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**Farm Characteristics**  
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**Associated with**  
**Commercial Egg Production**  
**in Oklahoma**

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# **Farm Characteristics and Production Practices Associated with Commercial Egg Production in Oklahoma**

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The poultry industry in Oklahoma has experienced many changes in recent years. The changes include an increase in the average rate of lay of hens and in the average number of hens per farm. A decrease has occurred in total laying hens in the state, total eggs produced, and gross income from egg production.

Although rate of lay has increased, Oklahoma still ranks 43rd among the states in eggs per hen per year. This apparent low level of efficiency has reduced profits which are necessary to encourage production.

This publication reports results of a study to determine the capital, labor, and management characteristics associated with commercial laying flocks in Oklahoma. More specifically the study was designed to: (1) discover the production characteristics of commercial poultry flocks in Oklahoma on farms with flocks of 400 or more laying hens, (2) describe and evaluate the various management practices followed.

## **How the Study Was Made**

The study was based on data obtained from personal interviews with commercial poultry operators during the period, September 1, 1958, to July 15, 1959. Sixty-one commercial poultry producers were selected from 20 counties. Originally, five additional counties were included in this group but were eliminated when it appeared that few, if any, commercial flocks were located in these counties. The counties used in the survey comprise a northeast-southwest diagonal and a northwest-southeast diagonal across the state (Figure 1).

The sample counties were selected in the manner described in order to (1) include variations in climatic conditions affecting poultry



**Table I. Number and Average Size of Farm Flocks Surveyed According to Method of Operation and Type of Eggs Marketed**

Flock Size and Type of Eggs	Floor Flocks		Caged Flocks	
	No. Flocks in Sample	Average No. Hens	No. Flocks in Sample	Average No. Hens
400-700				
Hatchery	2	440	--	---
Market	13	519	4	618
800-1599				
Hatchery	7	1,052	--	---
Market	6	1,075	13	1,190
Over 1600				
Hatchery	5	3,720	--	---
Market	3	2,162	8	2,255

## Results of the Study

### Characteristics of Farms Surveyed

The average size of the surveyed farms was 241 acres, of which 138 acres were pasture land and 103 acres were cropland (Table II). Farms with a relatively small percentage of cropland used the cage method of production, and these farms were smaller than farms with floor-plan flocks. The average size farm with a cage flock was 205 acres of which 170 acres or 83 percent was pasture land and 35 acres or 17 percent of land was in crops. The average size of farm with a floor-plan flock was 268 acres, of which 115 acres or 43 percent was pasture land and 153 acres or 57 percent was cropland.

**Table II. Average Size of Farms Surveyed, by Method of Production and Land Use**

Production Method	Pasture*		Crops		Total	
	Acres	Percent	Acres	Percent	Acres	Percent
Floor Flocks	115	43	153	57	268	100
Caged Flocks	170	83	35	17	205	100
All Farms	138	57	103	43	241	100

\* Includes all land not used as cropland.

*Classification of Farms.* The poultry producers were asked to classify their farm operations according to resource use. The resources considered were land, labor, capital, and management. Forty-four percent of all

producers in the survey considered the poultry enterprises as the major resource user (Table III).

**Table III. Classification of Farms Surveyed According to Resource Use, by Method of Production and Size of Flock**

Prod. Method and Flock Size	Types of Farming				
	Poultry	General	Part-time	Crops	Livestock
	(Percent of Farms)				
Floor Flocks					
400-799	27	33	7	13	20
800-1599	54	15	15	8	8
Over 1600	50	13	12	0	25
Caged Flocks					
400-799	25	25	50	0	0
800-1599	39	31	23	8	0
Over 1600	75	12	13	0	0
Total Flocks	44	23	16	10	7

General farming included all farms on which no single enterprise or group of enterprises used 50 percent of the total resources. Twenty-three percent of the poultry farms were in this classification.

Farms where a major portion of the labor was used in off-farm employment were classed as part-time farms. Sixteen percent of the farms were considered as part-time. Only one cage producer estimated that crops and livestock required over 50 percent of the total farm resources. Crops used more than 50 percent of the resources on 10.0 percent of the farms surveyed. These farms were located in western Oklahoma where small grains were the major enterprise. Only seven percent of the farmers interviewed indicated that livestock enterprises were the major resource users. Dairying was not listed as a major enterprise in resource use.

The poultry enterprise was also classified by each poultryman according to gross income received from poultry (Table IV). Poultry was considered a major enterprise on farms where 50 percent or more of gross income was contributed by poultry. It was classed as a minor enterprise if 25 to 50 percent of gross income was contributed by it, and as a sideline if it amounted to less than 25 percent. Poultry was the major source of gross income on 64 percent of all farms surveyed. Nineteen percent of the farms classified poultry as a minor enterprise, and 17 percent as a sideline enterprise.

**Table IV. Classification of a Poultry Enterprise According to Gross Income by Method of Production and Size of Flock**

Production Method and Flock Size	Classification of Poultry Enterprise		
	Major	Minor	Sideline
	(Percent of Farms)		
Floor Flocks			
400-799	54	31	15
800-1599	67	8	25
Over 1600	63	12	25
Caged Flocks			
400-799	50	25	25
800-1599	62	23	15
Over 1600	88	12	0
All Flocks	64	19	17

*Investment in Land, Buildings, and Machinery.* The average investment in land and buildings on all farms in the survey was \$32,208 per farm or \$134 per acre. Cage-flock producers reported an average investment in land and buildings of \$160 per acre, while floor-plan producers had \$126 invested per acre. The highest average investment per farm was reported by floor-plan producers in the group having more than 1600 birds. Lowest average investment per farm was reported by floor-flock producers in the 400-799 size group (Table V).

**Table V. Average Investment in Land and Buildings on Surveyed Farms, by Method of Production and Size of Flock**

Production Method and Flock Size	Average Investment in Dollars	
	per Acre	per Farm
Floor Flocks		
400-799	107	21,933
800-1599	117	36,533
Over 1600	172	45,625
Caged Flocks		
400-799	172	33,750
800-1599	129	27,803
Over 1600	220	35,375
Averages for:		
All Floor Flocks	126	32,371
All Caged Flocks	160	31,980
All Flocks	134	32,203

Investment in farm machinery per farm was significantly different between the floor and cage methods of production (Table VI). However,

**Table VI. Average Investment in Farm Machinery on Surveyed Farms, by Method of Production and Size of Flock**

Production Method and Flock Size	Average Investment in Dollars	
	per Acre	per Farm
Floor Flocks		
400-799	28	5,901
800-1599	18	5,503
Over 1600	20	5,400
All Floor Flocks	22	5,652
Caged Flocks		
400-799	11	2,400
800-1599	12	2,561
Over 1600	22	3,550
All Caged Flocks	14	2,852
All Flocks	19	4,435

the difference was attributed to the type of farming rather than the poultry enterprise. The farms with floor-plan flocks combined more livestock and crop production with their poultry enterprise than producers with cage flocks. The average machinery investment per farm with floor-plan flocks was \$5,652. The highest average machinery investment was reported by the farms with 400-799 size floor flocks. The average machinery investment was only \$2,852 per farm on farms with cage flocks. Farms with more than 1600 caged layers had the highest investment per farm and per acre.

*Investment in Poultry Buildings and Equipment.* The average investment in poultry buildings and equipment on all farms surveyed was \$4,161 per farm or \$320 per 100 layers (Table VII). Investment in laying houses accounted for 60 percent of the investment compared with 40 percent for other poultry buildings and equipment. There was a marked difference in investment of poultry buildings and equipment between the two methods of production. The average investment of all flocks is not representative of investments in poultry buildings and equipment, since these costs represent an average of many different types of houses and construction materials; neither does it indicate the amount of capital employed by the poultry enterprise.

Floor-plan flocks had an average investment of \$260 per 100 layers compared with \$420 where cages were used. The floor-plan flocks of 400 to 799 had an average investment of \$320 per 100 layers compared with an investment of \$270 per 100 layers in size group 800 to 1599, and \$220 per 100 layers for flocks with more than 1600 birds. The cage flocks had



**Table VII. Average Investment Per Farm and Investments In Poultry Housing And Equipment Per Farm And Per 100 Layers, By Method of Production and Size of Flock Surveyed**

	Floor Flocks Size Groups			All Floor Flocks	Cage Flocks Size Groups			All Cage Flocks	All Flocks
	400-799	800-1599	> 1600		400-799	800-1599	> 1600		
	(Average Size Flocks)								
Investments	519	1,062	3,138	1,293	618	1,185	2,626	1,360	1,317
	(Dollars)								
All Land and Building per Farm	21,933	36,583	45,625	32,371	38,750	27,803	35,375	31,980	32,203
Investment per Farm:									
Laying House <sup>1</sup>	1,167	1,918	4,459	2,170	1,888	3,186	3,790	3,047	2,433
Others <sup>2</sup>	520	930	2,496	1,107	1,181	2,790	3,983	2,707	1,673
Total	1,687	2,848	6,955	3,277	3,069	5,976	7,773	5,754	4,161
	(Percent)								
Poultry Investment as Percent of Total Farm:									
Laying House	5	5	10	7	5	11	11	10	8
Others	2	3	5	3	3	10	11	9	5
Total	7	8	15	10	8	21	22	19	13
	(Dollars)								
Investment per 100 Layers:									
Laying House	220	180	140	170	310	270	140	220	190
Others	100	90	80	90	190	230	150	200	130
Total	320	270	220	260	500	500	290	420	320

<sup>1</sup> Investment does not include labor, as most of the buildings were constructed by the operator.  
<sup>2</sup> Others include all equipment and buildings except laying houses, and do not include labor for installation and fabrication.

greater average investments than did comparable size floor-plan flocks. Investments in housing and equipment per 100 layers in cages were equal for the 400-799 and 800-1599 size groups. The average investment for these two size groups was \$500 per 100 layers. The 1600 and greater cage group averaged \$290 per 100 hens compared with \$220 for floor-plan flocks. The additional investment in housing cost for the cage method was influenced by a large number of new pole type buildings. However, the significant difference in cost between the two methods of production was a result of the greater amount of investment in equipment where cages are used (Table VII).

## Management Practices

*Floor Space.* The amount of floor space provided for each 100 cage layers was an important factor affecting investment in buildings and equipment per 100 layers. The floor space for each 100 layers averaged 326 square feet for all flocks (Table VIII). The floor flock producers provided an average of 350 square feet per 100 layers compared with 291 square feet with cage operations. The floor-plan group had hatchery flocks that included the heavier breeds which required more floor space.

**Table VIII. Average Floor Space in Square Feet per 100 Layers Housed, September 1, 1958, by Method of Production and Size of Flocks Surveyed**

Method of Production	Size of Flock			
	400-799	800-1599	Over 1600	All Sizes
	Square Feet per 100 Layers			
Floor Flocks	273	365	365	350
Caged Flocks	280	318	268	291
All Flocks	275	341	329	326

The amount of floor space influenced management of the poultry enterprise. There was a very slight difference in the amount of floor space used by the larger sized floor-plan method of production (Table VIII). This was influenced by the greater proportionate number of hatchery producers in this size group (Table I).

There are indications that the relative amount of floor space did not differ between market egg producers, regardless of the method of production in each size group. As a general rule when an equal number of hatchery flocks were included in each size group, more floor space was used per 100 layers by floor-plan producers than by cage producers.

*Labor Requirements.* Labor was an important resource in commercial egg production. Poultry required labor which could be used for other alternative enterprises. However, a large amount of this labor requirement can be supplied by unskilled family labor that has relatively low productivity in other uses. The total labor requirements were calculated on a weekly (7 day) basis, assuming full capacity for 12 continuous months.

According to the survey, labor requirements per 100 layers varied between the two methods of production, as well as between the two types of markets for eggs (Table IX). However, this difference could have been due to either the size of flock or the methods by which eggs were produced and sold. The market-egg, floor plan flock producers spent 3.95 hours per week per 100 birds compared with 2.24 hours for hatchery-egg flocks and 2.44 hours per 100 layers per week for cage flocks.

**Table IX. Average Weekly Labor Requirements of Farms Surveyed, by Method of Production and Type of Egg Market**

Prod. Method and Egg Market	No. Layers per Farm	Hours per Farm	Hours per 100 Layers
Floor Flocks			
Market Eggs	924	36.47	3.95
Hatchery eggs	2,030	45.49	34.86
Caged Flocks			
Market eggs	1,435	34.86	2.44

Hatchery-egg producers, with one exception, did not grade eggs, and therefore required less labor per 100 layers compared with market-egg flocks (Table X). This also could have been a factor contributing to situations in which cage flock producers used less labor per 100 layers

**Table X. Number and Percent of Farms Surveyed Grading Eggs for Market, by Method of Production and Type of Egg Market**

Method of Production	Number Surveyed	Farms Grading Eggs	Percent Grading Eggs
Caged Flocks			
Market eggs	25	17	68
Floor Flocks			
Market eggs	22	18	83
Hatchery Eggs	14	1	7

than market-egg producers. Grading eggs for market was practiced on 83 percent of the floor-plan market-egg flock farms compared with 68 percent for cage producers and seven percent for hatchery-egg flock farms. The one hatchery-egg flock producer who graded eggs indicated that hatchability was increased enough to pay for grading. On this farm, eggs were not washed or candled. Grading eggs constituted the removal of abnormal size and dirty eggs. Those eggs not suited for hatchery purposes were sold to local consumers ungraded, at reduced prices.

Labor saving devices or equipment were more common on farms with cage flocks than with floor flocks (Table XI). However, mechanical feeders were reported only on floor flock farms. The three producers which reported mechanical feeding devices had more than 2000 layers per farm. Mechanical watering devices were used more extensively on cage flock farms than on floor-flock farms. All cage producers used mechanical waterers compared with 79 percent of the floor flock producers.

**Table XI. Number and Percentage of Farms Reporting Labor-Saving Equipment, by Method of Production**

Production Method	Mechanical Feeders	Mechanical Waterers	Mechanical Egg Grader*	Mechanical Egg Washer
<b>Floor Flocks</b>				
Number of Farms	34	34	34	34
Farms Reporting	3	27	4	10
Percent of Farms	8.82	79.41	11.76	29.41
<b>Caged Flocks</b>				
Number of Farms	24	24	24	24
Farms Reporting	0	24	6	10
Percent of Farms	0.00	100.00	25.00	41.67

\* Provides devices to candle and weigh eggs.

More cage producers than floor flock producers had mechanical egg graders, 25 percent compared with 12 percent. Mechanical egg washers were more common on cage farms than floor flock farms. Forty-two percent of the cage producers had mechanical egg washers compared with 29 percent of the floor flock producers.

Labor requirements were sub-divided into two classifications, (1) production and (2) processing. Production included hours spent on chores such as feeding, watering, sanitation and disposing of sick or dead birds. Processing included collecting, cleaning, grading, packaging and marketing. The major portion of the labor was spent on processing jobs (Table XII). However, hatchery-egg producers used a smaller

**Table XII. Weekly Average Labor Requirements per 100 Birds for Producing and Processing Eggs by Method of Production and Type of Egg Market**

Type of Flock	Production		Processing		Total Hours
	Hours	Percent	Hours	Percent	
Floor Flock					
Market eggs	1.11	29.0	2.94	71.0	4.05
Hatchery eggs	0.93	41.0	1.33	59.0	2.26
Caged Flocks					
Market eggs	0.71	29.0	1.73	71.0	2.44

percentage of total labor on processing eggs than did the other two types of producers. These hatching egg producers spent 59 percent on processing. Although this was a substantial portion of the total labor requirements, it was less than the 71 percent required for processing by the market-egg flocks. As discussed earlier, grading and washing hatchery eggs was not a common practice on hatchery flock farms. This accounts for a smaller percentage of the total labor as well as less labor for processing eggs. Cage and floor-plan flocks producing market eggs had the same percentage distribution between producing and processing eggs. Less total time was used per 100 hens with cage flocks.

Indications are that less labor was required per 100 hens as the average size of flock increased (Table XIII). The labor required per 100 layers decreased from the 400-799 group through the 1600 size group, except for market-egg floor-flocks from the 400-799 to the 800-1599 group. Considerable variation existed in each size group among the different methods of production and types of eggs marketed. The size group 400-799 birds varied from 4.3 hours per 100 layers for floor-flock market eggs and 4.2 hours for cage market eggs to 8.0 hours per 100 layers for hatchery-egg flocks. The other two size groups did not show as much variation among the methods of production and type of eggs marketed.

Only three of the sixty-one producers interviewed indicated that labor was hired for the poultry enterprise. A few farmers hired houses cleaned once or twice a year, giving the manure in exchange for the labor. Of the three producers that hired labor, one hired help for cleaning, grading, and packaging eggs only. Each of the other two producers hired an employee to furnish both labor and management for the poultry flock.

*Feeding Practices.* Feeding practices varied between the two methods of production (Table XIV). The major difference was the combination

**Table XIII. Average Weekly Labor Requirements for Production and Processing Eggs per 100 Laying Birds, by Size of Flock and Type Off Egg Market, as Estimated from Survey of Commercial Poultry Producers**

Prod. Method, Market Type, Flock Size	Production <sup>1</sup>	Processing Eggs <sup>2</sup>	Total
<b>Floor Flocks</b>			
Market eggs			
400-799	1.2	3.1	4.3
800-1599	1.5	3.2	4.7
Over 1600	0.6	2.2	2.8
Hatchery eggs			
400-799	1.1	6.9	8.0
800-1599	1.2	1.7	2.9
Over 1600	0.8	1.1	1.9
<b>Caged Flocks</b>			
Market eggs			
400-799	1.2	3.0	4.2
800-1599	0.6	2.0	2.6
Over 1600	0.7	1.3	2.0

<sup>1</sup> Production included labor for feeding, watering, sanitation, and disposing of sick or dead birds.

<sup>2</sup> Processing included labor for collecting, cleaning, grading, casing or cartoning, and marketing.

**Table XIV. Feeding Practices of Flocks Surveyed, by Method of Production**

Feed Used	Caged Flocks	Floor Flocks
	(Percent)	
All Mash Ration	88.0	6.25
Mash—Grain Ration	12.0	93.75
Commercially Mixed	96.0	93.75

of feeds which made up the poultry ration. The cage producers usually fed a ration of all-mash, while floor-plan producers generally fed whole or cracked grain in addition to mash. Ninety-six percent of the cage producers and 94 percent of the floor-flock producers fed commercially mixed feed.

The methods of feeding grain to floor-flocks varied in the amount, time, and manner. Most operators practiced restricted grain feeding. Nine percent of the floor-flock producers fed grain in the morning while 63 percent fed grain in the evening hours. The remaining producers fed grain free choice. The three cage producers who fed grain followed the restricted plan, feeding late in the evening.

The producers with floor flocks fed grain two different ways: (1) in litter, and (2) in hoppers. Fifty-three percent of the producers fed grain in hoppers compared with 47 percent who fed grain in litter. A wet mash was fed by two floor-flock producers. It was fed daily to the flock in restricted quantities. Skimmed milk, a surplus farm product, was reported to be the wetting agent in both instances.

*Flock Replacement Practices.* Oklahoma poultry producers used two common methods of flock replacement: (1) day-old chicks were purchased and raised for replacements, and (2) pullets were purchased at 16-20 weeks of age.

Raising pullets was the most common method of replacement in commercial poultry flocks, according to the study (Table XV). Seventy-five percent of the floor-flock producers raised their replacements compared with 22 percent who purchased started pullets 16 to 18 weeks old. Both methods of replacement were used by 3 percent of the floor-flock producers. Only 36 percent of the farmers with cage flocks raised replacement stocks compared with 48 percent who purchased started pullets. Sixteen percent of the cage producers used both methods of flock replacement.

**Table XV. Methods of Flock Replacement Followed by 61 Oklahoma Commercial Poultry Producers, by Size and Type of Operation**

Type and Size Flocks	Method of Replacement			Total
	Buy	Raise	Both	
	(Percent)			
Floor Flocks				
400-799	20	73	7	100
800-1599	23	77	0	100
Over 1600	25	75	0	100
Total Floor Flocks	22	75	3	100
Caged Flocks				
400-799	25	50	25	100
800-799	46	46	8	100
Over 1600	63	12	25	100
Total Caged Flocks	48	36	16	100
Total All Flocks	33	59	8	100

Replacement costs were available from 15 producers who raised pullets. These 15 cost records were for replacing light breeds. The cost of raising replacements to 22 weeks of age was calculated by combining data from the Poultry Science Department with 15 farm records. All started pullets reported in this study were purchased when 16 weeks old.

The average cost of raising pullets to 16 weeks of age was \$1.21 per pullet raised and the estimated average cost of raising a pullet to 22 weeks was \$1.69 (Table XVI). The average size of brood was 577 chicks started. The broods ranged in size from 200 to 2,990 chicks started. The cost of feed at 16 weeks was \$.47, slightly above chick cost, and accounted for 38.8 percent of the total cost. Feed cost becomes more important after the 16th week (Figure 2). At 22 weeks of age, the feed cost was estimated at \$.84 per pullet or 49.7 percent of the total cost (Figure 3).

**Table XVI. Cost of Raising Replacements to 16 and 22 Weeks of Age, As Estimated from 15 Brooding Records**

Item	Total Cost		Percent of Cost	
	16 Weeks	22 Weeks <sup>4</sup>	16 Weeks	22 Weeks
Feed <sup>1</sup>	.470	.840	38.8	49.7
Chick	.430	.430	35.5	25.4
Litter	.010	.020	0.9	1.2
Fuel	.026	.026	2.2	1.5
Depreciation <sup>2</sup>	.068	0.94	5.6	5.6
Medical Supplies	.029	.040	2.4	2.4
Labor <sup>3</sup>	.177	.240	14.6	14.2
Total	1.210	1.690	100.0	100.0

<sup>1</sup> Average amount of feed was 13.5 pounds at 16 weeks and 24 pounds at 22 weeks.

<sup>2</sup> Depreciation includes insurance, taxes, interest, etc.

<sup>3</sup> Labor was valued at \$1.00 per hour.

<sup>4</sup> Estimated by extending the farm record data with Department of Poultry Science data for six weeks.

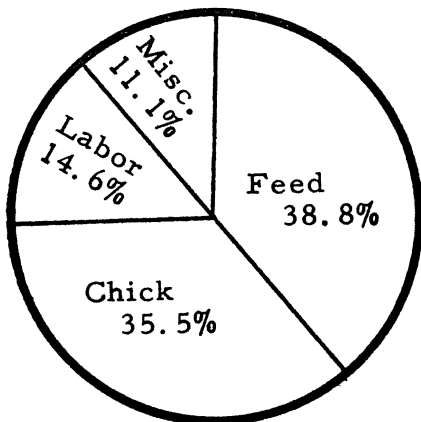


Figure 2. Average cost of raising pullet to 16 weeks of age was \$1.21.

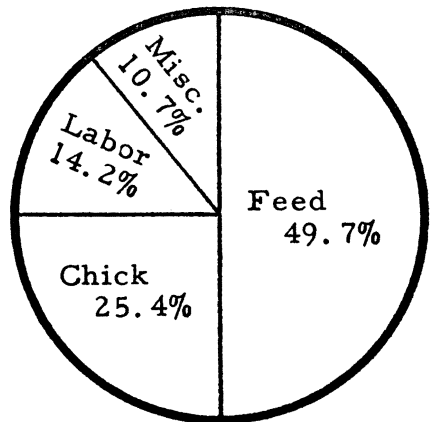


Figure 3. Average cost of raising pullet to 22 weeks of age was \$1.69.



These cost relationships were the results of three interacting forces: (1) certain items of cost were independent of age such as chick cost; (2) feed consumption per chick increased with age; and (3) all feed costs were charged against the birds that lived.

The second largest single item of expense was chick cost. The average price paid was \$.43. Chick cost accounted for 35.5 percent of the total cost at 16 weeks but decreased in importance, representing only 25.4 percent of the total cost at 22 weeks. It is interesting to note that a \$.60 chick increases the cost of a 22-week replacement by \$.17 from \$1.69 to \$1.86, slightly less than 10 percent. Therefore, if the price of the chick is indicative of the quality of pullet and the number of eggs laid, a superior layer would be the best use of resources. An additional dozen eggs produced by the superior layer at 17 cents could cover the added cost.

Labor was the third most important single item of cost, accounting for 14.6 percent and 14.2 percent of the total cost at the two ages, respectively. Labor costs were calculated at a rate of \$1.00 per hour. The labor cost was \$.177 at 16 weeks and \$.24 per pullet raised to 22 weeks of age. Labor cost per pullet declined as the size of brood increased (Table XVII). More efficient utilization of labor was the major advantage of large size broods. The three items—feed, chicks, and labor—accounted for 88.9 percent of the total cost at 16 weeks and 89.3 percent at 22 weeks of age. The feed cost increased in importance and the chick cost decreased in importance. The remaining 10.7 to 11.1 percent was accounted for by miscellaneous items such as litter, fuel, overhead, and medical supplies.

**Table XVII. Average Labor Cost per Bird Raised, by Size of Brood, as Estimated from 15 Brooding Records**

Brood Size	Broods Reported	Average Labor Cost
Under 500 Birds	10	0.32
500 to 1,000	3	0.17
Over 1,000	2	0.07

The average cost of \$1.21 at 16 weeks of age accounted for mortality, in that each item of cost was divided by the number of pullets raised to 16 weeks of age. The average mortality up to 16 weeks was five percent. The average mortality percentage did not vary significantly among broods, nor was the mortality rate greater for larger broods.

The average cost per pullet at 16 weeks varied on the fifteen farms from a low of \$1.03 to a high of \$2.13 per bird. The item that contributed more to variation in cost was labor, which varied from \$.04 to \$.60 per pullet raised.

Twenty-six of the 61 commercial poultrymen who bought started pullets paid, on the average, \$1.80 per pullet delivered to the farm. Pullets had been vaccinated for newcastle, bronchitis and fowl pox. Most of the started pullets were purchased from commercial hatcheries; however, a few producers purchased started pullets from local farmers.

In comparison, the raised pullets cost \$.59 per pullet less than purchased pullets. This represents a labor-management return of \$.77 per pullet. The labor-management earnings on replacements may determine whether the poultry flock shows a profit or loss during the production season.

*Other Management Practices.* Artificial lights were used by floor-flock producers to give an average day length of 17 hours compared with a 15-hour day used by cage producers. Artificial lights in the morning hours were more common than lights in the evening. Several producers maintained lights during the morning hours as well as in the evening.

The floor-flock producers indicated that eggs were collected three times daily compared with two times per day by cage producers.

Water was heated in the winter months on 48 percent of the floor-flock farms compared with 46 percent on cage-flock farms. Cage producers used an electrically heated cable to heat water. Floor-flock producers used gas water heaters.

Ten percent of the floor-flock producers used earthen floors and no litter. A large portion of the producers who did use litter followed a practice of letting it build up instead of removing it during the year. Seventy-two percent practiced a build-up litter program, while 18 percent removed litter periodically. Cage producers did not use litter on the floor.

Poultry producers were asked to indicate what factors were important to them in making a decision to expand, contract or maintain the same size poultry flock during 1958, as compared with 1957 (Table XVIII). Operating capital was named by 93 percent of the operators. Other factors receiving prominent mention were availability of buildings and labor and the possibility of obtaining improved poultry strains.

Expected feed prices were important to only 35 percent of the poultry producers. Very few farmers expected prices of commercial feeds to

**Table XVIII. Factors Influencing Producers to Expand, Contract, or Maintain Same Size Flock in 1958 as Compared with 1957.**

Factors Influencing Decision	Average All Flocks	Floor Flocks (Size Group)			Cage Flocks (Size Group)		
		400-799	800-1599	>1600	400-799	800-1599	>1600
(Percent of Flock Owners)							
Expected Egg Prices	42	46	50	50	33	30	37
Expected Feed Prices	35	46	50	50	50	0	25
Improved Strains Available	78	93	91	75	75	69	50
Poultry More Profitable	62	53	66	62	75	61	62
Buildings & Labor Available	63	93	83	62	75	30	25
Secured Egg Marketing Contract	45	26	50	75	50	38	50
Operating Capital Available	93	100	91	75	100	92	100

decline; however, an increased supply of homegrown grains was expected to be marketed at higher prices through feeding it to the poultry flock. A smaller percentage of the cage producers reported feed prices as an influencing factor compared with producers using floor flocks.

Forty-five percent of the producers indicated that egg marketing contracts had been secured. These contracts were informal agreements in which the buyers agreed to purchase a specified quantity of eggs each week throughout the year. A very large percentage of the hatching egg flock producers reported this type of agreement.

## Summary

Sixty-one commercial poultry operators were interviewed during the period, September 1, 1958 to July 1, 1959. Poultry was considered by the producers as the major enterprise on 64 percent of the farms. Less than half (44 percent) of the farm operators said that the poultry enterprise used more than 50 percent of the total resources on the farm.

Investment in land and buildings was \$32,208 per farm or \$134 per acre. Only 13 percent of the total capital on farms surveyed was allocated to poultry.

Labor was an important resource in commercial egg production. Floor-plan flocks producing market eggs required more labor per 100 layers per week than did cage or hatching-egg flocks. More labor was required to process eggs than to produce them.

Ninety-six percent of the cage producers and 94 percent of the floor-flock producers fed a commercially mixed feed. Most cage producers fed an all-mash ration, while floor-plan producers were inclined to feed grain in addition to mash.

Most producers raised rather than purchased flock replacements. The average cost of raising a 16-week-old pullet was \$1.21 as compared to \$1.80 required to purchase a started pullet at the same age.