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M56

ANNUAL FARM BUSINESS REPORT

Henderson, Knox and Warren Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 32 farmers in Henderson, Knox and Warren counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $60 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $196 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,881, while the one-third who were least successful lacked an average of $1,962 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $3,843 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 32 farmers earned 3.7 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 7.5 percent and the least successful third 0.3 percent. The average investment on the 32 farms was $49,198, which amounts to $196 an acre. The higher profit third had an average investment of $190 and the lower profit third $188 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $138 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The farms covered by this report averaged rather large in size, the average for all of them being about 250 acres. Those of the low profit group averaged 304 acres, compared with 246 acres for the higher profit group. Either group was large enough for efficient organization and it is not likely that the extra acres were any handicap to the low profit farms. It is more probable, judging from comparative studies in other areas, that difference in size had little if any influence on relative earnings of the two groups. The low profit farms had more non-tillable land, which, if deducted, leaves them an average of only 22 more acres of tillable land than the higher profit farms. The less successful farms had about 6 acres more corn, 3 acres more oats, and 4 acres more wheat per farm than the more successful farms.

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*E. D. Walker, L. R. Marchant, and A. A. Olsen, farm advisers in Henderson, Knox and Warren counties respectively, cooperated in supervising and collecting the records used in this report.

As to yields, the operators of the more successful farms raised an average of 7 bushels more corn and 2 bushels more oats. Wheat yields were equal on the two groups of farms. This is less difference in crop yields than we have usually found in accounting studies of this type. As a rule, one of the chief differences between the high and low profit groups is in crop yields. As a rule, operating costs increase only slightly with higher yields and the extra produce per acre goes to improve profits.

The biggest single advantage of the more successful farm operators whose records are included in this report was in their greater efficiency with livestock. They had a livestock investment per acre of $14.34 compared with a similar investment of $17.35 on the less successful farms. They secured a livestock income of $25.15 an acre as compared with only $14.30 an acre on the less successful farms. The greater efficiency of livestock on the more profitable farms is also shown by the fact that they had a livestock income of $175 for every $100 invested in livestock, while on the low profit farms the livestock income was only $85 for each $100 of investment. This greater efficiency was shown for each class of livestock. Hogs constituted the largest source of income on the more profitable farms followed in order by beef cattle, dairy products, and poultry. Two-thirds of the income was from hogs. Beef cattle stood first on the low profit farms followed closely by hogs. Dairy and poultry products were minor sources of income. Hogs furnished 45 percent of the income on the low profit farms and 67 percent on the high profit farms. Further evidence of the greater efficiency of livestock management on farms of the more profitable group is shown in the fact that although they averaged smaller in size they realized about 40 percent more income per farm from livestock and still had a little income from crop sales. In this case feed purchases were deducted from crop sales. The low profit farms had less livestock income and still spent $965 more per farm for feed than their crop sales amounted to.

Labor was used more efficiently on the more profitable farms. Their labor cost per acre was only slightly higher and they produced more livestock products than the less profitable farms. The more successful operators also cared for slightly more crop acres per man.

Total operating costs per acre were lower on the more profitable farms amounting to $11.34 as compared with $14.26 on the low profit farms. In contrast to this the gross income per acre was $25.58 on the more profitable farms as compared with $14.90 on the less profitable farms. It is relative costs and incomes which count, and the more successful operators had operating costs amounting to only $44 out of each $100 income, while their less successful neighbors had operating costs of $96 for every $100 income.

The simple farm accounting project was begun in Knox and Warren counties in 1926. A cost accounting project had been under way in those counties for three years preceding. It is of some interest to compare 1926 farm earnings for this area with the corresponding figures for previous years. Allowance must be made for the fact that only a few of the farms included are the same identical ones. In 1925 sixteen cost accounting farms earned an average of 4.8 percent on their investments compared with 3.7 percent for 1926 on the farms included in this report. For 1924 eighteen cost accounting farms earned an average rate of 6.3 percent. These data agree with those from other sections of west central Illinois in showing less favorable conditions on farms for 1926 than for 1925 or for 1924. Some causes for lower farm profits were lower yields of corn, lower quality of grains

due to wet weather, an outbreak of hog cholera, less favorable markets for heavy cattle, and somewhat lower prices for corn and wheat. Records for Henderson County for 1925 were included in a report for Whiteside, Henderson, Rock Island, and Mercer counties. The average rate of interest earned by the farms included in that report for 1925 was 5.3 percent as compared with 3.7 percent on the farms covered by this report for 1926.

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm, as well as for farms of the high and low profit groups.

Henderson, Knox and Warren Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 32 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.72%	7.51%	.34%
Labor and management wage	$	$ 60	$1,881	$-1,962
Size of farm - acres	A	251.6 A	246.5 A	304 A
Percent of land area tillable	%	79.2 %	82.5 %	74.2 %
Acres in Corn	A	87.4 A	88.6 A	94.2 A
Oats	A	37.4 A	37.6 A	40.3 A
Wheat	A	11.8 A	13.9 A	17.7 A
Crop yields - Corn	bu.	47.8 bu.	50.4 bu.	43.6 bu.
Oats	bu.	30.4 bu.	29.4 bu.	27.6 bu.
Wheat	bu.	12.9 bu.	11.3 bu.	11.9 bu.
Returns per $100 invested in all productive livestock	$	$130	$ 175	$ 82
For $100 in Cattle	$	$ 88	$ 102	$ 68
Swine	$	$182	$ 253	$ 107
Poultry	$	$169	$ 177	$ 158
Investment per acre in productive livestock	$	$ 15.56	$ 14.34	$ 17.35
Receipts per acre from productive livestock	$	$ 20.18	$ 25.15	$ 14.30
Man labor cost per acre	$	$ 5.90	$ 5.98	$ 5.32
Crop acres per man	A	85 A	91 A	87 A
Crop acres per horse (with tractor)	A	28.1 A	30.4 A	29.3 A
(without tractor)	A	20.2 A	18.9 A	21.4 A
Expense per $100 gross income	$	$ 65	$ 44	$ 96
Machinery cost per acre	$	$ 1.92	$ 1.56	$ 2.14
Building and fencing cost per acre	$	$ 1.15	$ .77	$ .89
Gross receipts per acre	$	$ 20.66	$ 25.58	$ 14.90
Total expenses per acre	$	$ 13.39	$ 11.34	$ 14.26
Net receipts per acre	$	$ 7.27	$ 14.24	$ .64
Farms with tractor - percent	%	69 %	50 %	70 %
Value of land per acre	$	$138	$ 140	$ 128
Total investment per acre	$	$196	$ 190	$ 188

Henderson, Knox, and Warren Counties, 1926

	Items	Your farm	Average of 32 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$49,198	$46,788	$57,103
2	Land		34,825	34,596	38,922
3	Farm improvements		5,064	4,250	5,834
4	Machinery and equipment		1,649	1,237	2,147
5	Feed and supplies		2,920	2,808	3,263
6	Livestock		4,740	3,897	6,937
7	Horses		687	666	882
8	Cattle		2,223	1,783	3,845
9	Swine		1,625	1,315	1,989
10	Sheep		88	13	108
11	Poultry		117	120	113
12	Receipts-Net Increases-Total	$_____	$ 5,199	$ 6,308	$ 4,531
13	Feed and grain		--	40	--
14	Miscellaneous		77	69	95
15	Livestock - Total		5,122	6,199	4,436
16	Horses		45	--	88
17	Cattle		1,507	1,256	2,069
18	Swine		3,028	4,226	1,891
19	Sheep		55	2	39
20	Poultry		105	132	87
21	Egg sales		98	81	103
22	Dairy sales		284	502	159
23	Expenses-Net Decreases-Total	$_____	$ 2,500	$ 1,840	$ 3,408
24	Farm improvements		289	190	272
25	Livestock		--	10	--
26	Horses		--	10	--
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		482	385	652
32	Feed and supplies		386	--	965
33	Livestock expense other than feed		68	64	69
34	Crop expense		195	207	214
35	Labor hired		615	517	687
36	Taxes, insurance, etc.		434	438	517
37	Miscellaneous		31	29	32
38	Receipts less Expenses	$_____	$ 2,699	$ 4,468	$ 1,123
39	Operator's and unpaid family labor		869	956	929
40	Net income from investment		1,830	3,512	194

Find Your Farm Leaks

Henderson, Knox and Warren Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.7	77	51	27	158	322	309	29.56	34.18	2.40	120	42	34	30	41	390
9.7	73	48	25	148	302	289	27.56	32.18	2.90	115	40	32	35	38	370
8.7	69	45	23	138	282	269	25.56	30.18	3.40	110	38	30	40	35	350
7.7	65	42	21	128	262	249	23.56	28.18	3.90	105	36	28	45	32	330
6.7	61	39	19	118	242	229	21.56	26.18	4.40	100	34	26	50	29	310
5.7	57	36	17	108	222	209	19.56	24.18	4.90	95	32	24	55	26	290
4.7	53	33	15	98	202	189	17.56	22.18	5.40	90	30	22	60	23	270
3.7	49	30	13	88	182	169	15.56	20.18	5.90	85	28	20	65	20	250
2.7	45	27	11	78	162	149	13.56	18.18	6.40	80	26	18	70	17	230
1.7	41	24	9	68	142	129	11.56	16.18	6.90	75	24	16	75	14	210
0.7	37	21	7	58	122	109	9.56	14.18	7.40	70	22	14	80	11	190
-0.3	33	18	5	48	102	89	7.56	12.18	7.90	65	20	12	85	8	170
-1.3	29	15	-	38	82	69	5.56	10.18	8.40	60	18	10	90	5	150
-2.3	25	12	--	28	62	49	3.56	8.18	8.90	55	16	8	95	-	130
-3.3	21	9	--	18	42	29	1.56	6.18	9.40	50	14	6	100	-	110

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

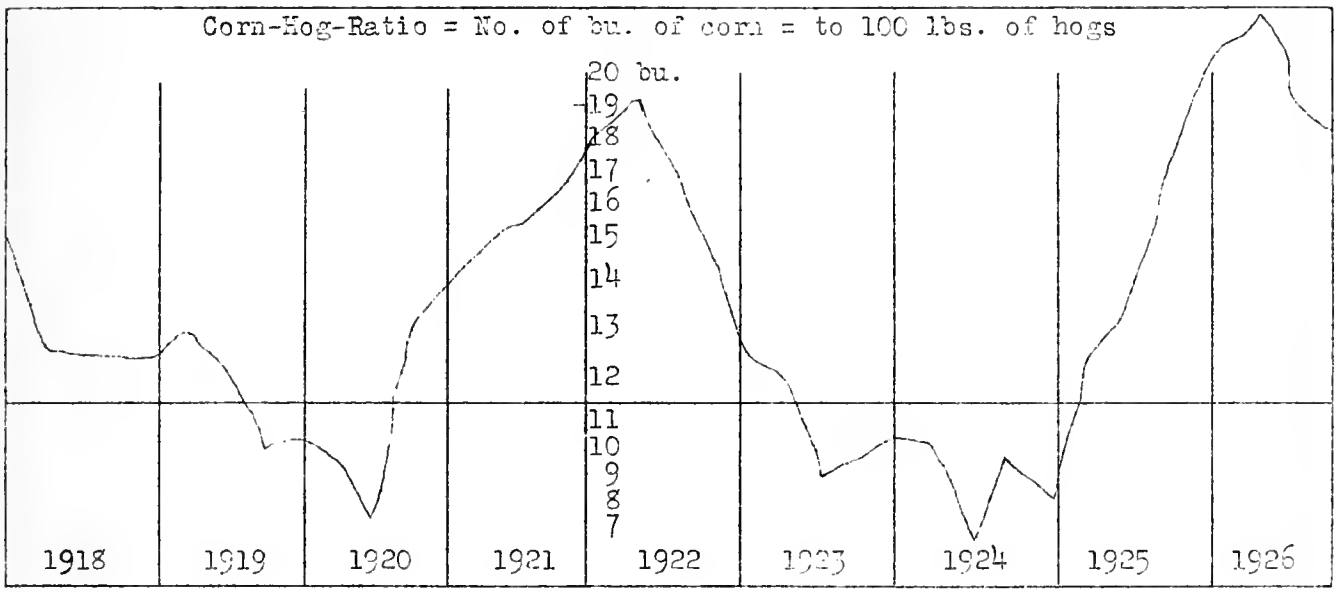
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

MASON, PEORIA, AND TAZEWELL COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Twenty-six Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

May, 1927

M59

ANNUAL FARM BUSINESS REPORT

MASON, PEORIA, AND TAZEWELL COUNTIES, ILLINOIS 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 26 farmers in Mason, Peoria, and Tazewell counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $207 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $181 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,433 while the one-third who were least successful lacked an average of $891 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,324 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 26 farmers earned 3.6 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.5 percent and the least successful third lost 1.0 percent. The average investment on the 26 farms was $35,795, which amounts to $181 an acre. The higher profit third had an average investment of $196 and the lower profit third $166 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $133 an acre as an average for all farms.

In addition to the above earnings, each farm family secures certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The ten most profitable farms covered by this report averaged about 240 acres in size compared with an average of about 160 acres for the 10 least profitable farms. This difference in size probably gave some advantage to the more profitable farms but similar studies in other areas and for other years indicate that difference in size is not one of the biggest factors in determining farm profits. A farm of 240 acres can be somewhat more efficiently organized for general farming than one of 160 acres. Overhead costs for improvements and equipment are less per acre and with 240 acres two men can be profitably employed throughout the year. In the case of this particular study however improvement and equipment costs were about the same for the two groups of farms. The operators of the larger farms did handle about 9 more crop acres per man. The more profitable group of farms averaged about 28 acres more corn, 3 acres more oats and 33 acres more wheat per farm than the less

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* T. R. Isaacs, Wilfred Shaw and R. E. Arnett, farm advisers in Mason, Peoria and Tazewell counties respectively, cooperated in supervising and collecting the records used in this report.

profitable farms. This gave them some advantage in having a small percentage of land in oats which is a relatively low profit crop.

As to yields the more profitable farms had an advantage of about 6 bushels of corn, 18 bushels of oats and 5 bushels of wheat per acre. As operating costs per acre usually do not increase in proportion to yield, higher yields are one of the most important factors in better profits.

In this area as in most areas of the state for which 1926 farm business reports are being made, the biggest single advantage of the more profitable farms was in handling livestock more efficiently. The more profitable farms also had more livestock which was an advantage. They had a livestock investment of $9.90 an acre compared with a similar investment of $5.50 on the low profit group. The more successful farm operators realized a livestock income of $13.18 an acre as compared with $5.54 for the less successful operators. Greater livestock efficiency on the higher profit farms is shown in the fact that they had $133 of livestock income for each $100 of livestock investment compared with $101 income per $100 of livestock investment on the low profit farms.

Operating costs on an acre basis were about equal for the high and low profit groups of farms, but the cost items were used in such a way as to bring greater returns on the more profitable farms. With equal operating costs per acre the more successful farmers realized $14.40 larger gross receipts per acre. Expressing this relationship in a different way the more profitable farms had operating costs of $47 for every $100 of income while the less profitable farms had operating costs of $117 for every $100 income.

Most of the records included in this report were for Mason County. We do not have an exactly comparable report for 1925 but it is of interest to note that farm earnings for Central and West Central Illinois were on a somewhat lower level for 1926 than for 1925. A report covering approximately the same area for 1925 showed an average rate earned of 4.1 percent as compared with 3.6 percent for this report.

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm as well as for farms of the high and low profit groups.

Mason, Peoria, and Tazewell Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.61%	6.52%	-.98%
Labor and management wage	$	$ 207	$1,433	$ -891
Size of farm - acres	A	197.8 A	239.7 A	159.4 A
Percent of land area tillable	%	85.9 %	87.0 %	79.8 %
Acres in Corn	A	63.4 A	78.6 A	51.1 A
Oats	A	16.4 A	19.5 A	16.7 A
Wheat	A	54.5 A	68.4 A	35.6 A
Yield of Corn	bu.	38.2 bu.	42.2 bu.	35.8 bu.
Oats	bu.	32.1 bu.	42.6 bu.	24.4 bu.
Wheat	bu.	17.8 bu.	20.1 bu.	15.3 bu.
Returns per $100 invested in all productive livestock	$	$ 124.00	$ 133.00	$ 101.00
For $100 in Cattle	$	$ 74.00	$ 76.00	$ 47.00
Swine	$	$ 193.00	$ 205.00	$ 180.00
Poultry	$	$ 163.00	$ 177.00	$ 149.00
Investment per acre in productive livestock	$	$ 7.57	$ 9.90	$ 5.50
Receipts per acre from productive livestock	$	$ 9.35	$ 13.18	$ 5.54
Man labor cost per acre	$	$ 5.60	$ 5.63	$ 5.79
Crop acres per man	A	101 A	99.3 A	90.5 A
Crop acres per horse (with tractor)	A	27.6 A	28.0 A	20.4 A
(without tractor)	A	26.0 A	27.1 A	24.6 A
Expense per $100 gross income	$	$ 63.00	$ 47.00	$ 117.00
Machinery cost per acre	$	$ 1.75	$ 1.78	$ 1.81
Building and fencing cost per acre	$	$ .84	$ .87	$ .97
Gross receipts per acre	$	$ 17.60	$ 24.06	$ 9.66
Total expenses per acre	$	$ 11.08	$ 11.30	$ 11.29
New receipts per acre	$	$ 6.52	$ 12.76	$ -1.63
Percent of farms with tractor	%	42.3 %	60 %	20 %
Value of land per acre	$	$ 133.00	$ 145.00	$ 119.00
Total investment per acre	$	$ 181.00	$ 196.00	$ 166.00

Mason, Peoria and Tazewell Counties, 1926

	Item	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$35,795	$46,952	$26,542
2	Land		26,403	34,781	19,003
3	Land improvements		3,108	3,835	2,857
4	Machinery and equipment		1,521	2,143	1,075
5	Feed and supplies		2,617	3,123	2,222
6	Livestock		2,146	3,070	1,285
7	Horses		654	801	468
8	Cattle		865	1,276	511
9	Swine		506	851	289
10	Sheep		8	3	18
11	Poultry		113	139	99
12	Receipts-Net Increases-Total	$_____	$ 3,482	$ 5,768	$ 1,540
13	Feed and grain		1,527	2,396	627
14	Miscellaneous		106	212	29
15	Livestock - Total		1,849	3,160	884
16	Horses		--	--	--
17	Cattle		242	392	51
18	Swine		1,029	1,917	489
19	Sheep		4	-	9
20	Poultry		101	131	81
21	Egg sales		100	135	82
22	Dairy sales		373	585	172
23	Expenses-Net Decreases-Total	$_____	$ 1,383	$ 1,851	$ 1,035
24	Farm improvements		166	208	154
25	Livestock		43	29	47
26	Horses		43	29	47
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31					
31	Machinery and equipment		347	426	288
32	Feed and supplies		--	--	--
33	Livestock expense other than feed		43	50	41
34	Crop expense		151	195	99
35	Labor hired		300	492	158
36	Taxes, insurance, etc.		313	421	236
37	Miscellaneous		20	30	12
38	Receipts less expenses	$_____	$ 2,099	$ 3,917	$ 505
39	Operator's and unpaid family labor		808	857	765
40	Net income from investment		1,291	3,060	-260

Find Your Farm Leaks

Mason, Peoria and Tazewell Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.6	66	53	32	144	333	303	14.57	16.35	2.10	135	42	40	28	32	338
9.6	62	50	30	134	313	283	13.57	15.35	2.60	130	40	38	33	30	318
8.6	58	47	28	124	293	263	12.57	14.35	3.10	125	38	36	38	28	298
7.6	54	44	26	114	273	243	11.57	13.35	3.60	120	36	34	43	26	278
6.6	50	41	24	104	253	223	10.57	12.35	4.10	115	34	32	48	24	258
5.6	46	38	22	94	233	203	9.57	11.35	4.60	110	32	30	53	22	238
4.6	42	35	20	84	213	183	8.57	10.35	5.10	105	30	28	58	20	218
3.6	38	32	18	74	193	163	7.57	9.35	5.60	100	28	26	63	18	198
2.6	34	29	16	64	173	143	6.57	8.35	6.10	95	26	24	68	16	178
1.6	30	26	14	54	153	123	5.57	7.35	6.60	90	24	22	73	14	158
0.6	26	23	12	44	133	103	4.57	6.35	7.10	85	22	20	78	12	138
-0.4	22	20	10	34	113	83	3.57	5.35	7.60	80	20	18	83	10	118
-1.4	18	17	8	24	93	63	2.57	4.35	8.10	75	18	16	88	8	98
-2.4	14	14	6	14	73	43	1.57	3.35	8.60	70	16	14	93	6	78
-3.4	10	11	--	--	53	23	--	2.35	9.10	65	14	12	98	4	58

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

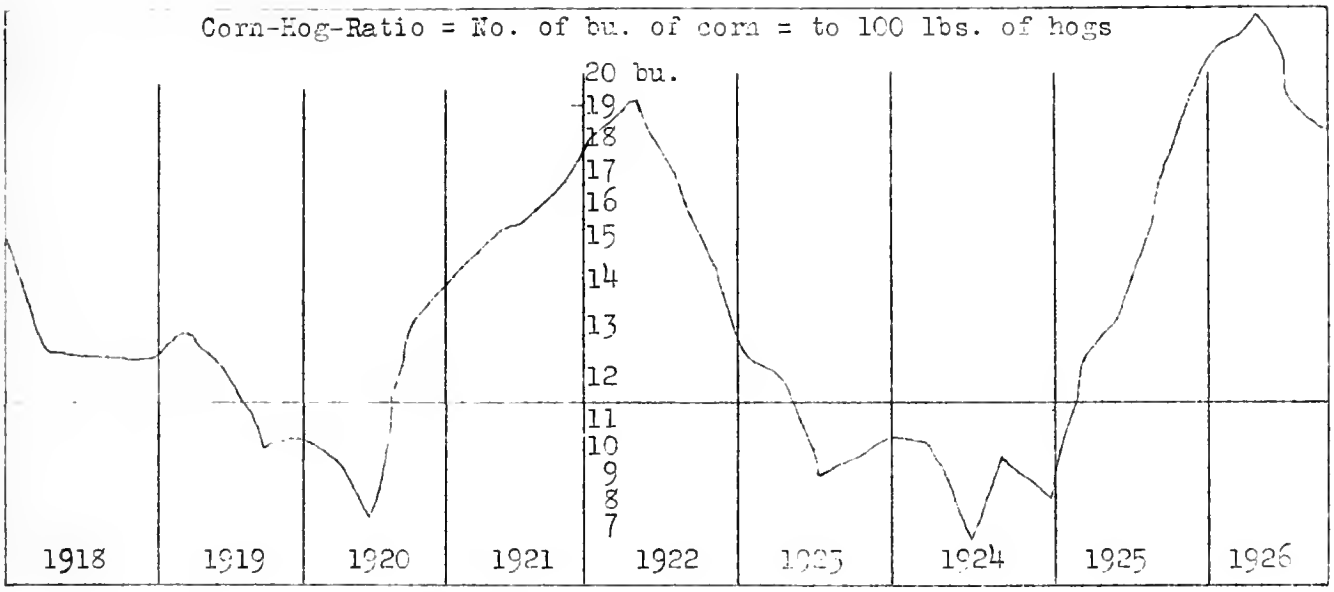
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

MC DONOUGH COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Twenty-six Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

June, 1927

M63

ANNUAL FARM BUSINESS REPORT

McDonough County, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 26 farmers in McDonough county who kept financial records in the Illinois Farm Account Project for 1926 had an average of $212 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $236 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,638, while the one-third who were least successful lacked an average of $1,140 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,778 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 26 farmers earned 3.8 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 7.5 percent and the least successful third 1.2 percent. The average investment on the 26 farms was $42,610, which amounts to $236 an acre. The higher profit third had an average investment of $221 and the lower profit third $243 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $176 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The ten most profitable farms averaged 36 acres smaller than the ten least profitable farms. This difference in size probably had little to do with the difference in net earnings, since we have found for other years and for other areas in 1926 that the high and low profit groups usually average about the same number of acres. If there was any advantage in size it was in favor of the 200 acre farms instead of the 164 acre farms. The more profitable farms had about 10 percent more of their land tillable, which was slightly in their favor.

The more profitable farms had considerable advantage in yields of corn and oats. They produced about 9 bushels more corn and 7 bushels more oats per acre than the less profitable farms. There was little difference in the

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*R. C. Doneghue, farm adviser in McDonough county, cooperated in supervising and collecting the records used in this report.

average wheat yield. Difference in yields is usually one of the largest differences between farms of the high and low profit groups. These differences were smaller than usual, however, for 1926.

The most important single advantage of the more profitable farms for 1926 was in having more livestock per acre and in handling their livestock more efficiently. The ten most successful farm operators whose records are included in this report secured $173 of livestock income for each $100 of livestock investment compared with a livestock income of $99 for each $100 of investment for the less successful operators. This advantage in efficiency was shown also with each kind of livestock separately. The more profitable farms returned $111 and the less profitable ones $61 income for each $100 invested in cattle. The corresponding amounts of income from hogs were $206 and $128 for the high and low profit groups. Hog production was much the largest source of income on these farms and any advantage in handling hogs efficiently had a correspondingly large influence on the net income. Good methods of sanitation and balanced economical feeding have been found to have a large influence on the relative cost of producing pork and hence on the margin of profit in the hog production enterprise.

It is of interest to note that the ten most profitable farms had a livestock investment per acre of $2.23 larger than that of the low profit group, but their livestock income was $13.50 larger than that of the latter group. The more profitable farms had twice as much livestock income per farm. About 59 percent of the income from the more profitable farms and 50 percent of that from the less profitable farms was derived from hogs. Greater efficiency in feeding by the more successful farmers is indicated by the fact that, although their farms were smaller in size, they fed off and marketed more livestock and still had about as much grain to sell as the less successful farm operators.

On the expense side of the business there was little difference in labor cost per acre between the higher and lower profit groups. With the same labor cost, however, the more successful operators managed to secure $30.96 gross income per acre against an average of $17.48 on the low profit farms. Total operating costs per acre did not differ much between the two groups of farms. Machinery and equipment costs were somewhat higher per acre on the less profitable farms in spite of their larger size, which should give them some advantage in keeping expenses per acre at a lower level. With a much higher gross income and about the same operating costs per acre, the more profitable farms had a net income per acre over five times as large as on the low profit farms. It is for the net income that the farm business is operated.

Although there has been a steady increase in the number of farms included in this accounting project, it is interesting to note the comparative earnings, investments and costs for these McDonough farms during the past four years. In using these figures it is best to keep in mind the shifting in individual farms included from year to year. A number of the farms have been included each of the four years. The following table brings out this comparison. It is interesting to note the larger income from grain sales in 1924 when grain prices were at their best since 1920. Hog incomes were highest in 1925 and fell back in 1926, probably on account of hog cholera. Operating costs per acre evidently are not decreasing.

Comparative Earnings on Some McDonough County Farms

	1923	1924*	1925	1926
Number of farms included	18	51	30	26
Average size of farm in acres	202	202	180	180
Average rate earned	2.7%	5.3%	5.7%	3.8%
Average value of land per acre	$ 182	$ 165	$ 179	$ 176
Average investment per acre	227	216	238	236
Investment in livestock per farm	3,037	2,765	2,858	3,118
Investment in cattle per farm	936	957	760	957
Investment in hogs per farm	1,237	1,034	1,266	1,287
Investment in poultry per farm	150	143	134	155
Gross income per acre	19.86	23.66	28.91	23.24
Operating cost per acre	13.72	12.14	15.16	14.23
Grain sales less feed purchases per farm	357	1,342	908	495
Miscellaneous income per farm	213	123	130	61
Livestock income per farm	2,799	3,319	4,166	3,641
Gross income per farm	3,369	4,784	5,204	4,197
Cattle income per farm	726	693	456	488
Dairy sales per farm	163	170	330	291
Hog income per farm	1,568	2,139	3,040	2,493
Poultry income per farm	295	238	266	325

Some points of strength and some of weakness in your own business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm as well as for farms of the high and low profit groups.

*Records for Adams and Hancock Counties were included for 1924.

McDonough County

Factors helping to analyze the farm business	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.82%	7.52%	1.20%
Labor and management wage	$	$ 212	$1,638	$-1,140
Size of farm - acres	A	180.6 A	164.3 A	200.1 A
Percent of land area tillable	%	84.3 %	89.1 %	80.6 %
Acres in Corn	A	65.1 A	52.0 A	72.2 A
Oats	A	25.1 A	26.3 A	28.0 A
Wheat	A	19.8 A	20.7 A	21.7 A
Crop yields - Corn	bu.	49.4 bu.	55.9 bu.	47.1 bu.
Oats	bu.	37.0 bu.	42.6 bu.	35.2 bu.
Wheat	bu.	20.6 bu.	19.6 bu.	21.8 bu.
Returns per $100 invested in all productive livestock	$	$ 139	$ 173	$ 99
For $100 in Cattle	$	$ 82	$ 111	$ 61
Hogs	$	$ 177	$ 206	$ 128
Poultry	$	$ 206	$ 201	$ 190
Investment per acre in productive livestock	$	$ 14.49	$ 15.45	$ 13.22
Receipts per acre from productive livestock	$	$ 20.14	$ 26.65	$ 13.10
Man labor cost per acre	$	$ 7.39	$ 7.13	$ 7.50
Crop acres per man	A	73.1 A	76.6 A	75.7 A
Crop acres per horse (with tractor)	A	21.1 A	28.8 A	22.1 A
(without tractor)	A	17.1 A	18.7 A	16.5 A
Expense per $100 gross income	$	$ 61	$ 46	$ 83
Machinery cost per acre	$	$ 1.95	$ 1.76	$ 2.38
Building and fencing cost per acre	$	$ 1.29	$ 1.24	$ 1.33
Gross receipts per acre	$	$ 23.24	$ 30.96	$ 17.48
Total expenses per acre	$	$ 14.23	$ 14.32	$ 14.55
Net receipts per acre	$	$ 9.01	$ 16.64	$ 2.93
Percent of farms with tractor	%	42.3 %	30%	50%
Value of land per acre	$	$ 176	$ 166	$ 181
Total investment per acre	$	$ 236	$ 221	$ 243

McDonough County

	Items	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$42,610	$36,328	$48,704
2	Land		31,743	27,195	36,199
3	Farm improvements		3,742	3,198	4,322
4	Machinery and equipment		1,446	1,198	1,613
5	Feed and supplies		2,561	1,934	3,232
6	Livestock		3,118	2,803	3,338
7	Horses		559	474	553
8	Cattle		957	859	883
9	Swine		1,287	1,225	1,432
10	Sheep		160	43	349
11	Poultry		155	202	121
12	Receipts-Net Increases-Total	$_____	$ 4,197	$ 5,086	$ 3,498
13	Feed and grain		495	652	824
14	Miscellaneous		61	54	52
15	Livestock - Total		3,641	4,380	2,622
16	Horses		4	1	--
17	Cattle		488	542	364
18	Swine		2,493	2,996	1,770
19	Sheep		40	40	49
20	Poultry		161	182	161
21	Egg sales		164	237	69
22	Dairy sales		291	382	209
23	Expenses-Net Decreases-Total	$_____	$ 1,561	$ 1,488	$ 1,785
24	Farm improvements		233	203	266
25	Livestock		---	---	24
26	Horses		---	---	24
27	Cattle		---	---	--
28	Swine		---	---	--
29	Sheep		---	---	--
30	Poultry		---	---	--
31	Machinery and equipment		352	289	477
32	Feed and supplies		---	---	---
33	Livestock expenses other than feed		73	87	45
34	Crop expense		199	223	216
35	Labor hired		326	308	375
36	Taxes, insurance, etc.		355	355	359
37	Miscellaneous		23	23	23
38	Receipts less Expenses	$_____	$ 2,636	$ 3,598	$ 1,713
39	Operator's and unpaid family labor		1,009	864	1,126
40	Net income from investment		1,627	2,734	587

Find Your Farm Leaks

McDonough County, 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels of acre of			Returns per $100 invested in			Invest. per acre in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.8	77	58	34	152	317	346	28.50	34.14	3.90	108	35	31	33	44	320
9.8	73	55	32	142	297	326	26.50	32.14	4.40	103	33	29	37	41	300
8.8	69	52	30	132	277	306	24.50	30.14	4.90	98	31	27	41	38	280
7.8	65	49	28	122	257	286	22.50	28.14	5.40	93	29	25	45	35	260
6.8	61	46	26	112	237	266	20.50	26.14	5.90	88	27	23	49	32	240
5.8	57	43	24	102	217	246	18.50	24.14	6.40	83	25	21	53	29	220
4.8	53	40	22	92	197	226	16.50	22.14	6.90	78	23	19	57	26	200
3.8	49	37	20	82	177	206	14.50	20.14	7.40	73	21	17	61	23	180
2.8	45	34	18	72	157	186	12.50	18.14	7.90	68	19	15	65	20	160
1.8	41	31	16	62	137	166	10.50	16.14	8.40	63	17	13	69	17	140
0.8	37	28	14	52	117	146	8.50	14.14	8.90	58	15	11	73	14	120
-0.2	33	25	12	42	97	126	6.50	12.14	9.40	53	13	9	77	11	100
-1.2	29	22	10	32	77	106	4.50	10.14	9.90	48	11	7	81	8	80
-2.2	25	19	8	22	57	86	2.50	8.14	10.40	43	9	5	85	5	60
-3.2	21	16	6	12	37	66	----	6.14	10.90	38	7	3	89	2	40

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest -

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

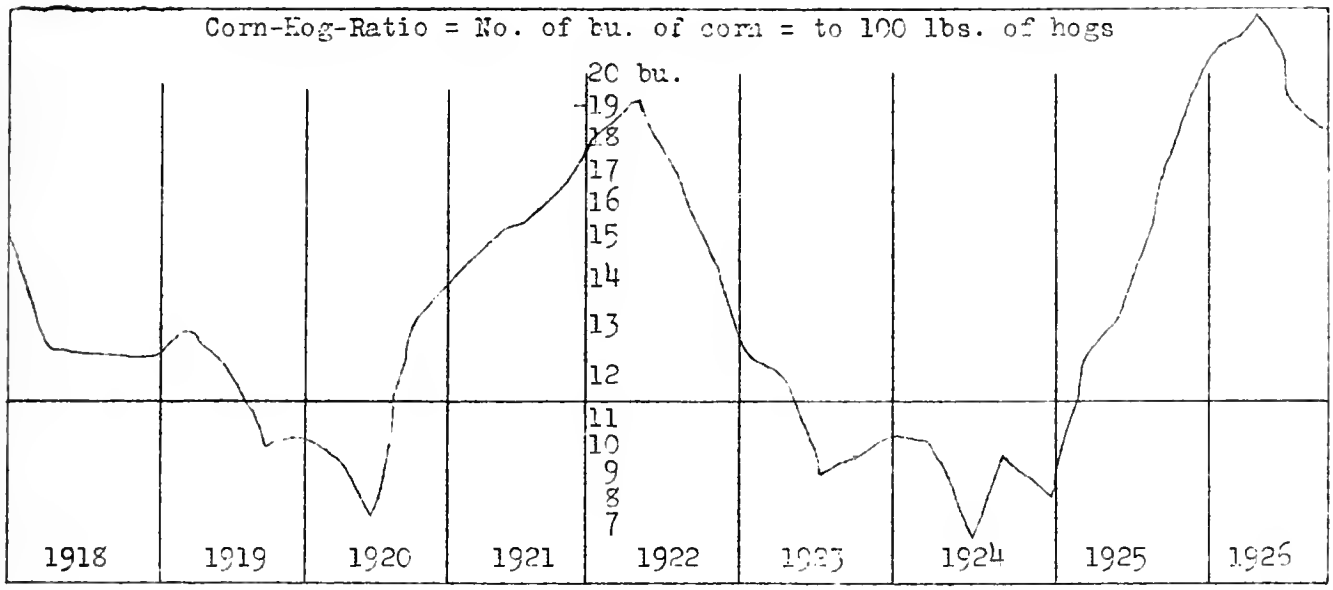
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

15

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

CHAMPAIGN COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

May, 1927

M48

ANNUAL FARM BUSINESS REPORT

Champaign County, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 30 farmers in Champaign county who kept financial records in the Illinois Farm Account Project for 1926 had an average of $185 to pay for their labor, management, and risk after paying expenses and allowing 5 percent interest on their average investment of $246 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,141 while the one-third who were least successful lacked an average of $876 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,017 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 30 farmers earned 4.1 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 5.93 percent and the least successful third 1.83 percent. The average investment on the 30 farms was $55,343, which amounts to $246 an acre. The higher profit third had an average investment of $249 and the lower profit third $243 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $203 an acre on the average farm.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

There was no important difference in average size of farm between the high and low profit groups. Their total investment per farm was also about the same. The average farm in each group contained a little over 200 acres and nearly all of it was tillable land. The entire 30 farms averaged 44 percent of their land in corn, 20 percent in oats, and 9 percent in wheat. The ten most profitable farms had 18 acres less oats and 15 acres

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*C. C. Burns, farm adviser in Champaign County, cooperated in supervising and collecting the records used in this report.

more wheat per farm than the ten least profitable farms. Since wheat is a more profitable crop than oats under present conditions, this advantage in wheat acreage helped to increase net earnings.

The more successful farms raised 5 bushels more corn, 7 bushels more oats, and 2 bushels more wheat per acre than the less successful farms. This is less difference in yield than was shown between these groups in previous reports. Since the cost of operating an acre of land increases very little with increasing yields, any advantage in yield usually helps to increase profits.

Although the Champaign county farms included in the farm accounting project show a smaller livestock investment per acre than farms of most other sections of the state, the amount and efficiency of livestock had some influence on relative profits. The high profit farms averaged almost $600 more livestock income per farm than the low profit farms. This larger income was derived from dairy products, poultry products, and hogs. The more successful farm operators had about one dollar an acre more livestock investment but they received about $2.60 an acre more livestock income than their less successful neighbors.

Operating costs including man labor, equipment, improvements, etc., differed only slightly between the two groups of farms. Higher earnings on the more successful farms were a result of larger gross income rather than smaller expenses. Economy in costs appears to be more in using each unit of labor, power, equipment, and cash expense so as to bring the largest increase in gross income than in actually cutting down the amounts of these cost items per farm.

Although there has been some shifting in the individual farms covered by these reports, it is interesting to compare earnings and investments in the following table. It should be noted that in 1924 the records from Champaign county were combined with the records from Ford county and eastern McLean county. This is responsible for some of the differences shown in results such as the amount of livestock per farm. The influence of higher grain prices in 1924 is strikingly brought out in net earnings and in gross income from crops. The figures showing gross income from different farm enterprises emphasize the extent to which these Champaign county farms depend on crop sales for their income. Allowing for changes in inventory values the inventory figures for these farms show little inclination to shift to livestock under pressure of low grain prices. There does appear to be some increase in the poultry enterprise.

Comparative Earnings on Champaign County Farms

Item	1924*	1925	1926
Number of farm records	52	30	30
Average size of farm in acres	223	214	225
Average rate earned	7.4%	3.5%	4.1%
Average value of land per acre	$ 198	$ 201	$ 203
Average investment per acre	242	251	246
Investment in livestock per farm	2,210	1,654	1,949
Investment in cattle per farm	675	572	656
Investment in hogs per farm	548	256	318
Investment in poultry per farm	151	148	203
Gross income per acre	29.44	20.67	22.50
Operating cost per acre	11.43	11.82	12.42
Grain sales less feed purchases per farm	4,620	2,841	3,379
Miscellaneous income per farm	83	115	74
Livestock income per farm	1,873	1,482	1,609
Gross income per farm	6,576	4,438	5,062
Cattle income per farm	358	182	196
Dairy income per farm	268	371	317
Hog income per farm	886	609	724
Poultry income per farm	233	287	356

Some points of strength and some of weakness in your farm business may be found by comparing the factors from your own record in the following tables with the same factors on the average farm as well as on farms of the high and low profit groups.

*Records for Champaign and Ford counties and the eastern part of McLean county were included for 1924.

Champaign County - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	4.10%	5.93%	1.83%
Labor and management wage	$	$ 185	$ 1,141	$ -876
Size of farm - acres	A	225 A	216.3 A	209.7 A
Percent of land area tillable	%	95.5 %	96.0 %	96.7 %
Acres in Corn	A	99.6 A	92.3 A	94.6 A
Oats	A	43.7 A	26.2 A	44.6 A
Wheat	A	19.9 A	25.8 A	11.2 A
Crop yields - Corn	bu.	49.9bu.	52.4bu.	47.2bu.
Oats	bu.	38.7bu.	40.3bu.	33.3bu.
Wheat	bu.	26.3bu.	26.8bu.	24.8bu.
Returns per $100 invested in all productive livestock	$	$ 132.00	$ 145.00	$ 123.00
For $100 in Cattle	$	$ 82.00	$ 86.00	$ 70.00
Hogs	$	$ 202.00	$ 242.00	$ 207.00
Poultry	$	$ 169.00	$ 168.00	$ 179.00
Investment per acre in productive livestock	$	$ 5.42	$ 5.95	$ 4.92
Receipts per acre from productive livestock	$	$ 7.15	$ 8.64	$ 6.05
Man labor cost per acre	$	$ 5.84	$ 5.79	$ 6.22
Crop acres per man	A	98.3 A	98.8 A	87.7 A
Crop acres per horse (with tractor)	A	28.6 A	31.1 A	25.1 A
(without tractor)	A	18.1 A	18.9 A	18.2 A
Expense per $100 gross income	$	$ 55.00	$ 46.00	$ 74.00
Machinery cost per acre	$	$ 2.10	$ 2.33	$ 2.01
Building and fencing cost per acre	$	$ .91	$ .86	$ .78
Gross receipts per acre	$	$ 22.50	$ 27.24	$ 17.16
Total expenses per acre	$	$ 12.42	$ 12.50	$ 12.71
Net receipts per acre	$	$ 10.08	$ 14.74	$ 4.45
Percent of farms with tractor	%	70 %	50 %	60 %
Value of land per acre	$	$ 203.00	$ 208.00	$ 196.00
Total investment per acre	$	$ 246.00	$ 249.00	$ 243.00

Champaign County - 1926

	Item	Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$55,343	$53,785	$50,885
2	Land		45,675	44,957	41,084
3	Farm improvements		3,310	3,229	3,440
4	Machinery and equipment		1,583	1,468	1,577
5	Feed and supplies		2,826	2,217	2,971
6	Livestock		1,949	1,914	1,813
7	Horses		748	722	765
8	Cattle		656	628	617
9	Hogs		318	238	266
10	Sheep		24	---	28
11	Poultry		203	326	137
12	Receipts-Net Increases-Total	$_____	$ 5,062	$ 5,892	$ 3,599
13	Feed and grain		3,379	3,960	2,272
14	Miscellaneous		74	65	58
15	Livestock - Total		1,609	1,867	1,269
16	Horses		--	13	--
17	Cattle		196	154	176
18	Hogs		724	737	580
19	Sheep		16	--	19
20	Poultry		214	344	143
21	Egg sales		142	214	123
22	Dairy sales		317	405	228
23	Expenses-Net Decreases-Total	$_____	$ 1,883	$ 1,781	$ 1,704
24	Farm improvements		204	186	164
25	Livestock		3	--	21
26	Horses		3	--	21
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		472	505	422
32	Feed and supplies		--	--	--
33	Livestock expense other than feed		41	72	22
34	Crop expense		215	145	228
35	Labor hired		403	329	342
36	Taxes, insurance, etc.		515	509	478
37	Miscellaneous		30	35	27
38	Receipts less Expenses	$_____	$ 3,179	$ 4,111	$ 1,895
39	Operator's and unpaid family labor		912	923	962
40	Net income from investment		2,267	3,188	933

Find Your Farm Leaks

Champaign County, 1926

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.10	71	60	40	152	342	309	12.42	14.15	2.34	133	42	32	20	43	365
10.10	68	57	38	142	322	289	11.42	13.15	2.84	128	40	30	25	40	345
9.10	65	54	36	132	302	269	10.42	12.15	3.34	123	38	28	30	37	325
8.10	62	51	34	122	282	249	9.42	11.15	3.84	118	36	26	35	34	305
7.10	59	48	32	112	262	229	8.42	10.15	4.34	113	34	24	40	31	285
6.10	56	45	30	102	242	209	7.42	9.15	4.84	108	32	22	45	28	265
5.10	53	42	28	92	222	189	6.42	8.15	5.34	103	30	20	50	25	245
4.10	50	39	26	82	202	169	5.42	7.15	5.84	98	28	18	55	22	225
3.10	47	36	24	72	182	149	4.42	6.15	6.34	93	26	16	60	19	205
2.10	44	33	22	62	162	129	3.42	5.15	6.84	88	24	14	65	16	185
1.10	41	30	20	52	142	109	2.42	4.15	7.34	83	22	12	70	13	165
0.10	38	27	18	42	122	89	0.42	3.15	7.84	78	20	10	75	10	145
-0.90	35	24	16	32	102	69	--	2.15	8.34	73	18	8	80	7	125
-1.90	32	21	14	22	82	49	--	1.15	8.84	68	16	6	85	4	105
-2.90	29	18	12	12	62	29	--	--	9.34	63	14	4	90	-	85

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

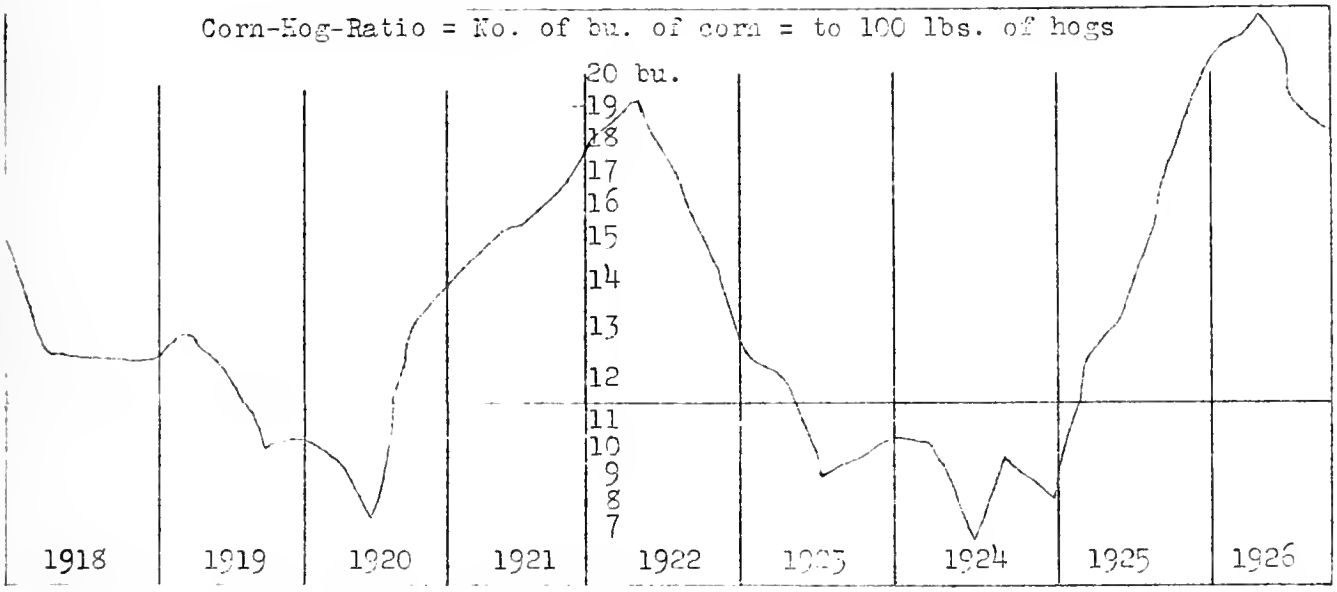
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

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UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

MACON, LOGAN, PIATT COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Twenty-eight Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

May, 1927

M47

ANNUAL FARM BUSINESS REPORT

Macon, Logan, Piatt Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case*

The 28 farmers in Macon, Logan, and Piatt counties who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $265 of having enough income to pay operating costs and 5 percent interest on their average investment of $244 an acre, allowing nothing for their labor, management, and risk. The one-third of these farmers who made the best profits had an average labor and management wage of $783 in addition to paying operating costs and 5 percent interest, while the one-third who were least successful lacked an average of $1,254 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,037 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 28 farmers earned 3.27 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 5.18 percent and the least successful third 0.82 percent. The average investment on the 28 farms was $55,312, which amounts to $244 an acre. The higher profit third had an average investment of $252 and the lower profit third $240 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $190 an acre as an average for all farms. The average farm contained 227 acres.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc.,not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The ten most profitable farms average about fifty acres larger in size than the ten least profitable farms. This, however, is usually a minor consideration in determining relative profits when both groups average around 200 acres or more as they did in this case. Both groups had nearly all tillable land. The more profitable farms averaged about 20 acres more corn and 15 acres more wheat than the less profitable farms but there was little difference in oat acreage. From this it is clear that the more successful farms had a smaller percentage of their land in oats.

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*E. H. Welworth, J. H. Checkley, and S. S. Davis, farm advisers in Macon, Logan and Piatt counties respectively, cooperated in supervising and collecting the records used in this report.

As to crop yields the more successful farmers raised about 3 bushels more corn, 8 bushels more oats, and 2 bushels more wheat to the acre than their less successful neighbors. Usually we find a larger difference than this between the high and low profit groups but any increase in yield goes directly to improve profits since the cost of operating an acre usually increases but slightly with an increased yield.

The 10 most profitable farms had about twice as large gross incomes per farm as the 10 least profitable farms. This is accounted for in both larger grain and larger livestock incomes. The greater acreage of wheat was a factor in the larger grain sales.

The more successful farm operators had 65 percent larger livestock investments per acre but there appeared to be little difference in the efficiency with which the two groups handled their livestock. With livestock prices more favorable than grain prices for 1926, however, it was a distinct advantage to feed larger numbers of livestock. The more profitable farms had much larger sales of beef cattle and hogs.

Labor was used much more efficiently on the more profitable farms. The operators of these farms worked 18 more crop acres per man, had better yields and more livestock, and a man labor cost per acre about $1.50 lower than on the less profitable farms.

Other operating costs were also handled with good judgment for the more profitable farms had $1.70 less operating costs per acre, while their gross income exceeded that of the less profitable farms by $9.41 an acre. There was a net operating income of $13.08 an acre for the more successful operators against $1.97 an acre for their less successful neighbors. It is net income that goes to pay interest and profits.

Some farm records from Mason and McLean counties were included in the report covering Macon, Logan, and Piatt counties for 1925 and this report is, therefore, not strictly comparable with the one for 1925. It is of interest to note, however, that the average rate of interest earned by the farms included for 1925 was 4.1 percent and for those included for 1926, a number of which were the same farms, the rate was 3.27 percent. This reduction in earnings is similar to that experienced in other sections of the state. The excessively wet weather beginning about the middle of August and extending through the fall and winter was a factor in reducing earnings. The outbreak of hog cholera added its toll and grain prices were certainly no better. Operating costs were slightly higher for 1926 but reduced gross incomes had a larger influence on the reduced earnings.

Some points of strength and some of weakness in your own business may be found by comparing the factors from your own record in the following tables with the same factors on the average farm, as well as on farms of the high and low profit groups.

Macon, Logan and Piatt Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of twenty-eight farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.27%	5.18%	.82%
Labor and management wage	$	$ -265	$ 783	$-1,254
Size of farm - acres	A	226.8 A	245.0 A	194.9 A
Percent of land area tillable	%	95.1 %	96.4 %	91.1 %
Acres in Corn	A	91.0 A	95.0 A	75.0 A
Oats	A	39.1 A	36.7 A	35.9 A
Wheat	A	24.3 A	29.9 A	15.6 A
Crop yields - Corn	bu.	49.7bu.	51.1bu.	47.9bu.
Oats	bu.	39.0bu.	42.8bu.	34.1bu.
Wheat	bu.	27.8bu.	30.5bu.	28.8bu.
Returns per $100 invested in all productive livestock	$	$ 123.00	$ 124.00	$ 122.00
For $100 in Cattle	$	$ 90.00	$ 107.00	$ 65.00
Swine	$	$ 166.00	$ 157.00	$ 201.00
Poultry	$	$ 164.00	$ 151.00	$ 177.00
Investment per acre in productive livestock	$	$ 9.38	$ 12.56	$ 7.58
Receipts per acre from productive livestock	$	$ 11.54	$ 15.60	$ 9.25
Man labor cost per acre	$	$ 6.32	$ 5.87	$ 7.34
Crop acres per man	A	96.7 A	101.7 A	83.5 A
Crop acres per horse (with tractor)	A	29.4 A	26.3 A	31.0 A
(without tractor)	A	17.4 A	18.7 A	19.9 A
Expense per $100 gross income	$	$ 62.00	$ 49.00	$ 88.00
Machinery cost per acre	$	$ 1.86	$ 1.87	$ 1.98
Building and fencing cost per acre	$	$ 1.09	$ .91	$ 1.59
Gross receipts per acre	$	$ 20.95	$ 25.62	$ 16.21
Total expenses per acre	$	$ 12.97	$ 12.54	$ 14.24
Net receipts per acre	$	$ 7.98	$ 13.08	$ 1.97
Farms with tractor (percent)	%	64.3 %	80 %	60 %
Value of land per acre		$ 190.00	$ 193.00	$ 186.00
Total investment per acre	$	$ 244.00	$ 252.00	$ 240.00

Macon, Logan and Piatt Counties, 1926

	Items	Your farm	Average of twenty-eight farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$55,312	$61,838	$46,728
2	Land		43,069	47,326	36,277
3	Farm improvements		4,243	4,829	3,992
4	Machinery and equipment		1,594	1,780	1,551
5	Feed and supplies		3,521	3,941	2,990
6	Livestock		2,885	3,962	1,918
7	Horses		744	730	623
8	Cattle		1,012	1,677	654
9	Swine		885	1,361	437
10	Sheep		90	59	55
11	Poultry		154	135	149
12	Receipts-Net Increases-Total	$_____	$ 4,752	$ 6,277	$ 3,160
13	Feed and grain		2,074	2,373	1,298
14	Miscellaneous		61	83	59
15	Livestock - Total		2,617	3,821	1,803
16	Horses		--	--	--
17	Cattle		666	1,600	141
18	Swine		1,384	1,791	1,005
19	Sheep		39	65	12
20	Poultry		143	126	153
21	Egg sales		123	92	134
22	Dairy sales		262	147	358
23	Expenses-Net Decreases-Total	$_____	$ 2,002	$ 2,231	$ 1,738
24	Farm improvements		248	223	309
25	Livestock		15	22	5
26	Horses		15	22	5
27	Cattle		-	-	-
28	Swine		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		421	458	385
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		58	63	54
34	Crop expense		248	259	163
35	Labor hired		494	596	392
36	Taxes, insurance, etc.		494	589	407
37	Miscellaneous		24	21	23
38	Receipts less Expenses	$_____	$ 2,750	$ 4,046	$ 1,422
39	Operator's and unpaid family labor		940	842	1,038
40	Net income from investment		1,810	3,204	384

Find Your Farm Leaks

Macon, Logan and Piatt Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.27	85	60	42	160	306	304	23.38	25.54	2.82	132	44	31	27	42	367
9.27	80	57	40	150	286	284	21.38	23.54	3.32	127	42	29	32	39	347
8.27	75	54	38	140	266	264	19.38	21.54	3.82	122	40	27	37	36	327
7.27	70	51	36	130	246	244	17.38	19.54	4.32	117	38	25	42	33	307
6.27	65	48	34	120	226	224	15.38	17.54	4.82	112	36	23	47	30	287
5.27	60	45	32	110	206	204	13.38	15.54	5.32	107	34	21	52	27	267
4.27	55	42	30	100	186	184	11.38	13.54	5.82	102	32	19	57	24	247
3.27	50	39	28	90	166	164	9.38	11.54	6.32	97	30	17	62	21	227
2.27	45	36	26	80	146	144	7.38	9.54	6.82	92	28	15	67	18	207
1.27	40	33	24	70	126	124	5.38	7.54	7.32	87	26	13	72	15	187
0.27	35	30	22	60	106	104	3.38	5.54	7.82	82	24	11	77	12	167
-0.73	30	27	20	50	86	84	1.38	3.54	8.32	77	22	9	82	9	147
-1.73	25	24	18	40	66	64	----	1.54	8.82	72	20	7	87	6	127
-2.73	20	21	16	30	46	44	----	----	9.32	67	18	5	92	3	107
----	15	18	14	20	26	24	----	----	9.82	62	16	3	97	-	87

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

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Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

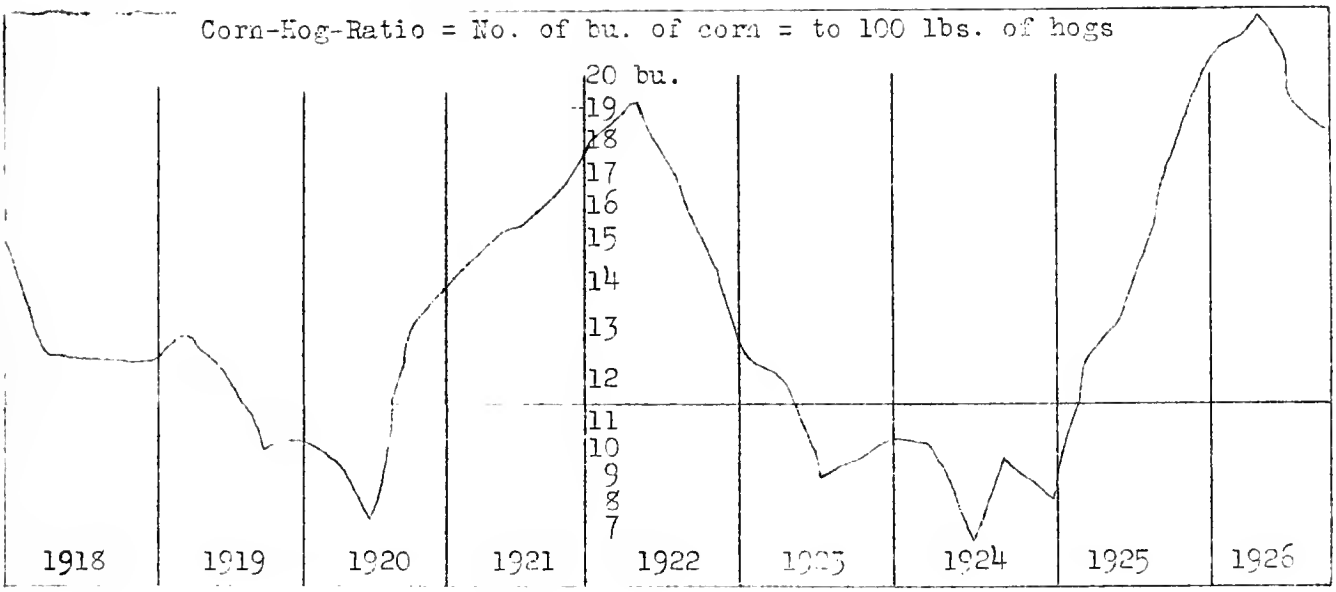
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

HANCOCK AND ADAMS COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-two Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April 20, 1927

M42

ANNUAL FARM BUSINESS REPORT

Hancock and Adams Counties, Illinois-1926

Prepared by R. R. Hudelson, P. E. Johnston, G. W. Kuhlman, H. C. M. Case*

The 32 farmers in Hancock and Adams counties who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $122 each of having enough income to pay operating costs and 5 percent interest on their average investment of $190 an acre, allowing nothing for their labor, management, and risk. The one-third of these farmers who made the best profits paid operating expenses and 5 percent on the investment and had left an average labor and management wage of $1,032, while the one-third who were least successful lacked an average of $964 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,996 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 32 farmers earned 3.41 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 5.91 percent and the least successful third 1.33 percent. The average investment on the 32 farms was $45,034, which amounts to $190 an acre. The higher profit third had an average investment of $185 and the lower profit third $188 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops listed in the table on page 4. The land alone was valued at $137 an acre on the average farm.

In addition to the above earnings, each family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The 10 most profitable farms had only about 14 acres more land but with a higher percentage of tillable land they had 39 more potential crop acres than the 10 least profitable farms. The average farm in either group was large enough to farm efficiently. The average size of all farms keeping accounts was 236 acres. There was little difference between groups in the number of acres of the chief grain crops.

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*J. H. Lloyd, and Ray E. Miller, farm advisers in Hancock and Adams Counties, respectively, cooperated in supervising and collecting the records used in this report.

As to crop yields the higher profit group raised 2 bushels more corn and one bushel less oats. The number of acres of wheat was so small that a difference in yield had little effect on earnings. Difference in crop yields was, therefore, of little significance between the high and low profit groups in this case. Reports for other years and for other sections of Illinois in 1926 show a greater advantage in yield for the high profit group of farms.

The biggest difference between the high and low profit groups was in their livestock efficiency. The low profit group had three dollars an acre more livestock investment but secured $8.15 an acre less income from livestock. The more successful farmers secured $185 of livestock income for every $100 of investment in livestock, while the less successful group secured only $99 income for every $100 of livestock investment. This greater efficiency of the more successful farmers in livestock management is uniform for all classes of productive livestock. They received $52 more cattle income, $97 more hog income, and $78 more poultry income per $100 invested than was received by the farmers of the less successful group. This with the relatively large investment in livestock on these farms constituted a great advantage in favor of the more profitable farms. Both groups spent more for feed than they received from crop sales, but the amounts were small on the average as compared with their livestock income. The net feed purchases of the higher profit group amounted to $464 per farm and those of the low profit group to $198 per farm.

The more successful group of farmers had a man labor cost of 61 cents an acre smaller than the less successful group in spite of the fact that they secured $2,133 more livestock income per farm, indicating better care of livestock. They also worked five more crop acres per man. As to power efficiency they handled more crop acres per horse than the less successful group both on the tractor and the non-tractor farms. Machinery and farm improvement costs were both somewhat smaller on the more profitable farms, and the total operating costs per acre were 40 cents an acre smaller than on the low profit farms. The big difference was not in operating costs but in gross income. Gross receipts amounted to $24.25 an acre for the more profitable group as compared with $16.22 for the low profit group.

Although there has been considerable shift in farms included due to the growth of the farm account project, it is of some interest to compare earnings from this report with the corresponding reports for 1924 and 1925. For 1924 fifty-one farms in Adams, McDonough and Hancock counties earned 5.3 percent on an investment of $216 an acre. For 1925 thirty-eight farms in Hancock, Adams, Brown, Schuyler, and Pike counties earned 6.0 percent on an investment of $188 an acre. For 1926 thirty-two farms in Hancock and Adams counties earned 3.4 percent on an investment of $190 an acre. Lower corn yields, less acres of wheat, and higher operating costs all seem to have had an influence in reducing earnings for 1926. All kinds of livestock showed less income per $100 investment, also, than in 1925. Hog incomes fell most, the apparent cause being losses from hog cholera.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm, as well as on the farms of the group making the best profits and the group making the least profits.

Hancock and Adams Counties - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty-two farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.41%	5.91%	1.33%
Labor and management wage	$	$ -122.	$ 1,032	$ -964.
Size of farm - acres	A	236.6 A	233.3 A	219.6 A
Percent of land area tillable	%	81.9 %	84.6 %	72.2 %
Acres in Corn	A	76.1 A	70.8 A	67.4 A
Oats	A	30.4 A	26.7 A	24.9 A
Wheat	A	5.4 A	8.6 A	8.9 A
Crop yields - Corn	bu.	39.0bu.	41.2 bu.	39.2bu.
Oats	bu.	31.9bu.	33.4 bu.	34.6bu.
Wheat	bu.	12.9bu.	10.1 bu.	15.9bu.
Returns per $100 invested in all productive livestock	$	$ 135.00	$ 185.00	$ 99.00
For $100 in Cattle	$	$ 78.00	$ 111.00	$ 59.00
Hogs	$	$ 191.00	$ 252.00	$ 155.00
Poultry	$	$ 173.00	$ 214.00	$ 136.00
Investment per acre in productive livestock	$	$ 14.37	$ 12.78	$ 15.66
Receipts per acre from productive livestock	$	$ 19.43	$ 23.62	$ 15.47
Man labor cost per acre	$	$ 5.59	$ 5.54	$ 6.15
Crop acres per man	A	79.8 A	75.3 A	70.0 A
Crop acres per horse (with tractor)	A	25.1 A	27.0 A	18.9 A
(without tractor)	A	20.5 A	19.0 A	17.9 A
Expense per $100 gross income	$	$ 67.00	$ 55.00	$ 85.00
Machinery cost per acre	$	$ 2.08	$ 2.07	$ 2.56
Building and fencing cost per acre	$	$ 1.03	$ .95	$ 1.41
Gross receipts per acre	$	$ 19.91	$ 24.25	$ 16.22
Total expenses per acre	$	$ 13.42	$ 13.31	$ 13.71
Net receipts per acre	$	$ 6.49	$ 10.94	$ 2.51
Farms with tractor (percent)	%	59.0%	50.0%	40.0%
Value of land per acre	$	$ 137.00	$ 133.00	$ 133.00
Total investment per acre	$	$ 190.00	$ 185.00	$ 188.00

Hancock and Adams Counties - 1926

	Item	Your farm	Average of thirty-two farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$45,034	$43,145	$41,355
2	Land		32,473	31,085	29,303
3	Farm improvements		4,625	4,731	4,309
4	Machinery and equipment		1,523	1,382	1,534
5	Feed and supplies		2,554	2,824	2,001
6	Livestock		3,859	3,123	4,208
7	Horses		604	591	687
8	Cattle		1,528	1,012	2,010
9	Hogs		1,483	1,297	1,305
10	Sheep		95	91	71
11	Poultry		149	132	135
12	Receipts-Net Increases-Total	_____	4,711	5,657	3,561
13	Feed and grain		--	--	--
14	Miscellaneous		112	126	163
15	Livestock - Total		4,599	5,531	3,398
16	Horses		3	20	--
17	Cattle		958	993	1,022
18	Hogs		3,078	3,752	2,020
19	Sheep		89	83	65
20	Poultry		105	138	73
21	Egg sales		156	147	107
22	Dairy sales		210	398	111
23	Expenses-Net Decreases-Total	_____	2,410	2,239	2,270
24	Farm improvements		244	222	309
25	Livestock		--	--	8
26	Horses		--	--	8
27	Cattle		--	--	--
28	Hogs		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		491	484	562
32	Feed and supplies		402	464	198
33	Livestock expense other than feed		112	133	93
34	Crop expense		231	179	186
35	Labor hired		558	426	609
36	Taxes, insurance, etc.		344	324	279
37	Miscellaneous		28	7	26
38	Receipts less expenses		2,301	3,418	1,291
39	Operator's and unpaid family labor		764	867	741
40	Net income from investment		1,537	2,551	550

Find Your Farm Leaks

(Hancock and Adams Counties - 1926)

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per A. in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.4	60	53	27	218	331	313	28.37	33.43	2.10	115	39	34	32	41	376
9.4	57	50	25	198	311	293	26.37	31.43	2.60	110	37	32	37	38	356
8.4	54	47	23	178	291	273	24.37	29.43	3.10	105	35	30	42	35	336
7.4	51	44	21	158	271	253	22.37	27.43	3.60	100	33	28	47	32	316
6.4	48	41	19	138	251	233	20.37	25.43	4.10	95	31	26	52	29	296
5.4	45	38	17	118	231	213	18.37	23.43	4.60	90	29	24	57	26	276
4.4	42	35	15	98	211	193	16.37	21.43	5.10	85	27	22	62	23	256
3.4	39	32	13	78	191	173	14.37	19.43	5.60	80	25	20	67	20	236
2.4	36	29	11	58	171	153	12.37	17.43	6.10	75	23	18	72	17	216
1.4	33	26	9	38	151	133	10.37	15.43	6.60	70	21	16	77	14	196
0.4	30	23	7	18	131	113	8.37	13.43	7.10	65	19	14	82	11	176
-0.6	27	20	5	--	111	93	6.37	11.43	7.60	60	17	12	87	8	156
-1.6	24	17	--	--	91	73	4.37	9.43	8.10	55	15	10	92	5	136
-2.6	21	14	--	--	71	53	2.37	7.43	8.60	50	13	8	97	--	116
-3.6	18	11	--	--	51	33	0.37	5.43	9.10	45	11	6	102	--	96

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

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The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

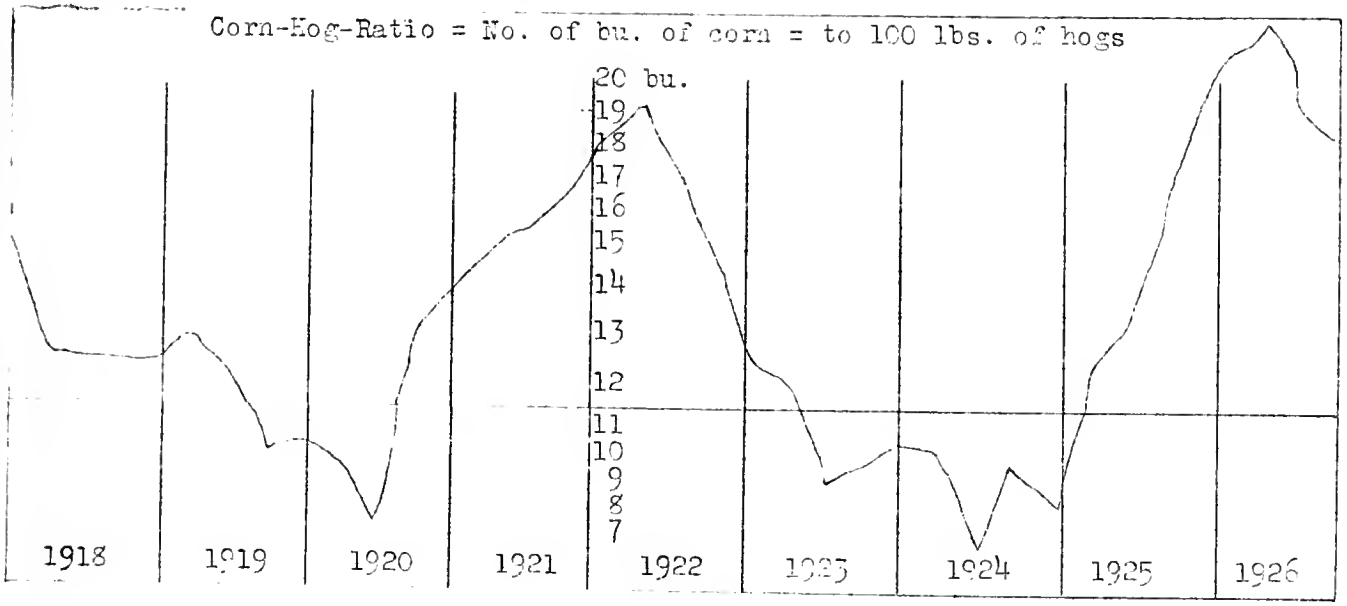
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

SCHUYLER, MORGAN, PIKE, AND BROWN COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Twenty-six Farms

for

1926

Farm account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M53

ANNUAL FARM BUSINESS REPORT

Schuyler, Morgan, Pike, Brown Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 26 farmers in Schuyler, Morgan, Pike and Brown counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $13 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $180 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,291, while the one-third who were least successful lacked an average of $1,376 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,667 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 26 farmers earned 3.4 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.9 percent and the least successful third 1.0 percent. The average investment on the 26 farms was $40,270, which amounts to $180 an acre. The higher profit third had an average investment of $173 and the lower profit third $182 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $130 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The low profit group of farms averaged about 73 acres per farm larger than the high profit group. They had only about 36 acres more tillable land, however. This difference in size probably had little influence on relative earnings. We have found that as a rule the high and low profit groups average about the same size in most areas where comparisons are made. The less profitable farms averaged 31 acres more corn and 21 acres more wheat per farm than the more profitable farms, but there was little difference in the average acreage of oats.

Crop yields averaged practically the same on farms of the high and low profit groups. This is unusual. In nearly all areas studied we find

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*L. E. McKinzie, F. A. Fisher, F. N. Barrett, and W. P. Miller, farm advisers in Schuyler, Morgan, Pike and Brown counties respectively, cooperated in supervising and collecting the records used in this report.

higher average yields on the higher profit farms. Operating costs per acre usually do not increase much with increased yields and the higher yields go directly to improve profits.

The one big difference between the 10 most profitable farms and the 10 least profitable farms covered by this report is that of greater numbers of livestock which were handled more efficiently on the more profitable farms. The more profitable farms had an average investment in livestock amounting to $16.76 an acre, while the low profit group had a livestock investment less than half this amount, their average being $7.65 an acre. In livestock income the difference was even greater. The operators of the more successful farms secured a livestock income amounting to $25.64 an acre, while their less successful neighbors secured only $8.46 an acre from livestock. Hogs were the chief source of income on both groups of farms, beef cattle being next in order on the higher profit farms and grain sales on the lower profit farms. The more successful operators spent an average of $662 more for feed than their crop sales amounted to. Greater efficiency with livestock on the more profitable farms is shown by the fact that their operators secured $153 of livestock income for every $100 of livestock investment, while on the less profitable farms the livestock income only amounted to $111 for every $100 of investment.

The greater efficiency with livestock on the more profitable farms is a factor that will tend to hold them above the average under any price conditions. The raising and feeding of more livestock per acre was an advantage in 1926 when prices favored livestock products in comparison with grains. This advantage promises to hold for 1927 but cannot be depended on indefinitely. It should be noted, however, that the area covered by this report is primarily a livestock farming section. Most farms in it have some non-tillable land more suitable for pasture than for harvested crops. The majority of farms find it profitable to feed their corn and oats, although a good many of them raise and sell some wheat.

Man labor and most other operating costs expressed on the acre basis were slightly higher on the more profitable farms. This was due to the additional labor and other expense required in handling more livestock. Equipment costs, however, were higher on the low profit farms.

A farm business report similar to this one was issued for 1925, covering Hancock, Brown, Schuyler, Adams and Pike counties. It is interesting to note that the average rate earned on the farms included in that report for 1925 was 6 percent as compared with 3.4 percent for 1926 on the farms included in this report. Hancock and Adams were covered by a separate report for 1926 and the average rate earned as shown in that report was 3.4 percent. These figures agree with those from other areas in Western Illinois in showing that 1926 was considerably less favorable for farm profits than 1925. Some of the underlying causes were lower corn yields and poorer quality of grains, less favorable markets for heavy beef cattle, and a severe outbreak of hog cholera. Wheat and corn prices ranged lower for 1926, also.

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own records in the following tables with the same factors on the average farm as well as on farms of the high and low profit groups.

Schuyler, Morgan, Pike and Brown Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.45%	6.86%	.97%
Labor and management wage	$	$ 13.	$1,291.	$-1,376.
Size of farm - acres	A	223.7 A	200.9 A	273.2 A
Percent of land area tillable	%	72 %	73 %	67 %
Acres in Corn	A	60.0 A	45.2 A	76.3 A
Oats	A	22.2 A	24.3 A	19.7 A
Wheat	A	24.0 A	13.7 A	34.9 A
Crop yields - Corn	bu.	42.1 bu.	41.7 bu.	41.3 bu.
Oats	bu.	29.7 bu.	30.7 bu.	30.6 bu.
Wheat	bu.	20.1 bu.	15.1 bu.	23.0 bu.
Returns per $100 invested in all productive livestock	$	$ 141.	$ 153.	$ 111.
For $100 in Cattle	$	$ 77	$ 97	$ 53
Swine	$	$ 220	$ 229	$ 188
Poultry	$	$ 163	$ 153	$ 172
Investment per acre in productive livestock	$	$ 11.37	$ 16.76	$ 7.65
Receipts per acre from productive livestock	$	$ 16.08	$ 25.64	$ 8.46
Man labor cost per acre	$	$ 5.30	$ 5.57	$ 4.81
Crop acres per man	A	70.4 A	62.6 A	72.9 A
Crop acres per horse (with tractor)	A	24.8 A	19.4 A	28.1 A
(without tractor)	A	13.9 A	14.5 A	11.6 A
Expense per $100 gross income	$	$ 63	$ 54	$ 85
Machinery cost per acre	$	$ 1.70	$ 1.46	$ 1.89
Building and fencing cost per acre	$	$ 1.09	$ 1.00	$ 1.08
Gross receipts per acre	$	$ 16.98	$ 25.87	$ 12.10
Total expenses per acre	$	$ 10.77	$ 13.99	$ 10.33
Net receipts per acre	$	$ 6.21	$ 11.88	$ 1.77
Farms with tractor (percent)	%	61 %	50 %	80 %
Value of land per acre	$	$ 130	$ 122	$ 132
Total investment per acre	$	$ 180	$ 173	$ 182

Schuyler, Morgan, Pike, Brown Counties, 1926

	Items	Your farm	Average of 26 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$40,270	$34,756	$49,686
2	Land		28,997	24,608	35,984
3	Farm improvements		4,596	3,651	5,983
4	Machinery and equipment		1,233	1,035	1,487
5	Feed and supplies		2,438	1,897	3,240
6	Livestock		3,016	3,565	2,992
7	Horses		528	369	732
8	Cattle		1,204	1,286	1,295
9	Swine		1,037	1,584	747
10	Sheep		120	223	60
11	Poultry		127	103	158
12	Receipts-Net Increases-Total	$_____	$ 3,798	$ 5,198	$ 3,306
13	Feed and grain		150	--	920
14	Miscellaneous		52	43	71
15	Livestock - Total		3,596	5,155	2,315
16	Horses		--	4	5
17	Cattle		760	1,319	429
18	Swine		2,449	3,589	1,413
19	Sheep		34	22	41
20	Poultry		86	69	103
21	Egg sales		118	48	167
22	Dairy sales		149	104	157
23	Expenses-Net Decreases-Total	$_____	$ 1,652	$ 1,995	$ 2,095
24	Farm improvements		244	201	296
25	Livestock		3	--	--
26	Horses		3	--	--
27	Cattle		-	--	--
28	Swine		-	--	--
29	Sheep		-	--	--
30	Poultry		-	--	--
31	Machinery and equipment		381	294	516
32	Feed and supplies		--	662	--
33	Livestock expense other than feed		72	98	57
34	Crop expense		161	109	225
35	Labor hired		431	301	587
36	Taxes, insurance, etc.		325	281	384
37	Miscellaneous		35	49	30
38	Receipts less expenses	$_____	$ 2,146	$ 3,203	$ 1,211
39	Operator's and unpaid family labor		756	817	727
40	Net income from investment		1,390	2,386	484

Find Your Farm Leaks

Schuyler, Morgan, Pike and Brown Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.4	70	51	34	147	360	303	25.37	30.08	1.80	105	39	28	28	31	364
9.4	66	48	32	137	340	283	23.37	28.08	2.30	100	37	26	33	29	344
8.4	62	45	30	127	320	263	21.37	26.08	2.80	95	35	24	38	27	324
7.4	58	42	28	117	300	243	19.37	24.08	3.30	90	33	22	43	25	304
6.4	54	39	26	107	280	223	17.37	22.08	3.80	85	31	20	48	23	284
5.4	50	36	24	97	260	203	15.37	20.08	4.30	80	29	18	53	21	264
4.4	46	33	22	87	240	183	13.37	18.08	4.80	75	27	16	58	19	244
3.4	42	30	20	77	220	163	11.37	16.08	5.30	70	25	14	63	17	224
2.4	38	27	18	67	200	143	9.37	14.08	5.80	65	23	12	68	15	204
1.4	34	24	16	57	180	123	7.37	12.08	6.30	60	21	10	73	13	184
0.4	30	21	14	47	160	103	5.37	10.08	6.80	55	19	8	78	11	164
-0.6	26	18	12	37	140	83	3.37	8.08	7.30	50	17	6	83	9	144
-1.6	22	15	10	27	120	63	1.37	6.08	7.80	45	15	4	88	7	124
-2.6	18	12	8	17	100	43	--	4.08	8.30	40	13	-	93	5	104
-3.6	--	--	--	7	80	23	--	2.08	8.80	35	11	-	98	-	84

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

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The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

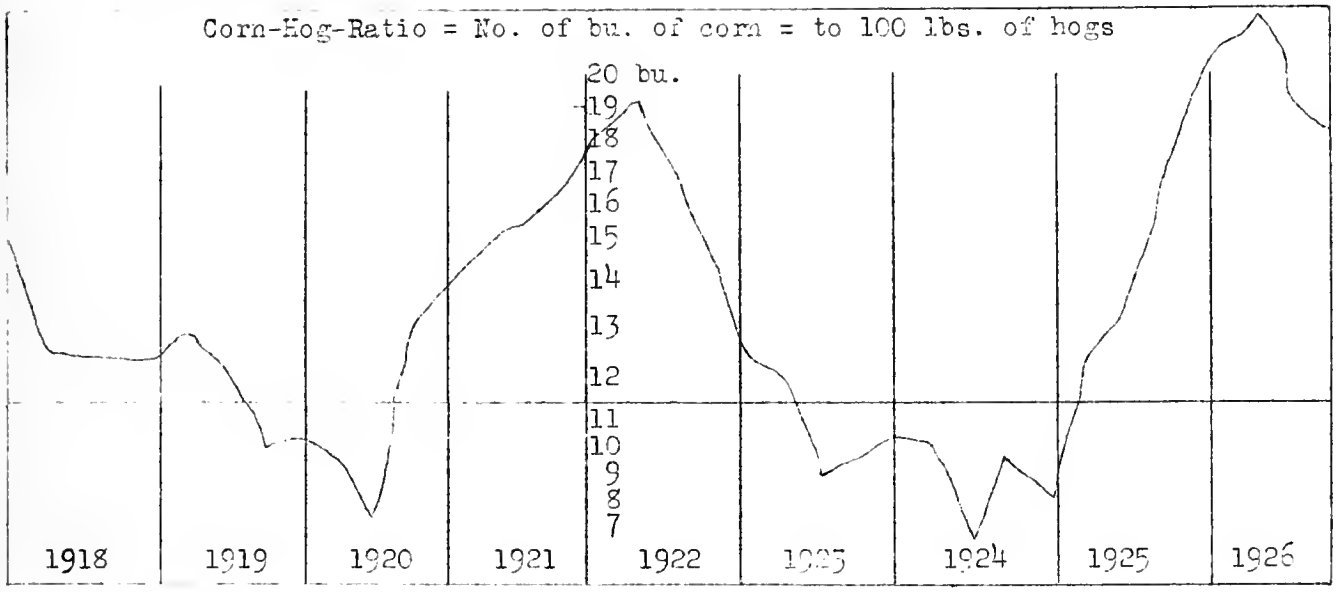
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

COLES AND DOUGLAS COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-nine Farms

for

1926

Farm account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

May, 1927

M50

ANNUAL FARM BUSINESS REPORT

Coles and Douglas Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, Peter Nelson, H. C. M. Case*

The 39 farmers in Coles and Douglas counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $275 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $224 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,289, while the one-third who were least successful lacked an average of $961 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,250 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 39 farmers earned 4.24 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.57 percent and the least successful third 1.49 percent. The average investment on the 39 farms was $44,030, which amounts to $224 an acre. The higher profit third had an average investment of $219 and the lower profit third $213 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $176 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home, not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County for 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The high and low profit groups averaged within four acres of the same size. Size of farm was clearly not a factor in determining the relative earnings of these groups. The more profitable farms did have about 20 acres more tillable land but they were valued $14 an acre higher than the less profitable farms. The more successful operators had 10 acres more corn and 10 acres more wheat than the less successful group.

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*Melvin Thomas and F. W. Garrett, farm advisers in Coles and Douglas counties respectively cooperated in supervising and collecting the records used in this report.

As a rule we have found that one of the big differences between the high and low profit groups of farms is in crop yields but the difference is unusually small between them in this report. The more profitable farms did raise an average of about 8 bushels more oats and 3 bushels more wheat but they raised about 4 bushels less corn per acre than the less profitable farms. However, the more successful operators did realize over twice as much gross income from crops as did their less successful neighbors. Part of this may be due to better marketing but some of it, at least, is due to the less successful operators having fed too much unprofitable livestock. They fed more of their crops to livestock which failed to bring a corresponding increase in livestock sales.

The greatest single advantage of the more profitable farms was in their more efficient handling of livestock. With $1.35 an acre less livestock investment these farms realized nearly $3.00 an acre more livestock income. At the same time, as noted above, less of their crops were fed than on the less profitable farms. The more successful farmers secured $171 income for each $100 invested in livestock while the less successful farmers only secured $114. This is a great advantage considering their economy in feeding.

There was not a large difference between the two groups in operation cost per acre although the more successful farm operators did have slightly lower labor and equipment costs. They handled about 11 more crop acres per man than the less successful operators.

The big difference in earnings came from larger gross receipts on the more profitable farms. They took in $10 more income per acre with about the same operating cost per acre. It is net earnings that go to pay interest and profits. The more successful farmers spent $44 and the less successful farmers $79 out of each $100 income in paying operating costs.

It is interesting to compare farm earnings for the past few years in the locality covered by this report. We must, however, make allowance for the fact that there has been considerable shifting in individual farms included. Coles and Douglas counties have contributed most of the accounts for each of the years covered by the following tables. It is probable that the lower land value and lower investment in livestock for 1924 are due to the inclusion of some accounts from Clark County. It is interesting to note that the rate earned on these farms has kept close to 4 percent except for 1924 when higher grain prices and fair yields pushed the rate up to 8 percent. In any one of these years it is safe to assume from careful studies along this line that the average farmer earned about 2 percent less on his capital than the farms on which these accounts were kept. This indicates that the average farmer has earned about 2 percent on his capital through this period except in 1924. Operating costs have remained rather stable if we allow for the variation in the number of farms included. Hogs and grain sales have been the chief sources of income on these farms.

Comparative Earnings on Coles and Douglas County Farms

Item	1922(1)	1924(2)	1925(1)	1926(3)
Number of farms included	7	32	30	39
Average size of farm in acres	174	200	184	196
Average rate earned	4.7%	8.2%	4.2%	4.2%
Average value of land per acre	$ 194	$ 164	$ 185	$ 176
Average investment per acre	246	202	243	224
Investment in livestock per farm	2,411	1,909	2,384	2,013
Investment in cattle per farm	966	696	920	785
Investment in hogs per farm	486	408	784	585
Investment in poultry per farm	117	105	144	127
Gross income per acre	24.66	27.64	22.03	21.92
Operating cost per acre	13.05	11.06	11.98	12.42
Crop sales less feed purchases per farm	1,666	3,503	974	1,970
Miscellaneous income per farm	60	66	67	52
Livestock income per farm	2,573	1,959	3,023	2,287
Cattle income per farm	999*	292	546	368
Dairy income per farm	-	338	416	237
Hog income per farm	1,369	1,122	1,769	1,414
Poultry income per farm	142	172	271	220
Gross income per farm	4,299	5,528	4,064	4,309

Some points of strength and some of weakness in your own business may be found by comparing the factors from your own record in the following tables with the same factors on the average farm and with those farms of the more profitable and less profitable groups.

*Includes dairy income.
(1) Only Coles County farms included.
(2) Farms in Coles, Douglas, Moultrie and Clark counties included.
(3) Coles and Douglas county farms included.

Coles and Douglas Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 39 farms	Thirteen most profitable farms	Thirteen least profitable farms
Rate earned	%	4.24%	6.57%	1.49%
Labor and management wage	$	$ 275	$1,289	$ -961
Size of farm - acres	A	196.6 A	205 A	209.2 A
Percent of land area tillable	%	89.3 %	91.8 %	82.5 %
Acres in Corn	A	75.6 A	80.1 A	69.5 A
Oats	A	29.4 A	31.3 A	28.1 A
Wheat	A	28.9 A	33.7 A	23.6 A
Crop yields - Corn	bu.	49.4 bu.	46.8 bu.	50.7 bu.
Oats	bu.	39.0 bu.	41.6 bu.	33.1 bu.
Wheat	bu.	32.3 bu.	33.4 bu.	30.9 bu.
Returns per $100 invested in all productive livestock	$	$ 142	$ 171	$ 114
For $100 in Cattle	$	$ 85	$ 109	$ 65
Swine	$	$ 204	$ 217	$ 175
Poultry	$	$ 165	$ 193	$ 129
Investment per acre in productive livestock	$	$ 8.17	$ 7.59	$ 8.94
Receipts per acre from productive livestock	$	$ 11.63	$ 12.96	$ 10.18
Man labor cost per acre	$	$ 5.95	$ 5.47	$ 5.65
Crop acres per man	A	87.3 A	93.6 A	82.3 A
Crop acres per horse (with tractor)	A	28.6 A	34.0 A	26.1 A
(without tractor)	A	20.9 A	19.9 A	20.1 A
Expense per $100 gross income	$	$ 57	$ 44	$ 79
Machinery cost per acre	$	$ 1.65	$ 1.94	$ 1.47
Building and fencing cost per acre	$	$ 1.12	$ .71	$ 1.25
Gross receipts per acre	$	$ 21.92	$ 25.66	$ 15.21
Total expenses per acre	$	$ 12.42	$ 11.28	$ 12.04
Net receipts per acre	$	$ 9.50	$ 14.38	$ 3.17
Percent of farms with tractor	%	61.5 %	77 %	61.5 %
Value of land per acre	$	$ 176	$ 175	$ 161
Total investment per acre	$	$ 224	$ 219	$ 213

Coles and Douglas Counties, 1926

	Item	Your farm	Average of 39 farms	Thirteen most profitable farms	Thirteen least profitable farms
1	Capital Investment - Total	$_____	$44,030	$44,900	$44,485
2	Land		34,556	35,879	33,606
3	Farm improvements		4,000	3,821	4,703
4	Machinery and equipment		1,229	1,291	1,311
5	Feed and supplies		2,232	2,128	2,664
6	Livestock		2,013	1,781	2,201
7	Horses		442	371	445
8	Cattle		785	574	926
9	Swine		585	647	581
10	Sheep		74	71	110
11	Poultry		127	118	139
12	Receipts-Net Increases-Total	$_____	$ 4,309	$ 5,261	$ 3,182
13	Feed and grain		1,970	2,560	988
14	Miscellaneous		52	44	65
15	Livestock - Total		2,287	2,657	2,129
16	Horses		--	--	--
17	Cattle		368	283	494
18	Swine		1,414	1,786	1,280
19	Sheep		48	51	79
20	Poultry		115	142	87
21	Egg sales		105	92	90
22	Dairy sales		237	303	99
23	Expenses-Net Decreases-Total	$_____	$ 1,731	$ 1,650	$ 1,871
24	Farm improvements		221	146	262
25	Livestock		43	7	44
26	Horses		43	7	44
27	Cattle		-	-	-
28	Swine		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		324	398	307
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		48	50	62
34	Crop expense		219	215	239
35	Labor hired		459	459	533
36	Taxes, insurance, etc.		392	342	403
37	Miscellaneous		25	33	21
38	Receipts less expenses	$_____	$ 2,578	$ 3,611	$ 1,311
39	Operator's and unpaid family labor		710	662	648
40	Net income from investment		1,868	2,949	663

Find Your Farm Leaks

Coles and Douglas Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Receipts per acre from L.S.	Invest. per acre in L.S.	Man labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
11.2	71	60	46	155	344	305	25.63	22.17	2.50	122	43	35	22	43	336
10.2	68	57	44	145	324	285	23.63	20.17	3.00	117	41	33	27	40	316
9.2	65	54	42	135	304	265	21.63	18.17	3.50	112	39	31	32	37	296
8.2	62	51	40	125	284	245	19.63	16.17	4.00	107	37	29	37	34	276
7.2	59	48	38	115	264	225	17.63	14.17	4.50	102	35	27	42	31	256
6.2	56	45	36	105	244	205	15.63	12.17	5.00	97	33	25	47	28	236
5.2	53	42	34	95	224	185	13.63	10.17	5.50	92	31	23	52	25	216
4.2	50	39	32	85	204	165	11.63	8.17	6.00	87	29	21	57	22	196
3.2	47	36	30	75	184	145	9.63	6.17	6.50	82	27	19	62	19	176
2.2	44	33	28	65	164	125	7.63	4.17	7.00	77	25	17	67	16	156
1.2	41	30	26	55	144	105	5.63	2.17	7.50	72	23	15	72	13	136
0.2	38	27	24	45	124	85	3.63	0.17	8.00	67	21	13	77	10	116
-0.8	35	24	22	35	104	65	1.63	--	8.50	62	19	11	82	7	96
-1.8	32	21	20	25	84	45	--	--	9.00	57	17	9	87	-	76
-2.8	29	18	18	15	64	25	--	--	9.50	52	15	7	92	-	56

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

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It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

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2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

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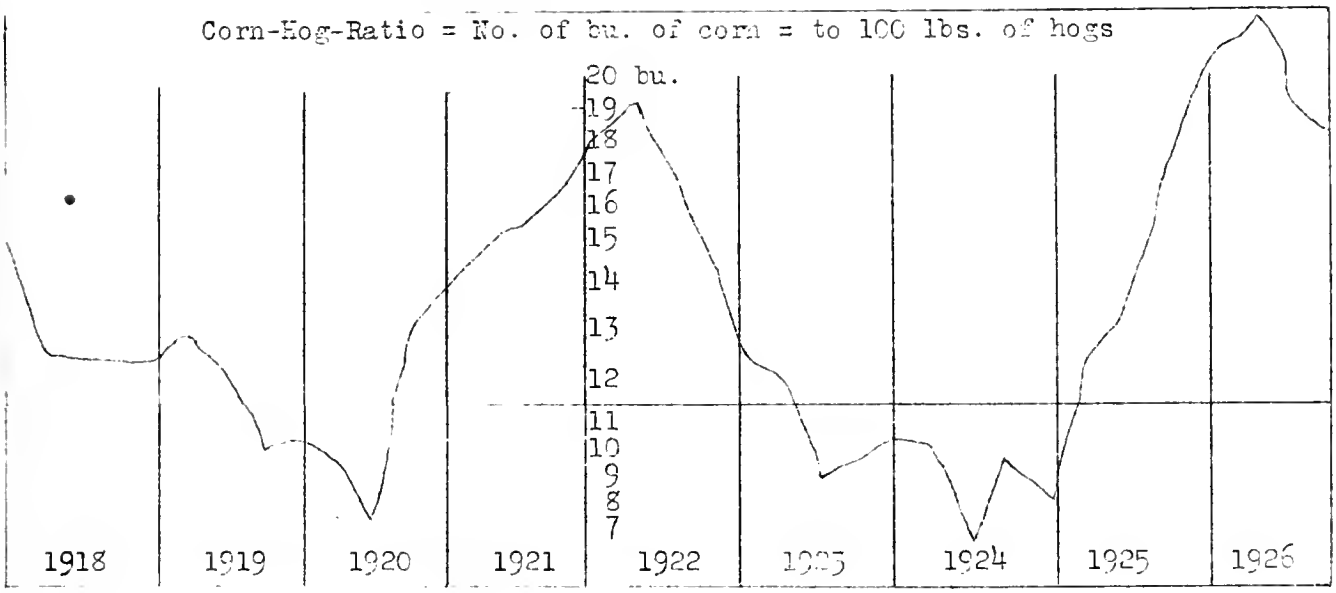

The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

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SCOTT COUNTY FARM BUREAU

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Twenty-seven Farms

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Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April, 1927

M45

ANNUAL FARM BUSINESS REPORT

Scott County, Illinois-1926

Prepared by R. R. Hudelson, H. A. Berg, P. E. Johnston, H. C. M. Case*

The 27 farmers in Scott county who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $123 of having enough income to pay operating expenses and 5 percent on their investments amounting to $163 an acre, allowing nothing for their labor, management and risk. The one-third of these farmers who made the best profits had enough income to pay operating expenses and 5 percent on their investments and leave $1,007 each to pay for labor, management, and risk. This is called their labor and management wage. The one-third who were least successful lacked an average of $1,384 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,391 in the relative amounts which the high and low thirds received for their time and labor.

Expressed in another way, these 27 farmers earned 2.79 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 6.34 percent and the least successful third lost .49 percent. The average investment on the 27 farms was $33,387 which amounts to $163 an acre. The higher profit third had an average investment of $162 and the lower profit third $154 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $118 on the average farm.

In addition to the above earnings, each family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in this county. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Size of farm had little influence on the relative earnings of the 10 most profitable farms and the 10 least profitable farms. The latter group averaged about 40 acres per farm larger and had a slightly higher percentage of tillable land. These lower profit farms averaged 24 acres more corn, 7 acres more oats, and 5 acres more wheat per farm than their more successful neighbors. The average farm raised 71 acres of corn, 17 acres of oats, and 44 acres of wheat. This indicates more wheat and less oats than on the average central Illinois farm.

As to crop yields the more profitable farms had an advantage of 4 bushels of corn and nearly 7 bushels of wheat per acre. As the cost of operating an acre of land does not increase much with higher yields, as a rule, these higher yields had an important effect on profits.

*Alfred Tate, farm adviser in Scott County, cooperated in supervising and collecting the records used in this report.

The biggest advantage of the more profitable farms was in their larger amount of livestock and in the fact that their livestock was more efficiently handled. They had an investment of $10.72 an acre in livestock, while the corresponding investment on the low profit farms was $6.02. The more successful farms averaged $22.62 an acre from livestock income, while the less successful group only averaged $6.27. The detailed figures show that this advantage was maintained for all classes of productive livestock, including cattle, hogs, and poultry. The more profitable farms received over twice as much income per $100 invested in livestock as the low profit group. Hogs made up the larger part of the livestock business especially on the high profit farms where they brought in nearly three-fourths of the livestock income.

The more profitable farms had a labor cost per acre about $1.30 higher than on the low profit farms. This evidently was caused by the larger amount of livestock and the larger gross income more than justified this additional expense. The more successful farms worked 13 less crop acres per man but they handled more crop acres per horse than the less successful farms. At the same time they had fewer tractors indicating a more efficient use of farm power.

The more profitable farms had about $2.00 an acre higher operating costs per acre but their gross income per acre was over twice as large as on the less profitable farms. This gave a big advantage in net earnings. The first group had $44 left out of every $100 income after paying all costs including depreciation and their own labor but not including interest on their investments. The second group, if they had paid all costs including depreciations and their own labor, would have spent $107 for every $100 they took in with no allowance for interest.

The year 1926 was the first year for the farm accounting project in Scott County but records from other sections in the same vicinity indicate that farm earnings for 1926 were lower than for the two years just preceding. The project has been in progress for over ten years in certain sections of the state but few if any counties have shown better first year progress in farm account keeping than Scott.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on farms of the group making the best profits and the group making the least profits.

Scott County-1926

Factors helping to analyze the farm business	Your farm	Average of twenty-seven farms	Ten Most Profitable Farms	Ten Least Profitable Farms
Rate earned	%	2.79%	6.34%	- .49%
Labor and management wage	$	$ -128	$1,007	$-1,384
Size of farm - acres	A	209.9 A	193.7 A	237.3 A
Percent of land area tillable	%	84.4 %	79.2 %	84.5 %
Acres in Corn	A	70.8 A	58.1 A	82.1 A
Oats	A	16.9 A	13.9 A	20.3 A
Wheat	A	44.2 A	40.5 A	45.6 A
Crop yields - Corn	Bu	40 Bu	44.2Bu	40.0Bu
Oats	Bu	22.4Bu	22 Bu	22.2Bu
Wheat	Bu	17.2Bu	21.7Bu	15.0Bu
Returns per $100 invested in all productive livestock	$	$ 171	$ 211	$ 104
For $100 in Cattle	$	$ 99	$ 163	$ 55
Swine	$	$ 230	$ 248	$ 160
Poultry	$	$ 176	$ 202	$ 128
Investment per acre in productive livestock	$	$ 7.76	$ 10.72	$ 6.02
Receipts per acre in productive livestock	$	$ 13.27	$ 22.62	$ 6.27
Man labor cost per acre	$	$ 5.77	$ 6.60	$ 5.32
Crop acres per man	A	75.3 A	65.3 A	78.5 A
Crop acres per horse (with tractor)	A	23.8 A	27.6 A	23.5 A
(without tractor)	A	18.8 A	14.4 A	12.2 A
Expense per $100 gross income	$	$ 73	$ 56	$ 107
Machinery cost per acre	$	$ 1.90	$ 1.97	$ 1.95
Building & fencing cost per A.	$	$ .99	$ 1.05	$ .85
Gross receipts per acre	$	$ 16.43	$ 23.48	$ 10.34
Total expenses per acre	$	$ 11.99	$ 13.23	$ 11.10
Net receipts per acre	$	$ 4.44	$ 10.25	$ - .75
Farms with tractor		46 %	50 %	60 %
Value of land per acre	$	$ 118	$ 117	$ 114
Total investment per acre	$	$ 163	$ 162	$ 154

Scott County-1926

		Your Farms	Average of twenty-seven Farms	Ten Most Profitable Farms	Ten Least Profitable Farms
1	Capital Investment - Total	$_____	$33,387	$31,346	$ 36,551
2	Land		24,675	22,604	26,985
3	Farm improvements		3,540	3,644	3,651
4	Machinery and equipment		1,178	1,139	1,443
5	Feed and supplies		1,861	1,602	2,189
6	Livestock		2,133	2,357	2,283
7	Horses		582	421	845
8	Cattle		584	565	708
9	Swine		754	1,151	571
10	Sheep		67	90	23
11	Poultry		146	130	136
12	Receipts-Net Increases-Total	$_____	$ 3,448	$ 4,548	$ 2,456
13	Feed and grain		622	123	922
14	Miscellaneous		41	43	47
15	Livestock-Total		2,785	4,382	1,487
16	Horses		--	--	--
17	Cattle		449	793	271
18	Swine		1,901	3,127	905
19	Sheep		42	62	12
20	Poultry		115	134	82
21	Egg sales		169	153	110
22	Dairy sales		109	113	107
23	Expenses-Net Decreases-Total	$_____	$ 1,756	$ 1,712	$ 1,906
24	Farm improvements		207	204	201
25	Livestock		51	36	73
26	Horses		51	36	73
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		398	382	463
32	Feed and supplies		--	--	--
33	Livestock expense other than feed		70	98	44
34	Crop expense		151	151	168
35	Labor hired		452	428	532
36	Taxes, insurance, etc.		397	390	398
37	Miscellaneous		30	23	27
38	Receipts less Expenses	$_____	$ 1,692	$ 2,836	$ 550
39	Operator's and unpaid family labor		760	850	730
40	Net income from investment		932	1,986	-180

Find Your Farm Leaks

Scott County - 1926

The numbers between the lines across the middle of the page are the approximate average for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
9.8	61	43	31	169	370	316	14.76	27.27	2.25	110	38	33	38	37	350
8.8	58	40	29	159	350	296	13.76	25.27	2.75	105	36	31	43	34	330
7.8	55	37	27	149	330	276	12.76	23.27	3.25	100	34	29	48	31	310
6.8	52	34	25	139	310	256	11.76	21.27	3.75	95	32	27	53	28	290
5.8	49	31	23	129	290	236	10.76	19.27	4.25	90	30	25	58	25	270
4.8	46	23	21	119	270	216	9.76	17.27	4.75	85	28	23	63	22	250
3.8	43	25	19	109	250	196	8.76	15.27	5.25	80	26	21	68	19	230
2.8	40	22	17	99	230	176	7.76	13.27	5.75	75	24	19	73	16	210
1.8	37	19	15	89	210	156	6.76	11.27	6.25	70	22	17	78	13	190
0.8	34	16	13	79	190	136	5.76	9.27	6.75	65	20	15	83	10	170
-0.2	31	13	11	69	170	116	4.76	7.27	7.25	60	18	13	88	7	150
-1.2	28	10	9	59	150	96	3.76	5.27	7.75	55	16	11	93	4	130
-2.2	25	7	7	49	130	76	2.76	3.27	8.25	50	14	9	98	-	110
-3.2	22	-	5	39	110	56	1.76	1.27	8.75	45	12	7	103	-	90
-4.2	19	-	-	29	90	36	.76	----	9.25	40	10	5	108	-	70

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

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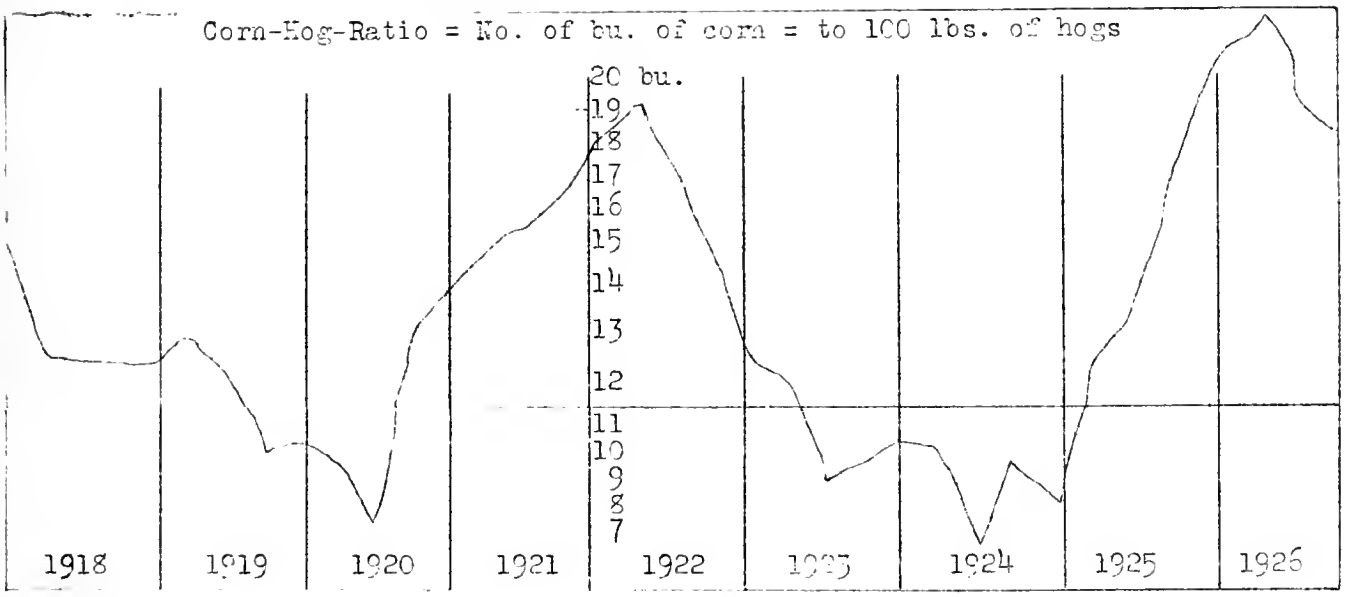

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Christian, Shelby, Cumberland and Clark Counties, Illinois, 1926

Prepared by R. R. Hudelson, H. A. Berg, P. E. Johnston, H. C. M. Case*

The 20 farmers in Christian, Shelby, Cumberland and Clark counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $124 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $139 an acre. This is called their labor and management wage. The one-half of these farmers who made the best profits had an average labor and management wage of $809, while the one-half who were least successful lacked an average of $562 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,371 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 20 farmers earned 3.3 percent on their investments after allowing $600 each to pay for his own labor. On the same basis the most successful third earned 6.1 percent and the least successful third 0.9 percent. The average investment on the 20 farms was $28,148, which amounts to $139 an acre. The higher profit third had an average investment of $117 and the lower profit third $165 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $100 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The more profitable farms averaged about 32 acres larger than the less profitable farms although records for other areas and other years indicate that this is a minor factor when even the smaller group averaged 186 acres per farm. There was little difference in the percentage of tillable land. Owing to the small number of farm accounts kept in the counties covered by this report and to the large area included it seems that there may be some difference in inventory values placed on land which is not justified by the difference in productivity of the land. This difficulty in getting representative figures is much reduced where 30 or more accounts are kept in one county and the report can be made on the basis of a single county.

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*C. E. Hay, C. J. Robinson, E. A. Whalin and W. W. Merritt, farm advisers in Christian, Shelby, Cumberland and Clark counties respectively, cooperated in supervising and collecting the records used in this report.

The more profitable farms had some advantage in their cropping system since they had a larger proportion of their land in wheat which under 1926 price and yield conditions was more profitable than corn or oats.

As a rule for other areas and for other years we have found that the more profitable group of farms produced distinctly larger yields of crops than the less profitable farms. For 1926 the difference in yield between these groups was generally smaller than usual and for this area we find the difference reversed. Other differences such as that of having more hogs and putting a lower price on land tended to cover up the yield difference in this case.

Apparently the greatest single advantage of the more profitable farms covered by this report was in their larger numbers of hogs per farm. For 1926 the hog production enterprise was the largest and most profitable one on the average farm of this section. The less successful farm operators included in this report actually handled their livestock a little more efficiently than the more successful farmers but for 1926 having more hogs was the thing which set the more profitable farms ahead. As indicated on the last page of this report this situation is not so likely to prevail in 1927. Through a period of years we have found it more important for the average farm to have a well balanced crop and livestock system than to be highly specialized on one enterprise. For the farms covered by this report the larger livestock investment per acre on the more profitable farms was due primarily to a larger investment in hogs.

On the expense side of the business we find that the more profitable farms show a higher efficiency with man labor and horse power and since these are the largest items of operating cost on most farms this was a distinct advantage. A combination of crops and livestock selected so as to use as near the same amount of labor throughout the year as possible is a great help in securing labor and power efficiency. Other helps consist in having large fields as conveniently located as possible and in using as large machinery and equipment as the size and type of farm will justify. It may be noted that the less profitable farms had a higher cost per acre for equipment. Part of this was caused by the smaller average size of these farms. The larger farms have some advantage in equipment and farm improvement costs. It may be noted on page four that the total operating costs for the average farm in each group run fairly near the same amount but the higher profit farms being larger have more acres over which to spread these costs. They have about $3.40 more gross income per acre which, taken with their lower costs, gives them a net income per acre $5.64 larger than on the less profitable farms. This advantage is not in any way dependent on a difference in land values since no interest charges are included in these operating costs.

Some points of strength and some of weakness in your own business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm as well as for farms of the higher and lower profit groups.

Christian, Shelby, Cumberland and Clark Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 20 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	3.31%	6.15%	.94%
Labor and management wage	$	$ 124	$ 809	$-562
Size of farm - acres	A	202.2 A	218.4 A	186.0 A
Percent of land area tillable	%	86.0 %	85.3 %	86.8 %
Acres in Corn	A	53.6 A	48.1 A	58.9 A
Oats	A	20.3 A	18.7 A	21.9 A
Wheat	A	9.9 A	13.7 A	6.2 A
Crop yields - Corn	bu.	36.1 bu.	35.2 bu.	36.8 bu.
Oats	bu.	31.1 bu.	22.6 bu.	37.6 bu.
Wheat	bu.	19.4 bu.	17.6 bu.	23.5 bu.
Returns per $100 invested in all productive livestock	$	$ 141	$ 136	$ 150
For $100 in Cattle	$	$ 82	$ 86	$ 77
Swine	$	$ 217	$ 186	$ 285
Poultry	$	$ 197	$ 201	$ 192
Investment per acre in productive livestock	$	$ 10.19	$ 11.24	$ 8.94
Receipts per acre from productive livestock	$	$ 14.42	$ 15.24	$ 13.45
Man labor cost per acre	$	$ 5.09	$ 4.51	$ 5.77
Crop acres per man	A	72.5 A	76.0 A	69.1 A
Crop acres per horse (with tractor)	A	27.3 A	27.6 A	26.9 A
(without tractor)	A	19.7 A	20.7 A	18.7 A
Expense per $100 gross income	$	$ 70	$ 58	$ 88
Machinery cost per acre	$	$ 2.04	$ 1.75	$ 2.38
Building and fencing cost per acre	$	$ .74	$ .75	$ .73
Gross receipts per acre	$	$ 15.33	$ 17.26	$ 13.83
Total expenses per acre	$	$ 10.73	$ 10.06	$ 12.27
Net receipts per acre	$	$ 4.60	$ 7.20	$ 1.56
Percent of farms with tractor	%	30%	30%	30%
Value of land per acre	$	$ 100	$ 78	$ 125
Total investment per acre	$	$ 139	$ 117	$ 165

Christian, Shelby, Cumberland and Clark Counties, 1926

	Item	Your farm	Average of 20 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$28,148	$25,577	$30,718
2	Land		20,129	16,953	23,306
3	Farm improvements		2,902	2,802	3,002
4	Machinery and equipment		1,013	1,162	864
5	Feed and supplies		1,464	1,582	1,345
6	Livestock		2,640	3,078	2,201
7	Horses		631	634	628
8	Cattle		921	977	864
9	Swine		746	1,062	430
10	Sheep		189	253	125
11	Poultry		153	152	154
12	Receipts - Net Increases - Total	$_____	$ 3,101	$ 3,769	$ 2,572
13	Feed and grain		9	156	--
14	Miscellaneous		119	187	51
15	Livestock - Total		2,973	3,426	2,521
16	Horses		57	96	19
17	Cattle		490	556	424
18	Swine		1,727	2,007	1,447
19	Sheep		116	158	73
20	Poultry		159	166	153
21	Egg sales		158	164	151
22	Dairy sales		266	279	254
23	Expenses - Net Decreases - Total	$_____	$ 1,415	$ 1,500	$ 1,469
24	Farm improvements		150	163	136
25	Livestock		--	--	--
26	Horses		--	--	--
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		413	383	443
32	Feed and supplies		--	--	138
33	Livestock expense other than feed		86	110	62
34	Crop expense		179	209	149
35	Labor hired		275	290	260
36	Taxes, insurance, etc.		279	303	256
37	Miscellaneous		33	42	25
38	Receipts less Expenses	$_____	$ 1,686	$ 2,269	$ 1,103
39	Operator's and unpaid family labor		755	696	813
40	Net income from investment		931	1,573	290

Find Your Farm Leaks

Christian, Shelby, Cumberland and Clark Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
10.3	82	41	33	152	357	337	24.19	28.42	1.50	107	41	34	42	29	340
9.3	78	38	31	142	337	317	22.19	26.42	2.00	102	39	32	46	27	320
8.3	74	35	29	132	317	297	20.19	24.42	2.50	97	37	30	50	25	300
7.3	70	32	27	122	297	277	18.19	22.42	3.00	92	35	28	54	23	280
6.3	66	29	25	112	277	257	16.19	20.42	3.50	87	33	26	58	21	260
5.3	62	26	23	102	257	237	14.19	18.42	4.00	82	31	24	62	19	240
4.3	58	23	21	92	237	217	12.19	16.42	4.50	77	29	22	66	17	220
3.3	54	20	19	82	217	197	10.19	14.42	5.00	72	27	20	70	15	200
2.3	50	17	17	72	197	177	8.19	12.42	5.50	67	25	18	74	13	180
1.3	46	14	15	62	177	157	6.19	10.42	6.00	62	23	16	78	11	160
0.3	42	11	13	52	157	137	4.19	8.42	6.50	57	21	14	82	9	140
-0.7	38	8	11	42	137	117	2.19	6.42	7.00	52	19	12	86	7	120
-1.7	34	-	9	32	117	97	-	4.42	7.50	47	17	10	90	5	100
-2.7	30	-	7	22	97	77	-	2.42	8.00	42	15	8	94	-	80
-3.7	26	-	-	12	77	57	-	-	8.50	37	13	6	98	-	60

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest -

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

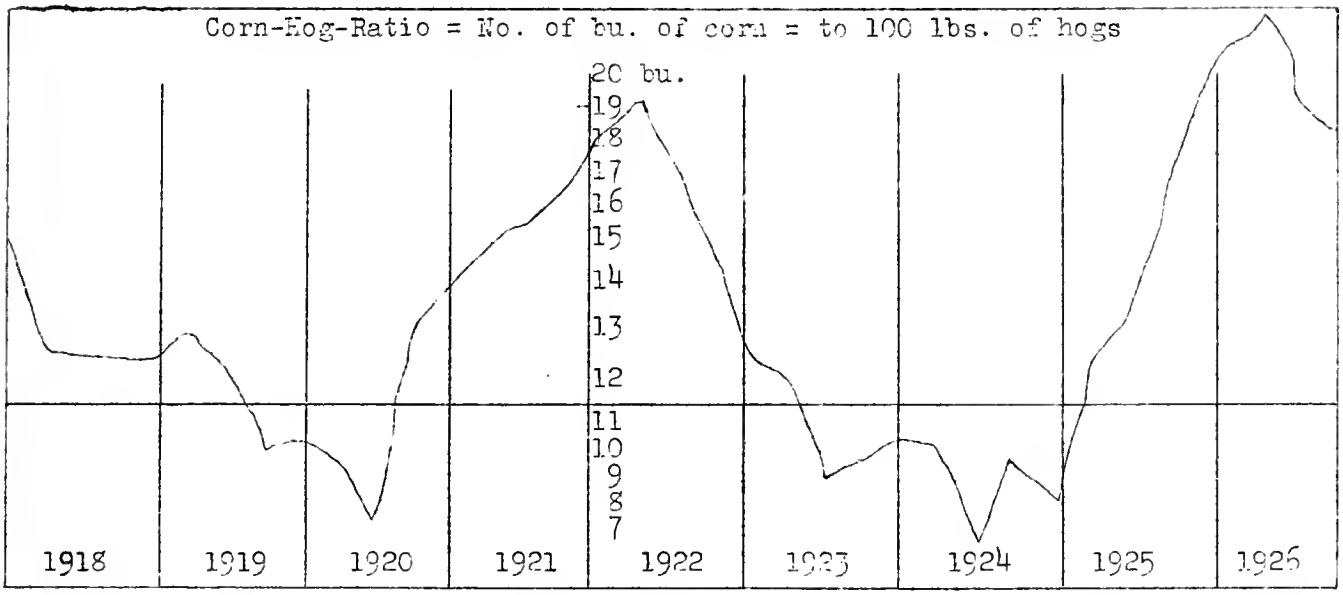
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

JERSEY AND GREENE COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-one Farms

for

1926

Farm Account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M57

ANNUAL FARM BUSINESS REPORT

Jersey and Green Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 31 farmers in Jersey and Green counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $861 to pay for their labor, management and risk after paying expenses and allowing 5 percent on their average investment of $161 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $2,436, while the one-third who were least successful lacked an average of $615 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $3,051 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 31 farmers earned 6 percent on their investments after allowing $720 each to pay for his own labor. On the same basis the most successful third earned 11 percent and the least successful third 1.9 percent. The average investment on the 31 farms was $33,294, which amounts to $161 an acre. The higher profit third had an average investment of $165 and the lower profit third $150 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock, and crops as listed in the table on page 4. The land alone was valued at $111 an acre as an average for all farms.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The 10 least profitable farms averaged about 40 acres larger in size than the 10 most profitable farms. They did a smaller average business, however, as shown in gross income. The farms of the more profitable group although smaller in area had within 4 acres of as much tillable land and they had 13 acres more corn and 5 acres more wheat per farm than the low profit farms. As to volume of business the more successful farms had an average gross income per farm of $6,136 compared with $3,525 on the less successful farms. From this it is evident that size of business is not de-

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*F. H. Shuman and R. J. Laible, farm advisers in Jersey and Greene counties respectively cooperated in supervising and collecting the records used in this report.

termined entirely by the number of acres.

The operators of the more successful farms raised an average of 10 bushels more corn and 5 bushels more wheat per acre than their less successful neighbors. This was a distinct advantage since acre costs usually do not increase much with higher yields and the margin of profit is therefore made greater by the larger amount of produce per acre.

The greatest single advantage of the more successful farm operators whose records are included in this report was in having more livestock and in handling their livestock more efficiently. The high profit group had a livestock investment of $14.48 an acre compared with $10.05 an acre on the low profit farms. The advantage in livestock income was even greater, it being $28.47 an acre on the more profitable farms and about half as much or $14.46 on the less profitable farms. Another indication of the greater efficiency of the livestock on the more profitable farms is seen in the fact that they realized $197 of livestock income for each $100 of livestock investment compared with $144 of livestock income for each $100 of livestock investment on the less profitable farms. Still another evidence of the greater livestock efficiency on the higher profit farms is seen in the fact that although they were smaller farms they fed out and sold an average of 60 percent more livestock and still had a little more income from crops than the low profit farms.

Labor and equipment costs per acre were slightly larger on the more profitable farms. This is to be expected, however, since they have less permanent pasture and more livestock per farm. That they handled their expenses judiciously is shown by the fact that they realized a little over twice as much gross income per acre at an operating expense only 77 cents an acre larger than on the low profit farms. Operating costs amounted to $41 for every $100 income on the more profitable farms compared with operating costs of $80 for every $100 income on the low profit farms. This left net receipts per acre six times as large on the more profitable farms.

If we make allowance for the fact that there has been a considerable growth in this accounting project making necessary some shifting in farms covered from year to year we can safely draw some comparisons in earnings, investments and costs during the last four years. The comparative figures are set up in the following table. Including Macoupin County records for 1924 probably accounts for tne larger amount of dairy income that year. Including Morgan County records for 1925 probably helped increase the average size of the hog business. It seems from these data that farms in the locality of Greene and Jersey Counties met with more favorable conditions in 1925 than in any other year of the last four and that 1926 was only a little worse. It is interesting to note that the grain selling sections of Illinois found 1924 the best year since 1919 and that for them 1925 and 1926 have been very unsatisfactory. This illustrates the fact that changing price conditions may affect each locality differently according to the type of farming followed.

Comparative Earnings on Farms in Jersey and Greene and Adjoining Counties

Item	1923(1)	1924(2)	1925(3)	1926(4)
Number of farms included	11	41	40	31
Average size of farms in acres	166	174	185	207
Average rate earned on investment	3.7%	4.6%	7.1%	6.0%
Average value of land per acre	$ 98	$ 104	$ 115	$ 111
Average investment per acre	128	146	159	161
Investment in livestock per farm	1,810	2,037	2,142	3,281
Investment in cattle per farm	552	993	819	1,478
Investment in hogs per farm	477	410	618	981
Investment in poultry per farm	102	130	114	130
Gross income per acre	16.24	18.61	23.35	22.38
Operating cost per acre	11.47	11.87	12.08	12.63
Grain sales less feed purchases per farm	835	783	1,087	351
Miscellaneous income per farm	19	151	117	63
Livestock income per farm	1,829	2,311	3,128	4,218
Gross income per farm	2,683	3,245	4,332	4,632
Cattle income per farm	145	232	415	987
Dairy products income per farm	421	802	559	600
Hog income per farm	952	913	1,845	2,271
Poultry income per farm	161	274	234	306

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own record in the following tables with the same factors for the average farm as well as for farms of the high and low profit groups.

(1) Only Jersey County records included in 1923.
(2) Records from Macoupin, Jersey and Greene counties included for 1924.
(3) Records from Jersey, Greene and Morgan counties included for 1925.
(4) Records from Jersey and Greene counties included for 1926.

Jersey and Greene Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of 31 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	6.06%	11.04%	1.93%
Labor and management wage	$	$ 861	$2,436	$-615
Size of farm - acres	A	207 A	198.8 A	238.5 A
Percent of land area tillable	%	79.5 %	84.0 %	71.8 %
Acres in Corn	A	58.9 A	68.7 A	55.9 A
Oats	A	16.1 A	13.9 A	17.4 A
Wheat	A	32.4 A	36.3 A	33.5 A
Crop yields - Corn	bu.	42.4 bu.	44.4 bu.	34.7 bu.
Oats	bu.	28.9 bu.	26.0 bu.	32.2 bu.
Wheat	bu.	19.9 bu.	21.7 bu.	16.6 bu.
Returns per $100 invested in all productive livestock	$	$ 163	$ 197	$ 144
For $100 in Cattle	$	$ 114	$ 132	$ 104
Hogs	$	$ 250	$ 273	$ 264
Poultry	$	$ 217	$ 233	$ 178
Investment per acre in productive livestock	$	$ 12.49	$ 14.48	$ 10.05
Receipts per acre in productive livestock	$	$ 20.38	$ 28.47	$ 14.46
Man labor cost per acre	$	$ 6.15	$ 6.18	$ 5.39
Crop acres per man	A	66.5 A	68.8 A	69.2 A
Crop acres per horse (with tractor)	A	22.6 A	24.1 A	26.8 A
(without tractor)	A	16.7 A	18.0 A	16.7 A
Expense per $100 gross income	$	$ 56	$ 41	$ 80
Machinery cost per acre	$	$ 2.24	$ 2.35	$ 2.27
Building and fencing cost per acre	$	$ .98	$ .70	$ 1.06
Gross receipts per acre	$	$ 22.38	$ 30.87	$ 14.78
Total expenses per acre	$	$ 12.63	$ 13.66	$ 11.89
Net receipts per acre	$	$ 9.75	$ 18.21	$ 2.89
Percent of farms with tractor		38 %	30 %	50 %
Value of land per acre	$	$ 111	$ 111	$ 108
Total investment per acre	$	$ 161	$ 165	$ 150

Jersey and Greene Counties, 1926

	Item	Your farm	Average of 31 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$33,294	$32,781	$35,689
2	Land		23,062	22,139	25,775
3	Farm improvements		3,305	3,080	3,392
4	Machinery and equipment		1,243	1,241	1,200
5	Feed and supplies		2,403	2,684	2,236
6	Livestock		3,281	3,637	2,086
7	Horses		507	547	415
8	Cattle		1,478	1,680	1,353
9	Hogs		981	1,254	774
10	Sheep		185	32	460
11	Poultry		130	124	84
12	Receipts-Net Increases-Total	$_____	$ 4,632	$ 6,136	$ 3,525
13	Feed and grain		351	412	26
14	Miscellaneous		63	65	50
15	Livestock - Total		4,218	5,659	3,449
16	Horses		-	-	-
17	Cattle		987	1,429	524
18	Hogs		2,271	3,306	1,866
19	Sheep		54	37	111
20	Poultry		149	210	81
21	Egg sales		157	132	78
22	Dairy sales		600	545	789
23	Expenses-Net Decreases-Total	$_____	$ 1,934	$ 1,901	$ 2,289
24	Farm improvements		203	139	254
25	Livestock		31	40	31
26	Horses		31	40	31
27	Cattle		-	-	-
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		463	468	542
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		86	99	84
34	Crop expense		211	185	259
35	Labor hired		593	614	739
36	Taxes, insurance, etc.		311	305	350
37	Miscellaneous		36	51	30
38	Receipts less expenses	$_____	$ 2,698	$ 4,235	$ 1,236
39	Operator's and unpaid family labor		681	615	547
40	Net income from investment		2,017	3,620	689

Find Your Farm Leaks

Jersey and Greene Counties, Illinois

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per			Expenses per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
13.0	70	50	34	184	390	357	26.50	34.38	2.65	101	37	31	21	43	347
12.0	66	47	32	174	370	337	24.50	32.38	3.15	96	35	29	26	40	327
11.0	62	44	30	164	350	317	22.50	30.38	3.65	91	33	27	31	37	307
10.0	58	41	28	154	330	297	20.50	28.38	4.15	86	31	25	36	34	287
9.0	54	38	26	144	310	277	18.50	26.38	4.65	81	29	23	41	31	267
8.0	50	35	24	134	290	257	16.50	24.38	5.15	76	27	21	46	28	247
7.0	46	32	22	124	270	237	14.50	22.38	5.65	71	25	19	51	25	227
6.0	42	29	20	114	250	217	12.50	20.38	6.15	66	23	17	56	22	207
5.0	38	26	18	104	230	197	10.50	18.38	6.65	61	21	15	61	19	187
4.0	34	23	16	94	210	177	8.50	16.38	7.15	56	19	13	66	16	167
3.0	30	20	14	84	190	157	6.50	14.38	7.65	51	17	11	71	13	147
2.0	26	17	12	74	170	137	4.50	12.38	8.15	46	15	9	76	10	127
1.0	22	14	10	64	150	117	2.50	10.38	8.65	41	13	7	81	7	107
0.0	18	11	8	54	130	97	—	8.38	9.15	36	11	5	86	4	87
-1.0	--	--	-	44	110	77	--	6.38	9.65	31	9	-	91	-	67

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

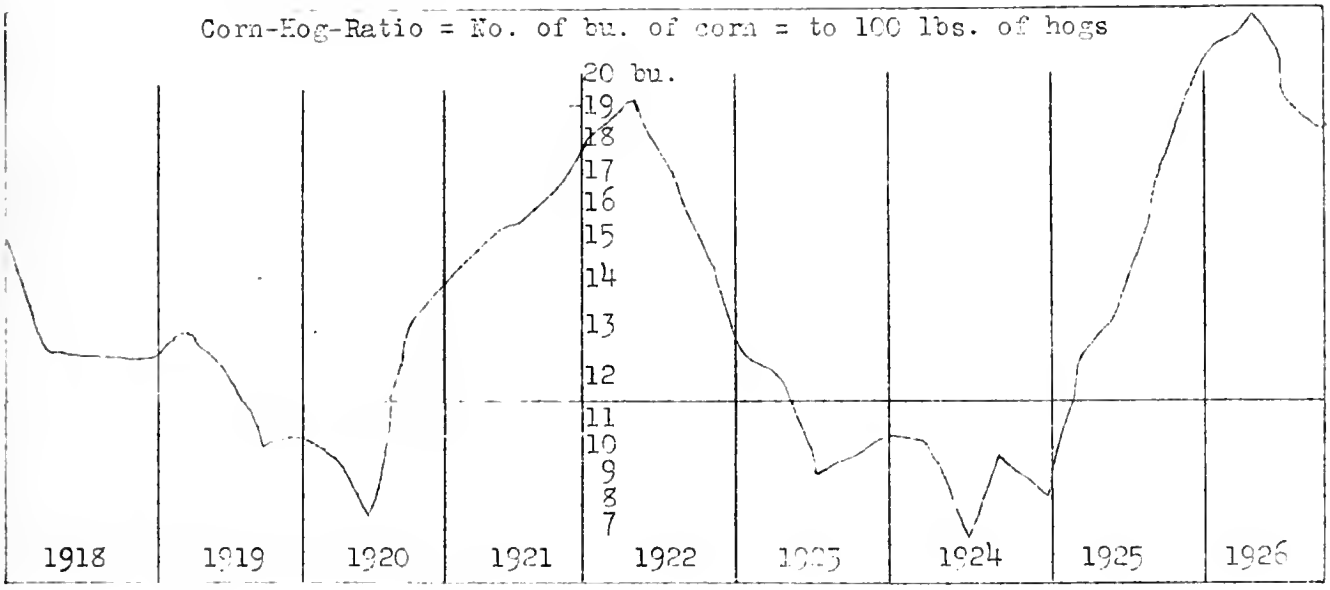
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

MACOUPIN, MONTGOMERY, BOND and MADISON COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April, 1927

M46

ANNUAL FARM BUSINESS REPORT

Macoupin, Montgomery, Bond, and Madison Counties, Illinois-1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg and H. C. M. Case*

The 30 farmers in Macoupin, Montgomery, Bond, and Madison counties who kept financial records in the Illinois Farm Account Project for 1926 lacked an average of $285 of having enough income to pay expenses and 5 percent interest on their investments, allowing nothing for their labor, management, and risk. The one-third of these farmers who made the best profits had an average of $1,065 left to pay for their labor, management, and risk after paying expenses and 5 percent on their investments. This is called their labor and management wage. The one-third who were least successful lacked an average of $1,757 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,822 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 30 farmers earned 1.5 percent on their investments after allowing $600 each to pay for his own labor. On the same basis the most successful third earned 7.04 percent and the least successful third lost 3.99 percent. The average investment on the 30 farms was $24,462 which amounts to $109 an acre. The higher profit third had an average investment of $136 and the lower profit third $97 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $68 an acre on the average farm.

In addition to the above earnings, each family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The farms of the lower profit group averaged about 90 acres larger than the more profitable farms but they had more acres of non tillable land and their land was inventoried at about two-thirds the value per acre placed on the land of the higher profit farms. Both groups had about the same number of acres of corn, oats, and wheat per farm. The lower profit group had more pasture both on tillable and non tillable land. It seems apparent that they had too much permanent pasture of low carrying capacity. Probably some of the permanent pasture on tillable land could profitably be replaced with sweet clover where the farm operator is in a position to finance the application of limestone. This would result in pasture of greater carrying capacity and crop yields following the sweet clover would undoubtedly be improved.

E. W. Rusk, A. E. Snyder, W. E. Foard, and Alfred Raut, farm advisers in Macoupin, Montgomery, Bond, and Madison counties, cooperated in supervising and collecting the records used in this report.

The more profitable farms raised an average of 5½ bushels more corn and 10 bushels more wheat per acre than their less successful neighbors. Since the operating costs per acre do not increase much with higher yields this advantage in yield gave a lower cost per bushel of grain produced.

The greatest advantage of the 10 most profitable farms was in their more efficient livestock. Both the high and low profit groups had about the same livestock investment per acre but the more successful farms averaged nearly twice as much livestock income per acre. While the low profit group received $104, the high profit group received $200 livestock income for each $100 invested in livestock. The more profitable farms had more income from dairy products and hogs and less from cattle sales. Their actual investment in cattle was much less than on the low profit farms. Efficient care and feeding on the more successful farms is indicated by the fact that on the average their crop sales exceeded their feed purchases by $289 a farm, while on the less successful farms feed purchases exceeded crop sales by $1,248 per farm. Undoubtedly the less successful farms should grow more of their own feed especially their own legume hays.

The man labor cost per acre was higher on the more profitable farms as was also the machinery cost per acre, but this is caused chiefly by the smaller size of the farms. Their total operating cost per acre was $1.11 less and their gross income per acre was $12.32 higher than on the less profitable farms.

It is of interest to compare earnings shown in this report with those for the same counties in 1925. The average rate earned for 1925 was 6.5 percent as compared with 1.57 percent for 1926. This decrease in earnings was evidently due both to higher operating costs and lower gross incomes. The average operating cost per acre exclusive of interest was $8.69 for 1925 and $11.10 for 1926. The average gross income per acre was $20.48 for 1925 and $12.81 for 1926. Lower corn and hay yields and larger feed purchases were factors influencing the level of earnings for 1926.

Some points of strength and some of weakness may be found in your own business by comparing the factors of your record in the following tables with the same factors on the average farm. Additional information may be secured by making a similar comparison with the more profitable and less profitable groups of farms.

Macoupin, Montgomery, Bond and Madison Counties - 1926

Factors helping to analyze the farm business	Your Farm	Average of Thirty Farms	Ten Most Profitable Farms	Ten Least Profitable Farms
Rate earned	%	1.57%	7.04%	- 3.99%
Labor and management wage	$	$ -285	$1,065	$-1,757
Size of farm - acres	A	224.1 A	171.2 A	263.9 A
Percent of land area tillable	%	78.0 %	83.8 %	76.5 %
Acres in Corn	A	48.6 A	44.0 A	49.2 A
Oats	A	31.7 A	25.0 A	25.4 A
Wheat	A	11.9 A	10.6 A	7.6 A
Crop yields - Corn	Bu	30.2Bu	33.3 Bu	26.8 Bu
Oats	Bu	22.3Bu	24.7 Bu	23.4 Bu
Wheat	Bu	19.0Bu	24.8 Bu	14.1 Bu
Returns per $100 invested in all productive livestock	$	$ 134	$ 200	$ 104
For $100 in Cattle	$	$ 106	$ 144	$ 86
Swine	$	$ 208	$ 313	$ 169
Poultry	$	$ 174	$ 157	$ 206
Investment per acre in productive livestock	$	$ 9.23	$ 10.45	$ 10.29
Receipts per acre from productive livestock		$ 12.40	$ 20.92	$ 10.66
Man labor cost per acre	$	$ 5.11	$ 6.37	$ 4.50
Crop acres per man	A	75.7 A	66.9 A	77.7 A
Crop acres per horse (with tractor)	A	27.2 A	29.0 A	24.4 A
(without tractor)	A	16.8 A	15.0 A	17.2 A
Expense per $100 gross income	$	$ 87	$ 59	$ 135
Machinery cost per acre	$	$ 1.83	$ 2.93	$ 1.31
Building & Fencing cost per A.	$	$ 1.14	$ .98	$ 1.49
Gross receipts per acre	$	$ 12.81	$ 23.22	$ 10.90
Total expenses per acre	$	$ 11.10	$ 13.66	$ 14.77
Net receipts per acre	$	$ 1.71	$ 9.56	$ -3.87
Farms with tractor		56 2/3%	60 %	50 %
Value of land per acre	$	$ 68	$ 85	$ 57
Total investment per acre	$	$ 109	$ 136	$ 97

Macoupin, Montgomery, Bond and Madison Counties - 1926

		Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$24,462	$23,228	$25,581
2	Land		15,341	14,616	15,144
3	Farm improvements		3,513	3,511	3,499
4	Machinery and equipment		1,283	1,227	1,362
5	Feed and supplies		1,782	1,775	2,045
6	Livestock		2,543	2,099	3,531
7	Horses		422	312	575
8	Cattle		1,203	861	1,732
9	Swine		519	577	618
10	Sheep		200	121	414
11	Poultry		199	228	192
12	Receipts - Net Increases - Total	_____	2,871	3,975	2,877
13	Feed and grain		---	289	---
14	Miscellaneous		90	105	59
15	Livestock - Total		2,781	3,581	2,818
16	Horses		3	--	4
17	Cattle		539	154	975
18	Swine		1,174	1,935	1,033
19	Sheep		64	125	10
20	Poultry		136	108	144
21	Egg sales		204	222	249
22	Dairy sales		661	1,037	403
23	Expenses - Net Decreases - Total	_____	1,647	1,573	3,104
24	Farm improvements		256	167	393
25	Livestock		--	14	--
26	Horses		--	14	--
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		409	501	345
32	Feed and supplies		92	--	1,248
33	Livestock expense other than feed		77	117	86
34	Crop expense		185	224	161
35	Labor hired		304	324	395
36	Taxes, insurance, etc.		277	192	392
37	Miscellaneous		47	34	84
3					
38	Receipts less Expenses	_____	1,224	2,402	- 227
39	Operator's and unpaid family labor		840	766	793
40	Net income from investment		384	1,636	-1,020

Find Your Farm Leaks

Macoupin, Montgomery, Bond and Madison Counties-1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man Labor cost per acre	Crop acres per			Expense per $100 income	Gross receipts per acre	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No tractor			
8.5	51	36	33	176	348	314	23.25	26.40	1.60	110	41	31	52	27	364
7.5	48	34	31	166	328	294	21.25	24.40	2.10	105	39	29	57	25	344
6.5	45	32	29	156	308	274	19.25	22.40	2.60	100	37	27	62	23	324
5.5	42	30	27	146	288	254	17.25	20.40	3.10	95	35	25	67	21	304
4.5	39	28	25	136	268	234	15.25	18.40	3.60	90	33	23	72	19	284
3.5	36	26	23	126	248	214	13.25	16.40	4.10	85	31	21	77	17	264
2.5	33	24	21	116	228	194	11.25	14.40	4.60	80	29	19	82	15	244
1.5	30	22	19	106	208	174	9.25	12.40	5.10	75	27	17	87	13	224
0.5	27	20	17	96	188	154	7.25	10.40	5.60	70	25	15	92	11	204
0.5	24	18	15	86	168	134	5.25	8.40	6.10	65	23	13	97	9	184
1.5	21	16	13	76	148	114	3.25	6.40	6.60	60	21	11	102	7	164
2.5	18	14	11	66	128	94	1.25	4.40	7.10	55	19	9	107	5	144
3.5	15	12	9	56	108	74	--	2.40	7.60	50	17	7	--	3	124
4.5	12	10	7	46	88	54	--	0.40	8.10	45	15	--	--	--	104
5.5	9	8	5	36	68	34	--	--	8.60	40	13	--	--	--	84

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

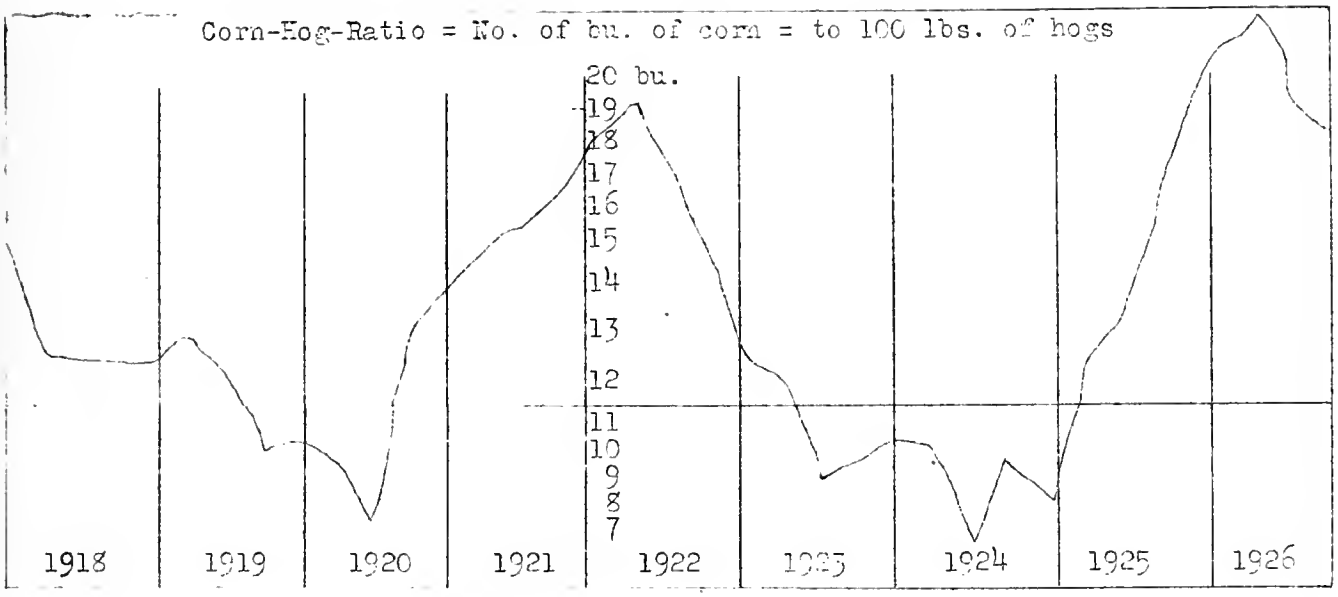
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

SUMMARY OF FARM SURVEY RECORDS FOR

108 BOND COUNTY FARMS

FOR 1926

This report is of special interest because the farm records were secured mainly in one township and therefore the report represents average farm conditions quite accurately for that part of Illinois.

University of Illinois, College of Agriculture
Department of Farm Organization and Management
Cooperating with Bond County Farm Bureau

February 1, 1927
Urbana

SUMMARY OF FARM SURVEY RECORDS ON 108 MILLS TOWNSHIP FARMS
BOND COUNTY, ILLINOIS, FOR 1926

Prepared by H. C. M. Case and P. E. Johnston

There were 108 Bond County farmers who gave their farm records to a representative of the University or to Mr. W. E. Foard, the farm adviser, last December. All of the 108 men live south of Greenville and most of them in Mills Township. The information given us concerning the farms shows that the average farm contained 177 acres and that the entire farm investment amounted to $11,195. After paying all expenses of operating the farms for the year 1926 and allowing $742 to pay the operators for their own labor and labor wages for other members of the family who helped with the farm work, the remaining income paid less than two percent on the investment, or 1.86 percent. The value of all the family labor given here is the value given by the men who gave their records. The earnings might be given in another way. After deducting from the income, all of the other expenses of operating the farms and 5 percent for the capital invested in the business, there remained $196 to pay the operator for his own time.

On pages 2 and 3 of this report you will find a statement showing the average results on the 108 farms, the average of 36 most profitable farms and the average of the 36 least profitable farms. Those who gave records may turn to the farm account book in which their record was recorded and compare the summary of their own record on pages 34 and 35 with the records of the other men shown in this report.

The part of Bond County covered by this study is located in what is sometimes called the St. Louis dairy section. It will be noted that livestock receipts make up 85 percent of the total and that dairy sales account for over half of the total livestock receipts. The soil in this area is commonly referred to as gray or brown gray silt loam on tight clay. Last year the average farm in this group raised 36 acres of corn, 29 acres of oats, and 10 acres of wheat. This wheat acreage is probably below average, due to the fact that the fall of 1925 was wet at seeding time and many acres of ground that had been prepared for wheat could not be seeded. On many farms in this area in 1926 there was tillable land lying idle due to various reasons.

Comparison for High and Low Profit Groups

This report shows the 36 most profitable farms made an average of over $1300 more per farm than the 36 least profitable farms. The most profitable group earned 8.10 percent on an investment of $12,971, while the least profitable group lacked 5.89 percent of making any return on an investment of $8,417. Stated in another way, the 36 best farmers received $943 to pay for their own labor and managing ability, while the 36 poorer farmers after paying their operating expenses lacked $360 of earning 5 percent on the capital invested. In this connection one should note that the average farm in the better group consisted of 190 acres which carried a total investment of $68 an acre, while the low profit group consisted of 155 acres and carried a total investment of $54 an acre. This points out quite clearly that the higher earnings are not due to lower inventories for land on the better farms. A further comparison of the results of this report will help you to study some of the factors that were responsible for this difference. The more important things to note are the kinds and acreages of crops grown, the crop yields, returns from each kind

Bond County - 1926

Factors helping to analyze the farm business	Average of 108 farms	36 most profitable farms	36 least profitable farms
Rate earned	1.86%	8.10%	-5.89%
Labor and management wage	$196.	$943.	$-360.
Size of farm - acres	177.1	190.0	155.2
Percent of land area tillable	89.0	88.0	89.0
Acreage of - corn	35.7	36	34.5
oats	28.9	28.6	28.3
wheat	10.0	17	5
Crop yields - corn - bushels	17.0	19.8	14.2
oats - bushels	18.6	20.7	16.7
wheat- bushels	13.4	16.1	6.9
Returns per $100 invested in all productive livestock	$140.00	$148.00	$126.00
For $100 in cattle	25.00	27.00	18.00
swine	159.00	178.00	158.00
poultry	178.00	217.00	153.00
Investment per acre in productive livestock	$ 5.40	$ 6.90	$ 4.15
Income per acre from productive livestock	7.59	10.25	5.22
Man labor cost per acre	4.65	4.58	4.98
Crop acres per man	78.6	85.1	76.6
Crop acres per horse	21.1	22.4	21.0
Expense per $100 gross income	$ 88.00	$ 61.00	$152.00
Machinery cost per acre	.90	.95	.88
Building and fencing cost per acre	.60	.57	.62
Gross receipts per acre	$ 9.03	$ 13.45	$ 5.32
Total expenses per acre	7.86	7.92	8.52
Net receipts per acre	1.17	5.53	-3.20
Farms with tractor - percent	10.0	8.	11.
Value of land per acre	$ 40.00	$43.00	$ 33.00
Total investment per acre	63.00	68.00	54.00

Bond County - 1926

		Average of 108 farms	36 most profitable farms	36 least profitable farms
1	Capital investment - total	$11,195	$12,971	$8,417
2	Land	7,057	8,189	5,194
3	Farm improvements	1,761	1,874	1,413
4	Machinery and equipment	593	726	497
5	Feed and supplies	584	619	465
6	Livestock	1,200	1,563	848
7	Horses	323	374	264
8	Cattle	622	860	379
9	Swine	75	114	40
10	Sheep	39	53	29
11	Poultry	141	162	136
12	Receipts - net increases - total	1,600	2,555	827
13	Feed and grain	205	496	---
14	Miscellaneous	43	101	17
15	Livestock - total	1,352	1,958	810
16	Horses	9	11	---
17	Cattle	161	242	73
18	Swine	181	316	102
19	Sheep	41	64	24
20	Poultry	99	125	82
21	Egg sales	174	257	137
22	Dairy sales	687	943	392
23	Expenses - net decreases - total	650	745	596
24	Farm improvements	106	109	96
25	Livestock	---	---	7
26	Horses	---	---	7
27	Cattle	---	---	---
28	Swine	---	---	---
29	Sheep	---	---	---
30	Poultry	---	---	---
31	Machinery and equipment	160	181	137
32	Feed and supplies	---	---	42
33	Livestock expense other than feed	21	33	16
34	Crop expense	105	124	93
35	Labor hired	82	113	47
36	Taxes, insurance, etc.	161	163	147
37	Miscellaneous	15	22	11
38	Receipts, less expenses	950	1,810	231
39	Operator's and unpaid family labor	742	759	727
40	Net income from investment	208	1,051	-496

of livestock, the use made of man and horse labor and the amounts of expenses in relation to income.

Acreage of Crops and Crop Yields

The most profitable group raised 36 acres of corn which yielded 19.8 bushels per acre, 28.6 acres of oats which yielded 20.7 bushels per acre, and 17 acres of wheat at 16.1 bushels per acre. The acreages of corn and oats were almost the same for the least profitable group, but the corn produced only 14 bushels per acre, and the oats 16.7 bushels per acre. The five acres of wheat produced only 6.9 bushels per acre. With corn at 50 cents, oats at 40 cents, and wheat at $1.20, the difference in acreage and yield of these three crops would make a difference of $454 per farm. Of this difference $287 was due to a large acreage and the larger yield of wheat. The total receipts per acre of wheat were $19.20, while the average total receipts per acre for all farms were only $9.03.

Livestock Returns

The most profitable group of farms received $1958 increase from livestock or a return of $148 for $100 invested in cattle, hogs, sheep and poultry. The least profitable group received $810 from livestock or on the basis of productive livestock only $126 for each $100 invested. It is of interest to note that the most profitable group sold $257 worth of eggs and $943 of dairy products as compared with $137 for eggs and $392 for dairy products for the least profitable group. The receipts from livestock were over twice as high on the most profitable farms which accounts for much of the difference in receipts.

Use of Man and Horse Labor

The most profitable group worked 85 crop acres with a man and 22.4 crop acres per horse, as compared with 76.6 crop acres per man and 21 crop acres per horse for the least profitable group. Even though handling more livestock, the first group spent only $4.58 per acre for man labor, while the second group spent $4.98. Part of this difference may be due to the fact that the farms are larger which made it possible to use labor to better advantage.

Expense

The most profitable group spent $7.92 per acre while the least profitable group spent $8.52 during the year in operating their farms. This difference of 60 cents per acre is not one of the important reasons for the difference in income but the interesting fact is that the most profitable farms received a much larger income with less expense per acre. A study of the records indicates that in most cases expenses were being held as low as possible, and in some cases better results could have been secured if more money had been spent for limestone and clover seed.

How Profits May Be Increased

Farm profits may be increased by increasing the receipts or by decreasing expenses, or both. As was pointed out before, the most profitable group had higher profits because of larger receipts and not because of reduced expenses. However, the expenses were no larger per acre of land farmed on the farms with a much larger income.

The larger receipts were due to larger acreages of more profitable crops such as corn, wheat, sweet clover and alfalfa. The use of the sweet clover and alfalfa had also caused an increase in yield of the other crops. The increase in crop yields made it possible to keep more livestock per acre, and the legume crops being better feed also produced larger receipts from the livestock which were being kept on the farms in the most profitable group. The investment in land was $10 an acre higher on the farms in the most profitable group.

The experience of these men should indicate to the farmers in the least profitable group the desirability of investing perhaps $10 per acre in limestone which would enable them to raise sweet clover and alfalfa and so increase the crop yields, which would enable them to keep more livestock and feed it better. In this connection they should also consider the importance of keeping livestock of better quality. A cow which will produce 8000 pounds of milk will not eat twice as much as the cow which will produce only 4000 pounds. To grow more feed per acre and to feed it to more efficient livestock should be the aim of every progressive farmer in this area. The place to begin in order to carry out this plan is to put the soil in the right condition to grow the most profitable crops.

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UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

CLINTON COUNTY FARM BUREAU

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Fifty-six Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April, 1927

M39

Annual Farm Business Report

CLINTON COUNTY, ILLINOIS-1926

Prepared by R. R. Hudelson, P. E. Johnston,
H. A. Berg, H. C. M. Case*

The 56 farmers in Clinton County who kept financial records in the Illinois Farm Account Project for 1926 had an average of $320 to pay for their labor management and risk after paying expenses and allowing 5 percent interest on their average investment of $108 an acre. This is called their labor and managment wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,295, while the one-third who were least successful lacked an average of $584 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,879 in the relative amounts which these two groups received for their time and labor.

Expressed in another way, these 56 farmers earned 3.5 percent on their investments after allowing $600 to pay each for his own labor. On the same basis the most successful third earned 8.4 percent and the least successful third lost 1.5 percent. The average investment on the 56 farms was $18,604, which amounts to $108 an acre. The higher profit third had an average investment of $93 and the lower profit third $130 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $66 an acre on the average farm.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These together with the use of the farm home, not included in the above investment, amounted to $725 on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in this county. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

The group of more profitable farms averaged somewhat larger than the less successful group since they had 77 acres more land, including 46 acres more tillable land per farm than the latter. Clinton County Farm Business Reports for 1924 and 1925, as well as records from other areas, indicate, however, that larger size is not one of the most important differences between these groups. The more profitable farms had 8 acres more corn, 9 acres more oats, and 23 acres more wheat per farm than the low profit group. This advantage in acres of wheat was an important one, since wheat is one of the most profitable crops in Clinton County.

The more successful group of farms had better yields of corn and wheat than the less successful group, altho the difference was not so great as in previous reports.

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* C. H. Rehling, farm adviser in Clinton County, cooperated in supervising and collecting the records used in this report.

In returns per $100 invested in productive livestock the high profit group had a big advantage. They received $38 more per $100 of livestock investment than the low profit group. A study of the records shows that this advantage comes chiefly from poultry and hog sales, altho the high profit group also handled their dairy cattle more efficiently. Practically all cattle on these farms are dairy cattle. The low profit farms had $2.33 more livestock investment but only 58 cents more livestock income per acre. They had to spend for feed $436 more per farm than their crop sales amounted to, while the more successful group fed their livestock and had an average of $545 income left from crop sales.

The low profit farms show a 52 percent higher labor cost per acre than the high profit group, which is a severe handicap in making profits. Part but not all of this is due to their smaller farms. They handled only 47 acres of crops per man while the latter group worked 70 acres. Man labor is one of the largest operating costs on the farm and should be saved by using a good cropping system, large fields and suitable equipment.

The figures showing the expense per $100 of income bring out the big difference between the 20 most profitable and the 20 least profitable farms. The first group had $44 left out of every $100 income after paying all costs, including depreciations and their own labor, but not including interest on their investments. The second group, if they had paid all costs including depreciations and their own labor, would have spent $113 for every $100 they took in with no allowance for interest.

Since most of the farms included in this report are the same ones covered by the Clinton County reports for 1924 and 1925, some interesting comparisons can be made. The average rate earned on 58 farms in 1924 was 4.7 percent on an investment of $105 an acre. Sixty farms were included in 1925 and the average rate was 5.9 per cent on an investment of $105 an acre. For 1926 an average rate of 3.5 per cent on an investment of $108 an acre is below the level of 1924. Probably the smaller acreage of wheat, smaller yields of corn and a shortage of hay were among the chief causes of lower earnings for 1926. Gross receipts from livestock products were slightly larger in 1926. The smaller acreage of wheat was caused by a wet seeding season during the fall of 1925. The 1926 corn crop was reduced by early drought followed by an excessively wet fall.

Smaller numbers of farm accounts were analyzed for Clinton County previous to 1924. In 1923 twenty-one farms averaged 4.54 percent on an investment of $124 an acre and in 1922 twenty-five farms averaged 1.7 percent on an investment of $123 an acre. Eleven accounts were completed for 1921 with an average rate earned of two-tenths of one percent on an investment of $115 an acre.

The following table of income and investment figures from five years of Clinton County records gives a good summary of farming conditions. It is interesting to note that these farms have gradually increased their incomes from dairy products, poultry products and hogs.

COMPARATIVE EARNINGS ON CLINTON COUNTY FARMS

Item	1922	1923	1924	1925	1926
Number of farm records	25	21	58	60	56
Av. size of farm, acres	164	163	164	165	172
Av. rate earned	1.7%	4.5%	4.7%	5.9%	3.5%
Av. value of land per acre	$ 98	$ 98	$ 64	$ 64	$ 66
Av. investment per acre	123	124	105	105	108
Investment in livestock per farm	1832	1727	1655	1703	1884
Investment in cattle per farm	892	866	816	865	941
Investment in poultry per farm	266	255	260	264	279
Investment in hogs per farm	83	129	120	134	188
Gross income per acre	13.49	17.80	15.87	18.19	15.28
Operating cost per acre	11.50	12.14	10.91	11.94	11.51
Grain sales less feed purchases per farm	597	769	589	657	000
Misc. income per farm	116	143	114	126	139
Livestock income per farm	1499	1953	1901	2222	2494
Gross income per farm	2212	2867	2604	3005	2633
Cattle income per farm	904	1313	1213	1323	1491
Hog income per farm	114	146	159	255	358
Poultry income per farm	504	510	520	630	629

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on the farms of the group making the best profits and the group making the least profits.

Clinton County-1926

Factors helping to analyze the farm business	Your farm	Average of 56 farms	Twenty most profitable farms	Twenty least profitable farms
Rate earned	%	3.49%	8.46%	-1.51%
Labor and management wage	$	$320	$1,295	-$584
Size of farm - acres	A	172.3 A	216.6 A	139.8 A
Percent of land area tillable	%	72.4 %	67.7 %	71.7 %
Acres in Corn	A	32.8 A	36.2 A	28.2 A
Oats	A	27.3 A	31.8 A	22.2 A
Wheat	A	33.2 A	46.5 A	23.2 A
Crop yields - Corn	bu.	18.4bu.	21.4bu.	15.6bu.
Oats	bu.	20.0bu.	19.7bu.	21.4bu.
Wheat	bu.	19.2bu.	21.1bu.	18.3bu.
Returns per $100 invested in all productive livestock	$	$172.00	$188.00	$150.00
For $100 in Cattle	$	$161.00	$165.00	$149.00
Swine	$	$173.00	$205.00	$116.00
Poultry	$	$218.00	$260.00	$182.00
Investment per acre in productive livestock	$	$ 8.40	$ 7.51	$ 9.84
Receipts per acre from productive livestock	$	$ 14.47	$ 14.14	$ 14.72
Man labor cost per acre	$	$ 6.47	$ 5.30	$ 8.08
Crop acres per man	$	$ 60.9	$ 70.6	$ 47.3
Crop acres per horse	$	$ 19.4	$ 22.0	$ 16.7
Expense per $100 gross income	$	$ 75.00	$ 56.00	$113.00
Machinery cost per acre	$	$ 1.80	$ 1.95	$ 1.93
Building & fencing cost per A	$	$ .87	$ .76	$ 1.20
Gross receipts per acre	$	$ 15.28	$ 17.92	$ 15.20
Total expenses per acre	$	$ 11.51	$ 10.08	$ 17.17
Net receipts per acre	$	$ 3.77	$ 7.84	$ -1.97
Percent of farms with tractor	%	21%	12%	5%
Value of land per acre	$	$ 66.00	$ 57.00	$ 78.00
Total investment per acre	$	$108.00	$ 93.00	$130.00

Clinton County-1926

	Your farm	Average of 56 farms	Twenty most profitable farms	Twenty least profitable farms
1 Capital Investment-Total	$	$18,604	$ 20,044	$ 18,189
2 Land		11,397	12,363	10,905
3 Farm improvements		2,690	2,640	2,930
4 Machinery and equipment		1,196	1,442	1,146
5 Feed and supplies		1,437	1,533	1,420
6 Livestock		1,884	2,066	1,788
7 Horses		449	477	407
8 Cattle		941	1,023	956
9 Swine		188	193	159
10 Sheep		27	42	32
11 Poultry		279	331	234
12 Receipts-Net Increases-Total		2,633	3,880	2,127
13 Feed and grain		---	545	---
14 Miscellaneous		139	274	68
15 Livestock-Total		2,494	3,061	2,059
16 Horses		---	---	---
17 Cattle		246	328	174
18 Swine		358	517	179
19 Sheep		16	23	21
20 Poultry		185	260	130
21 Egg sales		444	630	319
22 Dairy sales		1,245	1,303	1,236
23 Expenses-Net Decreases-Total		1,018	1,191	1,413
24 Farm improvements		149	165	168
25 Livestock		9	25	15
26 Horses		9	25	15
27 Cattle		---	---	---
28 Swine		---	---	---
29 Sheep		---	---	---
30 Poultry		---	---	---
31 Machinery and equipment		311	423	271
32 Feed and supplies		2	---	436
33 Livestock expense other than feed		23	17	21
34 Crop expense		193	213	177
35 Labor hired		151	155	141
36 Taxes, insurance, etc.		149	170	142
37 Miscellaneous		31	23	42
38 Receipts less Expenses		1,615	2,689	714
39 Operator's and unpaid family labor		965	992	989
40 Net income from investment		650	1,697	-275

Find Your Farm Leaks

(Clinton County-1926)

The numbers between the lines across the middle of the page are the approximate averages for your county of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your county.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per A. in L.S.	Receipts per A. from L.S.	Man Lab. cost per A.	Crop acres per		Expense per $100 income	Gross receipts per A.	Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Horse			
10.5	46	34	33	301	313	358	15.40	28.50	3.00	96	33	40	36	312
9.5	42	32	31	281	293	338	14.40	26.50	3.50	91	31	45	33	292
8.5	38	30	29	261	273	318	13.40	24.50	4.00	86	29	50	30	272
7.5	34	28	27	241	253	298	12.40	22.50	4.50	81	27	55	27	252
6.5	30	26	25	221	233	278	11.40	20.50	5.00	76	25	60	24	232
5.5	26	24	23	201	213	258	10.40	18.50	5.50	71	23	65	21	212
4.5	22	22	21	181	193	238	9.40	16.50	6.00	66	21	70	18	192
3.5	18	20	19	161	173	218	8.40	14.50	6.50	61	19	75	15	172
2.5	14	18	17	141	153	198	7.40	12.50	7.00	56	17	80	12	152
1.5	10	16	15	121	133	178	6.40	10.50	7.50	51	15	85	9	132
0.5	6	14	13	101	113	158	5.40	8.50	8.00	46	13	90	6	112
-0.5	--	12	11	81	93	138	4.40	6.50	8.50	41	11	95	3	92
-1.5	--	10	9	61	73	118	3.40	4.50	9.00	36	9	100	--	72
-2.5	--	8	7	41	53	98	2.40	2.50	9.50	31	7	105	--	52
-3.5	--	6	5	21	33	78	1.40	0.50	10.00	26	5	110	--	32

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

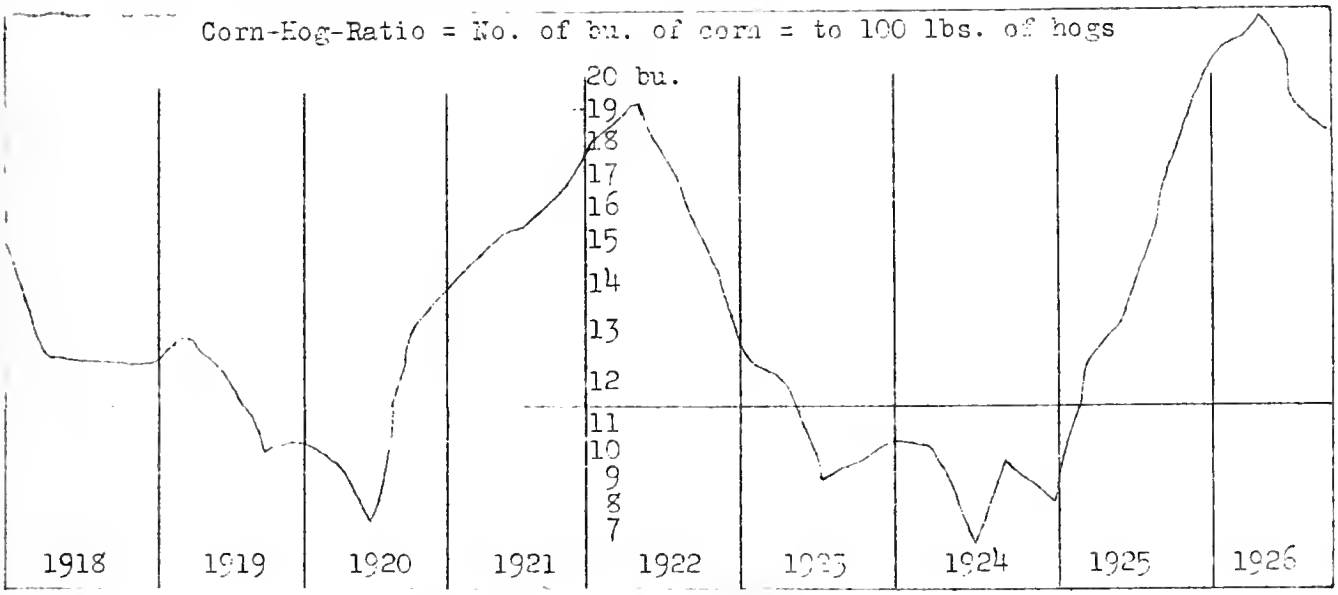
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

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ANNUAL FARM BUSINESS REPORT

Wabash, Edwards, Richland and Lawrence Counties, Illinois - 1926

Prepared by R. R. Hudelson, J. B. Andrews, Peter Nelson, H. C. M. Case*

The 30 farmers in the above named counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $603 to pay for their labor risk and management after paying expenses and allowing 5 percent interest on their average investment of $128 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,955 while the one-third who were least successful lacked an average of $713 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,668 in the relative amounts which these last two groups received for their time and labor.

Expressed in another way, these 30 farmers earned 5.6 percent on their investments after allowing $600 each to pay for his own labor. On the same basis the most successful third earned 11.6 percent and the least successful third 0.3 percent. The average investment on the 30 farms was $21,990 which amounts to $128 an acre. The higher profit third had an average investment of $148 and the lower profit third $128 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $90 an acre on the average farm.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home, not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Size of farm evidently had little influence on the relative earnings of the high and low profit groups. The less profitable farms had about 40 acres more land per farm which included 20 acres more tillable land. The more profitable farms although smaller had more acres of corn and wheat but less acres of oats per farm than the less profitable farms. This corresponds with other records which show that wheat is the most profitable grain crop for southern Illinois and that oats are usually unprofitable.

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*J. R. Spencer, H. N. Myers, W. B. Bunn and H. C. Wheeler, farm advisers in Wabash, Edwards, Richland and Lawrence counties cooperated in supervising and collecting the records used in this report.

The operators of the more successful farms secured better crop yields. They raised $5\frac{1}{2}$ bushels more corn, 10 bushels more oats and 6 bushels more wheat per acre than their less successful neighbors. As the cost of growing an acre of crop increases but little with increased yields these larger yields go toward increasing profits.

The greatest advantage of the more profitable farms was in their more efficient livestock. The high and low profit groups had about the same investment per acre in livestock but the operators of the more profitable farms secured nearly three times as much livestock income per acre. The biggest single difference was in dairy products. The more successful operators sold almost ten times as much dairy products per farm as those who were less successful and almost three times as much poultry products. The livestock investment on the lower profit farms was mostly in beef cattle which handled as they were made little profit. Hogs were somewhat more efficient on the low profit farms than on the high profit farms.

That feeding on the more successful farms was more efficient is indicated by the fact that although these farms were smaller they had left on the average $542 per farm from crop sales after feeding their livestock. In this case any feed purchased was deducted from crop sales. The less successful farms had left only $262 from crop sales.

As might be expected labor costs were higher on the more profitable farms. Dairy cattle and poultry require more labor than beef cattle and hogs. In this case, however, the additional labor was well paid for in increased income. Dairy cattle and poultry also call for more equipment and the equipment costs were $1.44 per acre higher on the more successful farms. Total operating costs were $4.86 per acre higher on the farms of the higher profit group but their gross income per acre was $21.56 per acre higher than on the low profit farms. The result was that the more profitable farms earned a rate of $11\frac{1}{2}$ percent on a land value of $104 an acre, while the less profitable farms earned one-third of one percent on a land value of $91 an acre.

Although there has been some shifting in the individual farms included for different years it is interesting to note the comparative income and cost figures in the following table. The better grain prices of 1924 made it the best year for profits of the four years for which we have records. Since then the trend has been slightly downward. Evidently there has been some progress in replacing declining grain income with increased income from hogs, dairy products and poultry products. It is evident that the farm operators who keep these accounts do adjust their farm production to meet changing prices.

Comparative Earnings on Farms in Wabash, Edwards, Richland and Lawrence Counties

Item	1923*	1924	1925	1926
Number of farm records	24	41	32	30
Average size of farm in acres	163	174	187	172
Average rate earned	3.5%	7.2%	6.2%	5.6%
Average value of land per acre	$ 103	$ 85	$ 83	$ 90
Average investment per acre	139	115	120	128
Investment in livestock per farm	1,911	1,534	1,737	1,923
Investment in cattle per farm	784	626	694	835
Investment in hogs per farm	371	293	418	501
Investment in poultry per farm	161	144	175	166
Gross income per acre	15.40	18.23	17.22	19.75
Operating cost per acre	10.57	9.89	9.71	12.60
Grain sales less feed purchases per farm	1,122	1,327	516	708
Miscellaneous income per farm	120	102	104	167
Livestock income per farm	1,268	1,748	2,610	2,525
Gross income per farm	2,510	3,177	3,230	3,400
Cattle income per farm	227	206	298	251
Hog income per farm	487	742	1,482	1,044
Poultry income per farm	282	290	490	460
Dairy products sold per farm	272	476	300	740

*Only records from Wabash County were included for 1923.

Some points of strength and some of weakness in your own farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm as well as on the farms of the higher and lower profit groups.

Wabash, Edwards, Richland, and Lawrence Counties - 1926

Factors helping to analyze the farm business	Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	5.6%	11.58%	0.32%
Labor and management wage	$	$ 603	$1,955	$-713
Size of farm - acres	A	172.1 A	152.5 A	191.3 A
Percent of land area tillable	%	85.6%	86.6%	79.2%
Acres in Corn	A	42.4 A	43.9 A	39.5 A
Oats	A	18 A	12.7 A	19.8 A
Wheat	A	25.2 A	25.5 A	18.6 A
Crop yields - Corn	bu.	38.3 bu.	42.3 bu.	36.8 bu.
Oats	bu.	20.7 bu.	27.2 bu.	16.6 bu.
Wheat	bu.	22.2 bu.	25.0 bu.	18.8 bu.
Returns per $100 invested in all productive livestock	$	$ 171	$ 254	$ 96
For $100 in Cattle	$	$ 122	$ 254	$ 38
Hogs	$	$ 230	$ 214	$ 247
Poultry	$	$ 274	$ 409	$ 167
Investment per acre in productive livestock	$	$ 8.57	$ 10.75	$ 10.01
Receipts per acre from productive livestock	$	$ 14.67	$ 27.32	$ 9.60
Man labor cost per acre	$	$ 6.23	$ 8.18	$ 5.39
Crop acres per man	A	66.5 A	55.2 A	61.1 A
Crop acres per horse	A	23.1 A	23.2 A	20.0 A
Expense per $100 gross income	$	$ 63	$ 48	$ 96
Machinery cost per acre	$	$ 2.13	$ 2.90	$ 1.46
Building and fencing cost per acre	$	$ 1.16	$ 1.08	$ 1.24
Gross receipts per acre	$	$ 19.75	$ 32.98	$ 11.42
Total expenses per acre	$	$ 12.60	$ 15.88	$ 11.02
Net receipts per acre	$	$ 7.15	$ 17.10	$ 0.40
Farm with tractor	%	40%	60%	20%
Value of land per acre	$	$ 90	$ 104	$ 91
Total investment per acre	$	$ 128	$ 148	$ 128

Wabash, Edwards, Richland, and Lawrence Counties - 1926

		Your farm	Average of thirty farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$21,990	$22,530	$24,474
2	Land		15,570	15,925	17,483
3	Farm improvements		2,137	2,113	2,243
4	Machinery and equipment		953	1,108	762
5	Feed and supplies		1,407	1,325	1,540
6	Livestock		1,923	2,059	2,446
7	Horses		385	348	471
8	Cattle		835	873	1,297
9	Hogs		501	656	490
10	Sheep		36	17	42
11	Poultry		166	165	146
12	Receipts-Net Increases-Total	$_____	$ 3,400	$ 5,029	$ 2,185
13	Feed and grain		708	542	262
14	Miscellaneous		167	320	84
15	Livestock - Total		2,525	4,167	1,839
16	Horses		-	-	2
17	Cattle		251	327	300
18	Hogs		1,044	1,247	1,087
19	Sheep		30	18	21
20	Poultry		116	181	68
21	Egg sales		344	517	170
22	Dairy sales		740	1,877	191
23	Expenses-Net Decreases-Total	$_____	$ 1,446	$ 1,733	$ 1,347
24	Farm improvements		199	164	238
25	Livestock		12	10	-
26	Horses		12	10	-
27	Cattle		-	-	-
28	Hogs		-	-	-
29	Sheep		-	-	-
30	Poultry		-	-	-
31	Machinery and equipment		366	443	279
32	Feed and supplies		-	-	-
33	Livestock expense other than feed		45	90	25
34	Crop expense		192	200	180
35	Labor hired		349	559	270
36	Taxes, insurance, etc.		260	239	334
37	Miscellaneous		23	28	21
38	Receipts less Expenses	$_____	$ 1,954	$ 3,296	$ 838
39	Operator's and unpaid family labor		723	688	761
40	Net income from investment		1,231	2,608	77

Find Your Farm Leaks

Wabash, Edwards, Richland, Lawrence Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L. S.	Receipts per acre from L.S.	Man labor cost per acre	Crop acres per		Expense per $100 income	Gross receipts per acre	Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Horse			
12.6	59	42	36	192	370	414	22.57	28.67	2.75	101	37	28	34	312
11.6	56	39	34	182	350	394	20.57	26.67	3.25	96	35	33	32	292
10.6	53	36	32	172	330	374	18.57	24.67	3.75	91	33	38	30	272
9.6	50	33	30	162	310	354	16.57	22.67	4.25	86	31	43	28	252
8.6	47	30	28	152	290	334	14.57	20.67	4.75	81	29	48	26	232
7.6	44	27	26	142	270	314	12.57	18.67	5.25	76	27	53	24	212
6.6	41	24	24	132	250	294	10.57	16.67	5.75	71	25	58	22	192
5.6	38	21	22	122	230	274	8.57	14.67	6.25	66	23	63	20	172
4.6	35	18	20	112	210	254	6.57	12.67	6.75	61	21	68	18	152
3.6	32	15	18	102	190	234	4.57	10.67	7.25	56	19	73	16	132
2.6	29	12	16	92	170	214	2.57	8.67	7.75	51	17	78	14	112
1.6	26	9	14	82	150	194	0.57	6.67	8.25	46	15	83	12	92
0.6	23	6	12	72	130	174	--	4.67	8.75	41	13	88	10	72
-0.4	20	-	10	62	110	154	--	2.67	9.25	36	11	93	8	52
-1.4	17	-	8	52	90	134	--	0.67	9.75	31	9	98	6	32

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

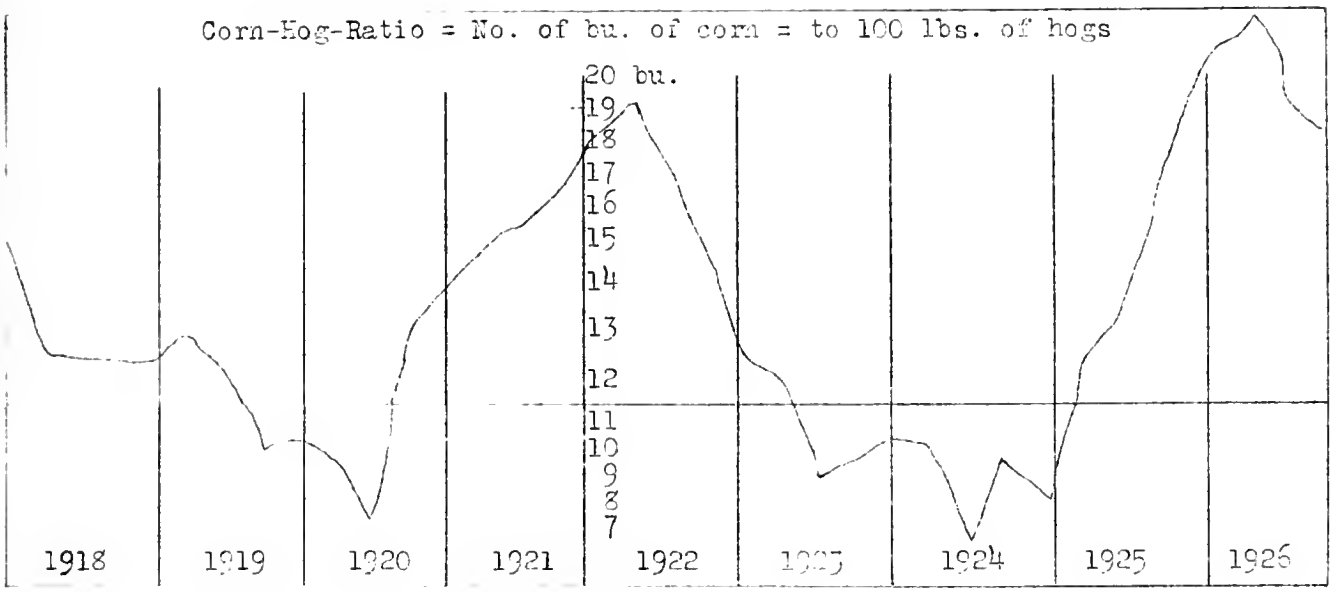
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

Department of Farm Organization and Management

and

RANDOLPH, MONROE, MARION AND WASHINGTON FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Thirty-three Farms

for

1926

Farm Account keepers say:
"Farm accounts have more value the longer
they are kept."

Urbana, Illinois

April, 1927

ANNUAL FARM BUSINESS REPORT

Randolph, Monroe, Marion and Washington Counties, Illinois-1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 33 farmers in Randolph, Monroe, Marion and Washington counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $742 to pay for their labor management and risk after paying expenses and allowing 5 percent interest on their average investment of $83 an acre. This is called their labor and management wage. The one-third of these farmers who made the best profits had an average labor and management wage of $1,654 while the one-third who were least successful lacked an average of $44 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $1,700 in the relative amounts which these two groups received for their time and labor.

Expressed in another way, these 33 farmers earned 6 percent on their investments after allowing $600 each to pay for his own labor. On the same basis the most successful third earned 10.4 percent and the least successful third earned no interest on the investment. The average investment on the 33 farms was $15,595 which amounts to $83 an acre. The higher profit third had an average investment of $84 and the lower profit third $79 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4.

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The higher profit group had somewhat larger farms with about 80 acres more tillable land per farm than the lower profit group. The average farm contained 188 acres of which 158 acres was tillable land. This 158 acres included 27 acres of corn, 23 acres of oats, and 35 acres

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of wheat. The remaining area was mostly in hay and pasture. The more profitable farms had about 50 percent more acres of wheat per farm than the least profitable group.

One of the big advantages of the more successful farms was in their higher yields. They averaged 13 bushels more corn, 35½ bushels more oats, and 8½ bushels more wheat per acre than the less successful farms. Stated on a farm basis, this gave the former group an average of 500 bushels more corn, 840 bushels more oats, and 600 bushels more wheat per farm than the latter.

The farms of the higher profit group had $1.10 per acre more income from livestock than the low profit farms but this appears to be due more to a larger amount of livestock than to greater livestock efficiency. They did, however, show a higher efficiency in their hog and poultry enterprises.

Man labor and horse power were used more efficiently on the higher profit farms since they not only worked more crop acres per man and per horse but they secured larger yields and had more livestock to look after.

It required all of the income of the low profit group of farms to pay operating costs, including family labor, but not including any interest on the investment. The higher profit group had almost twice as much gross income per acre and their operating costs were no higher. They therefore had about half of their income left to pay interest and profits. The larger gross income is due chiefly to larger crop yields and more livestock.

Although there was a considerable shift in individual farms included it is interesting to make a comparison of income figures in this report with those of previous years in the same area. The average rates earned on the investment have been as follows: 1926, 6.0 percent; 1925, 6.6 percent; 1924, 5 percent; 1923, 3.3 percent, and 1922, 3.7 percent. The figures for 1925 came from 30 farms in Randolph and Monroe Counties; for 1924 from 23 farms in Randolph and Monroe Counties; for 1923 from 9 farms in Monroe County, and for 1922 from 10 farms in Monroe County. If we compare only those farms on which accounts were completed in both 1925 and 1926 we find that they earned 2 percent less on their invested capital in 1926 than in 1925. The reduction in gross income was due to less income from crop sales and miscellaneous sources. They took in as much livestock income in 1926 as in 1925. The operating costs per acre on those farms which reported both years averaged $11.29 in 1925 and $11.08 in 1926.

Some points of strength and some of weakness in your farm business may be found by comparing the factors of your own record in the following tables with the same factors on the average farm in each group.

Randolph, Monroe, Marion and Washington Counties - 1926

Factors helping to analyze the farm business	Your farm	Average of 33 farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	6.0%	10.43%	.02%
Labor and management wage	$	$ 742.00	$ 1,654.	$ -44.
Size of farm - acres	A	188.3	231.5	162.8
Percent of land area tillable	%	84.0	88.9	76.8
Acres in Corn	A	27.1 A	31.6 A	26.6 A
Oats	A	23.3 A	22.8 A	20.3 A
Wheat	A	35.0 A	42.0 A	27.9 A
Crop yields - Corn	bu.	24.5 bu.	30.8 bu.	17.7 bu.
Oats	bu.	22.8 bu.	47.8 bu.	12.1 bu.
Wheat	bu.	22.7 bu.	26.4 bu.	17.9 bu.
Returns per $100 invested in all productive livestock	$	$ 161.00	$ 152.00	$ 165.00
For $100 in cattle	$	$ 140.00	$ 124.00	$ 148.00
hogs	$	$ 175.00	$ 177.00	$ 124.00
poultry	$	$ 227.00	$ 253.00	$ 229.00
Investment per acre in productive livestock	$	$ 4.71	$ 5.29	$ 4.25
Receipts per acre from productive livestock	$	$ 7.51	$ 8.03	$ 6.93
Man labor cost per acre	$	$ 5.16	$ 4.60	$ 5.63
Crop acres per man	A	79.7 A	98.6 A	67.0 A
Crop acres per horse (with tractor)	A	30.0 A	33.7 A	25.3 A
(without tractor)	A	19.6 A	24.0 A	18.2 A
Expense per $100 gross income	$	$ 64.00	$ 50.00	$ 100.00
Machinery cost per acre	$	$ 1.35	$ 1.52	$ 1.07
Building and fencing cost per A	$	$ .48	$ .42	$ .39
Gross receipts per acre	$	$ 13.88	$ 17.50	$ 8.90
Total expenses per acre	$	$ 8.92	$ 8.75	$ 8.90
Net receipts per acre	$	$ 4.96	$ 8.75	$ ----
Farms with tractor (%)	%	33-1/3%	50.0%	20.0%
Value of land per acre	$	$ 54.00	$ 53.00	$ 51.00
Total investment per acre	$	$ 83.00	$ 84.00	$ 79.00

Randolph, Monroe, Marion and Washington Counties - 1926

		Your farm	Average of 33 farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$	$15,595	$ 19,416	$ 12,845
2	Land		10,123	12,341	8,322
3	Farm improvements		1,614	2,112	1,427
4	Machinery and equipment		994	1,095	690
5	Feed and supplies		1,676	2,131	1,388
6	Livestock		1,278	1,737	1,018
7	Horses		423	572	354
8	Cattle		425	504	409
9	Hogs		163	275	100
10	Sheep		73	167	8
11	Poultry		194	219	147
12	Receipts-Net Increases-Total		2,614	4,050	1,449
13	Feed and grain		1,107	2,013	242
14	Miscellaneous		93	178	69
15	Livestock - Total		1,414	1,859	1,138
16	Horses		---	---	10
17	Cattle		177	247	173
18	Hogs		273	461	124
19	Sheep		49	115	---
20	Poultry		156	157	153
21	Egg sales		319	431	236
22	Dairy sales		440	427	442
23	Expenses-Net Decreases-Total		861	1,152	593
24	Farm improvements		91	97	63
25	Livestock		11	53	1
26	Horses		11	53	---
27	Cattle		---	---	---
28	Hogs		---	---	---
29	Sheep		---	---	1
30	Poultry		---	---	---
31	Machinery and equipment		254	353	175
32	Feed and supplies		---	---	---
33	Livestock expense other than feed		13	22	12
34	Crop expense		164	232	122
35	Labor hired		153	192	64
36	Taxes, insurance, etc.		164	189	145
37	Miscellaneous		11	14	10
38	Receipts less Expenses		1,753	2,898	856
39	Operator's and unpaid family labor		818	873	853
40	Net income from investment		935	2,025	3

Find Your Farm Leaks (Randolph, Monroe, Marion and Washington Counties - 1926)

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per A. in L.S.	Receipts per A. from L.S.	Man lab. cost per A.	Crop acres per			Expense per $100 income	Gross receipts per A.	Size of farm
											Horse				
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Tractor	No Tractor			
13.00	60	44	44	210	280	367	11.71	14.50	1.66	115	44	34	29	35	328
12.00	55	41	41	200	265	347	10.71	13.50	2.16	110	42	32	34	32	308
11.00	50	38	38	190	250	327	9.71	12.50	2.66	105	40	30	39	29	288
10.00	45	35	35	180	235	307	8.71	11.50	3.16	100	38	28	44	26	268
9.00	40	32	32	170	220	287	7.71	10.50	3.66	95	36	26	49	23	248
8.00	35	29	29	160	205	267	6.71	9.50	4.16	90	34	24	54	20	228
7.00	30	26	26	150	190	247	5.71	8.50	4.66	85	32	22	59	17	208
6.00	25	23	23	140	175	227	4.71	7.50	5.16	80	30	20	64	14	188
5.00	20	20	20	130	160	207	3.71	6.50	5.66	75	28	18	69	11	168
4.00	15	17	17	120	145	187	2.71	5.50	6.16	70	26	16	74	8	148
3.00	10	14	14	110	130	167	1.71	4.50	6.66	65	24	14	79	5	128
2.00	5	11	11	100	115	147	.71	3.50	7.16	60	22	12	84	2	108
1.00	--	8	8	90	100	127	--	2.50	7.66	55	20	10	89	-	88
0.00	--	--	5	80	85	107	--	1.50	8.16	50	18	--	94	-	68
-1.00	--	--	--	70	70	87	--	.50	8.66	45	16	--	99	-	48
-2.00	--	--	--	60	55	67	--	--	9.16	40	14	--	--	-	28

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

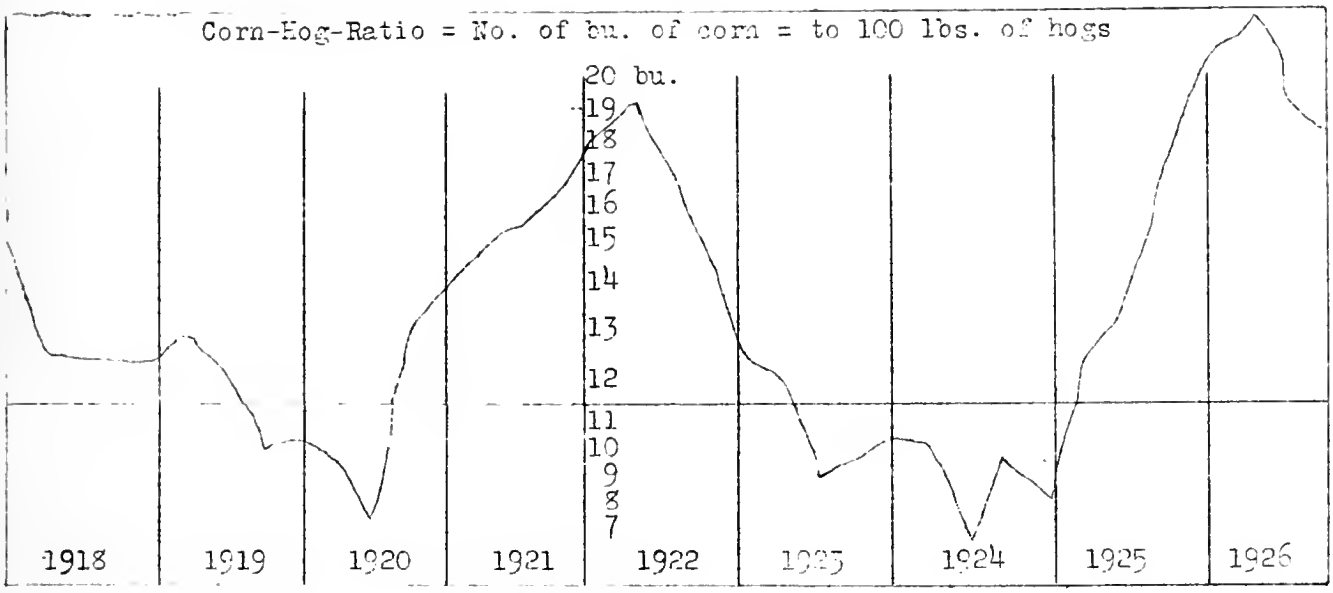
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

and

WHITE, SALINE, GALLATIN, PULASKI, AND JOHNSON COUNTY FARM BUREAUS

Cooperating

ANNUAL FARM BUSINESS REPORT

on

Twenty-five Farms

for

1926

Farm Account keepers say:
"Farm accounts are more valuable the longer
they are kept."

Urbana, Illinois

May, 1927

M49

ANNUAL FARM BUSINESS REPORT

White, Saline, Gallatin, Pulaski and Johnson Counties, Illinois, 1926

Prepared by R. R. Hudelson, P. E. Johnston, H. A. Berg, H. C. M. Case*

The 25 farms in the above named counties who kept financial records in the Illinois Farm Account Project for 1926 had an average of $957 to pay for their labor, risk and management after paying expenses and allowing 5 percent interest on their average investment of $116 an acre. This is called their labor and management wage. Ten of these farmers who made the best profits had an average labor and management wage of $1,975 while ten who were least successful lacked an average of $240 of having enough income to pay expenses and 5 percent on the investment, allowing nothing for their own labor and management. There was, therefore, an average difference of about $2,215 in the relative amounts which these two groups received for their time and labor.

Expressed in another way, these 25 farmers earned 6.6 percent on their investments after allowing $600 each to pay for his own labor. On the same basis the most successful third earned 11.9 percent and the least successful third 1.6 percent. The average investment on the 25 farms was $23,785, which amounts to $116 an acre. The higher profit third had an average investment of $120 and the lower profit third $108 an acre. The term investment per acre is used to include the capital in land, buildings, equipment, livestock and crops as listed in the table on page 4. The land alone was valued at $79 an acre on the average farm.

In addition to the above earnings, each farm family secured certain items of produce, such as milk, butter, eggs, etc., not listed in these accounts. These, together with the use of the farm home not included in the above investment, amounted to $725 at farm prices on a group of Central Illinois farms where this phase of the farm business was given special study.

The income figures given in this report should not be considered as representative of all farms in these counties. A field survey of all farms in one township in McLean County in 1925 and a similar study of farm incomes in a township in Bond County for 1926 indicate that those farms on which financial records are kept average about 2 percent higher rate on the investment than the average of all farms in the same locality.

Size of the farm had little, if any, influence on relative earnings of the high and low profit groups of farms covered by this report. The less successful group averaged 57 acres larger and had a higher percentage of tillable land than the more successful group.

As to crop yields, the ten most profitable farms averaged four bushels more corn and six bushels more wheat per acre than the ten least profitable farms. Since acre costs increase but slightly with increased yield, this was enough to affect profits.

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*E. W. Creighton, J. E. Whitchurch, C. W. Simpson, J. H. Hughes, and L. S. Foote, farm advisers in White, Saline, Gallatin, Pulaski, and Johnson Counties respectively, cooperated in supervising and collecting the records used in this report.

The biggest advantage of the more profitable group of farms was in having a larger amount and more efficient livestock. They had $2.40 more livestock investment and $7.70 more livestock income per acre. This larger livestock income came chiefly from hog and dairy sales. The more successful farmers had $54 more livestock income for each $100 of livestock investment than their less successful neighbors.

That labor was used more efficiently on the more profitable farms is shown by the fact that with their greater amount of livestock and their smaller size they were farmed at no greater labor cost per acre than the less profitable farms. Having fields and equipment of good size, following a good crop rotation, and planning work ahead help increase labor efficiency.

That feed was more efficiently used is indicated by the fact that the more profitable farms, although smaller, furnished feed for more livestock and still had about 50 percent more income from crops than the less profitable farms. Having a proper combination and quantity of home-grown feeds and keeping livestock thrifty by good sanitation are important factors in livestock efficiency.

The high and low profit groups did not differ greatly in building and equipment costs but total operating costs per acre were seventy-five cents per acre smaller on the more profitable farms. The advantage of the latter group was due more to larger gross incomes than to lower expenses. They received almost twice as much gross income per acre as the low profit farms. It cost the more successful operators $40 out of every $100 income to pay operating costs, while the less successful ones had operating costs amounting to $85 out of every $100 income.

The following table of comparative earnings would be more reliable if only the same identical farms had been included for each year, but, making allowance for the shifting in farms reporting, it gives an interesting comparison of farm business conditions during the years 1923 to 1926. There seems to be a tendency toward larger livestock investments and incomes on these farms. This increase was evidently due to increasing prices for livestock and livestock products. This increased the value of livestock inventories and stimulated the keeping of more livestock.

Comparative Earnings on Accounting Farms
in
White, Saline, Gallatin, Pulaski and Johnson Counties

Item	1923	1924	1925	1926
Number of farm records	11*	17*	30	25
Average size of farms	196 A	177	202	205
Average rate earned	1.6%	5.4%	5.7%	6.6%
Average value of land per acre	$ 101	97	80	79
Average investment per acre	128	129	115	116
Investment in livestock per farm	1,519	1,381	1,578	1,883
Investment in cattle per farm	296	401	489	505
Investment in hogs per farm	334	252	333	551
Investment in poultry per farm	212	176	165	168
Gross income per acre	10.20	16.41	15.95	17.76
Operating cost per acre	8.07	9.42	9.39	10.06
Grain sales less feed purchases per farm	916	1,624	998	1,343
Miscellaneous income per farm	57	92	106	139
Livestock income per farm	1,028	1,188	2,118	2,162
Gross income per farm	2,001	2,904	3,222	3,644
Cattle income per farm	232	383	608	458
Hog income per farm	439	440	1,078	1,215
Poultry income per farm	368	343	394	453

Some points of strength and some of weakness in your own farm business may be found by comparing the factors from your own account with those for the average farm as well as with the factors for the more profitable farms and the less profitable farms.

*Only Gallatin County records were included for 1923, and Saline and Gallatin county records for 1924.

White, Saline, Gallatin, Pulaski, and Johnson Counties, 1926

Factors helping to analyze the farm business	Your farm	Average of twenty-five farms	Ten most profitable farms	Ten least profitable farms
Rate earned	%	6.64 %	11.89 %	1.64 %
Labor and management wage	$	$ 957	$1,975	$-240
Size of farm - acres	A	205.1 A	171.1 A	228.5 A
Percent of land area tillable	%	84.2 %	82.3 %	83.9 %
Acres in Corn	A	50.9 A	43.0 A	53.6 A
Oats	A	24.5 A	17.7 A	23.0 A
Wheat	A	22.3 A	20.8 A	27.1 A
Crop yields - Corn	bu.	38.1 bu.	40.1 bu.	36.0 bu.
Oats	bu.	24.[illegible] bu.	22.4 bu.	22.6 bu.
Wheat	bu.	24.[illegible] bu.	27.6 bu.	21.9 bu.
Returns per $100 invested in all productive livestock	$	$ 161	$ 183	$ 129
For $100 in Cattle	$	$ 97	$ 143	$ 54
Swine	$	$ 192	$ 201	$ 182
Poultry	$	$ 245	$ 243	$ 197
Investment per acre in productive livestock	$	$ 6.55	$ 8.47	$ 6.08
Receipts per acre in productive livestock		$ 10.54	$ 15.52	$ 7.83
Man labor cost per acre	$	$ 5.29	$ 5.41	$ 5.38
Crop acres per man		72.3 A	63.7 A	69.1 A
Crop acres per horse		20.8 A	20.5 A	19.9 A
Expense per $100 gross income	$	$ 57.00	$ 40.00	$ 85.00
Machinery cost per acre	$	$ 1.38	$ 1.13	$ 1.39
Building and fencing cost per acre	$	$ .64	$ .61	$ .68
Gross receipts per acre	$	$ 17.76	$ 23.93	$ 12.12
Total expenses per acre	$	$ 10.06	$ 9.59	$ 10.34
Net receipts per acre	$	$ 7.70	$ 14.34	$ 1.78
Percent of farms with tractor	%	40 %	30 %	50 %
Value of land per acre	$	$ 79.00	$ 78.00	$ 72.00
Total investment per acre	$	$ 116.00	$ 120.00	$ 108.00

White, Saline, Gallatin, Pulaski and Johnson Counties, 1926

	Item	Your farm	Average of twenty-five farms	Ten most profitable farms	Ten least profitable farms
1	Capital Investment - Total	$_____	$23,785	$20,629	$24,675
2	Land		16,241	13,403	16,505
3	Farm improvements		3,152	3,260	3,351
4	Machinery and equipment		913	814	926
5	Feed and supplies		1,596	1,313	1,805
6	Livestock		1,883	1,839	2,088
7	Horses		597	524	727
8	Cattle		505	461	619
9	Swine		551	637	466
10	Sheep		62	40	116
11	Poultry		168	177	160
12	Receipts-Net Increases-Total	$_____	$ 3,644	$ 4,094	$ 2,770
13	Feed and grain		1,343	1,257	820
14	Miscellaneous		139	181	163
15	Livestock - Total		2,162	2,656	1,787
16	Horses		--	--	--
17	Cattle		227	279	217
18	Swine		1,215	1,448	1,101
19	Sheep		36	36	54
20	Poultry		153	191	125
21	Egg sales		300	280	230
22	Dairy sales		231	422	60
23	Expenses-Net Decreases-Total	$_____	$ 1,270	$ 926	$ 1,473
24	Farm improvements		131	104	155
25	Livestock		21	31	2
26	Horses		21	31	2
27	Cattle		--	--	--
28	Swine		--	--	--
29	Sheep		--	--	--
30	Poultry		--	--	--
31	Machinery and equipment		283	194	317
32	Feed and supplies		--	--	--
33	Livestock expense other than feed		21	15	34
34	Crop expense		259	163	309
35	Labor hired		291	211	338
36	Taxes, insurance, etc.		247	190	303
37	Miscellaneous		17	18	15
38	Receipts less Expenses	$_____	$ 2,374	$ 3,168	$ 1,297
39	Operator's and unpaid family labor		794	715	891
40	Net income from investment		1,580	2,453	406

Find Your Farm Leaks

White, Saline, Gallatin, Pulaski, and Johnson Counties, 1926

The numbers between the lines across the middle of the page are the approximate averages for your locality of the factors named at the top of the page. By drawing a line across each column at the number measuring the efficiency of your farm in that factor, you can compare your efficiency with that of other farmers in your locality.

Rate earned	Bushels per acre of			Returns per $100 invested in			Invest. per acre in L.S.	Receipts per acre from L.S.	Man labor cost per acre	Crop Acres per		Expense per $100 income	Gross receipts per acre	Size of farm
	Corn	Oats	Wheat	Cattle	Hogs	Poultry				Man	Horse			
13.6	59	45	39	167	332	385	13.55	24.54	1.80	107	35	22	32	345
12.6	56	42	37	157	312	365	12.55	22.54	2.30	102	33	27	30	325
11.6	53	39	35	147	292	345	11.55	20.54	2.80	97	31	32	28	305
10.6	50	36	33	137	272	325	10.55	18.54	3.30	92	29	37	26	285
9.6	47	33	31	127	252	305	9.55	16.54	3.80	87	27	42	24	265
8.6	44	30	29	117	232	285	8.55	14.54	4.30	82	25	47	22	245
7.6	41	27	27	107	212	265	7.55	12.54	4.80	77	23	52	20	225
6.6	38	24	25	97	192	245	6.55	10.54	5.30	72	21	57	18	205
5.6	35	21	23	87	172	225	5.55	8.54	5.80	67	19	62	16	185
4.6	32	18	21	77	152	205	4.55	6.54	6.30	62	17	67	14	165
3.6	29	15	19	67	132	185	3.55	4.54	6.80	57	15	72	12	145
2.6	26	12	17	57	112	165	2.55	2.54	7.30	52	13	77	10	125
1.6	23	9	15	47	92	145	1.55	0.54	7.80	47	11	82	8	105
0.6	20	6	13	37	72	125	0.55	----	8.30	42	9	87	6	85
-0.4	17	--	11	27	52	105	----	----	8.80	37	7	92	4	65

ORGANIZING THE FARM FOR MORE PROFITABLE OPERATION

The problem of profitable farming is one of selecting the best combination of crop and livestock enterprises and handling those enterprises efficiently so as to produce the largest average net income over a period of years. This does not mean devoting the entire farm to that product which according to cost of production studies shows the largest margin between cost and selling price. Devoting the entire farm to one or two products may greatly increase the cost of production. Risks are also increased by such a plan since price and weather conditions affecting a particular product cannot be known in advance. Several products are less likely to be hit by unfavorable weather and prices during the same year.

"The Simple Farm Account Project" furnishes the farm operator with a means of knowing his net income, how his combination of crop and livestock enterprises differs from that of the average farmer in his locality, and the effect this has on farm earnings. Every keeper of an account book in this project will have missed a valuable opportunity if he does not make a thoughtful study of his own combination of enterprises with that of other farm operators who are more or less successful than he. A profitable comparison can be made as to kind and size of enterprises and particularly as to their efficiency. The enterprises on any given farm may have been selected a generation ago when investments, costs and prices differed from what they are now. The efficient farm operator will study the effect of changing conditions on his business and will plan his operations so as to work with the changing forces and not against them. This does not mean a constant shifting of farm enterprises nor a constant change in methods. It does mean the adoption of a carefully thought out plan of operation definite enough to keep from acting too short-sightedly and flexible enough to allow for adjustments to meet changing weather and market conditions.

Selecting Crop Enterprises

For any given farm the choice of staple crops is restricted to a few and these are usually well established in the community. As a rule, rotations will be built up out of these staple crops. Emergency and minor crops constitute a much longer list and the choice of these will vary with the particular farm, especially with respect to soil and market conditions and the kinds of livestock grown.

It was long ago found to be good practice to include in a rotation for general farming one cultivated crop to aid in clearing land of weeds, and one deep rooted legume crop to add nitrogen and organic matter. As legumes can usually be seeded with least expense in a small grain crop it has proved good practice to put in a small grain crop between the cultivated crop and the deep rooted legume. The number of years of the rotation devoted to any one of these three kinds of crops should be adjusted to suit soil, labor, market, amount and kind of livestock and crop pest

conditions on the individual farm.

Carefully kept records on several hundred farms thruout Illinois have shown that the profits on a particular farm are increased by keeping a high percentage of the tillable land in the more profitable crops. For any given locality there are usually one or two staple crops which are more profitable under general farming conditions than others. If we try to devote too much of the farm to the one or two best crops from this standpoint, however, we will unbalance the farm business from the point of view of securing good use of land, labor, power, equipment, buildings and fences. We may also increase the risk of damage by insect pests and crop diseases and fail to produce the crops needed as feeds. One of the best means of keeping farm expenses down is that of producing sufficient quantity and variety of well balanced feed crops for all livestock, thus avoiding a cash outlay for feeds.

Cost of production records have shown that for Central Illinois the more profitable staple crops include corn, winter wheat, alfalfa, and sweet clover. Here we have representatives of the three kinds of crops necessary to a good rotation, namely, a cultivated crop, a small grain and a deep rooted legume. For large scale farming, they do not fit together perfectly, however. Winter wheat does not follow corn well and alfalfa needs labor at the same time that corn must be cultivated. It is generally preferred also to leave a seeding of alfalfa longer than the year or two that the legume can best be left in a rotation. For central and northern Illinois corn is the undisputed favorite crop. The rotation will, therefore, include as much corn as possible without requiring too much labor and power in April, May and June and without exhausting the soil or increasing the damage from corn insects and diseases. This frequently means about 40 percent of the land in corn on good level black land, or less under less favorable circumstances. It is seldom advisable to have more than 40 percent of the crop land in one crop.

As winter wheat does not follow corn well, it is desirable to introduce some crop between corn and wheat unless the corn is cut for early feed or silage. The old favorite for this place has been oats. It has the advantage of taking little labor and power and of taking them when they are not greatly in demand for other crops. Against these advantages there is the poor oat market which does not promise to improve with the increasing displacement of horses as a source of power. Up to the amount that can be fed on the farm where grown, however, oats are as good as they ever were. For many farms this suggests a reduction of the oat acreage. For northern Illinois barley and spring wheat are gradually replacing some oats. For central Illinois soybeans are the favorite substitute, if the ground is well prepared, free of weeds, and the seed well inoculated. Many failures with soybeans can be attributed to these causes. They have the disadvantages of taking more labor and power than oats and of taking it when it is in greater demand, especially for corn. They have the advantage of being legumes and thus supplying a protein feed and cutting down the cash outlay for protein hays and concentrates, of fixing some nitrogen in the soil,

and of being a good preparatory crop for wheat on land that is well supplied with nitrogen.

Since alfalfa, our most profitable deep rooted legume crop, does not fit well in the general farm rotation, we must substitute for it the clover best adapted to the particular conditions. Alfalfa is used both as hay and pasture. Where the primary purposes are to provide pasture and soil improvement sweet clover is proving to be the best clover on land that is not deficient in lime. Where lime is lacking for sweet clover or where hay is the product most needed red, alsike and mammoth clovers are best adapted, if the land will grow them successfully. They may be classified as medium profit crops.

Among the low profit crops must be included blue grass, oats, and timothy, but these are all crops requiring little labor and where soil conditions or other circumstances prohibit the growing of better crops they have a place in the cropping system.

The above discussion on the selection of staple crops applies more definitely to central and northern Illinois. Under prevailing conditions in southern Illinois wheat is found to be the most profitable grain crop. Corn may equal wheat in profitableness even in southern Illinois, however, when the soil has been built up with limestone and legumes. Under any circumstances corn is one of the few staple cultivated crops and will be included on most southern Illinois farms even where soil conditions prevent a profitable yield. The acreage will be less, however, than on central and northern Illinois farms. Soybeans may also be considered as a cultivated crop. With wheat as the most profitable grain crop for most of southern Illinois, it will form the center about which the rotation is built and will generally occupy as large a percentage of the tillable land as corn does farther north in the state.

After the farm operator has decided on the kinds of crops he will grow and the acreage of each, there still remains the problem of producing those crops most efficiently, that is, at the lowest practical cost per bushel or ton of crop and the problem of marketing particularly as to whether the crop will be sold or fed. Efficiency of production cannot be discussed here for lack of room but the problem may be defined as that of securing good yields of good quality without too great cost. The difficulties under which midwest farmers have labored since 1920 cannot be removed by growing lower yields. Better yields of grain crops on less land will come nearer solving the problem. This will usually mean using more acres for soil building legumes and in many cases will aid in cheaper livestock production.

Livestock Enterprises

While in some cases, particularly in good dairy locations, crops will be selected to suit the kind of livestock, on the majority of farms the livestock enterprises will be adjusted to the crops at least so far

as the numbers of each kind of livestock are concerned. Too often the kinds of livestock are determined primarily by the personal likes and dislikes of the individual operator. This can hardly be justified on a business basis. It probably is true that a man will succeed more easily with enterprises he enjoys, but we usually can learn to like those enterprises which make money and therefore supply our wants. Today information on the care and handling of all livestock enterprises is available to anyone who has the determination and the open-mindedness to learn. Livestock furnish the best opportunity for using slack season labor profitably and they make it possible to avoid the necessity for throwing all the grain crops on a cash market which at times may be below cost of production. If feed crops are sold, they usually are bought by another farm at an increase in price and he hopes to feed them so as to make a profit on the feeding process. The grower has the advantage over this feeder of purchased feed in that he does not have to pay the freight, commission, and the other shipping charges on the transfer.

The livestock enterprises are few in number but they may be combined in any proportions. The question of relative numbers of each kind is probably the biggest one for most operators. If it is decided to increase the numbers of any given kind of livestock, care should be taken not to buy in when that class of livestock is relatively too high in price. The government outlook and market reports furnish the best available information as to the prospects for any class of livestock to move up or down over a period of time.

Each class of livestock has its particular advantages if handled efficiently. Poultry are probably the most universal. They have the advantages of furnishing a finished product and bringing in some income at close regular intervals to meet current expenses. They pick up a considerable amount of what would otherwise be waste feed and can be handled in a way that will make a profit on odd time labor. This last feature should not be overemphasized, however, to the point that the poultry be neglected except when there is surplus labor. Poultry must have regular and careful attention to give the best results.

Hogs furnish the greatest alternative market for corn and by being marketable at various weights give a good opportunity for adjustment to meet market conditions. Efficiency in breeding, sanitation and feeding can make hogs more profitable on most farms. Recent hog cost accounts in McLean County show that among a large number of farms twenty-five percent produced pork at a cost of $6.75 a hundred pounds, while another twenty-five percent had a corresponding cost of $13.12. The first group can grow pork at a profit even when the price level is such as to cause the latter group to lose heavily.

Cattle are needed on most farms to consume what would otherwise be waste roughage. Sheep alone compete with them for this purpose and sheep are grown in small numbers in Illinois. Where a market is available and labor can be had at reasonable cost, dairy cattle have the advantage in

supplying a frequent and steady source of income. They are particularly suited to the smaller farm which usually has more labor available. Dairy cattle require a better grade of roughage feeds than beef cattle.

Beef cattle are suited to more extensive farming and shortage of labor. They may be raised or bought for feeding. If they are raised the breeding cows must be kept at low cost to produce a calf as cheaply as it can be bought from the range country where grain is seldom fed to cows and where cheap land and cheap feed are available. Purchased feeder cattle are the next alternative and require good buying judgment to meet feed and market conditions. Grain is generally necessary to the finishing of feeder cattle and purchased feeders are indicated only where grain is available. In this enterprise it is particularly desirable for the farm operator to know his own feed supplies, the outlook for cattle from competitors, the seasonal market fluctuation and the prospect for long-time swings in market conditions. Helpful information along these lines is available for the man who has the desire and determination to study the problem carefully.

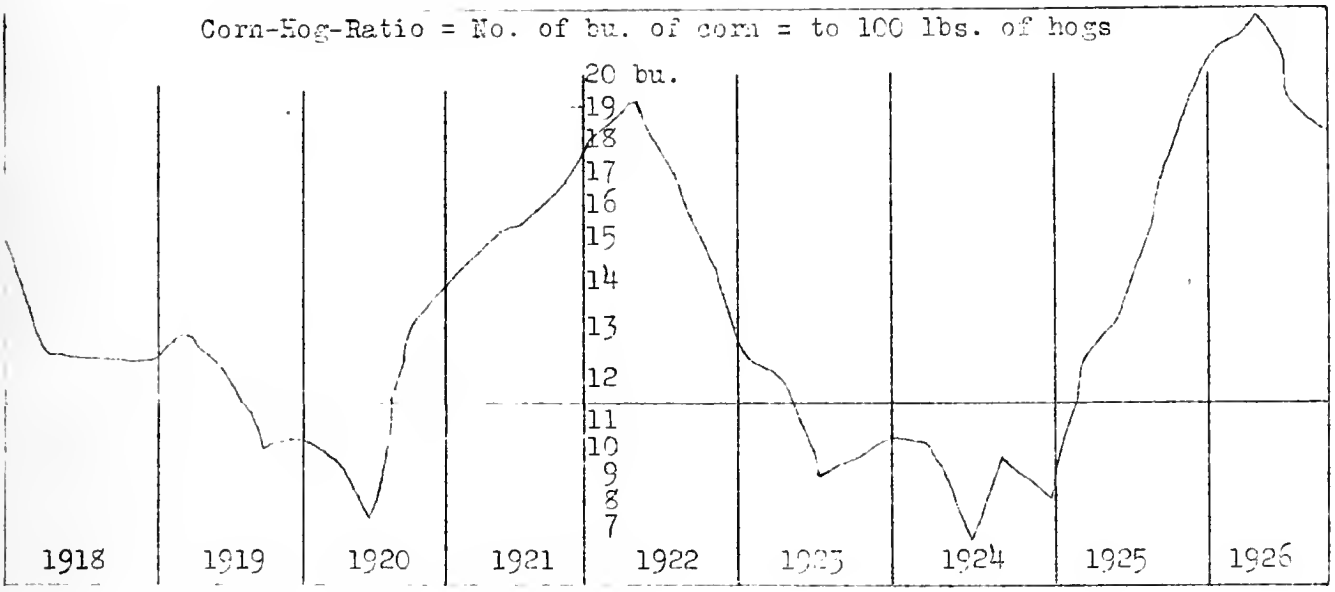
Although the above discussion emphasizes the selection and combination of enterprises it is equally important to secure efficiency in conducting these enterprises once they are selected. Lack of space forbids a discussion of production and marketing methods. This information is available, however, through publications of the Illinois Agricultural Experiment Station.

It will pay all farm operators keeping farm accounts to watch their relative standing on the following factors which our accounting studies have shown to influence farm profits to a great degree.

1. Crop yields
2. Percentage of land in more profitable crops
3. Livestock efficiency
4. Man labor efficiency
5. Power and equipment efficiency
6. Thrift in keeping down cash expense
7. Volume of business
8. Number of important sources of income

In addition to the above factors affecting farm earnings, the successful farmer will keep well informed concerning market conditions and will make some adjustment in his farm business to meet changes in the market. Crop enterprises cannot be changed without danger of interfering with the crop rotation or with the adjustment of labor and power in a way that will increase the costs of operation. However, hog production is one enterprise that is flexible and with which most Illinois farmers are concerned. It offers one of the best opportunities of regulating farm operations to take advantage of economic conditions.

The relative advantage of selling corn directly or in the form of hogs must take into account the efficiency with which hogs are raised and the relative price of corn and hogs, which may be expressed as the corn-hog-ratio, as shown in the following chart.



The corn-hog-ratio which is the name given to the number of bushels of corn equal in price to 100 pounds of live hogs, is one of the best indicators of profit or lack of profit in hog production. When the crooked line in the above chart was above the straight line, the average farmer made a profit in feeding corn to hogs. When it was below, only the more efficient hog producers made a profit. When the ratio line is below the straight line, it usually pays to market at lighter weights, but when the ratio line is high, it usually pays to feed to heavier weights if the hogs are thrifty and are making good use of feed. One may be influenced to raise more or less hogs depending on the prospective relationship of corn and hogs when the hogs are to be marketed. It is the relative price of corn and hogs at the time hogs are sold that is important, rather than the price when feeding is planned.

In making plans for breeding and feeding hogs, it is well to consider such factors as the number of hogs on farms, the rate of movement of hogs to market, results of surveys of intentions to breed, the prevalence of disease, the supply of old corn, the prospect for new corn and general business conditions. These factors are published in market papers or they can be had from a monthly publication of the U. S. Department of Agriculture called "The Agricultural Situation."

UNIVERSITY OF ILLINOIS

COLLEGE OF AGRICULTURE

Department of Farm Organization and Management

SUMMARY

of

ANNUAL FARM BUSINESS REPORTS

on

Twelve Hundred Farms

for

1926

Urbana, Illinois

June 30, 1927

SUMMARY OF ANNUAL FARM BUSINESS REPORTS
ON
TWENTY-SEVEN LOCAL FARMING AREAS IN ILLINOIS FOR 1926

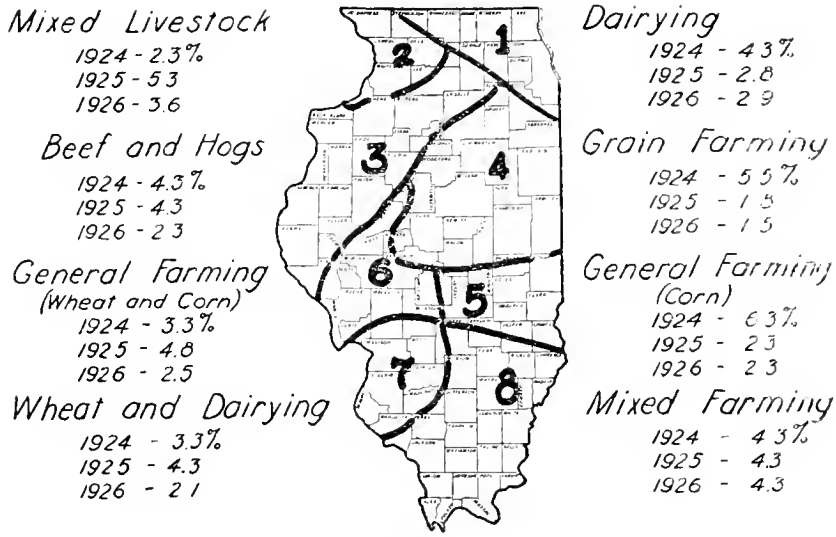
Prepared by R. R. Hudelson, P. E. Johnston, H. C. M. Case

Separate farm business reports for each of the areas shown in the following tables have been prepared and distributed to each of the farm operators whose accounts were included in this summary. In these separate reports the data included herewith was fully discussed with a view to aiding the individual account keeper in using his accounts as a guide to more profitable farm management. That discussion will not be repeated here, but a limited number of copies of the separate reports are available to those who are particularly interested in a given area.

In considering the following tables, it should be kept in mind that these data represent only those farms whose operators are sufficiently progressive and businesslike to keep accounts. They show higher average net earnings than the rank and file of all farmers. While there are many efficient and successful farm operators who keep no financial records, the selection of a group all of whom keep accounts eliminates a large number of the more careless and unbusinesslike farmers who usually rank near the bottom in earnings. A comparative study of earnings for 1925 on 113 McLean County farms located in a solid block and a similar study of 108 Clinton County farms for 1926 indicate that on an average the farms in the simple farm account project earn nearly 2 percent more on their capital than the average of all farmers in their localities. In considering the following data it would therefore seem necessary to deduct about 2 percent from the rates earned if it is desired to estimate the rate earned by the average farmer in a particular locality. The computed average rates earned by the rank and file of all farmers in each "type of farming" area are indicated for the last three years on the map and chart, page 2.

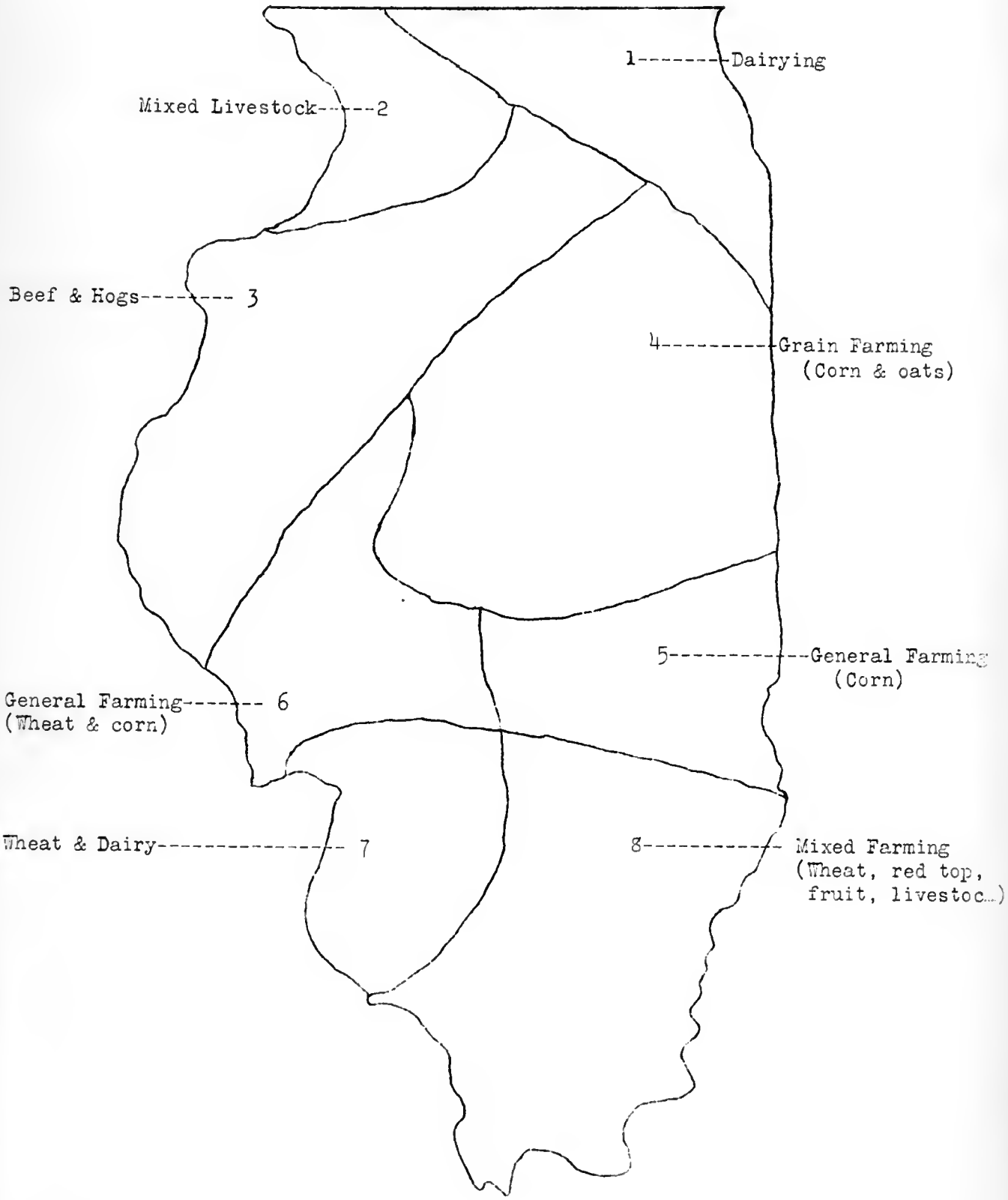
Net earnings on these accounting farms for 1926 averaged about one percent less than for 1925. The average rate for 1926 was about 4 percent. If we deduct 1.7 percent which is the exact amount that the accounting farms exceeded the rank and file of all farms in the special areas studied in McLean and Bond Counties we have an estimate of 2.3 percent for the rate earned on the average Illinois farm for 1926.

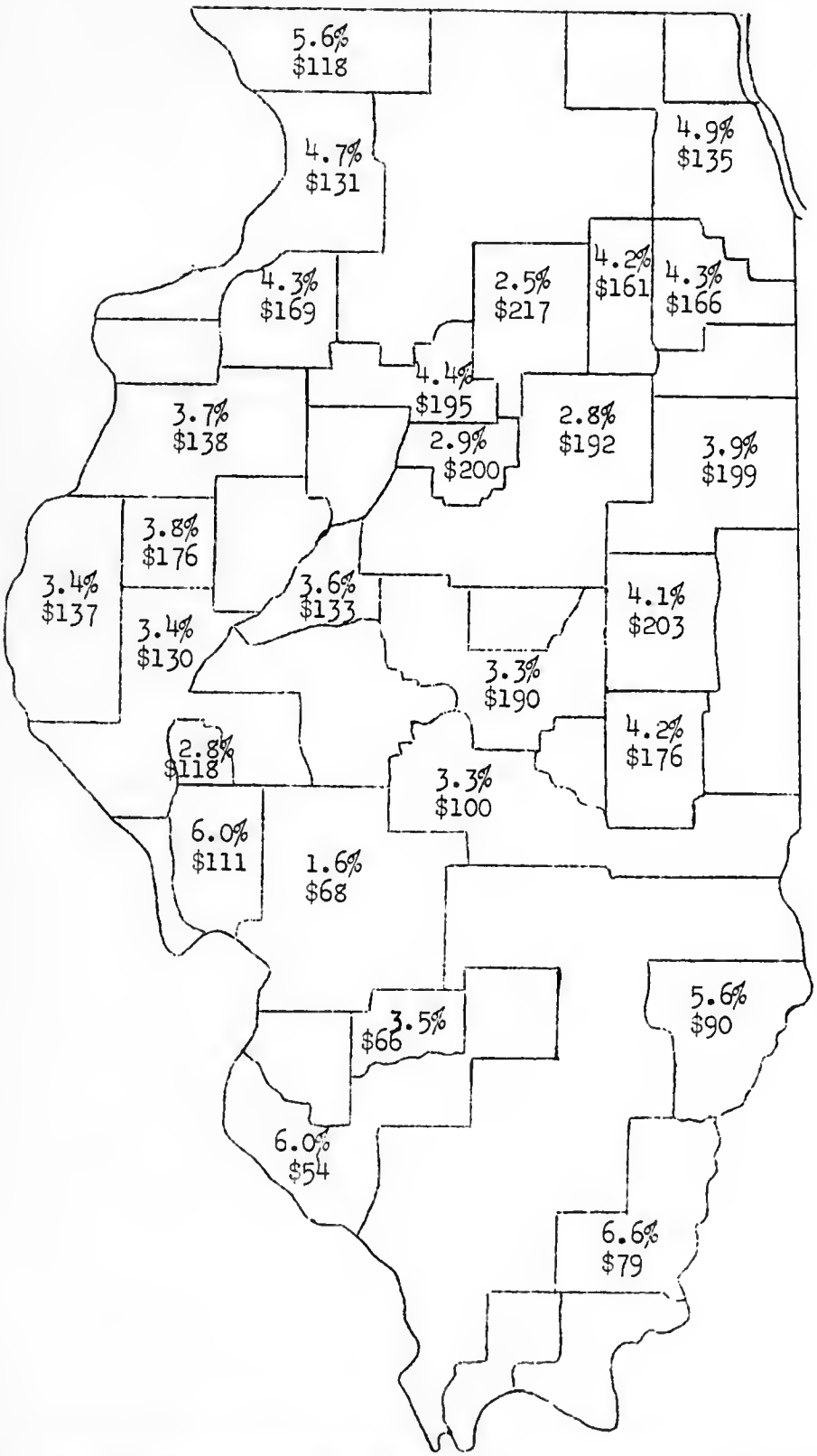
The greatest reduction in earnings between 1925 and 1926 was found in those sections which had the highest net earnings for 1925. This was especially true for the western and northwestern sections of the state. These sections had unusually good yields for 1925. The 1925 corn yield was especially good in these sections. Some of the causes of lower farm earnings over the state for 1926 as compared with 1925 include the loss of much small grain and corn due to continued wet weather in late summer and fall, the loss of many hogs from a serious outbreak of cholera, and unfavorable selling prices for heavy fat cattle during the winter of 1925 and 1926.



Computed average rates earned by the rank and file of all farmers in each principal type of farming section of Illinois, 1924 to 1926 inclusive.

Types of Farming Followed in Different Sections of Illinois





Rate earned and average value of land per acre on farms keeping accounts for 1926. Figures used are averages for 30 to 210 farms in each section as outlined. The average of all farms has been found to be about 2 percent less than the average of farms on which accounts are kept.

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926

County or area	McHenry Cook DuPage Dairy farms	Jo Daviess Stephenson	Whiteside Rock Island Carroll	Will	Kendall Grundy	LaSalle	Henry	Marshall Putnam Stark	Woodford
Rate earned	4.9%	5.6%	4.7%	4.3%	4.2%	2.5%	4.3%	4.4%	2.9%
Labor and management wage	$652	$829	$595	$391	$535	$-712	$378	$329	$-261
Size of farm, acres	161	182	194	179	202	204	199	195	191
Percent of land tillable	77%	74%	85%	88%	91%	91%	86%	90%	85%
Crop acreage—Corn	38	39	62	51	79	80	76	85	75
Oats	25	25	32	32	47	47	32	36	51
Wheat	6	3	6	24	13	12	8	6	5
Crop yields—Corn, bushels	35	43	43	42	42	47	49	49	51
Oats, bushels	47	37	30	45	41	38	39	34	32
Wheat, bushels	24	24	24	27	23	20	24	23	22
Returns from $100 in productive livestock	$125	$125	$139	$124	$122	$123	$124	$124	$140
For $100 in cattle	121	85	85	102	76	115	83	76	87
For $100 in hogs	148	223	222	164	185	165	171	172	192
For $100 in poultry	155	161	172	187	214	151	170	164	163
Investment an acre in productive livestock	$25.50	$19.34	$17.77	$12.34	$12.04	$10.96	$19.45	$15.17	$8.75
Receipts an acre from productive livestock	31.82	21.26	21.75	15.30	14.66	13.49	21.18	18.86	12.25
Man labor cost an acre	$10.28	$6.15	$6.91	$6.54	$6.10	$6.91	$7.49	$6.28	$6.47
Crop acres a man	48	64	70	87	91	82	79	91	85
Crop acres a horse									
With tractor	23	23	28	31	26	26	25	23	22
Without tractor	18	18	19	21	21	20	18	21	19
Expense for $100 gross income	$65	$58	$63	$58	$57	$68	$59	$54	$53
Gross receipts an acre	32.07	24.70	24.96	23.26	22.09	22.30	24.80	24.32	19.96
Total expense an acre	20.92	14.22	15.66	13.48	12.61	15.25	14.54	13.03	12.59
Net receipts an acre	11.15	10.48	9.30	9.78	9.48	7.05	10.26	11.29	7.37
Farms with tractor	71%	62%	44%	62%	56%	70%	64%	62%	67%
Value of land an acre	$135	$118	$131	$166	$161	$217	$169	$195	$200
Total investment an acre	226	188	196	227	223	283	239	258	250

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926—*Continued*

Capital investment, total	$36 429	$34 222	$38 134	$40 564	$45 093	$57 649	$47 547	$50 361	$47 787
Land	21 688	21 548	25 447	29 700	32 664	44 181	33 556	38 008	38 088
Farm improvements	6 290	5 289	5 238	4 298	5 307	5 476	4 792	4 191	3 437
Machinery and equipment	1 994	1 366	1 392	1 611	1 591	2 004	1 668	1 454	1 400
Feed, grain, and supplies	2 053	1 984	2 140	2 355	2 631	3 152	3 143	3 423	2 628
Livestock	4 404	4 035	3 917	2 690	2 900	2 836	4 388	3 285	2 234
Receipts, total	$5 170	$4 594	$4 852	$4 163	$4 469	$4 545	$4 933	$4 752	$3 814
Feed and grain	.....	.....	.....	1 319	1 454	1 769	68	1 018	1 440
Miscellaneous	41	79	41	105	50	27	55	48	34
Livestock, total	5 129	4 425	4 811	2 739	2 965	2 749	4 810	3 686	2 340
Horses	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cattle	484	712	796	481	629	356	1 178	622	283
Hogs	601	2 195	2 991	890	1 593	953	2 894	2 599	1 434
Sheep	17	81	48	35	117	99	36	67	31
Poultry	70	107	147	131	224	104	156	95	102
Egg sales	194	174	171	168	128	89	119	97	147
Dairy sales	3 763	1 156	658	1 034	364	1 148	427	206	343
Expenses, total	$2 285	$1 659	$2 040	$1 513	$1 700	$2 151	$1 961	$1 779	$1 510
Farm improvements	238	202	315	219	252	331	243	225	139
Livestock and dairy expense	152	18	18	4	46	25	20	4	17
Machinery and equipment	616	361	431	465	376	596	470	420	356
Feed and supplies	121	450	348	.....	.....	.....	.....	.....	.....
Livestock expense other than feed	36	56	88	66	43	81	88	73	54
Crop expense	173	119	177	176	214	202	208	171	171
Labor hired	569	188	340	271	383	159	558	462	342
Taxes and insurance	349	238	315	279	359	429	345	402	402
Miscellaneous	31	27	26	33	27	36	29	22	29
Receipts less expenses	$2 885	$2 845	$2 812	$2 650	$2 769	$2 395	$2 972	$2 973	$2 304
Operator's and unpaid family labor	1 088	935	1 004	900	851	958	932	766	895
Net income from investment	1 797	1 910	1 808	1 750	1 918	1 437	2 040	2 207	1 409
Number of farms included	35	37	32	30	34	40	50	41	55

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926—*Continued*

County or area	Henderson Warren Knox	Mason Tazewell Peoria	McLean Livingston Tazewell Woodford	McDonough	Hancock Adams	Schuyler Morgan Pike Brown	Logan Macon Piatt	Ford Iroquois	Champaign
Rate earned	3.7%	3.6%	2.8%	3.8%	3.4%	3.4%	3.3%	3.9%	4.1%
Labor and management wage	$60	$207	$-616	$212	$-122	$13	$-265	$53	$185
Size of farm, acres	252	198	232	181	236	224	227	231	225
Percent of land tillable	79%	86%	90%	84%	82%	72%	95%	95%	96%
Crop acreage—Corn	87	63	95	65	76	60	91	97	100
Oats	37	16	53	25	30	22	39	61	44
Wheat	12	51	15	20	5	24	24	12	20
Crop yields—Corn, bushels	48	38	51	49	39	42	50	52	50
Oats, bushels	30	32	37	37	32	30	39	34	39
Wheat, bushels	13	18	21	21	13	20	28	25	26
Returns from $100 in productive livestock	$130	$121	$114	$139	$135	$141	$123	$121	$132
For $100 in cattle	88	74	71	82	78	77	90	78	82
For $100 in hogs	182	193	182	177	191	220	166	172	202
For $100 in poultry	169	163	165	206	173	163	164	172	169
Investment an acre in productive livestock	$15.56	$7.57	$10.48	$14.49	$14.37	$11.37	$9.38	$6.99	*$5.42
Receipts an acre from productive livestock	20.18	9.35	13.38	20.14	19.43	16.08	11.54	8.45	7.15
Man labor cost an acre	$5.90	$5.60	$6.67	$7.39	$5.59	$5.30	$6.32	$5.62	$5.84
Crop acres a man	85	101	92	73	80	70	97	109	98
Crop acres a horse			25						
With tractor	28	28		21	25	25	29	31	29
Without tractor	20	26	.....	17	20	14	17	22	18
Expense for $100 gross income	$65	$63	$55	$61	$67	$63	$62	$51	$55
Gross receipts an acre	20.66	17.60	20.74	23.24	19.91	16.98	20.95	20.96	22.50
Total expense an acre	13.39	11.08	13.57	14.23	13.42	10.77	12.97	11.39	12.42
Net receipts an acre	7.27	6.52	7.17	9.01	6.49	6.21	7.98	9.57	10.08
Farms with tractor	69%	42%	65%	42%	59%	61%	64%	68%	70%
Value of land an acre	$138	$133	$192	$176	$137	$130	$190	$199	$203
Total investment an acre	196	181	256	236	190	180	244	245	246

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926—*Continued*

Capital investment, total	$49 198	$35 795	$59 403	$42 610	$45 034	$40 270	$55 312	$56 731	$55 343
Land	31 825	26 403	44 620	31 743	32 473	28 997	43 059	45 985	45 675
Farm improvements	5 064	3 108	5 840	3 742	4 625	4 596	4 243	4 086	3 310
Machinery and equipment	1 649	1 521	1 883	1 446	1 523	1 233	1 594	1 547	1 583
Feed, grain, and supplies	2 920	2 617	3 809	2 561	2 554	2 428	3 521	2 932	2 826
Livestock	4 740	2 146	3 251	3 118	3 859	3 016	2 885	2 181	1 949
Receipts, total	$5 199	$3 482	$4 813	$4 197	$4 711	$3 798	$4 752	$4 845	$5 062
Feed and grain	.....	1 527	1 961	495	.....	150	2 074	2 819	3 379
Miscellaneous	77	106	69	61	112	52	61	73	74
Livestock, total	5 122	1 849	2 783	3 641	4 599	3 596	2 617	1 953	1 609
Horses	45	.....	.....	4	3	.....	.....	.....	.....
Cattle	1 507	242	454	488	958	760	666	228	196
Hogs	3 028	1 029	1 689	2 493	3 078	2 449	1 384	966	724
Sheep	55	4	36	40	89	34	39	38	16
Poultry	105	101	121	161	105	86	143	162	214
Egg sales	98	109	130	164	156	118	123	168	142
Dairy sales	284	373	353	291	210	149	262	391	317
Expenses, total	$2 500	$1 383	$2 234	$1 561	$2 410	$1 652	$2 002	$1 666	$1 883
Farm improvements	289	166	259	233	244	244	248	215	204
Livestock and dairy expense	.....	43	8	.....	.....	3	15	32	3
Machinery and equipment	482	347	481	352	491	381	421	374	472
Feed and supplies	386	.....	.....	.....	402	.....	.....	.....	.....
Livestock expense other than feed	68	43	52	73	112	72	58	35	41
Crop expense	195	151	250	199	231	161	248	189	215
Labor hired	615	300	634	326	558	131	494	333	403
Taxes and insurance	434	313	500	355	344	325	494	465	515
Miscellaneous	31	20	50	23	28	35	21	23	30
Receipts less expenses	$2 699	$2 099	$2 579	$2 636	$2 301	$2 146	$2 759	$3 179	$3 179
Operator's and unpaid family labor	869	808	914	1 009	764	756	940	967	912
Net income from investment	1 830	1 291	1 665	1 627	1 537	1 390	1 810	2 212	2 267
Number of farms included	32	26	210	25	32	26	28	31	30

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926—*Continued*

County or area	Scott	Jersey Greene	Coles Douglas	Christian Shelby Cumberland Clark	Macoupin Montgomery Bond Madison	Clinton	Monroe Randolph Washington Marion	Wabash Edwards Richland Lawrence	White Saline Gallatin Johnson Pulaski
Rate earned	2.8%	6.0%	4.2%	3.3%	1.6%	3.5%	6.0%	5.6%	6.6%
Labor and management wage	$−128	$861	$275	$124	$−285	$320	$742	$603	$957
Size of farm, acres	210	207	197	202	224	172	188	172	205
Percent of land tillable	94%	80%	89%	86%	78%	72%	84%	86%	84%
Crop acreage—Corn	71	59	76	54	49	33	27	42	51
Oats	17	16	29	20	32	27	23	18	25
Wheat	44	32	29	10	12	33	35	25	22
Crop yields—Corn, bushels	40	42	49	36	30	18	25	38	38
Oats, bushels	22	29	39	31	22	20	23	21	24
Wheat, bushels	17	20	32	20	19	19	23	22	25
Returns from $100 in productive livestock	$171	$163	$142	$141	$134	$172	$161	$171	$161
For $100 in cattle	99	114	85	82	106	161	140	122	97
For $100 in hogs	230	250	204	217	208	173	175	230	192
For $100 in poultry	176	217	165	197	174	218	227	274	245
Investment an acre in productive livestock	$7.76	$12.49	$8.17	$10.19	$9.23	$8.40	$4.71	$8.57	$6.55
Receipts an acre from productive livestock	13.27	20.38	11.63	14.42	12.40	11.47	7.51	14.67	10.54
Man labor cost an acre	$5.77	$6.15	$5.95	$5.09	$5.11	$5.47	$5.16	$6.23	$5.29
Crop acres a man	75	67	87	72	76	61	80	66	72
Crop acres a horse	.....	.....	.....	.....	.....	19	.....	23	21
With tractor	24	23	29	27	27	.....	30	.....	.....
Without tractor	19	17	21	20	17	.....	20	.....	.....
Expense for $100 gross income	$73	$56	$57	$70	$87	$75	$64	$63	$57
Gross receipts an acre	16.43	22.38	21.92	15.33	12.81	15.28	13.88	19.75	17.76
Total expense an acre	11.99	12.63	12.42	10.73	11.10	11.51	8.92	12.60	10.06
Net receipts an acre	4.44	9.75	9.50	4.60	1.71	3.77	4.96	7.15	7.70
Farms with tractor	46%	38%	61%	30%	56%	21%	33%	40%	40%
Value of land an acre	$118	$111	$176	$100	$68	$66	$54	$90	$79
Total investment an acre	163	161	224	139	109	108	83	128	116

TABLE 72.—SUMMARY, BY AREAS, OF BUSINESS RECORDS FROM 1,200 ILLINOIS FARMS, 1926—*Concluded*

County or area	Scott	Jersey Greene	Coles Douglas	Christian Shelby Cumberland Clark	Macoupin Montgomery Bond Madison	Clinton	Monroe Randolph Washington Marion	Wabash Edwards Richland Lawrence	White Saline Gallatin Johnson Pulaski
Capital investment, total	$33 387	$33 294	$44 030	$28 148	$24 462	$18 604	$15 595	$21 990	$23 785
Land	24 675	23 062	34 556	20 129	15 341	11 397	10 123	15 570	16 241
Farm improvements	3 540	3 305	4 000	2 902	3 513	2 690	1 614	2 137	3 152
Machinery and equipment	1 178	1 243	1 229	1 013	1 283	1 196	904	953	913
Feed, grain, and supplies	1 861	2 403	2 232	1 464	1 782	1 437	1 676	1 407	1 596
Livestock	2 133	3 281	2 013	2 640	2 543	1 884	1 278	1 923	1 883
Receipts, total	$3 448	$4 632	$4 309	$3 101	$2 871	$2 633	$2 614	$3 400	$3 644
Feed and grain	622	351	1 970	9	.....	.....	1 107	708	1 313
Miscellaneous	41	63	52	119	99	139	93	167	139
Livestock, total	2 785	4 218	2 287	2 973	2 781	2 494	1 414	2 525	2 162
Horses	.....	.....	.....	57	3	.....	.....	.....	.....
Cattle	449	987	368	490	539	246	177	251	227
Hogs	1 901	2 271	1 414	1 727	1 174	358	273	1 044	1 215
Sheep	42	54	48	116	64	16	49	30	36
Poultry	115	149	115	159	136	185	155	116	153
Egg sales	169	157	105	158	294	444	319	344	300
Dairy sales	109	600	237	256	661	1 245	440	740	231
Expenses, total	$1 756	$1 934	$1 731	$1 415	$1 647	$1 018	$861	$1 446	$1 270
Farm improvements	297	203	221	150	256	149	91	199	131
Livestock and dairy expense	51	31	43	.....	.....	9	11	12	21
Machinery and equipment	398	463	324	413	409	311	254	366	283
Feed and supplies	.....	.....	.....	.....	92	2	.....		.....
Livestock expense other than feed	70	86	48	86	77	23	13	15	21
Crop expense	151	211	219	179	185	193	164	192	259
Labor hired	452	593	459	275	304	151	153	349	291
Taxes and insurance	397	311	392	279	277	149	164	260	247
Miscellaneous	30	36	25	33	47	31	11	23	17
Receipts less expenses	$1 692	$2 698	$2 578	$1 686	$1 224	$1 615	$1 753	$1 954	$2 374
Operator's and unpaid family labor	760	681	710	755	840	965	818	723	794
Net income from investment	932	2 017	1 838	931	384	650	935	1 231	1 580
Number of farms included	27	31	39	24	30	56	33	39	25