UNIVERSITY OF
MANCHESTER

FACULTY OF ECONOMIC
AND SOCIAL STUDIES

DEPARTMENT OF AGRICULTURAL ECONOMICS

Economic Studies of Egg and Poultry Production
with special reference to systems of Housing
by
D. I. S. RICHARDSON, B.A.

UNIVERSITY OF MANCHESTER

FACULTY OF ECONOMIC AND SOCIAL STUDIES
DEPARTMENT OF AGRICULTURAL ECONOMICS

ECONOMIC STUDIES OF
EGG & POULTRY PRODUCTION
with special reference to systems of Housing

by

D. I. S. RICHARDSON, B.A.

1954

SUMMARY

1. This report covers information on costs, returns, profits and physical requirements obtained from fifty-one poultry flocks in Lancashire, Cheshire and Shropshire.

2. Flocks were divided into six groups according to method of housing.

3. The two groups, Battery + Free Range and Deep Litter + Battery were the most profitable at 19s. 2d. per bird.

4. There was a wide range of individual results, particularly in the Free Range group.

5. High profits for intensive flocks were associated with high egg yields, high winter egg production and efficient use of feeding-stuffs.

6. The Battery group averaged the lowest profit per bird. This was due to a low average egg yield, a low winter egg production rate associated with the lowest average price received per dozen eggs sold, but with high costs per bird.

7. In order to cover all costs for the year it was necessary for a flock to average 141 eggs per annum per bird (95 to cover cost of 1 cwt. feeding-stuffs).

8. Intensive flocks tended to be more profitable than extensive flocks because of higher egg yields. Reasonable profits may be made with extensive flocks provided they are well managed.

9. Flocks on mixed farms were more profitable than on specialist poultry farms, because of the saving in labour and overheads and availability of home-grown feed. It is suggested that flocks were not large enough on specialist farms to give the farmer an adequate income.

10. For an identical sample of farms for the past three years profits have been falling by four per cent. in 1951–52 and thirty-four per cent. in 1952–53.

INTRODUCTION

This report for the year ending September 30th, 1953, summarises financial and physical information obtained from fifty-one farms in Lancashire, Cheshire and Shropshire. All accounts relate to the twelve months ending September 30th, 1953, so that changes in prices over this period will have affected all farms to the same extent.

The objects of the investigation were primarily:

(*a*) To obtain general information about costs, returns and profits of commercial or accredited flocks on mixed and specialist poultry farms.

(*b*) To compare the relative merits of various methods of housing and poultry management.

(*c*) To obtain such information as was available about the physical requirements of laying stock.

The Sample

The farms have been divided into six groups, it was hoped to divide them into four main groups based on method of housing and management, i.e. Battery, Deep Litter, Free Range and Accredited, but where it was found impossible to divide the costs and returns on farms where two methods of housing were employed these farms have been grouped into a further two sub-divisions, i.e. Battery + Free Range and Deep Litter + Battery.

All the farms except those in the accredited group kept commercial flocks whose main function was the production of eggs for sale either to packing stations or direct to consumers. The size of the commercial flocks varied from an average of 57 to 2,005 birds per flock; twenty-nine of the flocks were run on mixed farms and nine on specialist poultry farms.

The main function of the accredited flocks was the sale of hatching eggs, day-old chicks and growing stock. Two of the farms in this group also kept part of the flock in batteries for commercial egg production. All except one of these flocks were managed by specialist poultry-men. They tended to be larger than the commercial flocks, varying from 272 to 1,441 laying birds, and were usually the only source of employment for the farmer. The sample of fifty-one farms, divided as it is into six groups is rather small and it is hoped that, in the future, it will be further increased so as to be more representative of the different methods of housing employed by poultry-keepers in the North West. In particular, the Department would welcome new co-operators who specialise in the more intensive systems of poultry-keeping.

Table I

DISTRIBUTION OF FIFTY-ONE FLOCKS BY SIZE AND METHOD OF HOUSING

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	Accredited	Total
Average number of birds—							
50—100	1	—	3	—	—	—	4
100—200	1	1	8	2	2	—	14
200—300	2	—	2	1	2	1	8
300—500	2	—	1	1	2	5	11
500—1,000	1	1	3	1	—	5	11
1,000+	—	—	—	—	1	2	3
Total number of flocks in group	7	2	17	5	7	13	51
Average number of birds in flock	292	434	249	408	522	648	417
Mixed farms	5	1	13	4	6	1	30
Specialist farms	2	1	4	1	1	12	21

COSTS, RETURNS AND PROFITS

The average costs, returns, and profit margins per bird according to method of housing for all flocks are set out in Table II. On average, the Battery + Free Range group and the Deep Litter + Battery group were the most profitable at 19s. 2d. per bird among the commercial flocks, followed by the Free Range group at 7s. 11d., Deep Litter at 5s. 4d. and Battery at 2s. 10d. The accredited flocks averaged a profit of 6s. 4d. per bird.

Table III shows the distribution of profit margins per bird by method of housing. It demonstrates the fact that the average figures given in Table II hide a wide range of individual results. This is particularly marked in the Free Range group.

COSTS

For most of the groups the cost per laying bird varied between £3. 3s. and £3. 16s. per bird but averaged approximately £4. 10s. in the Battery + Free Range group and £5. 7s. in the Accredited group. When cost is computed per laying bird it is naturally high in the Accredited group, where there is a good deal of expenditure on young stock.

TABLE II

AVERAGE COSTS AND RETURNS PER BIRD GROUPED ACCORDING TO METHOD OF HOUSING

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks	Accredited	Total Flocks
Number of flocks	7	2	17	5	7	38	13	51
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
COSTS—								
Purchased feeding-stuffs	3 0 7	1 17 2	2 4 8	2 4 11	2 5 1	2 6 10	3 4 8	2 13 11
Home-grown foods ..	1 8	9 11	7 10	8 9	6 3	6 8	9	4 4
Total feeding-stuffs ..	3 2 3	2 7 1	2 12 6	2 13 8	2 11 4	2 13 6	3 5 5	2 18 3
Hatching eggs and stock	6 11	4 0	5 10	4 7	4 10	5 5	5 0	5 3
Miscellaneous	3 6	2 6	3 3	2 1	1 10	2 8	7 4	4 6
Hired labour	2 1	—	4 9	4	6 7	3 10	5 10	4 7
Family labour	10 11	8 2	6 2	8 8	4 4	7 0	10 1	8 2
Rent	10	3	5	2	2	4	1 2	8
Farm eggs set ..	1 1	—	6	—	1	5	7 10	3 4
Deadstock depreciation	2 2	1 2	1 11	2 6	3 10	2 6	3 4	2 10
Livestock depreciation	—	—	—	—	—	—	7	—
Total cost	4 9 9	3 3 2	3 15 4	3 12 0	3 13 0	3 15 8	5 6 7	4 7 7
RETURNS—								
Market eggs	3 16 11	3 7 9	3 4 4	3 1 4	3 5 5	3 6 1	2 0 7	2 15 11
Hatching eggs	1 5	—	—	—	—	3	1 2 1	8 11
Table poultry	13 1	10 9	5 10	6 9	8 6	8 3	9 8	8 9
Day-old chicks	3 5	—	1 0	—	—	11	11 4	5 0
Livestock	1	—	2	—	2	1	16 8	6 8
Miscellaneous	8	1	4	—	1	3	11	6
Produce to house ..	1 2	1 1	2 0	9	1 6	1 5	10	1 3
Farm eggs set	1 1	—	6	—	1	5	7 10	3 4
Livestock appreciation	11 1	2 8	9 1	8 6	1	6 3	—	3 7
Total returns	5 8 11	4 2 4	4 3 3	3 17 4	3 15 10	4 3 11	5 9 11	4 13 11
Profit	19 2	19 2	7 11	5 4	2 10	8 3	3 4	6 4
Average flock	292	434	249	408	522	338	648	417
Average yield per bird ..	194	167	163	155	164	167	159	164

TABLE III

DISTRIBUTION OF PROFIT MARGINS PER BIRD BY METHOD OF HOUSING

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	Accredited	Total
Loss—							
Over 25/-	—	—	2	—	—	—	2
25/- — 20/-	—	—	1	—	—	—	1
20/- — 15/-	—	—	1	—	1	1	3
15/- — 10/-	—	—	—	—	—	1	1
10/- — 5/-	—	—	1	—	—	1	2
5/- — 0/-	—	—	1	1	2	2	6
PROFIT—							
0/- — 5/-	1	—	3	1	2	4	11
5/- — 10/-	1	—	—	1	1	2	5
10/- — 15/-	—	—	3	—	—	—	3
15/- — 20/-	1	1	1	—	1	—	4
20/- — 25/-	2	1	1	—	—	—	4
Over 25/-	2	—	3	2	—	2	9
Average profit	19/2	19/2	7/11	5/4	2/10	3/4	6/4

TABLE IV

CERTAIN MANAGEMENT FACTORS IN RELATION TO FEEDING-STUFFS COSTS,
AND RETURNS FROM EGGS AND STOCK

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	Accredited
Feeding-stuffs cost per bird	£3 2 3	£2 7 1	£2 12 6	£2 13 8	£2 11 4	£3 5 5
Average cost per cwt. feed	£1 18 5	£1 17 2	£1 16 10	£1 17 0	£1 17 6	£1 19 0
Food per bird p.a. (lbs.)	181	141	160	163	153	188
Eggs per cwt. feed	120	132	115	107	120	87
Egg sales per cwt. feed ..	£2 8 4	£2 9 10	£2 5 1	£2 2 3	£2 7 9	£1 17 5
Output per £100 feeding-stuffs	£162	£156	£146	£136	£138	£151
Profit per bird	19s. 2d.	19s. 2d.	7s. 11d.	5s. 4d.	2s. 10d.	3s. 4d.
Winter Egg production ..	52%	57%	49%	48%	47%	44%
Average egg yield per bird	194	167	163	155	164	159
Number of eggs to cover cost of 1 cwt. feeding-stuffs	92	89	90	92	92	87
Returns from eggs and stock	£5 0 3	£3 18 3	£3 16 7	£3 12 9	£3 10 10	£4 15 7
Returns from eggs and stock *less* feeding-stuffs..	£1 18 0	£1 11 2	£1 4 1	£1 0 1	19s. 6d.	£1 10 2
Returns from eggs and stock per cwt. feeding-stuffs	£3 1 2	£3 0 11	£2 12 4	£2 9 7	£2 10 7	£2 16 6
Number of eggs required to cover cost of feeding-stuffs per bird	150	113	128	133	125	146
% Increase on size of opening flocks	+33%	+8%	+40%	+26%	nil	-1%

Feeding-stuffs

For all commercial flocks in this report, feed costs averaged approximately seventy per cent. of total costs, and sixty-one per cent. for accredited flocks. Food is clearly the most important item on the cost side and, therefore, the one which offers the greatest scope for economy. The food cost has been partly complicated by the inclusion of the food of rearing stock as well as that of the laying flock. It was impossible this year to separate the two costs, but next year, when more detailed feeding records will be available, feed to the rearing flocks will not be included, except as part of the cost of replacements. For the time being the inclusion of the food cost of the rearing flock must be borne in mind when comparing the various groups.

Certain management factors in relation to feeding-stuffs cost are set out in Table IV in an attempt to assess the efficiency in the utilisation of feed between the various groups. The Battery + Free Range group seems to have been the most efficient. Although the average cost of food for this group was the highest at £1. 18s. 5d. per cwt., it also had the highest returns from eggs and stock per cwt. of feed. The Deep Litter + Battery group was also efficient in its feed utilisation in that it nearly achieved the same return from eggs and stock per cwt. of food as the Battery + Free Range group, although its egg yield was lower by twenty-seven eggs per bird. It is significant that these two groups were also the most profitable groups.

The Deep Litter group, despite the fact that it had the advantage of having a high proportion of home-grown food in its food cost, had the lowest average return from eggs and stock per cwt. at £2. 9s. 7d. This was partly caused by the low average egg yield per bird (155), the low winter egg production rate (forty-seven per cent.) and the low average price per dozen eggs sold (4s. 10d.) which is not generally expected of intensive flocks. These results therefore made this group the least efficient in the use of feed and clearly demonstrates the very important relationship between food costs, egg yield and returns from eggs and stock.

It was necessary during the year in question for a bird consuming five ounces of feed a day to lay ninety-five eggs in order to cover its cost of feed.

Labour

Labour was the second most important item of cost, averaging fourteen per cent. of total cost for all commercial flocks.

The Deep Litter + Battery and the Deep Litter groups show the lowest labour costs, the lowest hours per bird, and the highest output per £100 labour. These are important advantages of this system of housing.

The probable reason for the relatively high labour cost in the Battery group is explained by the fact that the majority of farmers used batteries that did not have automatic feed and cleaning appliances and thus did not have the advantage of saving labour associated with the more modern " cafeteria " type of batteries.

The highest labour cost was found in the Accredited group. This was partly due to the heavier demand on labour for hatching and rearing young stock and partly because the flocks, mostly found on specialist farms, were not large enough to utilise all the available family labour which, on a mixed farm, could be employed on other work.

The labour cost does, of course, form part of the income from poultry on farms employing family labour. In fact it is the combined profit and labour cost that is the significant figure for such farms rather than the profit figure alone. Table VI sets out the distribution of family income per bird. As in Table III the average for each group hides a very wide variation within it.

TABLE V
CERTAIN MANAGEMENT FACTORS IN RELATION TO LABOUR COSTS

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks	Accredited
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
LABOUR COST PER BIRD—							
Hired labour ..	2 1	—	4 9	4	6 7	3 10	5 10
Family labour ..	10 11	8 2	6 2	8 8	4 4	7 0	10 1
Total Labour ..	13 0	8 2	10 11	9 0	10 11	10 10	15 11
Labour as % total cost	14·5%	12·9%	14·5%	12·5%	14·9%	14·3%	14·9%
Number hours per bird	5·4	3·2	4·4	3·6	4·8	4·4	6·4
Number of birds per flock to give return to farmer equivalent to wage of agricultural worker..*	207	227	441	444	867	407	463
Average size of flock	292	434	249	408	522	338	648
Output per £100 labour	£774	£901	£708	£814	£649	£727	£607

* These figures do not take into account any interest on capital invested.

TABLE VI
DISTRIBUTION OF FAMILY INCOME PER BIRD

Method of housing	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	Accredited	Total
LOSS—							
25/- — 20/-	—	—	1	—	—	—	1
15/- — 10/-	—	—	—	—	—	—	—
10/- — 5/-	—	—	3	—	—	—	3
5/- — 0/-	—	—	1	—	1	2	4
PROFIT—							
0/- — 5/-	1	—	1	—	2	1	5
5/- — 10/-	1	—	1	1	—	2	5
10/- — 15/-	—	—	2	2	2	2	8
15/- — 20/-	—	—	2	—	—	2	4
20/- — 25/-	—	—	2	—	—	2	4
25/- — 30/-	1	2	—	—	2	—	5
Over 30/-	4	—	4	2	—	2	12
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Average family income ..	1 10 1	1 7 4	14 1	14 0	7 2	13 5	14 6
Profit	19 2	19 2	7 11	5 4	2 10	3 4	6 4

Miscellaneous and Deadstock Depreciation

Miscellaneous and deadstock depreciation was highest in the Accredited group partly because they are specialist poultry farms and partly because these flocks need more equipment and houses than the average commercial flock.

Hatching Eggs and Stock

The higher costs of the Battery + Free Range, and the Free Range group for hatching eggs and livestock was due to the greater increase in size of flock during the year in comparison with other groups. Farmers in the Battery + Free Range group had a heavy culling policy and in consequence more birds had to be reared as replacements.

RETURNS

TABLE VII

THE RELATIONSHIP BETWEEN YIELDS, SEASONAL PATTERN OF EGG PRODUCTION,
CULLING, AND NET INCOME

	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks
Profit per bird	19s. 2d.	19s. 2d.	7s. 11d.	5s. 4d.	2s. 10d.	8s. 3d.
Average egg yield per bird	194	167	163	155	164	167
Winter egg production ..	52%	57%	49%	48%	47%	49%
Average Rate of Lay ..	53%	46%	44%	43%	44%	46%
Average egg returns per bird	£3 18 4	£3 7 9	£3 4 4	£3 1 4	£3 5 5	£3 6 4
Average price per dozen eggs sold	4s. 11¾d.	5s. 0d.	4s. 11¼d.	4s. 10d.	4s. 11d.	4s. 11d.
% Flock culled	85%	91%	44%	75%	100%	76%
% Pullets opening flock ..	100%	86%	54%	73%	81%	80%
Income from table poultry per bird	13s. 1d.	10s. 9d.	5s. 10d.	6s. 9d.	8s. 6d.	8s. 3d.
Average price of culls ..	8s. 3d.	11s. 10d.	9s. 7d.	8s. 10d.	9s. 2d.	9s. 3d.
Mortality rate	11·6%	6·5%	15·7%	12·6%	8·7%	12·0%
Number of eggs required to cover all costs less income other than sale of eggs	145	119	138	137	153	141

The average returns per bird for each group are found in Table II. The highest returns among the commercial flocks were obtained by the Battery + Free Range group which was also the most profitable group. The lowest returns were made by the Battery group which was the least profitable group.

The most important item of returns was market eggs for the commercial flocks, and market and hatching eggs, day-old chicks and young stock for the accredited flocks. The sale of eggs constituted seventy-nine per cent. of total returns in commercial flocks, and eggs and stock together accounted for eighty-two per cent. of returns in the accredited flocks.

FACTORS AFFECTING RETURNS PER BIRD

The four factors which chiefly affect the rate of egg return per bird are:

    (i) Yield per bird.

   (ii) Seasonality of production.

  (iii) Culling.

  (iv) Mortality rate.

I. *Yields*

During the year in question it was necessary for a bird to lay 7·9 eggs per month (or 95 eggs per annum) in order to cover the cost of its food requirements (on average 1 cwt. feeding-stuffs), i.e.

$$\frac{\text{Average price F/s}}{\text{Average price dozen eggs}} \times 12 = \frac{£1. \ 18s. \ 11d.}{4s. \ 11d.} \times 12 = 95$$

In order to cover all costs (including replacements) less income other than sale of eggs it was necessary for a bird to average 141 eggs, i.e.

$$\frac{£2. \ 17s. \ 10d.}{4s. \ 11d.} \times 12 = 141$$

Yield per bird has a very important influence on profit or loss per flock. In Table VIII the distribution of yields per bird in the various types of housing, and the average profits associated with different yield levels are given. It clearly demonstrates that profit per bird rises as yield rises. Flocks with yields below 140 eggs per bird did not cover their costs.

TABLE VIII

DISTRIBUTION OF YIELD AND PROFIT PER BIRD BY METHOD OF HOUSING AND YIELD

Average number of eggs per bird	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks	
						Total	Avge. profit
Below 120	—	—	2	—	—	2	−13s. 10d.
120 — 140	—	—	1	2	—	3	− 3s. 9d.
140 — 160	1	1	5	—	3	10	+ 5s. 7d.
160 — 180	2	—	5	3	1	11	+ 5s. 11d.
180 — 200	—	—	1	—	1	2	+22s. 3d.
200 — 220	2	1	2	—	1	6	+20s. 0d.
220+	2	—	—	—	1	3	+28s. 11d.
Average yield ..	194	167	163	155	164	164	—
Average profit ..	19s. 2d.	19s. 2d.	7s. 11d.	5s. 4d.	2s. 10d.	—	8s. 3d.

The close relationship between yields and profits is also demonstrated in Diagram 1. This shows clearly that the attainment of high yields per bird is much more important than type of housing in the economy of poultry enterprises. High yields per bird are not confined to any particular form of housing but are dependent upon a number of other managerial factors such as good feeding, appropriate culling, the choice of the right type of bird, etc. But certain systems of poultry keeping, such as the battery system, are more expensive than others in terms of capital outlay and feed costs and require higher yields in order to cover these extra costs. The failure of the battery group to achieve the higher yields required largely accounts for the poor profit position.
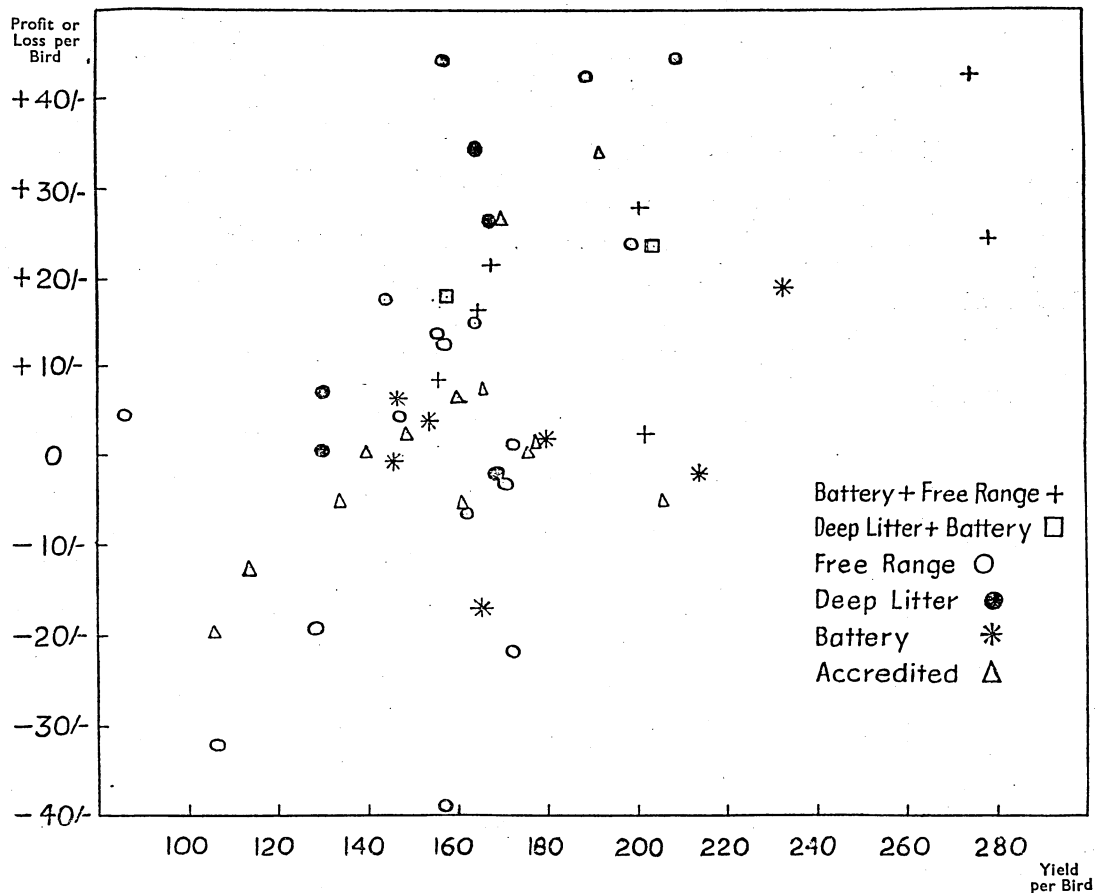
Diagram 1
YIELDS AND PROFITS PER BIRD

2. *Seasonality of Egg Production*

When, for the year in question, twelve winter eggs equalled the value of sixteen summer eggs, it was very much to the advantage of farmers to produce as many winter eggs per bird as possible. The graphs below show the number of eggs laid per month as a percentage of total eggs laid, according to method of housing. The Battery + Free Range group with the highest average yield of 195 eggs per bird also had a high winter egg production rate of fifty-two per cent.

Although the average egg yield of the Deep Litter + Battery groups was lower than the Battery + Free Range group, it maintained the highest winter rate of egg production (fifty-seven per cent.) and thus the highest average price per dozen eggs sold. This group shows the advantage of having a high winter rate of egg production when birds are housed intensively. Although its yield was lower the average profit per bird for this group was the same, at 19s. 2d., as in the Battery + Free Range group.

The battery flocks in this study failed to achieve the high egg yields normally expected of this type of housing. They also obtained a low winter production rate and thus a low average price per dozen eggs. The Deep Litter group, similarly, did not have a large enough egg yield

11

(155), and its winter production rate of forty-eight per cent. gave it the lowest average price per dozen eggs (4s. 10d.) of all groups. This low winter production is surprising in view of the claims made for this system of housing. In fact, the Free Range flocks in this sample achieved a higher egg production and a higher proportion of winter eggs than the Deep Litter flocks. They also showed some economy in feeding, both in weight per bird and in price per cwt. Farmers are, however, still experimenting with Deep Litter and it may be that a number of them have not yet had time to reach the highest level of efficiency which is possible under this system. A judgment of the relative merits of Free Range and Deep litter on general farms must await further evidence.
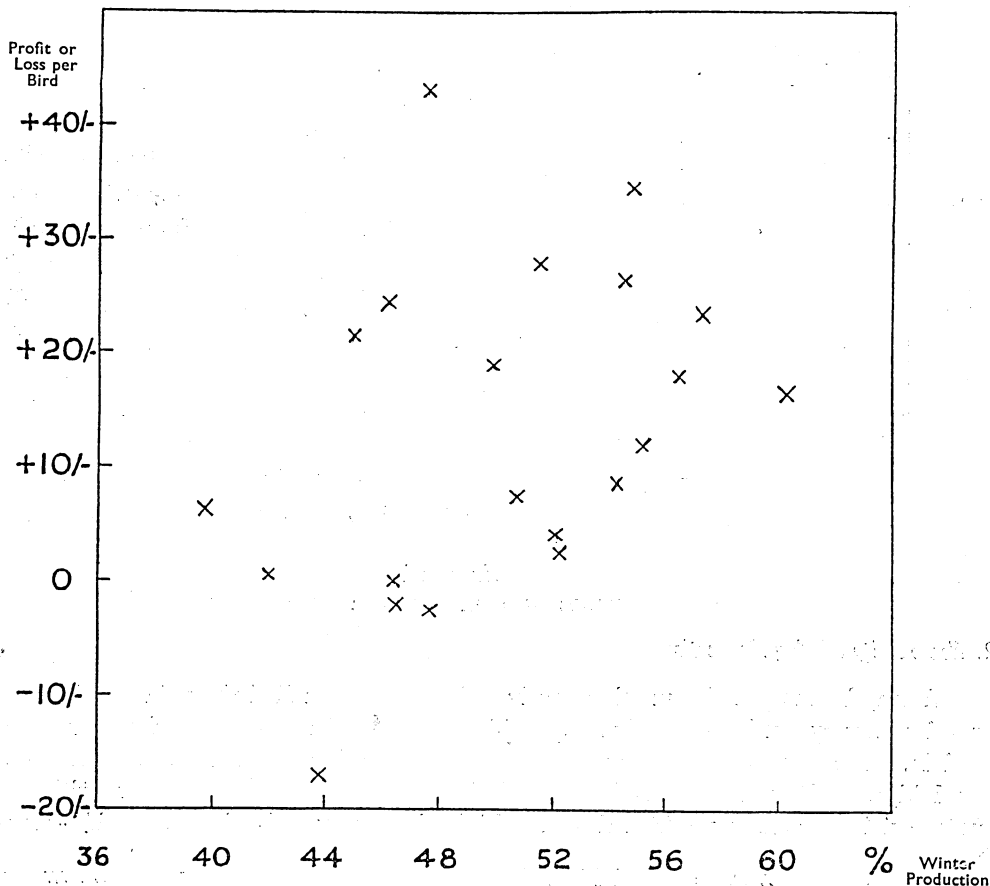
Graph No. 1

WINTER EGG PRODUCTION AS A PERCENTAGE OF TOTAL EGG PRODUCTION
AND PROFITS PER BIRD FOR INTENSIVE FLOCKS

Graph No. 1 shows the relationship between winter egg production (as a percentage of total eggs laid) and profits per bird for flocks housed intensively. Farmers whose flocks were housed in this way, and who aimed at a high rate of winter egg production because of the advantage of selling eggs at the higher average price (5s. 7d. doz. for winter eggs as against 4s. 3d. doz. for summer eggs) made profits which increased as the proportion of winter eggs increased.

12
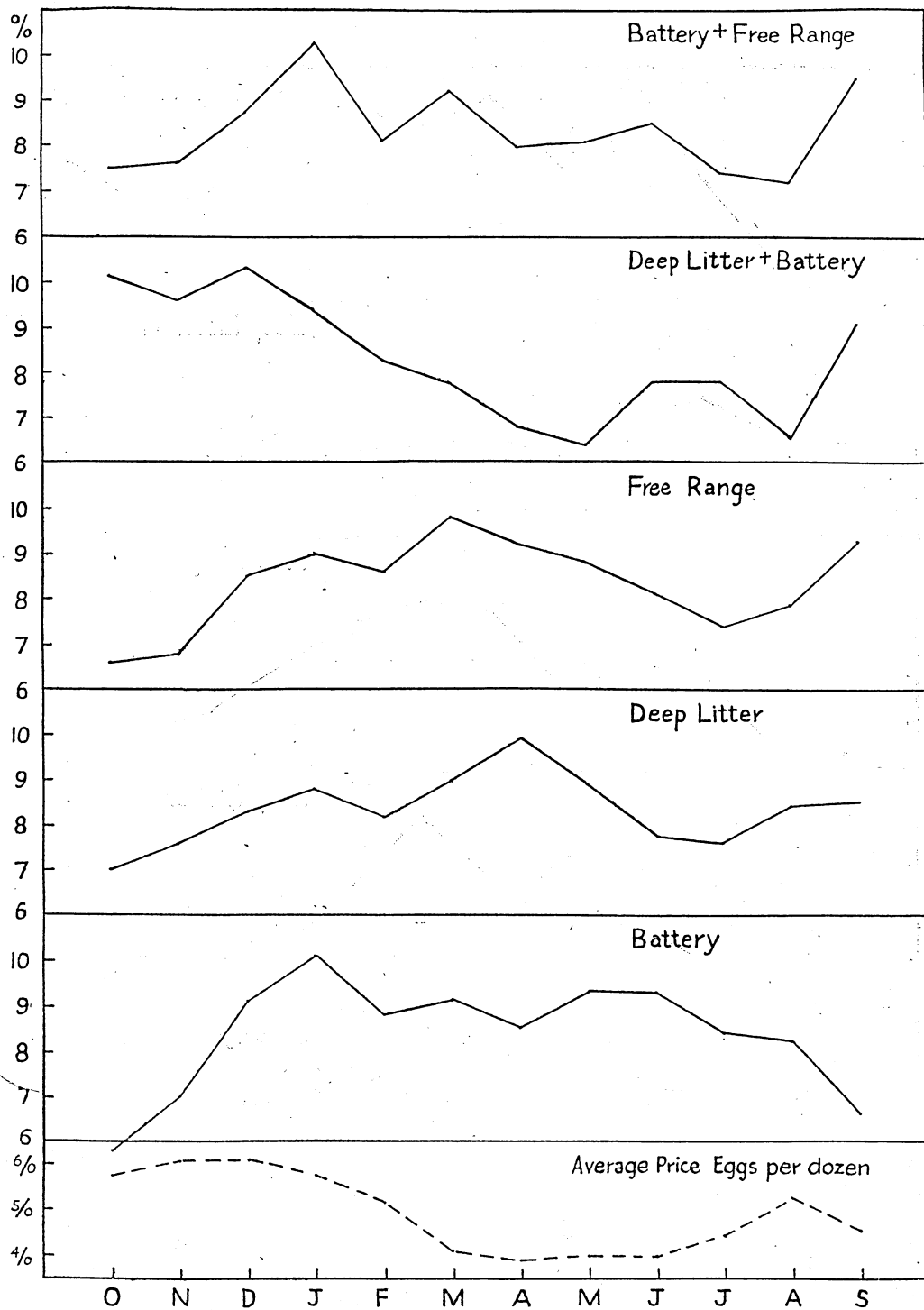
Graph No. 2

MONTHLY EGG PRODUCTION AS A PERCENTAGE OF TOTAL EGG PRODUCTION

13
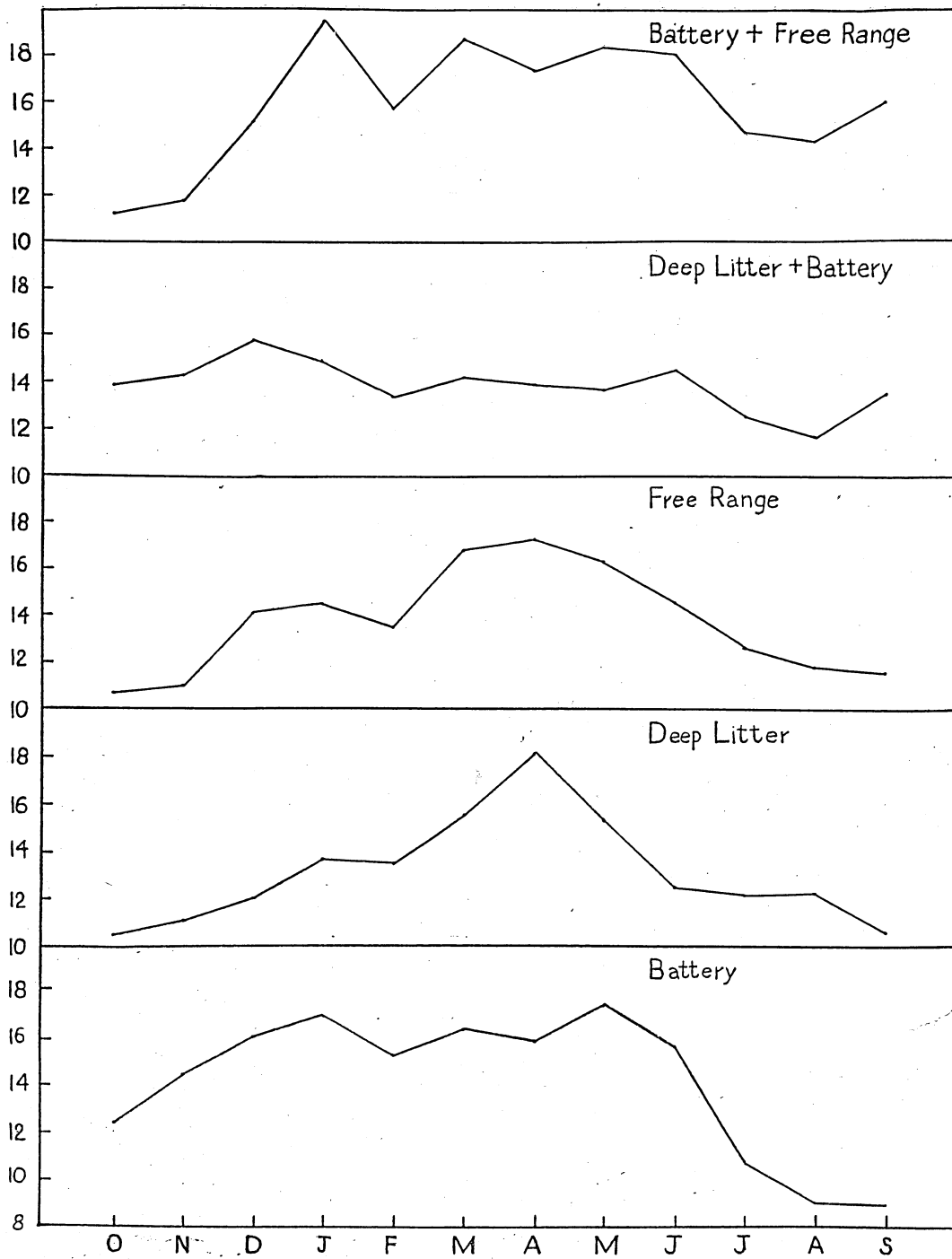
Graph No. 3

NUMBER OF EGGS LAID PER BIRD PER MONTH

14

3. *Culling*

The time of year and the rate of culling appropriate to particular flocks will depend on a number of factors, the most important of which are:—

(*a*) Estimated future egg production of the flock or bird in question.

(*b*) The price per dozen of estimated egg production.

(*c*) Seasonal changes in the price of culls.

(*d*) The cost of feeding-stuffs.

(*e*) The food and labour requirements of young stock, if these conflict with those of the laying flock.

(*f*) The possibility of alternative use of labour on mixed farms.

On most specialist enterprises we may regard all costs, other than feed, as overheads. This is also true to a large extent on mixed farms because the labour, which is the other most important element of cost, is often family labour working spare-time or tends to be specialised hired labour for which alternative employment cannot readily be found. On many farms, the question of time of year for culling the main portion of the flock, therefore, resolves itself into a comparison of the future returns which may be expected from the flock, less the cost of feed and any further depreciation incurred on the birds, until such a time as equipment and housing are required for young stock coming in to replace the old flock.

TABLE IX

CULL RATE (% TOTAL FLOCK CULLED)

Month	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks	Accredited	All Flocks
	%	%	%	%	%	%	%	%
October	9·4	13·0	3·0	6·7	10·8	7·5	5·2	6·7
November ..	1·1	2·4	0·9	3·8	2·6	2·0	3·7	·2·6
December ..	6·6	3·3	5·5	8·3	8·6	6·9	3·3	5·6
January	0·5	2·6	1·5	5·1	2·5	2·3	3·3	2·6
February ..	1·1	1·3	1·1	4·1	2·6	2·0	4·9	3·1
March	4·7	18·2	13·7	2·6	2·9	7·8	7·1	7·5
April	3·9	2·7	3·0	4·5	2·4	3·2	5·8	4·1
May..	6·2	3·0	1·8	4·4	1·3	2·8	4·1	3·3
June..	20·5	2·8	2·8	8·2	5·2	7·1	10·0	8·2
July	14·0	2·7	2·4	15·6	6·0	7·4	5·4	6·6
August	6·4	36·6	1·9	5·1	12·1	8·4	7·0	7·9
September ..	10·2	2·4	6·8	6·2	46·4	18·2	3·4	12·8
Total yearly rate	84·6	91·0	44·4	74·6	103·4	75·6	63·2	71·0

In recent years, many poultrymen have been wondering whether to cull their flocks drastically in the early spring, when the prices obtainable for table birds are high, and egg prices are low, instead of keeping their flocks on to the late summer and autumn when prices of culled layers tend to drop rapidly. The graph of monthly egg yields on page 14 shows that, for nearly all groups, egg production remained high during March, April and May

but fell rapidly in the following months. On the other hand, it will be seen in Table X that the prices of culled layers remained fairly steady until the end of May but suffered a severe drop in June. This price movement was not uniform throughout all groups but, taking the average of all commercial flocks, the drop was about 3s. 1d. between February and June.

<div align="center">

TABLE X

AVERAGE PRICE OF CULLS

</div>

Month	Battery + Free Range	Deep Litter + Battery	Free Range	Deep Litter	Battery	All Commercial Flocks	Accredited	All Flocks
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
October	6 7	10 1	10 6	10 3	7 9	8 6	10 1	9 0
November ..	7 8	16 3	8 9	8 2	11 8	10 2	11 1	10 8
December ..	10 10	16 8	8 7	9 5	11 5	10 4	10 1	10 3
January	4 0	16 2	7 9	9 0	11 10	10 0	11 9	10 10
February ..	11 7	15 7	8 11	8 3	16 0	11 5	10 8	11 0
March	10 7	13 4	11 0	9 1	7 11	10 11	11 0	10 11
April	11 3	15 9	10 10	6 3	11 8	10 4	10 10	10 7
May	10 1	16 4	10 6	8 0	10 6	10 2	9 0	9 8
June.. ..	7 9	15 9	10 5	9 0	6 9	8 4	11 10	9 6
July	6 11	17 4	7 4	8 11	8 7	8 3	9 11	8 9
August	8 5	8 10	7 0	9 6	9 0	8 9	10 3	9 3
September ..	7 10	16 6	8 2	10 3	8 8	8 8	9 3	8 9
Average price culls	8 3	11 10	9 7	8 10	9 2	9 3	10 6	9 8

If we now assume an average feed intake of five ounces per bird per day and an average drop in price of culls of 3s. 1d. per head per bird between February and June the margins over these two items of cost in the groups studied were as follows:—

<div align="center">

MARGINS OVER FEED AND DEPRECIATION DURING THE THREE MONTHS

MARCH, APRIL AND MAY

</div>

	Value of eggs laid	Cost of feed and extra depreciation	Margin
	s. d.	s. d.	s. d.
Battery + Free Range	18 3	12 5	5 10
Deep Litter + Battery	14 9	12 5	2 4
Free Range	16 9	12 5	4 4
Deep Litter	16 4	12 5	3 11
Battery	16 7	12 5	4 2

It seems clear that over these three months nearly all the flocks studied were laying at a sufficiently high rate to cover the costs of feed and depreciation of the birds. In the case of the Free Range group the margin would be greater than that shown because the cost of feed would be less for these flocks than for the more intensive ones. Most of the flocks also yielded a sufficient margin to pay for the labour involved, but, as pointed out earlier this may not be an important consideration where alternative employment cannot readily be found.

After the end of May the position is more complex and cannot be easily demonstrated from the data available. Prices of culled birds remain low but do not drop any further. The monthly egg yield per bird, in nearly all groups dropped rapidly after May and June but was

sufficiently high in most cases to pay for the feed.   It is important to bear in mind, however, that heavy culling was taking place in these flocks from June onwards and that this was a very important factor in keeping up the rate of lay, even though at a reduced level.   In the absence of drastic culling during this period it is unlikely that the egg yield would have been high enough to cover feed costs.
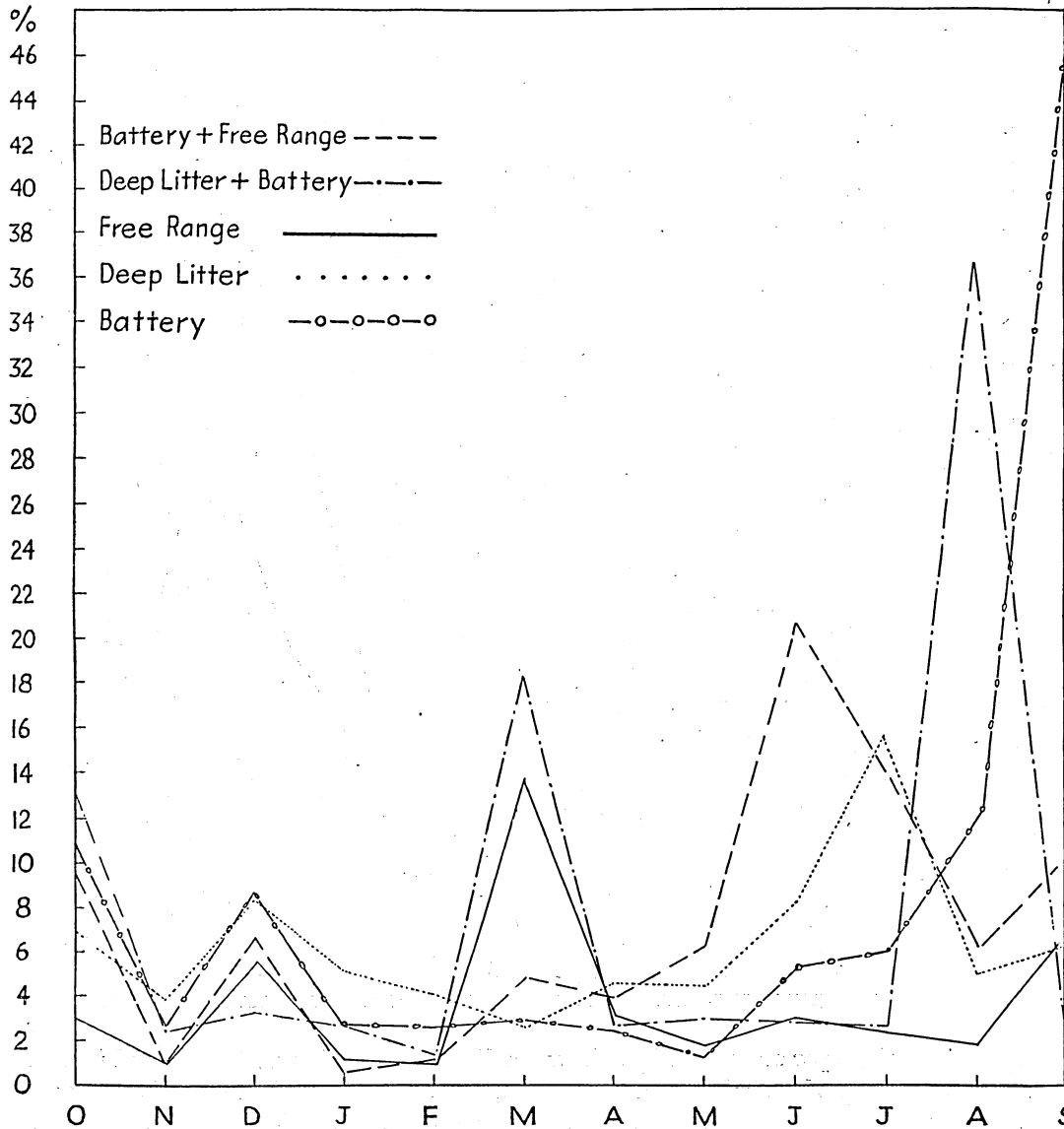
Graph No. 4

CULLING RATE (PERCENTAGE TOTAL FLOCK CULLED) FOR COMMERCIAL FLOCKS

On the farms studied there were considerable differences in the proportion of the flock culled over the whole year.   In the Battery group all the hens were culled during the year whereas on the Free Range group the proportion was less than half.
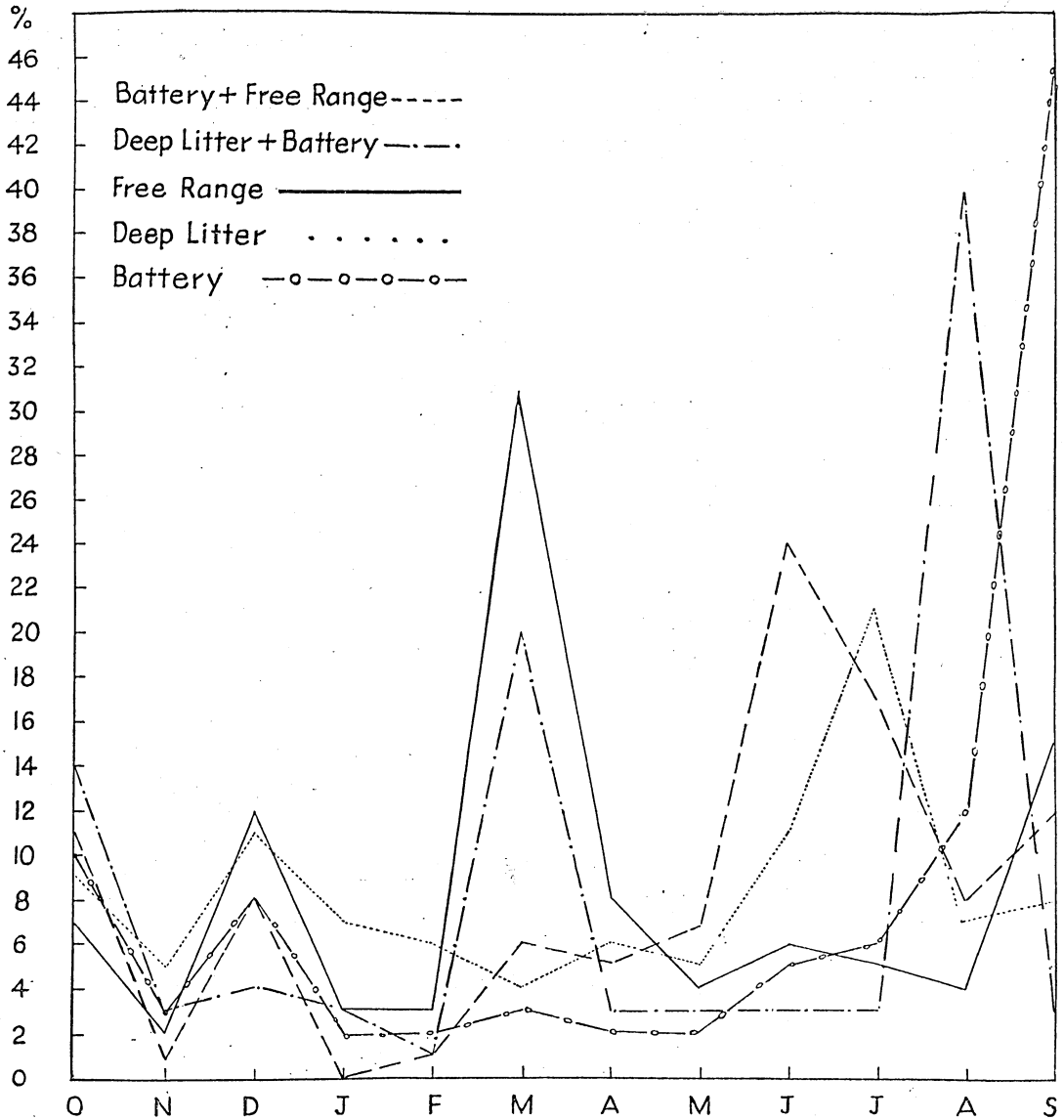
Graph No. 5

MONTHLY CULL RATE AS A PERCENTAGE OF TOTAL CULLS

There were three periods of relatively heavy culling, in December when the good price at about Christmas induced some farmers to sell, a heavier rate in spring when egg prices dropped and a longer period of heavy culling when the birds came off lay after June. It was surprising to find that one of the heaviest rates of culling in the spring occurred in the Free Range flocks. This may have been partly due to the culling of birds in their second laying year at the end of the high-price season for eggs. Most of the Free Range flocks were on mixed farms and their culling policy may have been to some extent dictated by the need to release labour for other farm work or in order to empty the laying houses for breeding replacements. Poultry farmers on Free

Range should remember, however, that the spring is their season of highest production and it is doubtful whether a heavy rate of culling can be justified at this period.

The price of culls depended on local conditions, nearness to the market, demand, seasonal demand, and the ability of farms to market their birds in attractive condition. The average price varied from as much as 17s. 4d. to 4s. per bird the higher prices being for dressed birds in good condition and the lower prices for live birds sold in lots. Where a high rate of annual culling is practised it is important to find a good market and to sell as attractively as possible as this helps to reduce what can otherwise be a heavy depreciation rate.

4. *Mortality Rate*

The mortality rates for the various methods of housing are set out in Table XI. The average rate for all flocks was twelve per cent., it was highest in the Free Range group and lowest in the Deep Litter + Battery group. There was a close relationship between the mortality rate and culling policy. Where the annual culling was heavy the death rate was relatively low. It is generally more difficult to pick out birds that are diseased or not laying when they are kept on the extensive system and this may account, in part, for the heavy mortality rate of the Free Range flocks. These flocks, too, had a high proportion of birds in the second laying year and it is generally recognised that the death rate will be higher in the second than in the first year. But to demonstrate the relative economy of keeping the flock to two years rather than one requires more information than is at present available.

<div align="center">

TABLE XI

MORTALITY AND CULLING RATE

</div>

	Per cent. of average flock culled	Per cent. mortality
Battery + Free Range	84·6	11·6
Deep Litter + Battery	91·0	6·5
Free Range	44·4	15·7
Deep Litter	74·6	12·6
Battery	100·0	8·7
Average	75·6	12·0

SPECIALIST AND MIXED FARMS

The average results of thirty commercial flocks on mixed farms, nine specialist commercial poultry farms and twelve specialist accredited poultry farms are given in Table XII. It is true, of course, that some of the larger flocks on the mixed farms were managed along specialist lines, run as a separate department of the farm in the charge of one person.

On average, the mixed farm flocks were the most profitable at 11s. per bird, followed by the accredited group at 3s. 5d. and the specialist commercial group at 2s. 1d. The mixed farms showed the lowest feed cost per bird: they derived some of their advantage through feeding home-grown food which, although charged at market price, was still cheaper than the feeding-stuffs available to most specialists. Since the fall in price of imported feed, which has recently taken place, this advantage may no longer hold. But, on average, the feed intake per bird was also lower on the mixed farms as the birds were able to forage for part of their feed requirement when on Free Range.

The other main advantages obtained by the mixed farms were in labour and miscellaneous costs. There were few flocks, even on the specialist farms, of a size to provide full employment for one man but alternative employment was available on most of the mixed farms. Specialist poultry farms, on the other hand, tend to have surplus family labour which cannot be fully employed elsewhere. In the same way miscellaneous expenses on specialist farms tend to be high because there are no other enterprises to carry a share of the overheads.

The specialist farms employed mainly family labour and the total family income includes this share of labour costs. It may be of interest to farmers to learn that, for these three groups it was necessary to have a flock of 401 birds in the Mixed group, 463 in the Specialist Accredited group, and 426 in the Specialist Commercial group, in order to give the operator an average wage equivalent to the agricultural minimum wage for 1952–53.

TABLE XII
COSTS AND RETURNS ON SPECIALIST COMMERCIAL FLOCKS, MIXED FARM FLOCKS AND SPECIALIST ACCREDITED FLOCKS

	Mixed farms with Commercial Flocks			Specialist Commercial Flocks			Specialist Accredited Flocks		
Number of flocks	30			9			12		
	£	s.	d.	£	s.	d.	£	s.	d.
COSTS—									
Purchased feeding-stuffs	2	3	2	2	15	4	3	4	11
Home-grown feed		8	8		2	1			9
Total feeding-stuffs	2	11	10	2	17	5	3	5	8
Hatching eggs and stock		5	3		5	4		5	2
Miscellaneous		1	10		4	4		7	8
Hired labour		4	11		1	1		6	1
Family labour		4	6		12	6		10	0
Rent			2			8		1	1
Eggs set			1		1	1		8	1
Deadstock depreciation..		2	3		3	0		3	4
Livestock depreciation		—			—				9
Total costs	3	10	10	4	5	5	5	7	10
RETURNS—									
Market eggs	3	4	9	3	6	10	2	0	8
Hatching eggs		1	2		—		1	1	11
Total eggs	3	5	11	3	6	10	3	2	7
Table poultry		8	3		7	11		9	10
Day-old chicks			5		1	9		11	9
Livestock..			1			2		17	3
Miscellaneous			1			8			11
House		1	9			10			10
Eggs set			1		1	1		8	1
Livestock appreciation		5	3		8	3		—	
Total returns	4	1	10	4	7	6	5	11	3
PROFIT		11	0		2	1		3	5
Profit plus family labour		15	6		14	7		13	5
Average size of flock	298			466			677		
Egg yield per bird	166			168			159		
Output per £100 feeding-stuffs ..	£148			£141			£148		
Output per £100 labour	£809			£597			£607		
Number of birds to give return to farmer equivalent to wages of agricultural worker 1952–53 ..	401			426			463		

INTENSIVE AND EXTENSIVE COMMERCIAL FLOCKS

The results of a comparison of groups of commercial flocks managed intensively and extensively are given in Table XIII. Each group has been divided into flocks with yields above and below the average of 167 eggs for all commercial flocks. It seems clear from the evidence of this year that it is not so much the type of housing as the quality of management which determines success. The attainment of a high egg yield per bird is the critical factor.

It has become generally recognised that high yields are more easily achieved under intensive systems of housing than on Free Range. More than half the intensive flocks in this survey gave yields higher than average, whereas the proportion of such flocks on Free Range was only about one-third. Egg production, at 208 per bird, in the high yielding intensive flocks shows a very good performance and, although attained at the higher feed cost per bird left the greatest profit. Feed input was also high on the high yielding extensive flocks but also gave a good result.

TABLE XIII

COMPARISON COSTS,

RETURNS AND YIELDS PER BIRD FOR INTENSIVE AND EXTENSIVE COMMERCIAL FLOCKS

Method of housing	Intensive high yield	Intensive low yield	Extensive high yield	Extensive low yield
	Average 11 flocks with yields *above* 167 eggs per bird	Average 10 flocks with yields *below* 167 eggs per bird	Average 6 flocks with yields *above* 167 eggs per bird	Average 11 flocks with yields *below* 167 eggs per bird
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Costs—				
Purchased feeding-stuffs	2 14 3	1 19 11	2 5 7	2 1 4
Home-grown feeding-stuffs	4 6	7 8	10 6	9 10
Total feeding-stuffs	2 18 9	2 7 7	2 16 1	2 11 2
Hatching eggs and stock	6 1	4 6	4 6	8 8
Eggs set, Miscellaneous, and Rent	4 0	2 8	2 7	6 3
Labour	14 5	9 4	12 1	12 4
Deadstock depreciation	3 1	1 9	1 7	2 2
Total costs	4 6 4	3 5 10	3 16 10	4 0 7
Returns—				
Eggs	4 3 2	2 18 11	3 13 8	2 10 11
Table poultry	11 2	7 8	3 8	7 1
Livestock and D.O.C.	2 1	2	3	2 10
Eggs set, Miscellaneous, and house..	2 3	2 2	2 7	5 9
Livestock appreciation	4 7	4 2	11 3	15 5
Total returns	5 3 3	3 13 1	4 11 5	4 2 0
Profit	16 11	7 3	14 7	1 5
Average yield	208 eggs	152 eggs	185 eggs	143 eggs
Food per bird	180 lbs.	149 lbs.	168 lbs.	153 lbs.
Output per £100 feeding-stuffs	£165	£144	£155	£143
Output per £100 labour	£674	£735	£719	£598
Winter % egg production	52%	50%	53%	44%
Mixed or	8	8	5	8
Specialist	3	2	1	3
Average size flock	313	516	309	217
Number birds to give farmer the wage of an agricultural worker 1952–53	367	858	426	4,388

On the other hand, the low yielding flocks, although associated with low feed costs, gave poor results. In fact, the egg returns in the extensive low yield flocks failed to cover the cost of feed, but part of the feed in this case could be attributed to a large rearing programme. It is clear that to achieve success in poultry farming it is (a) necessary to keep a strain of birds capable of high yields, and (b) poor economy to restrict the feed intake.

FINANCIAL CHANGES ON AN IDENTICAL SAMPLE OF FOURTEEN FARMS FOR THREE YEARS 1950-51, 1951-52 and 1952-53

The costs and returns per bird for an identical sample of fourteen farms for the three years 1950–51, 1951–52, 1952–53 are set out in Table XIV.

Feeding-stuffs and labour, as in other tables in this report, are the two major items of cost. The cost of feeding-stuffs per bird has increased over the three years, partly owing to the rise in the unit price of feeding-stuffs and partly because there has been an increase in the average size of flocks. Labour per bird has decreased slightly, due to the economy achieved with increasing flock numbers.

TABLE XIV

AVERAGE COSTS AND RETURNS PER BIRD

FOR AN IDENTICAL SAMPLE OF FOURTEEN FARMS FOR THREE YEARS

1950–51, 1951–52, 1952–53

	1950–51			1951–52			1952–53		
	£	s.	d.	£	s.	d.	£	s.	d.
Costs—									
Feeding-stuffs	2	8	0	2	15	10	2	16	6
Hatching eggs and stock		6	0		7	4		5	6
Miscellaneous		5	11		5	0		6	2
Labour		14	7		14	9		14	6
Rent			11		1	0		1	0
Farm eggs set		1	11		4	4		4	11
Deadstock depreciation		2	2		2	1		2	2
Livestock depreciation		—			—			3	11
Total cost	3	19	6	4	10	4	4	14	8
Returns—									
Market eggs	1	19	11	2	2	0	2	2	8
Hatching eggs		14	1		16	11		19	6
Table poultry		12	10		11	3		10	8
Day-old chicks		3	2		5	1		5	5
Growing stock		17	4		17	5		18	2
Miscellaneous		—				5			8
Produce to house			10			10		1	0
Farm eggs set		1	11		4	4		4	11
Livestock appreciation		2	1		4	3		—	
Total returns	4	12	2	5	2	6	5	3	0
Profit		12	8		12	2		8	4
Total birds		6,435			6,634			6,829	
Average number of eggs per bird		141			151			153	
Average price of eggs per doz.		4s. 5d.			4s. 7¾d.			4s. 11d.	
Number of eggs to cover cost of feeding-stuffs		131			144			138	

On the income side, despite the fact that no figure for livestock appreciation could be included in 1952–53, total income increased—this was brought about chiefly by an increase in returns from market and hatching eggs (more hatching eggs being sold in proportion to market eggs in 1952–53) and sales of livestock.

However, this increase in total income was not enough to counteract the increase in costs, and profit per bird decreased from 12s. 8d. in 1950–51 to 8s. 4d. per bird in 1952–53.

CONCLUSIONS

During the past few years poultry-keepers have been passing through a difficult time. Until August, 1953, feeding-stuffs were rationed and many specialists on small areas of land could not keep sufficient numbers of poultry to make an adequate living. Since the abandonment of rationing, poultry flocks have increased, but so have the costs of feeding-stuffs, and the ratio between the price of eggs and the cost of feed has deteriorated. More recently, the costs of feeding-stuffs have tended to fall, and the indications are that the fall will continue, but prices of eggs are now tied to the costs of feeding-stuffs, so that no improvement can be expected in the ratio of egg prices to feed-cost of the standard ration. On the other hand, with a greater choice of available feeding-stuffs of higher quality there are new opportunities open to the astute manager. The relative costs of the various items which can be incorporated in an adequate ration seldom remain the same for long periods. A closer watch on the feeding-stuffs market will be justified and the make-up of the ration should be changed from time to time so as to include the highest proportion of low-cost feed which is consistent with good nutrition.

The results during 1952–53 show extreme variability between farm and farm, both for intensive and extensive types of management. The evidence of the relative economy of the two types is inconclusive and to some extent conflicting. This may be largely due to the small size of some of the groups with the consequent prominence of individual results, good or bad. The matter is, however, of considerable importance and this survey is to be continued and improved in its representation.

The study demonstrates clearly the overriding importance of achieving high egg yields per bird. This can only be done by starting with the right type of bird, feeding adequately, but without waste, and adopting a rigid culling policy to avoid wastage of feed and to keep mortality low. This demands constant and critical attention to the flock. Although it is important to achieve economy in the use of labour, a scrutiny of the tables in this report will show that low labour cost per bird is not a feature of most of the highly successful farms. Saving in labour should be sought through good organisation and good work arrangements rather than through skimping the general supervision. It is important, too, that the flocks should be of a size that will fully utilise the available labour.

On mixed farms the poultry flock may only provide part of the family income and it should be of a size that will use any spare labour profitably. On specialist farms it is, as the name implies, the only source of income and here the question of numbers kept is of equal importance with results per bird. A number of the specialist farms in this survey have increased their flocks in recent years, but on ten out of twenty-one the income earned by the operator with the aid of family labour was less than could have been earned in other agricultural employment. On some, there is now the opportunity for expanding the flocks and this will often lead to greater economy in the use of labour and in the purchase of feeding-stuffs in greater bulk. On others, the first priority is the improvement of the standard of management so that the existing flock will yield a higher income.

23

COSTS, RETURNS AND AVERAGE FIGURES PER BIRD

Method of housing	Battery + Free Range						
Farm Code Number (Mixed or Specialist)	L332 (M)	P78 (M)	L362 (M)	L485 (S)	P83 (M)	P61 (M)	P60 (S)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Costs—							
Purchased feeding-stuffs	3 3 8	1 18 3	1 13 0	3 14 3	4 10 0	3 1 11	2 13 0
Home-grown	—	—	16 4	—	—	—	—
Total feeding-stuffs	3 3 8	1 18 3	2 9 4	3 14 3	4 10 0	3 1 11	2 13 0
Hatching eggs and stock	7 8	4 4	3 1	—	1 1 6	5 5	5 4
Miscellaneous	3 10	2 11	3 4	4 1	5 0	1 0	4 2
Hired labour	18 10	—	3 8	—	—	6 1	—
Family labour	—	10 3	—	1 13 11	14 3	—	10 3
Rent	11	7	5	1 11	1 11	4	4
Farm eggs set	—	—	—	7 10	—	—	—
Deadstock depr.	1 4	1 0	1 5	2 11	3 7	3 4	11
Livestock depr.	—	—	—	—	—	—	—
Total costs	4 16 3	2 17 4	3 1 3	6 4 11	6 16 3	3 18 1	3 14 0
Returns—							
Market eggs	5 9 9	3 3 8	3 7 9	4 0 0	5 6 10	3 18 5	3 2 1
Hatching eggs	—	—	—	—	1 11	5 8	—
Table poultry	9 9	9 5	6 8	15 2	1 19 7	8 6	4 8
D.O.C. and livestock	—	—	—	10 10	12 3	—	2 4
Miscellaneous	—	—	—	—	—	—	—
Produce to house	8	1 6	1 6	10	2 9	1 0	6
Farm eggs set	—	—	—	7 10	—	—	—
Livestock apprec.	9	4 4	1 11	12 8	16 1	12 6	12 10
Total returns	6 0 11	3 18 11	3 17 10	6 7 4	8 19 5	5 6 1	4 2 5
Profit per bird	1 4 8	1 1 7	16 7	2 5	2 3 2	1 8 0	8 5
Loss per bird	—	—	—	—	—	—	—
Total profit per farm	80 3 1	181 5 4	171 1 9	35 3 2	690 10 6	539 1 3	256 6 0
Total loss per farm	—	—	—	—	—	—	—
Average number of birds per flock	65	168	206	289	320	385	608
Average yield per bird	279	168	165	202	275	201	156
Winter production%	46%	45%	60%	52%	48%	52%	54%
Average price of doz. eggs sold	4s. 9d.	4s. 11¾d.	5s. 1¼d.	5s. 2½d.	4s. 10½d.	5s. 0¼d.	4s. 10d.
% Flock culled	100%	28%	83%	93%	129%	94%	66%
Average price culls	8s. 4d.	12s. 6d.	9s. 2d.	9s. 4d.	8s. 4d.	8s. 3d.	6s. 6d.
Output per £100 feeding-stuffs	£178	£195	£152	£161	£199	£171	£156
Output per £100 labour	£603	£729	£2,081	£352	£1,259	£1,744	£805
Pullets in opening flock	100%	100%	100%	100%	100%	100%	99%

INDIVIDUAL RESULTS

COSTS, RETURNS AND AVERAGE FIGURES PER BIRD

Method of housing	Deep Litter + Battery					
Farm Code No. (Mixed or Specialist)	L487 (M)			P54 (S)		
	£	s.	d.	£	s.	d.
Costs—						
Purchased feeding-stuffs	2	0	8	1	16	4
Home-grown foods		16	11		8	3
Total feeding-stuffs	2	17	7	2	4	7
Hatching eggs and stock..		4	2		3	11
Miscellaneous		1	8		2	8
Hired labour		—			—	
Family labour		5	1		8	11
Rent			5			3
Farm eggs set		—			—	
Deadstock depreciation		1	5		1	1
Livestock depreciation		—			—	
Total costs	3	10	4	3	1	5
Returns—						
Market eggs	4	0	8	3	4	8
Hatching eggs		—			—	
Table poultry		6	4		11	10
D.O.C. and livestock		—			—	
Miscellaneous			5		—	
Produce to house		3	8			5
Farm eggs set		—			—	
Livestock appreciation		2	8		2	7
Total returns	4	13	9	3	19	6
Profit per bird	1	3	5		18	1
Loss per bird						
Total profit per farm	201	8	3	629	17	11
Total loss per farm		—			—	
Average number of birds per flock ..		172			696	
Average yield per bird		204			158	
Winter production %		57%			57%	
Average price per doz. eggs sold ..		5s. 0d.			5s. 0d.	
% Flock culled		90%			91%	
Average price culls		7s. 1d.			12s. 11d.	
Output per £100 feeding-stuffs ..		£156			£170	
Output per £100 labour		£1,750			£845	
% Pullets in opening flock		—			100%	

Method of housing							
Farm Code No. (Mixed or Specialist)	L448 (M)	P75 (M)	P77 (M)	L331 (M)	L383 (M)	P82 (M)	P81 (M)
Costs—							
Purchased feeding-stuffs	2 17 3	1 8 9	1 5 8	3 7 7	1 6 4	1 12 2	1 3 11
Home-grown foods	—	15 3	1 6 7	—	—	12 6	1 7 10
Total feeding-stuffs	2 17 3	2 4 0	2 12 3	3 7 7	1 6 4	2 4 8	2 11 9
Hatching eggs and stock	—	1 8 4	7 3	7 10	3 5	—	8 5
Miscellaneous	—	3 8	1 11	5	1 4	1	6
Hired labour	—	—	16 2	—	—	7 5	—
Family labour	10 4	13 4	—	1 3 4	6 3	—	7 1
Rent	—	—	—	1 8	—	—	—
Farm eggs set	—	—	—	—	—	—	—
Deadstock depreciation	10	3 11	1 3	1 8	1 0	8	1 4
Livestock depreciation	2 7	—	—	—	2 8	4 6	—
Total costs	3 11 0	4 13 3	3 18 10	5 2 6	2 1 0	2 17 4	3 9 1
Returns—							
Market eggs	1 11 6	2 5 9	2 12 9	3 4 7	1 12 10	3 18 3	3 1 8
Hatching eggs	—	—	—	—	—	—	—
Table poultry	—	1 1 11	8 0	3 4	10 8	—	9 10
D.O.C. and Livestock	—	—	—	1 4	—	—	—
Miscellaneous	—	—	—	—	—	—	—
Produce to house	7 4	9 10	11 1	2 5	2 0	2 10	3 1
Farm eggs set	—	—	—	—	—	—	—
Livestock appreciation	—	1 13 0	6	1 8 0	—	—	7 4
Total returns	1 18 10	5 10 6	3 12 4	4 19 8	2 5 6	4 1 1	4 1 11
Profit per bird	—	17 3	—	—	4 6	1 3 9	12 10
Loss per bird	1 12 2	—	6 6	2 10	—	—	—
Total profit per farm	—	58 11 3	—	—	26 2 4	151 19 0	86 2 6
Total loss per farm	91 14 8	—	32 9 10	15 5 9	—	—	—
Average number birds per flock ...	57	68	99	107	117	128	134
Average yield per bird	116	144	162	170	86	199	157
Winter production %	27%	43%	51%	48%	45%	45%	46%
Average price per doz. eggs sold ...	4s. 7d.	4s. 8¼d.	4s. 10¼d.	4s. 9¾d.	5s. 0¾d.	4s. 11¼d.	5s. 0d.
% Flock culled	—	—	96%	41%	80%	—	45%
Average price culls	—	—	8s. 4d.	8s. 1d.	10s. 11d.	—	12s. 0d.
Output per £100 feeding-stuffs ...	£63	£187	£124	£136	£150	£171	£142
Output per £100 labour	£353	£615	£403	£394	£631	£1,030	£1,035
% Pullets in opening flock	—	—	100%	—	34%	—	67%

ange

	P78 (S)	L492 (S)	P86 (S)	P88 (M)	L475 (M)	P57 (M)	L272 (M)	C132 (M)	L349 (M)	P66 (S)
	2 19 8	2 18 5	2 18 3	3 1 4	1 8 11	1 4 9	2 6 0	1 12 10	1 18 1	2 18 9
	—	—	16 9	1 1 5	18 10	10 3	—	13 9	8 1	—
	2 19 8	2 18 5	3 15 0	4 2 9	2 7 9	1 15 0	2 6 0	2 6 7	2 6 2	2 18 9
	11 4	6 7	16 4	5 7	4 2	4 3	7 6	3 10	2 4	5 3
	0 6	14 5	1 5 4	4 9	1 1	3 1	2 2	2	6	3 6
	6 9	2 10	—	—	8 10	7 0	8 6	6 2	4 8	3 6
	—	13 9	1 15 4	15 1	—	—	—	4 6	—	7 2
	8	5	2 8	—	—	—	—	—	—	9
	—	14 3	—	—	—	—	—	—	—	
	1 5	2 10	10 2	5	1 6	1 11	1	10	2	3 4
	—	1 7	—	—	—	—	—	5	—	1 6
	4 0 4	5 15 1	8 4 10	5 8 7	3 3 4	2 11 3	3 4 3	3 2 6	2 13 10	4 3 9
	2 12 5	1 17 3	3 1 11	3 10 0	3 19 8	3 14 8	2 17 8	3 5 11	2 18 10	3 15 1
	—	1 1	—	—	—	—	—	—	—	—
	2 6	9 5	5	2 8	6 6	1 8	4 2	11 2	—	8 1
	2	1 11 5	—	—	—	—	—	—	—	1 3
	—	1 1	4	—	—	—	—	—	—	6
	9 6	1 5	11	1 9	2 5	3 11	9	5	1 2	—
		14 3	—	—	—	—	—	—	—	
	3 0 6	—	3 2 4	12 7	19 1	13 8	6 4	—	7 0	—
	6 5 1	4 15 11	6 5 11	4 7 0	5 7 8	4 13 11	3 8 11	3 17 6	3 7 0	4 4 11
	2 4 9	—	—	—	2 4 4	2 2 8	4 8	15 0	13 2	1 2
	—	19 2	1 18 11	1 1 7	—	—	—	—	—	—
	4 6 9	—	—	—	478 16 8	511 15 0	99 15 7	378 2 9	340 7 6	55 7 2
	—	147 10 0	342 9 6	195 6 0	—	—	—	—	—	—
	136	154	176	181	216	240	424	502	517	980
	157	128	157	172	209	189	147	164	156	172
	51%	43%	47%	64%	46%	53%	42%	46%	41%	57%
	4s. 11d.	5s. 0d.	4s. 10¼d.	5s. 1½d.	4s. 9¼d.	4s. 9d.	4s. 9¼d.	4s. 10d.	4s. 7¾d.	5s. 3d.
	14%	50%	9%	28%	62%	18%	55%	71%	—	72%
	12s. 6d.	9s. 2d.	5s. 0d.	9s. 6d.	12s. 5d.	7s. 3d.	7s. 8d.	8s. 10d.	—.	10s. 2d.
	£191	£126	£146	£99	£217	£256	£134	£157	£140	£133
	£1,689	£442	£310	£539	£1,167	£1,281	£728	£682	£1,392	£736
	70%	32%	100%	—	91%	92%	37%	81%	—	71%

Individual Results

Costs, Returns and Average Figures per Bird

Method of housing	Deep Litter				
Farm Code No. (Mixed or Specialist)	L307 (M)	P87 (M)	P58 (M)	L320 (M)	L468 (S)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Costs—					
Purchased feeding-stuffs ..	1 1 7	2 2 5	11 9	2 1 1	2 19 2
Home-grown foods	1 0 8	6 8	1 3 6	15 8	—
Total feeding-stuffs	2 2 3	2 9 1	1 15 3	2 16 9	2 19 2
Hatching eggs and stock.. ..	3 6	6 9	4 11	3 9	4 9
Miscellaneous	4	4 0	6	3 5	1 7
Hired labour	3 5	—	—	—	—
Family labour	—	5 1	12 0	9 9	9 9
Rent	4	1 0	—	—	2
Farm eggs set	—	—	—	—	—
Deadstock depreciation	6	7	1 10	1 3	3 11
Livestock depreciation	—	—	—	—	—
Total costs	2 10 4	3 6 6	2 14 6	3 14 11	3 19 4
Returns—					
Market eggs	3 4 11	2 13 1	3 6 8	2 9 10	3 7 1
Hatching eggs	—	—	—	—	—
Table poultry	7 0	7 4	3 8	7 5	6 10
D.O.C. and livestock	—	—	—	—	—
Miscellaneous	—	—	—	—	—
Produce to house	1 9	1 7	2 1	9	2
Farm eggs set	—	—	—	—	—
Livestock appreciation	11 0	11 9	8 8	17 8	2 7
Total returns	4 4 8	3 13 9	4 1 1	3 15 8	3 16 8
Profit per bird	1 14 4	7 3	1 6 7	9	—
Loss per bird	—	—	—	—	2 8
Total profit per farm	308 8 5	69 7 10	281 9 5	16 12 9	—
Total loss per farm	—	—	—	—	129 18 11
Average number of birds per flock	180	192	212	492	963
Average yield per bird	164	130	167	130	169
Winter production %	55%	51%	55%	42%	48%
Average price per doz. eggs sold	5s. 0d.	5s. 2d.	5s. 0d.	4s. 8d.	4s. 10d.
% Flock culled	89%	73%	75%	88%	65%
Average price culls	7s. 10d.	10s. 0d.	5s. 0d.	8s. 0d.	10s. 4d.
Output per £100 feeding-stuffs ..	£192	£136	£216	£127	£122
Output per £100 labour	£2,352	£1,312	£635	£743	£744
% Pullets in opening flock ..	31%	78%	100%	91%	62%

Individual Results

Costs, Returns and Average Figures per Bird

Method of housing	Battery						
Farm Code Number (Mixed or specialist)	L369 (M)	L402 (S)	P55 (M)	L472 (M)	P59 (M)	P80 (M)	P72 (M)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Costs—							
Purchased feeding-stuffs	2 10 8	3 0 3	1 15 4	1 13 4	2 5 9	3 1 4	2 2 1
Home-grown ..	—	—	2 5	—	—	6 10	9 6
Total feeding-stuffs	2 10 8	3 0 3	1 17 9	1 13 4	2 5 9	3 8 2	2 11 7
Hatching eggs and stock	—	7 2	—	12 3	1 6	7 1	4 9
Miscellaneous ..	9	2 10	—	1 4	1 7	5 3	1 3
Hired labour ..	—	—	—	11 1	5 8	3 10	8 7
Family labour ..	1 0 2	1 7 6	9 6	—	6 6	7 8	—
Rent	—	7	—	2	3	2	1
Farm eggs set ..	—	—	—	—	11	—	—
Deadstock depr...	1 8	6 2	5 0	3 0	3 4	3 7	3 10
Livestock depr. ...	11 1	—	1 7 9	3 1	3 11	—	—
Total costs	4 4 4	5 4 6	4 0 0	3 4 3	3 9 5	4 15 9	3 10 1
Returns—							
Market eggs ..	3 0 11	4 6 3	3 11 6	2 16 6	2 16 2	4 16 0	2 19 3
Hatching eggs ..	—	—	—	—	—	—	—
Table poultry ..	2 11	5 11	9 0	6 3	15 1	9 0	7 9
D.O.C. and livestock	—	—	—	—	1 2	—	—
Miscellaneous ..	—	—	—	—	2	—	—
Produce to house	3 7	1 9	1 5	5 5	2 4	1 2	8
Farm eggs set ..	—	—	—	—	1 0	—	—
Livestock apprec.	—	8 9	—	—	—	8 7	2 3
Total returns.. ..	3 7 5	5 2 8	4 1 11	3 8 2	3 15 11	5 14 9	3 9 11
Profit per bird ..	—	—	1 11	3 11	6 6	19 0	—
Loss per bird	16 11	1 10	—	—	—	—	2
Total profit per farm	—	—	20 7 5	47 16 7	138 9 1	431 17 0	—
Total loss per farm	90 9 4	18 0 2	—	—	—	—	17 1 2
Average number of birds per flock ..	107	193	220	245	429	454	2,005
Average yield per bird	165	214	180	154	147	233	146
Winter production%	44%	47%	55%	52%	40%	50%	46%
Average price per doz. eggs sold	4s. 9d.	4s. 11d.	4s. 11d.	5s. 0d.	4s. 9d.	5s. 0d.	4s. 11d.
% Flock culled ..	29%	80%	135%	62%	137%	122%	100%
Average price culls	11s. 3d.	6s. 9d.	6s. 8d.	10s. 0d.	12s. 6d.	7s. 10d.	9s. 0d.
Output per £100 Feeding-stuffs ..	£111	£159	£143	£159	£152	£158	£126
Output per £100 labour	£279	£347	£567	£472	£574	£940	£761
% Pullets in opening flock	45%	100%	100%	86%	54%	100%	95%

COSTS, RETURNS AND AVERA...

Method of housing				Accredit	
Farm Code No. (Mixed or Specialist)	L430 (S)	L128 (M)	C241 (S)	C449 (S)	L428 (S)
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Costs—					
Purchased feeding-stuffs	3 0 6	2 17 9	2 12 10	2 5 11	3 13 5
Home-grown foods	—	—	—	—	4 3
Total feeding-stuffs	3 0 6	2 17 9	2 12 10	2 5 11	3 17 8
Hatching eggs and stock	1 11	2	1 8	6	—
Miscellaneous	3 5	1 4	3 11	3 6	4 4
Hired labour	2	—	5 8	—	1 1 11
Family labour	1 9 2	12 7	12 6	15 8	2 10
Rent	1 2	9	7	3	10
Farm eggs set	3 7	1 0	4 2	11	5 5
Deadstock depreciation	2 2	8	2 2	1 7	4 4
Livestock depreciation	3 10	—	—	4 2	—
Total costs	5 5 11	3 14 3	4 3 6	3 12 6	5 17 4
Returns—					
Market eggs	2 4 6	1 17 6	1 19 5	1 16 5	2 4 5
Hatching eggs	1 4 3	1 7 1	2 11 0	1 1 11	1 12 7
Table poultry	10 1	5 9	9 3	5 2	9 11
D.O.C. and livestock	15 7	—	8 9	2 0	1 2 10
Miscellaneous	1 2	—	10	—	1 0
Produce to house	10	1 4	11	1 1	1 6
Farm eggs set	3 7	1 0	4 2	11	5 5
Livestock appreciation	—	4 1	3 2	—	3
Total returns	5 0 0	3 16 9	5 17 6	3 7 6	5 17 11
Profit per bird	—	2 6	1 14 0	—	7
Loss per bird	5 11	—	—	5 0	—
Total profit per farm	—	38 0 11	536 10 11	—	14 6 6
Total loss per farm	80 10 5	—	—	98 13 5	—
Average number of birds per flock	272	301	315	398	462
Average yield per bird	161	149	192	134	176
Winter production %	55%	41%	47%	41%	52%
Average price doz. commercial eggs sold	5s. 1d.	4s. 8d.	5s. 3d.	5s. 0d.	5s. 0d.
Average price doz. hatching eggs sold	6s. 8d.	7s. 1d.	7s. 7d.	6s. 4d.	6s. 11d.
Output per £100 feeding-stuffs	£150	£131	£211	£135	£145
Output per £100 labour	£309	£602	£616	£396	£454
% Pullets in opening flock	84%	75%	80%	73%	54%
% Flock culled	78%	47%	62%	36%	64%
Average price culls	12s. 5d.	9s. 3d.	8s. 11d.	10s. 0d.	10s. 11d.

(*a*) not available.

locks

P83 (S)			L480 (S)			L156 (S)			P48 (S)			L401 (S)			P47 (S)			1218 (S)			L424 (S)		
£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
7	1	9	4	1	1	3	6	11	2	16	10	2	6	2	2	14	8	2	5	0	3	17	1
		—			—			—		6	3			—			—			—			—
7	1	9	4	1	1	3	6	11	3	3	1	2	6	2	2	14	8	2	5	0	3	17	1
1	19	4			2		2	1		9	6		1	3			1		7	9		7	3
1	9	6		10	4		5	1		3	6		3	4		4	2		12	8		7	3
1	9	10		10	3								1	3		4	4		6	2		3	11
	9	9		12	1		14	11		14	6		10	3		8	10		3	6		7	4
	3	6		1	1		2	4		1	6		1	4			5		1	3			6
		—		13	6			10		1	2		1	2		1	1	1	4	9		15	4
	5	11		3	5		1	3			7		2	3		1	6		3	6		7	4
	11	10			—			—			—		11	0		11	5		3	6			—
3	11	5	6	11	11	4	13	5	4	5	1	3	18	0	4	6	6	5	8	1	6	6	0
1	10	9	2	15	3		11	3	1	9	3	1	17	7	1	19	9	2	1	2	2	17	3
1	16	1	1	0	0	1	15	0	2	9	8		11	6	1	15	1		3	9			7
	14	8		2	5		11	4		10	6		14	0		16	0		6	2		7	5
9	4	10	1	1	0		6	7			6			—			—	2	18	3	1	14	3
	4	9			—			3						9			6			4		1	9
		11			9			4						9			7			5		1	1
		—		13	6			10		1	4		1	2		1	1	1	4	9		15	4
		—		14	1		8	4		1	2									—		9	9
											4												
3	12	0	6	7	0	3	13	11	4	12	9	3	5	9	4	13	0	6	14	10	6	7	5
		7			—			—		7	8			—		6	6	1	6	9	1		5
		—		4	11		19	6			—		12	3			—			—			—
4	1	2			—			—	290	13	2			—	303	11	9	1,491	11	4	104	2	10
		—	127	12	11	508	12	5			—	560	9	0									
	478			516			522			753			914			940			1,115			1,441	
	140			206			106			166			114			160			169			179	
	44%			39%			22%			37%			44%			50%			39%			51%	
5s.	1d.		4s.	7d.		4s.	5d.		4s.	9d.		4s.	9d.		4s.	9d.		4s.	5d.		4s.	9d.	
6s.	9d.		7s.	6d.		5s.	11d.		7s.	0d.		8s.	0d.		7s.	8d.		7s.	4d.		6s.	6d.	
£156			£140			£106			£144			£113			£147			£259			£136		
£558			£508			£475			£627			£457			£609			£1,216			£937		
77%			85%			(a)			78%			60%			81%			45%			42%		
54%			35%			67%			45%			100%			(a)			38%			84%		
12s.	2d.		9s.	0d.		16s.	11d.		9s.	6d.		10s.	10d.		(a)			8s.	3d.		9s.	2d.	

31

METHOD OF ACCOUNTING

Average size of flock was calculated on a month-by-month basis to take account of changes in sales, additions and deaths.

Average egg yield per bird was calculated by dividing the total number of eggs laid by the average size of flock.

Food. Home-grown food was valued at prevailing market price.

Labour (hired and family) charged at standard agricultural wage rates.

Rent has only been included for extensive flocks where farms are specialist poultry farms.

Deadstock depreciated at five per cent. buildings and houses, and ten per cent. equipment.

Valuations. Birds have been valued at conservative market values, same values applied at the beginning and end of the year.

Flock appreciation or depreciation is difference between opening and closing valuations.

Management and interest on capital.—No allowance.

Returns from eggs and stock include all sales and home-use of eggs, sales young stock and culls, and increase in valuation of stock, *less* decrease in valuation of stock and purchases of hatching eggs and young stock.