JULY, 1932 BULLETIN 257

AGRICULTURAL EXPERIMENT STATION
KANSAS STATE COLLEGE OF AGRICULTURE
AND APPLIED SCIENCE
MANHATTAN, KANSAS

THE POULTRY ENTERPRISE ON KANSAS FARMS

PRINTED BY KANSAS STATE PRINTING PLANT
B. P. WALKER, STATE PRINTER
TOPEKA 1932
14-4743

SUMMARY

The poultry enterprise in Kansas is taking rank as a major enterprise on an increasingly large number of farms, especially in the eastern two-thirds of the state. The centers of greatest poultry population and heaviest production are the central and northeastern parts of the state. The poultry industry is primarily a farm enterprise with commercial flocks being, as yet, relatively unimportant.

The poultry enterprise on the usual farm does not require a large investment in stock, buildings, or equipment, nor does it usually require so much space as the other enterprises.

The man labor requirement per hen decreases as the size of flock increases. For the small flocks studied, the man labor put in averaged 2.9 hours per hen per year, but the large flocks averaged only 1.6 man hours per hen.

The yearly egg production per hen did not vary greatly for the flocks studied, but there was a wide variation in the pounds of meat produced per hen. Meat production per hen was greatest in the small flocks, averaging 7.7 pounds per hen. In the large flocks the meat production averaged 3.6 pounds per hen.

The quantity of feed per hen varied considerably between flocks because of size of flock, breed of chickens, care given the flock, and other factors. On most of the farms studied the farm-grown feeds made up around 90 per cent of the ration fed.

Cash expenses other than feed purchased made up about 10 per cent of the total cost of the poultry enterprise. Feed is the largest single item of expense, averaging 42 per cent of the total cost for all flocks studied. The man labor charge was the next largest item, averaging about 29 per cent, of the total cost. Overhead charges were the smallest item, averaging 3 per cent.

Cash sales made up 70 per cent of the total receipts from the flock, and the eggs and meat used on the farm for food made up 30 per cent. Eggs sold and used for food accounted for 63 per cent of the total receipts, and poultry sold and used for food accounted for 37 per cent.

The total receipts per hen, from sales and products used for food on the farm, decreased as the size of flock increased, decreasing from $3.14 per hen in the small flocks to $2.20 per hen in the large flocks with an average for all flocks of $2.51 per hen.

As the size of flock increases, a larger part of the total farm receipts comes from the poultry enterprise, varying in flocks studied from 5.5 per cent in the case of flocks of 100 hens or less to 22 per cent for the flocks of more than 300 hens.

Per capita consumption of eggs and poultry was higher on farms with large flocks than where the flocks were small.

The price that the farmer is paid for his poultry and eggs is influenced by a large number of factors, many of which are beyond his control.

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MORRIS EVANS

INTRODUCTION

Poultry gives a high return year after year on the investment when compared with other enterprises in the Kansas farm business.[2] The gross income is usually not large on most farms but it is well distributed and is used to meet many of the small expenses which come up throughout the year. In addition to paying grocery bills and other expenses, the poultry enterprise furnishes a large proportion of the food consumed by the farm family.

The poultry flock responds readily to better care and feeding and can be improved in quality and productiveness much more quickly and easily than any other kind of live stock on the farm. Where the record of the flock has been carefully studied and steps taken to better it, the improvement is soon noticeable.

Cost items are important in a study of the poultry enterprise, but of more importance is a working knowledge of the factors which determine costs and methods which reduce costs. Along with these cost-determining factors there should be considered ways in which productiveness may be increased. A careful consideration should be given to the times and manner of marketing the poultry products so the best prices may be obtained.

It is the purpose of this bulletin to discuss some of the more important factors which determine or influence the profit of the poultry enterprise. The size of the flock, the labor performed in handling the flock, and the feed used by the flock are some of the points considered. Price determining factors, such as receipts and storage holdings and the trend of egg and poultry markets, are also discussed. A brief statement of the distribution of poultry in Kansas together with changes in recent years is given.

DISTRIBUTION OF THE KANSAS POULTRY INDUSTRY

The poultry industry of Kansas is fairly evenly distributed throughout the state. On March 1, [3]1929 there were 12 counties having an average of more than 120 hens per farm, 24 counties with flocks of 101 to 120, 30 counties with flocks of 81 to 100, and 39 counties with average flocks of 80 hens or less. The counties with large average flocks were mostly in the north central and north-

1. Contribution No. 69 from the Department of Agricultural Economics.

2. The data from the studies in Jackson and McPherson counties in 1920 to 1924, inclusive, and in Bourbon county in 1925 and 1926, are from studies conducted in coöperation with the Division of Farm Management, Bureau of Agricultural Economics, United States Department of Agriculture.

3. Based on data from Kansas State Board of Agriculture, quarterly report for December, 1929.

eastern sections of the state. The five highest counties, in order, were McPherson, Clay, Lincoln, Wabaunsee, and Riley.

The distribution of poultry follows fairly closely the feed-grain-growing sections of the state. In the northeastern section of the state corn is the principal grain crop, with wheat, oats, and sorghums also grown to a considerable extent. In central Kansas wheat, corn, and the sorghums are the principal grain crops. The southeastern section is a general farming region, while the western third of the state grows wheat and some sorghums. Corn is the most important grain used in Kansas for poultry feed, and there is a tendency to restrict the size of the flock where corn is not grown or is not a dependable crop.

FARM PRODUCTION OF POULTRY

The central one-third of the state and a few northeastern counties raise by far the largest number of chickens per farm. Only

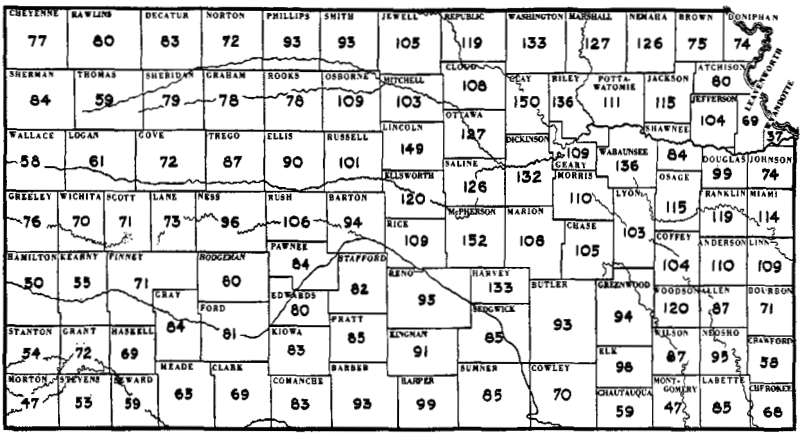

FIG. 1.—Average number of hens on farms, March 1, 1929. (Data from Report of the Kansas State Board of Agriculture for the quarter ending December, 1929.)

five counties in central Kansas raised fewer than 175 chickens per farm in 1924.[4] The five leading counties in order were Pawnee, Nemaha, Ellsworth, Marion, and Lincoln.

The distribution of poultry raised follows closely those regions where corn is a certain or fairly dependable crop, or where grain sorghums are a sure crop. In the central and northeastern sections all grains usually fed to poultry are raised in large quantities. Another factor influencing the distribution of poultry raised is the nearness to a good market for live poultry. The western part of the state is far from good markets. The central part of the state has

4. Based on data from U. S. Census of Agriculture, 1925, for Kansas, Table III.

a large number of towns with 5,000 or more population, and in many of these towns, such as Hutchinson, Salina, and Manhattan, there are large concerns handling poultry and poultry products.

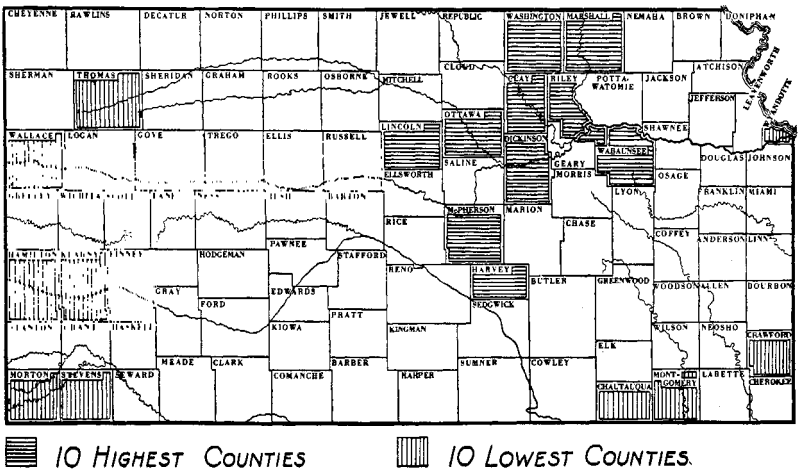

FIG. 2.—Outline map showing counties of highest and lowest average poultry population per farm, March 1, 1929.

PRODUCTION OF EGGS

The heaviest production of eggs on Kansas farms is in the north central and northeastern sections of the state. Production of eggs does not follow closely the size of flocks, but varies according to the interest and care taken in the flock on the part of the farmer. In 1924[5] most farms in the state averaged more than 400 dozen eggs per flock. More than one-half of the counties averaged more than 500 dozen per flock, and 17 counties averaged more than 700 dozen eggs per flock. The five leading counties were Morris, Lincoln, Clay, Nemaha, and Wabaunsee.

INVESTMENT IN THE POULTRY INDUSTRY

VALUE OF CHICKENS

The poultry industry on most Kansas farms is one requiring a small investment in chickens, buildings, and equipment as compared to the investment required for other live stock. The value of chickens per farm in 1929 was $109.[6] This is one-third of that invested in horses and mules, one-third of that in dairy cows and heifers, one-eighth of all cattle, and two-thirds of hogs.

5. *Ibid.*
6. Based on data from U. S. D. A. Yearbook, 1930, page 940.

VALUE OF BUILDINGS AND EQUIPMENT

The value of buildings and equipment on 29 McPherson county farms, where cost records were kept, was $58 per building in 1920 when the records were started. In Jackson county the buildings on 27 farms averaged $92 in 1920, and in Bourbon county the average for 24 farms was $99 in 1925. Most of these buildings were old and out-of-date, many having been used from 20 to 40 years. A few newer buildings were valued at $200 to $300 each.

The investment in buildings increases fairly consistently with the increase in size of flock. The building investment per hen is usually greater on farms with small flocks than with large flocks.

Table I gives data on the value of both chickens and buildings on 124 farms, scattered throughout Kansas in 1922, with the flocks grouped according to size.

The equipment on most farms is inadequate for the best results with the poultry enterprise. The value of equipment follows closely the size of the flock, increasing in amount and proportion as flocks increase in size. On the farms in Table I the equipment investment per hen was as follows: Group I, 79 cents per hen; Group II, 31 cents per hen; Group III, 42 cents per hen; and Group IV, 55 cents per hen.

TABLE I.—AVERAGE INVESTMENT IN CHICKENS AND BUILDINGS FOR THEM PER FARM.

Data from 124 Kansas farms in 1922.

GROUP.	Number of farms.	Number of hens per farm.	Building investment per farm.	Number of hens per building. (a)	Building investment per hen.
I. 100 hens or less	31	63	$150	43	$2.40
II. 101-200 hens	50	163	146	100	.87
III. 201-300 hens	20	251	264	151	1.05
IV. 301 hens or more	23	408	477	178	1.16

(a) There was an average of more than one building per farm.

SIZE OF FLOCK

MAN LABOR USED

There is a fairly close relation between size of flock and the man labor actually spent in caring for the flock. Small flocks usually require less total time but require more time per 100 hens. Data on farm flocks were secured from complete cost records on a number of Jackson and McPherson county farms for the years 1920 to 1924, inclusive. These flocks were grouped according to size, as follows: Seventy-two small flocks of 100 hens or less, 58 medium-sized flocks of 101 to 150 hens, and 65 large flocks of 151 hens or more.

The man labor in caring for small flocks averaged 289 hours per 100 hens, for medium flocks 215 hours per 100 hens, and for the large flocks 164 hours. The large flocks required more total hours of

man labor, but considerably less labor per 100 hens than the small or medium-sized flocks. Table II shows the hours of man labor required to care for various-sized flocks.

TABLE II.—SIZE OF FLOCK AND HOURS OF MAN LABOR ON KANSAS FARMS, 1920 TO 1924, INCLUSIVE.

GROUP.	Number of flocks.	Hours per flock.	Hours per 100 hens.	Highest hours per 100 hens.	Lowest hours per 100 hens.
100 hens or less	72	202	289	1,073	61
101–150 hens	58	267	215	909	79
151 hens or more	65	357	164	500	51

The larger flocks require less man labor because of more efficiency in feeding, caring for young stock, cleaning buildings, and other similar items. It takes little more time to prepare and feed 100 pounds of feed than 50 pounds, and there is more efficiency in cleaning and disinfecting due to better and larger equipment. Buildings and pens are usually better arranged for large flocks than for small flocks, making it easier to care for the poultry.

Most of the small flocks received more than one-half hour of man labor each day, and many received as high as one hour per day. The medium flocks received approximately three-quarters of an hour per day, while the large flocks as a rule received approximately one hour per day.

PRODUCTION OF EGGS AND MEAT

The success or failure of the poultry enterprise is largely dependent on the number of eggs laid during the year. This is due to the fact that egg sales are the larger part of the sales from the enterprise, and that the eggs used are a large part of the home-use products.

Small flocks are kept primarily to supply the table with eggs and meat. Usually there is little attempt to handle the small flock on a commercial basis. The production of eggs per hen is usually about as high for small flocks as for larger flocks, and for the flocks in the Jackson and McPherson county studies the eggs laid per hen were greater than for the larger flocks. The care given the small flocks is usually about as good as that given the large flocks.

The medium-sized flocks are kept for the purpose of supplying the table with eggs and meat and to produce a considerable supply of market eggs and poultry. Large flocks are kept primarily as a source of cash income through the sale of products, with the production of eggs and meat, for home use as a less important part of the enterprise.

Because of the widely varying conditions under which farm flocks are kept, and the differing quality of the flocks, there is a wide variation in the production of eggs and meat. The size of the flock has

little relation to the production of eggs where the chickens are of the same quality and are handled in the same manner. On the farms in Jackson and McPherson counties the small- and medium-sized flocks produced more eggs per hen than the large flocks. Within each group of flocks, based on size, there were flocks of certain sizes that were either consistently high or low in production. Table III shows the average production per hen for each size group, and the size of the flocks which were high or low.

TABLE III.—SIZE OF FARM FLOCK AND EGG PRODUCTION PER HEN.

Data from farms in Jackson and McPherson counties, 1920 to 1924.

GROUP.	Number of flocks.	Eggs per hen.	High-producing flocks.			Low-producing flocks.		
			Number of flocks.	Size.	Eggs per hen.	Number of flocks.	Size.	Eggs per hen.
100 hens or less.....	72	83	14	71–80	97	11	91–100	66
101–150 hens.....	58	83	14	121–130	94	10	131–140	72
151 hens or more.....	65	72	9	201–220	96	10	171–180	56

There is a noticeable relation between the size of flock and the production of meat per hen. The production is greatest for the small flocks and lowest for the large flocks. The farmer with the small flock wants just about as much meat as one with a large flock. In the large flock the meat production is a sideline and varies according to the number of pullets which must be raised to maintain the flock. The quantity of feed used does not seem to have any effect on the pounds of meat produced. The average production per 100 hens on the Jackson and McPherson county farms was 767 pounds for flocks of 100 hens or less, 464 pounds for the medium-sized flocks, and 356 pounds for flocks of 151 or more hens.

FEED USED BY FLOCKS

Under usual farm conditions poultry flocks do not receive so much feed as do flocks handled under commercial conditions. This is because the farm flock can secure a large part of its feed by picking up waste grain and other feed scattered around the lots and farmstead. It is impossible to measure the quantity of feed secured in this manner, but it materially reduces the need for other feeds. In many instances flocks which were fed but little grain were still fairly high in production.

The quantity and kind of feed that each flock is given depends upon several things. The following things are perhaps the most important: The size of the flock; the breed; the number of chickens raised; the interest shown by the farmer in high egg production; the kind of feed used; the shelter provided; and the extent of range available.

INFLUENCE OF THE SIZE OF FLOCK

The size of flock influences feed requirement in that the total quantity is usually greater for the large than for the small flocks. There are many large flocks, however, receiving less feed than smaller flocks due to less care, more range, etc. The small- and medium-sized flocks in Jackson and McPherson counties were fed more per hen than the large-sized flocks. Table IV shows the feed fed per year per 100 hens.

TABLE IV.—SIZE OF FARM FLOCK AND FEED FED ANNUALLY PER 100 HENS.

Data from farms in Jackson and McPherson counties, 1920 to 1924.

GROUP.	Pounds of grain per 100 hens.	Pounds of other feed per 100 hens.	Total pounds of feed per 100 hens.
100 hens or less	4,483	524	5,007
101–150 hens	4,760	481	5,241
151 hens or more	3,747	519	4,266

BREED OF CHICKENS

The breed of chickens kept influences the total feed fed. The Mediterranean breeds are better foragers than the American or Asiatic breeds, and being smaller in size have a smaller feed requirement. The number of chickens raised influences the quantity and kind of feed used. Flocks of equal initial size but varying in the number of chickens raised will vary in feeds fed. The purpose for which the chickens are raised influences feed requirements. Broilers require from 5 to 10 pounds of feed to raise to marketable weight, springs somewhat more, and pullets should have from 25 to 35 pounds. Thus the total feed consumed is affected by the number of each class of young chickens that are raised.

KIND OF FEED

The kind of feed fed has some influence on the total feed used. If corn is the principal grain the total will be less than if other grains form the bulk of grain fed. Corn, wheat, and kafir are the most important grains fed, with the other sorghums of less importance. Oats is fed on some farms, while barley is of little importance. In Jackson county the proportion of grains fed was, corn 48 per cent, kafir and other sorghums 27 per cent, and wheat and oats 25 per cent. In McPherson county wheat and oats made up 41 per cent of the grain fed, corn 30 per cent, and the sorghums 29 per cent.

On most of the farms in Kansas grain forms the major part of the ration. Will feeds, such as bran and shorts, special poultry feeds, and animal product feeds such as tankage and meat scraps, have a place on many farms. However, an increasing number of farmers are mixing their own feeds, using home-grown grains, and

skim milk replaces tankage and other similar feeds. The farmer who raises a variety of grains, uses a feed grinder, and keeps milk cows need not purchase any feed for his poultry, except perhaps for small chicks.

On the Jackson and McPherson county farms, purchased concentrates, special feeds, etc., made up 10 per cent of the feed for small flocks, 9 per cent of the feed for medium flocks, and 12 per cent of the feed for large flocks. In Bourbon county these feeds made up from 12 to 16 per cent of the feed for all flocks on which cost records were secured.

INFLUENCE OF SHELTER

The shelter provided for the flock influences the quantity of feed used. Chickens that are well housed and kept in during cold and stormy weather are given more feed than those that roost in barns or sheds and are largely left to shift for themselves. The interest shown by the farmer in high egg production is an important factor in feed consumption. If a large fall and winter production is desired, it is necessary to provide plenty of feed at all times so the hens will not have to forage. High production at any time requires plenty of good feed. In general it pays well on Kansas farms to be liberal in feeding the producing flock.

COSTS OF THE POULTRY ENTERPRISE

There are two classes of costs or expenses in the poultry enterprise. These are cash costs and noncash costs. The cash expense items are purchased feed, purchased poultry, eggs bought for setting, medicines, shipping expense, and similar items. The noncash costs are those which involve items of value but in which no money is spent. These costs are the value of the operator's labor in caring for the flock, the use of poultry houses and equipment, the home-grown feeds, and similar items.

CASH EXPENSES

The cash expenses are not large as most farm flocks are handled in Kansas. It is not easy to determine the cash cost of feeds used, since the chickens are usually fed from the farm supply, but the total of other cash expenses usually will not exceed 10 per cent of the total operating cost of the enterprise. Purchased poultry and eggs are the largest items of cash expense.

NONCASH COSTS

Consideration of only cash costs often gives a mistaken idea as to the profit of the enterprise. The noncash items make up most of the cost of the enterprise. Of these expenses, home-grown feed is the largest item and the value of the operator's labor is the next largest. It is difficult to determine the amount of these two items because of the variation in the price of feeds and the lack of a record of time spent in caring for the poultry.

The amount of the various items of expense is influenced by the size of the flock. Feed cost is the largest item for all sizes of flocks but varies with the size of the flock. On the Jackson and McPherson county farms the feed cost per 100 hens was higher for small flocks than for the large flocks. On the basis of 100 hens, the small flocks had the highest total cost and had higher costs than large flocks for man labor, use of buildings, and interest charge. The flocks of medium size had the highest feed cost per 100 hens and the large flocks had the largest cash cost.

Table V shows the amount of the various items of cost for each group of flocks based on size. The costs are shown on the 100-hen basis so that direct comparison may be easily made between flocks of different sizes.

TABLE V.—OPERATING EXPENSE PER 100 HENS.

Jackson and McPherson counties, 1920 to 1922. Data from complete cost records.

GROUP.	Number of hens.	Poultry purchased.	Other cash expenses.	Feed cost.	Man labor charge.	Building charge.	Interest charge.	Other expenses, not cash.	Total.
100 hens or less.....	3,873	$6.00	$9.59	$67.63	$60.15	$12.41	$9.11	$14.13	$179.03
101–150 hens.....	4,141	10.57	4.28	81.27	43.13	8.80	7.96	8.50	164.51
151 hens or more.....	6,942	7.71	9.64	64.94	40.32	9.10	7.03	11.35	150.09
Av. for all groups.....	14,956	8.05	8.14	70.17	46.24	9.87	7.83	11.28	161.58

In addition to knowing the expenses of various kinds it is well to know the per cent that each item of expense is of the total expense. Thus, for all flocks, the feed cost was 43 per cent of the total expense, and the value of man labor was 28 per cent. Table VI shows the per cent that each item of expense was of the total expense on the flocks in Jackson and McPherson counties.

TABLE VI.--PER CENT EACH ITEM OF EXPENSE WAS OF TOTAL EXPENSE.

Data from farms in Jackson and McPherson counties, 1920 to 1922.

	Poultry purchased.	Other cash expenses.	Feed cost	Man labor charge.	Building charge.	Interest charge.	Other expenses, not cash.	Overhead.
100 hens or less	3.3	5.3	37.8	33.6	7.0	5.1	7.9	3.7
101-150 hens.....	6.4	2.6	49.5	26.3	5.3	4.7	5.2	3.7
150 hens or more.....	5.1	6.4	43.3	26.8	6.0	4.8	7.6	2.3
Av. for all groups.....	5.0	5.0	43.4	28.7	6.1	4.8	7.0	3.1

RECEIPTS FROM THE FLOCK

One of the most important measures of the usefulness of a farm enterprise is its contribution to the farm income from sales and products used on the farm. The poultry industry on most farms is a minor enterprise, yet it contributes a steady income throughout the year. The receipts from the poultry enterprise consist of cash sales of eggs and poultry and the value of eggs and poultry used in the house.

There is, obviously, a fairly close relation between the size of the flock and the total receipts for the year. This relation, however, is not direct or constant because of differences in methods of handling the flock, difference in breeds and similar factors. The sales per flock follow more closely the increase in size of flock than does the value of products used in the home.

More than two-thirds of the total receipts for most farm flocks come from the sale of eggs and poultry. On most farms the receipts from eggs are greater than the receipts from poultry sold or used. Table VII shows the receipts per flock from the sale of eggs and poultry and the value of eggs and poultry used in the home.

TABLE VII.—RECEIPTS PER FLOCK.

Data from 195 farms in Jackson and McPherson counties, 1920 to 1924.

SIZE OF FLOCK.	Egg sales.	Poultry sales.	Eggs used on farm.	Poultry used on farm.	Total receipts.	Per cent receipts from sales.	Per cent receipts from eggs.
100 hens or less	$78.98	$66.00	$46.44	$30.91	$222.33	65.2	56.4
101–150 hens	164.34	76.35	64.66	37.06	342.41	70.3	66.9
151 hens or more	230.31	124.81	83.09	48.02	486.23	73.0	64.5
Average per flock	153.49	88.46	83.78	38.33	344.06	70.3	63.0

The efficiency of the hens in farm flocks cannot be adequately measured upon the basis of size of flock alone. To determine their relative efficiency the receipts have been calculated on the basis of 100 hens. The large flocks do not have large receipts from poultry sales, as they are kept primarily for egg production. Smaller flocks are kept for both purposes so have higher returns per hen. Table VIII shows the receipts per 100 hens from sales and home-use products on 195 flocks in Jackson and McPherson counties.

There is a close relation between the size of flock and the proportion of the total live-stock income and total farm income that comes from poultry. On farms with small flocks the income from poultry is about 10 per cent of the total live-stock income and 5 per cent of the total farm income. Very large flocks often produce from one-third to one-half of the live-stock income and one-fifth to one-fourth of the total income.

TABLE VIII.—RELATION OF SIZE OF FLOCK TO RECEIPTS PER 100 HENS.

Data from 195 farms in Jackson and McPherson counties, 1920 to 1924.

GROUP.	Egg sales.	Poultry sales.	Eggs used on farm.	Poultry used on farm.	Total receipts per 100 hens.
100 hens or less	$111.67	$93.32	$65.65	$43.70	$314.34
101–150 hens	127.97	59.45	50.35	28.85	266.62
151 hens or more	104.15	56.44	37.57	21.71	219.87
Average per flock	112.00	64.55	46.54	27.97	251.06

There seems to be no relation between the acres of crop land on the farm and the number of hens kept. Data from 736 Kansas farms 7 for the years 1924 to 1926 show that the average number of hens is practically constant on farms of different sizes. On the large farms, however, the proportion of total income which comes from poultry is less than on the small farms. Data from the 736 farms show in Table IX the income from poultry as being highest on medium-size farms and lowest on the large farms, with the per cent of income from poultry decreasing as the farms increase in size. Table IX shows the effect of size of flock on the proportion which the poultry income is of live-stock and total farm income.

TABLE IX.—SIZE OF FLOCK AND INCOME FROM POULTRY.

Data from 707 farm flocks, 1924 to 1927 (*a*).

SIZE OF FLOCK.	Number of flocks.	Receipts per flock.	Per cent poultry receipts were of live-stock receipts.	Per cent poultry receipts were of farm receipts.
100 hens or less	120	$139	11.0	5.5
101–200 hens	336	292	14.5	8.8
201–300 hens	172	448	20.5	12.7
301 hens or more	79	960	31.8	22.0

(*a*) Data from Farm Account Records secured under the direction of I. N. Chapman, extension economist in farm management, Kansas State College.

PROFITS FROM THE POULTRY ENTERPRISE

Most farm flocks are kept as a side line to the major enterprises of the farm, but there are few if any enterprises that pay so well for the time, effort, and expense involved. The poultry make use of labor which would otherwise be unemployed or only partially employed and turn this time used into cash income. Feeds which would otherwise be wasted are picked up by the poultry and turned into

7. Data from Farm Account Records secured under the direction of I. N. Chapman, extension economist in farm management, Kansas State College.

eggs and meat. The small investment required keeps down the cost of the enterprise.

It is only under unusual circumstances, such as excessive death loss, that the farm flock does not return some profit for the year. Low prices for eggs and poultry will reduce the profit, but most farm flocks if properly cared for will return a profit in spite of low prices. Large flocks return the greatest total profit because of their size, but do not necessarily return the greatest profit per hen. Table X shows the profit per flock and per hen for different-sized flocks in McPherson and Jackson counties, 1920 to 1922, inclusive.

TABLE X.—RELATION OF SIZE OF FLOCK TO PROFIT PER FLOCK AND PER HEN.

Data from 195 farms in Jackson and McPherson counties, 1920 to 1922.

SIZE OF FLOCK.	Receipts per flock.	Cost per flock.	Profit per flock.	Receipts per hen.	Cost per hen.	Profit per hen.
100 hens or less	$222	$133	$89	$3.14	$1.79	$1.35
101–150 hens	342	201	141	2.67	1.65	1.02
151 hens or more	486	331	155	2.20	1.50	.70

EGGS AND POULTRY FOR HOME USE

One of the reasons commonly given for keeping poultry is that they furnish eggs and meat for table use. The proportion of eggs and poultry used on the farm varies with (1) the size of the family, (2) the size of the flock, (3) the price of eggs and of live poultry, (4) the distance from a good market, and (5) personal tastes. It is difficult because of these various factors to make comparison between different-sized flocks as to quantity and value of home-used products, but there are a few points that are clearly evident.

The total quantity and value of both eggs and poultry used in the home increase as the size of the flock increases, but the increase in consumption is not so great as the increase in size of flock. A larger proportion of the production of small flocks is used in the home than of large flocks. Consumption of eggs and poultry is greater on farms with large flocks than on those with small flocks. The proportion of the total value of live stock and live-stock products used in the house that comes from poultry increases as the size of the flock increases.

The kinds of live stock most frequently used to supply meat in the home are poultry, swine, and young cattle. All the farms in the Jackson and McPherson county studies reported the use of poultry, eggs, and dairy products. Most farms reported the use of pork raised on the farm, but many did not report any beef used. On most farms the poultry enterprise furnishes from one-third to one-half of the products used in the home. Table XI shows the value of live-stock products used on farms in Jackson and McPherson counties for the years 1920 to 1924.

TABLE XI.—SIZE OF FLOCK AND LIVE STOCK PRODUCTS USED PER FARM.

Data from 184 farms in Jackson and McPherson counties, 1920 to 1924.

SIZE OF FLOCK.	Total value live stock and live-stock products used in the home.	Value of eggs used.	Value of poultry used.	Total value eggs and poultry used.	Per cent of total for—		
					Eggs.	Poultry.	Total.
100 hens or less	$231	$51	$31	$82	22	13	35
101–150 hens	231	63	37	100	27	16	43
151–200 hens	283	80	48	128	28	17	45
Average, 184 flocks	248	64	38	102	26	15	41

The data on consumption of eggs and poultry on the farms studied in Jackson and McPherson counties show that as farm flocks increase in size there is an increase in the quantity of products consumed per person. There is a wide range in the quantity consumed due to differences in personal tastes, but the average of 184 farms showed 57 dozen eggs and 40 pounds of poultry consumed per person during the year. Table XII shows the relation of size of flock to the consumption of eggs and poultry.

TABLE XII.—RELATION OF SIZE OF FLOCK TO PER CAPITA CONSUMPTION OF EGGS AND POULTRY.

Data from 184 farms in Jackson and McPherson counties.

SIZE OF FLOCK.	Quantity consumed per family.		Average number of persons per farm.	Quantity consumed per person. (*a*)	
	Eggs.	Poultry.		Eggs.	Poultry.
	Doz.	*Lbs.*		*Doz.*	*Lbs.*
100 hens or less	215	167	5	43	34
101–150 hens	277	189	4	69	47
151 hens or more	386	249	6	64	41

(*a*) These figures are somewhat higher than those given in Bulletin 256 of the Agricultural Experiment Station or in United States Department of Agriculture figures for Kansas.

POULTRY PRODUCTION AND PRICES

As is well known, the price received by producers for eggs and poultry is usually lowest during the season of heavy production and highest during the season of light production. Most of the eggs marketed from farm flocks are produced during the months of March to June, inclusive. Fifty-five per cent of the eggs received at five big markets[8] are received during these four months, 26 per cent in the months of July to October, and only 19 per cent during the months of November to February. In the last 20 years the low

8. New York, Chicago, Boston, Philadelphia, and San Francisco, 1920 to 1929, inclusive.

price of the year paid to farmers for their eggs occurred six times in March, five times in April, once in May, seven times in June, and once in July.[9] The chance of getting a higher or a lower price each month than in the preceding month is shown in figure 3.

The price of eggs goes up from the late spring or early summer months until November or December and then goes down again. For the last 20 gears the average length of the upward price move-

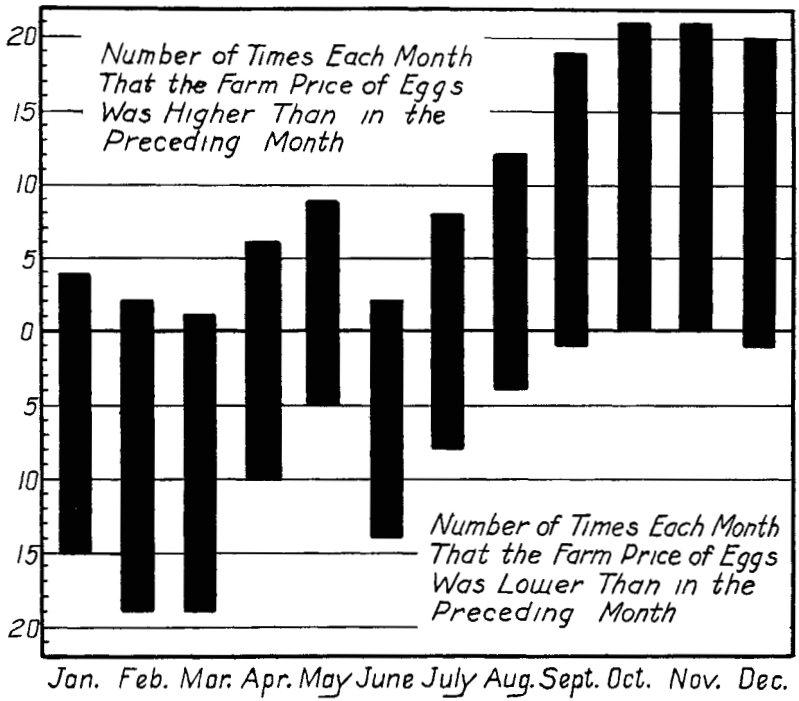

FIG. 3.—Changes in the monthly farm price of eggs, 1909 to 1929. (Data from U. S. D. A. Yearbook, 1930, page 943.)

ment, has been seven months, with a five-month downward movement. The high price for the year as paid to producers was reached in December in 17 of the last 20 years,[10] in January twice, and November once. In those years when the egg prices started upward in May the rise of prices lasted for eight months, while only a six-month rise occurred when the price did not start upward until June.

The relation of egg receipts to the price paid to producers is illustrated in figure 4. This shows the marketing of eggs from McPherson and Jackson county farms and the price received for the eggs. The production on these farms was similar to the production

9. U. S. D. A. Yearbook, 1929, p. 937.
10. *Ibid.*

on most other farms in the Middle West. In both counties for 1923 and 1924 the high point in production occurred in April and the low point in November or December. The low point in price was in June one year and March and April the other year, with the high price occurring in November or December.

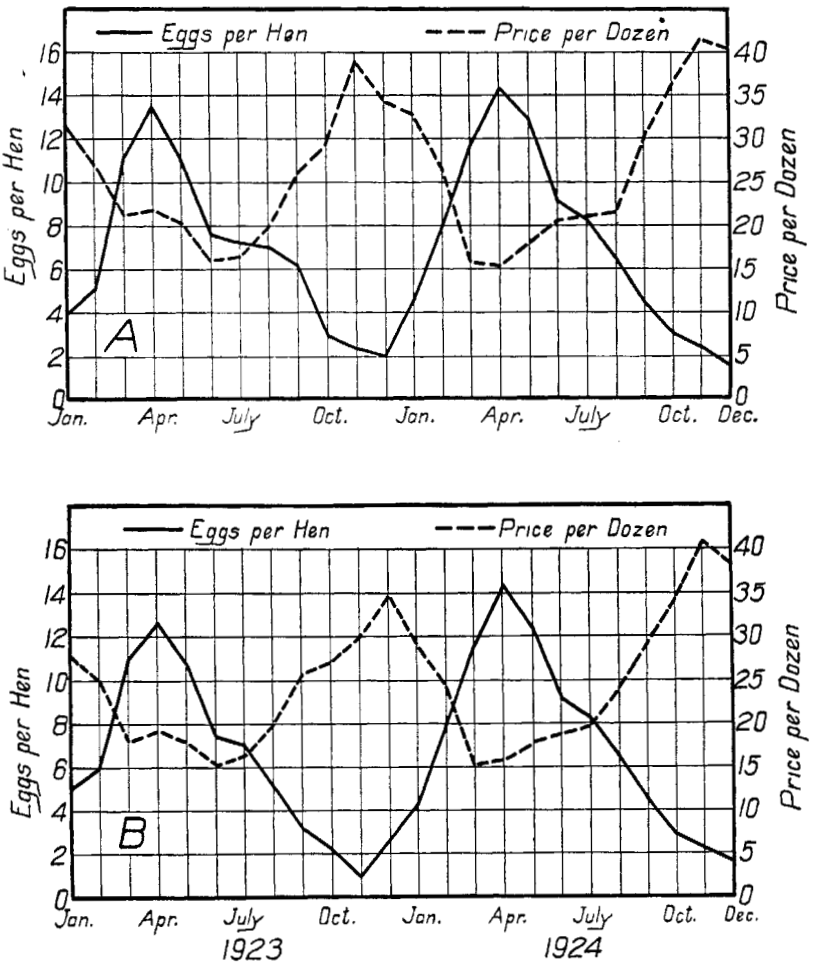

FIG. 4.—Egg production per hen and egg price per dozen by months, 1923 to 1924. (A) Jackson county. (B) McPherson county.

The movement of poultry to market is similar to the movement of eggs in that the larger proportion occurs within a few months. However, the heaviest movement of poultry comes in the fall months, while the movement of eggs is heaviest in the spring. Data on receipts of live poultry are meager, but figures for Chicago

show that more than one-half of the total receipts of live poultry comes in the months of August to November, inclusive. The price paid to producers for live poultry does not vary inversely with the receipts at the important markets as is the case with eggs. In the last 20 years[11] the farm price of poultry reached its high point in June and July more frequently than other months, but the high point varied from March to October. The low point was reached in November or December in all but two of the 20 years, the other

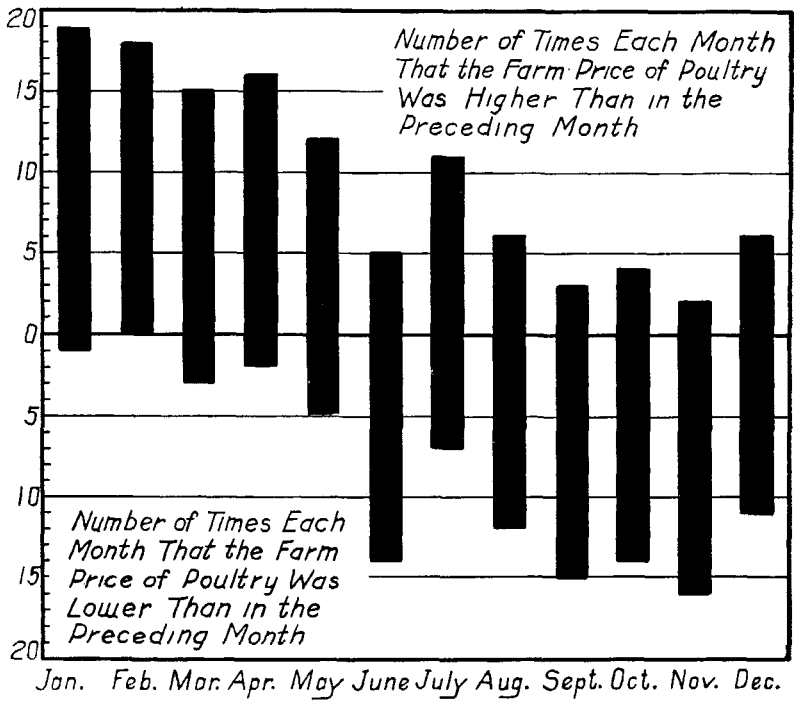

FIG. 5.—Changes in the monthly farm price of poultry, 1909 to 1929. (Data from U. S. D. A. Yearbook, 1930, page 939.)

two times being in January and February. Figure 5 shows the chance that the producer has of receiving higher or lower prices each month than were paid the preceding month.

FACTORS INFLUENCING PRICES

There are a number of important factors which influence the price which the producer receives for the eggs and poultry which he markets. The influence which these factors have upon price is different from one season to another and from year to year, since they are all variable factors. The influence of any one factor is often over-

11. U. S. D. A. Yearbook, 1929, page 930.

come by the strength of some other one. For instance, high receipts of eggs tend to lower or to keep down the price, but, a strong consumptive demand may cause a rise in price.

The more important factors which influence egg prices are the receipts—both total and current—the quantity of eggs in storage, the consumption of eggs, the price of substitute foods, and general business conditions. The number of hens on farms affects the price largely through the receipts of eggs. Receipts have the strongest downward influence in the spring months as they are heaviest at that season of the year. In the late summer and fall months, when receipts are decreasing, the downward influence is less strong and often disappears entirely.

The effect of storage holdings of eggs is usually most apparent at the time when egg receipts are light. However, heavy storage holdings at the beginning of the storage season have a noticeable influence on prices. Storage holdings affect the price of eggs in different ways. They tend to keep the price lower in the fall and winter months than would be the case if no eggs were stored. Unusually heavy storage during the spring months keeps the price from going ruinously low during that period. The general effect of cold storage of eggs is to level out the price for the year, keeping eggs from going excessively high in the fall and winter or ruinously low in the spring and summer.

All of the eggs marketed during the year are consumed at some price, but the strength or weakness of the consumptive demand has a big influence on the price paid. In the spring of 1928 egg prices were good in spite of the heaviest receipts on record and the slow storage movement, largely because of the strong consumptive demand. Later in the season consumptive demand slackened, allowing storage holdings to reach a new high point, and prices failed to rise as rapidly as in previous years.

The egg market is not greatly affected by imports of eggs or egg products and little if at all by exports from the United States. Exports for the last four years have averaged less than one million cases. Imports of whole eggs are unimportant, but imports of dried and frozen eggs are of some effect. The average imports for the last three years were about equal to July receipts at the five important markets. Imports are influenced somewhat when egg prices are low, by the tariff on whole or processed eggs, but the present tariff tends to be noneffective when egg prices are high.

The more important factors influencing poultry prices are: The number of poultry on farms, the number raised, total and current receipts of live and dressed poultry, the quantity of dressed poultry in storage, and the consumptive demand. A large supply of poultry on farms and large numbers of poultry raised have a tendency to keep prices from going very high. Short apparent supplies act as a support to good prices. Heavy receipts of live or dressed poultry usually cause prices to decline, but not always in proportion to the size of the receipts.

Cold-storage holdings of dressed poultry do not decline to approximately zero as do the holdings of eggs. The low point is in the fall months when live poultry receipts are the heaviest. The farm price is lowest in these months. The high point of storage comes in January or February with prices on the upward swing and receipts low. Thus the storage holdings are less effective than receipts of poultry. Receipts of dressed poultry usually affect the price much the same as the receipts of live poultry.