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Eggs - Cost of production

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FARM FLOCK  
EGG PRODUCTION 1960-63

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UNIVERSITY OF NEWCASTLE UPON TYNE  
DEPARTMENT OF AGRICULTURAL ECONOMICS

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## FARM FLOCK EGG PRODUCTION 1960-63

## Introduction

Recent developments in the poultry industry have focussed attention on the future of the smaller egg producers who in the past, have supplied a large proportion of total home production. If multi-million bird units are established, then inevitably, there will be over-production and egg prices will fall. The effect will, to some extent, be cushioned by the operation of the price support system, but even so, on the assumption that large units are more efficient, a drastic reduction in the number of smaller producers seems inevitable.

This report deals with the operation over the last three years of units which in the light of the foregoing discussion must be considered to be small, but which nevertheless were, with certain exceptions, considerably larger than the average flock in England and Wales. From the results, it is possible to assess how far this particular group of producers has been able to counteract the steady reduction in the price of eggs and, what is perhaps of greater interest, to consider how long they would be able to stay in business in the face of competition from large-scale producers.

## The Sample

Financial records were collected from a group of farms for the three year period September 1960 to August 1963 and sub-divided according to the system of management adopted. Although the composition of the sample varied somewhat from year to year, the marked increase in the average size of the battery flocks was of the same order of magnitude for the whole sample as for a smaller group of identical farms.

## THE SAMPLE

## Ranges in Flock Size

Table 1 Battery Flocks

Flock Size	1960-61	1961-62	1962-63
Under 250 layers	2	2	1
250 - 499 "	2	4	1
500 - 749 "	4	3	2
750 - 999 "	2	1	2
1000 -1499 "	1	4	2
1500 -1999 "	1	2	2
Over 2000 "	2	4	4
<b>TOTAL FLOCKS</b>	<b>14</b>	<b>20</b>	<b>14</b>
Average size of flocks	889	1086	1506

Table 2 Deep Litter Flocks

Flock Size	1960-61	1961-62	1962-63
Under 250 layers	5	6	6
250 - 499 "	6	5	1
500 - 749 "	2	1	2
<b>TOTAL FLOCKS</b>	<b>13</b>	<b>12</b>	<b>9</b>
Average size of flocks	309	253	288

## Financial Results

There was a considerable variation in the profitability of both the battery and deep litter flocks during the period, as is shown in Tables 3 and 4.

## Average Costs and Returns Per Layer

Table 3 Battery Flocks

	1960-61	1961-62	1962-63
Number of flocks	14	20	14
Average layers per flock	889	1086	1506
Value of eggs produced	s. d. 52 4	s. d. 52 3	s. d. 49 4
<b>COST ITEMS</b>	s. d. %	s. d. %	s. d. %
Feed	27 7 59	25 11 65	27 3 63
Labour	5 7 12	4 0 10	3 6 8
Fuel and Miscellaneous	11 2	5 1	7 1
Plant Depreciation	2 9 6	2 2 6	1 7 4
Flock Depreciation	10 3 21	7 3 18	10 2 24
<b>TOTAL COSTS</b>	<b>47 1 100</b>	<b>39 9 100</b>	<b>43 1 100</b>
Management and Investment Income	5 3 -	12 6 -	6 3 -
Plus Cost of Family Labour	1 9 -	1 1 -	1 0 -
<b>FAMILY INCOME</b>	<b>7 0 -</b>	<b>13 7 -</b>	<b>7 3 -</b>
Value of eggs per £1 total costs	22 3	26 4	22 11
Eggs per Layer	180	194	193
Total Feed per Bird (lbs)	100	94.1	99.7
Feed Conversion (lbs per doz.eggs)	6.7	5.8	6.2
Mortality (%)	6.5	7.7	9.9
Eggs per cwt of Feed	202	231	217

The profit per bird for the battery flocks rose from 5/3d. in the first year to 12/6d. in the second, due partly to an 11% increase in production but also to more efficient feed utilization and lower flock maintenance costs. This, coupled with the larger size of unit, resulted in an increase of nearly 200% in the total profit from the flock. In the third year, although production was maintained, feed and flock depreciation costs rose to their former level and consequently profit per bird fell to 6/3d. Nevertheless this reduction was offset by a further 50% increase in the number of birds and total flock profit was still twice that of the first year.

The significance of labour in egg production sometimes tends to be overlooked because of the relative importance of feed in total costs, but whereas a marked reduction in labour costs can often be obtained by increasing the size of the unit, once a reasonable level of efficiency is obtained, further economies in feed use result only gradually from genetic improvement in the stock, more efficient feed formulation, etc.

**Average Costs and Returns Per Layer**

**Table 4 Deep Litter Flocks**

	1960-61	1961-62	1962-63
<b>Number of flocks</b>	13	12	9
<b>Average layers per flock</b>	309	253	288
<b>Value of eggs produced</b>	s. d. 52 11	s. d. 52 8	s. d. 53 7
<b>COST ITEMS</b>			
<b>Feed</b>	28 5 61%	33 9 63%	34 3 63%
<b>Labour</b>	5 3 11%	6 1 11%	7 0 13%
<b>Fuel and Miscellaneous</b>	3 6 7%	1 1 2%	1 4 3%
<b>Plant Depreciation</b>	2 9 6%	2 8 5%	2 10 5%
<b>Flock Depreciation</b>	6 11 15%	10 1 19%	8 7 16%
<b>TOTAL COSTS</b>	46 10 100%	53 8 100%	54 0 100%
<b>Management and Investment</b>			
<b>Income</b>	5 3 -	1 10 -	5 -
<b>Plus Cost of Family Labour</b>	4 2 -	3 8 -	3 1 -
<b>FAMILY INCOME</b>	9 5 -	2 8 -	2 8 -
<b>Value of eggs per fl total costs</b>	22 3	19 8	19 10
<b>Eggs per Layer</b>	168	188	183
<b>Total Feed per Bird (lbs)</b>	95	118.2	115.4
<b>Feed Conversion (lbs per doz. eggs)</b>	7.5	7.5	7.6
<b>Mortality (%)</b>	7.2	10.2	7.5
<b>Eggs per cwt of Feed</b>	178	178	178

In spite of a 14% rise in minimum wage rates during the three year period, the total labour cost for the battery flocks varied only slightly and the cost per bird decreased by 37%.

In contrast to the battery flocks, those on deep litter showed every sign of succumbing to the economic pressures. Although egg production rose by about 10%, feed and labour costs both increased sharply and consequently the profit of 5/3d. per bird in the first year was followed by losses in the other two.

It can be argued that in the case of small units such as these, plant depreciation is no longer a factor to be taken into account by the producer and that it is unrealistic to include a charge for family labour. To exclude these items in the final year would convert a small loss into a profit of 5/6d. per bird or approximately £80 per flock. Certainly the cost of much of the equipment will have been covered by receipts in the earlier years and the family labour, where this is the family rather than the farmer himself, may have little opportunity of alternative cash employment. It might therefore be preferable to regard the margin over feed, flock depreciation and other cash costs as a measure of the opportunity cost of this labour. In this particular case, the figure of 5/6d. per bird represents a return of approximately 7/6d. per hour.

The higher costs of the deep litter flocks were to some extent offset by the fact that a proportion of the eggs was sold retail. In spite of the operation of the Egg Marketing Board, this is an outlet which may well expand and if no account is taken of the time devoted to preparing and selling the eggs at the farmhouse door, it could help to reduce the disadvantages of the small deep litter unit.

Inevitably with both systems there was a wide range in profitability (Table 5) and although losses were more numerous in the deep litter flocks, some producers made nearly as much profit per bird as those with battery flocks and would obviously be justified in continuing to operate their units providing that they were not aiming to increase their total income from egg production.

The average costs and returns per dozen eggs, shown in the above tables, emphasise the vulnerable position of deep litter production. Although the 1964-5 indicator price for eggs is 3/2d. per dozen, the actual price realised by the producer, including subsidy, might be as little as 2/10d. For the deep litter man without retail outlets, this price would barely cover feed and flock depreciation costs, whereas the battery producer can still hope to make a profit of perhaps 3d. or 4d. per dozen or 4/- to 5/- per bird.

In both groups, the range in egg output (Table 8) was of the order of 80 eggs and whilst the survey does little to suggest which factors were responsible for this variation, it does emphasise the need for continuous scrutiny of all aspects of management.

## Range in Individual Profit Per Layer

Table 5 Battery Flocks

	Extremes		No. of flocks showing loss	No. of flocks showing profit
	s. d.	s. d.		
1960-61	3 8	15 7	4	10
1961-62	2 5	33 1	1	19
1962-63	3 4	17 6	1	13

  

Deep Litter Flocks				
	Extremes		No. of flocks showing loss	No. of flocks showing profit
	s. d.	s. d.		
1960-61	27 0	26 2	6	7
1961-62	28 6	15 0	5	7
1962-63	14 0	13 9	5	4

## Average Costs and Returns Per Dozen Eggs

Table 6 Battery Flocks

	1960-61	1961-62	1962-63
	14 flocks	Averages for:- 20 flocks	14 flocks
Eggs produced per Layer	180	194	193
Price per dozen eggs	s. d. 3 6	s. d. 3 3	s. d. 3 1
<b>COST ITEMS</b>	s. d.	s. d.	s. d.
Feed	1 10	1 7½	1 8½
Labour	4½	3	2½
Miscellaneous	3	2	1½
Flock Depreciation	8½	5½	7½
<b>TOTAL COSTS</b>	3 2	2 6	2 8
Margin per dozen eggs	4	9	5



Table 7 Deep Litter Flocks

	1960-61		1961-62		1962-63	
	13 flocks		12 flocks		9 flocks	
Eggs produced per Layer	168		188		183	
Price per dozen eggs	s. d. 3 9	s. d. 3 4	s. d. 3 4	s. d. 3 4	s. d. 3 6	s. d. 3 6
<b>COST ITEMS</b>	s. d.		s. d.		s. d.	
Feed	2 0		2 2		2 3	
Labour	4½		4½		5½	
Miscellaneous	5½		3		3½	
Flock Depreciation	6		7½		6½	
<b>TOTAL COSTS</b>	3 4		3 5		3 6½	
Margin per dozen eggs	5		-1		-½	

Table 8 Distribution of Flocks According to Egg Output

Eggs produced per layer	Battery			Deep Litter		
	1960-61	1961-62	1962-63	1960-61	1961-62	1962-63
	No. of flocks			No. of flocks		
Under 100	-	-	-	-	1	-
100 - 119	-	-	-	-	-	1
120 - 139	-	1	1	1	1	-
140 - 159	2	3	2	1	1	1
160 - 179	4	4	4	3	1	2
180 - 199	4	2	2	3	3	1
200 - 219	3	6	3	1	3	2
220 - 239	-	3	4	3	-	2
240 - 259	-	-	-	2	-	-
260 - 279	1	-	-	-	2	-
280 and above	-	1	-	-	-	-
<b>TOTALS</b>	14	20	14	13	12	9

## APPENDIX

## ACCOUNTING METHODS

## Flock Valuations

Mature home reared pullets valued at 15/- per head.  
Purchased point of lay pullets valued at actual price paid.  
Over year hens valued at 7/6d. each.

## Feed

Purchased feed charged at net delivered cost.  
Home grown grain charged at 25/- per cwt.

## Labour

Hired labour charged at actual wage rates paid.  
Family labour charged at minimum wage rate for corresponding hired labour.  
Tractors charged at 4/- per hour.

## Plant Depreciation

Charged at  $12\frac{1}{2}\%$  of written down value.

## Rent

No charge for rent has been made.

## Average Flock

For each month the average flock is obtained from the opening and closing numbers; the year's average flock is the simple average of the monthly averages.

## Egg Production Rates

Annual egg production per layer is the total year's egg production divided by the average annual flock.

## Food Consumed

Average food consumption per bird is total food fed divided by average annual flock.

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