INFLUENCE OF VARYING LEVELS OF BLOOD MEAL ON BROILER PERFORMANCE

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The experiment was conducted to study the influence of substitution of varying levels of blood meal with sesame oil cake in broiler ration. Three experimental rations viz A, B and C containing 3, 5 and 7 per-cent blood meal were prepared by partially substituting seasame oil cake and were fed for eight weeks. Non-significant differences were observed in weight gain, feed consumption and feed efficiency. However, the differences indicated trend in favour of blood meal as partial replacement of sesame oil cake. The economic comparison of the experimental rations revealed that the chicks fed ration C containing 7% blood meal resulted into most economical weight gains than the other two rations.

INTRODUCTION

The availability of economical and efficient rations is of great significance to the poultry farmers today because the feed costs run into about 60 to 70 per cent of the total cost of broiler production. In broiler rations, protein supplements make up about 30 per cent of the ration and are the most expensive items. Therefore, any attempt to reduce the cost of protein supplement in the ration will affect the overall cost of broiler production. Poultry can utilize a wide a variety of agricultural, industrial and slaughter house byproducts. Sesame oil cake is a good source of protein supplement for broiler rations but cannot be used as a sole source protein due to its deficiency in lysine, while blood meal which is a slaughter house byproduct is a rich source of lysine. Winter (1929) reported that although blood meal is one of the richest source of protein but is not easily digestible and as a single source of protein it did not produce good results. Thus, an attempt was made to study the influence of substitution of varying levels of blood meal with sesame oil cake in order to formulate efficient and cheap broiler rations.

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MATERIALS AND METHODS

Ninety, day-old Hyline broiler chicks were used in this experiment. The chicks were randomly divided into nine groups of 10 chicks each and were kept in thermostatically controlled battery brooders upto eight weeks of age. These groups were randomly allotted to three experimental rations with three groups on each ration. The three experimental ration viz, A, B and C containing 3, 5 and 7 per cent blood meal were prepared by partially replacing sesame oil cake (Table 1). The feed and water were given *ad libitum*. Weekly weight records of individual chicks were maintained and the feed consumption of each group was recorded at weekly intervals. The chicks were wingbanded for identification and protected against New Castle disease by intra-ocular vaccination. The experiment was conducted according to completely randomized design. The data collected were subjected to statistical analysis.

TABLE 1. Composition of Experimental Rations

Ingredients	Rations		
	A%	B%	C%
Maize (Yellow)	60.0	62.0	64.5
Sesame oil cake	27.0	23.0	18.5
Blood meal	3.0	5.0	7.0
Fish meal	3.0	3.0	3.0
Alfalafa leaf meal	3.0	3.0	3.0
Lime stone	2.5	2.5	2.5
Bone meal	0.5	0.5	0.5
Common Salt	0.5	0.5	0.5
Coopavite	0.5	0.5	0.5
Total	100.00	100.00	100.0
Crude protein	22.12	22.23	22.17
Crude fibre	3.68	3.49	3.29
Calcium	1.97	1.90	1.82
Phosphorus	1.20	1.18	1.14

RESULTS AND DISCUSSION

Ration B (5 per cent blood meal) gave highest average weight gains i.e. 731.7 grammes per chick followed by rations A (3 per cent blood meal) and C (7 per cent blood meal) where the average weight gain were 702.2 and 697.2 grammes respectively (Table 2). However, the differences in weight gain for different rations were non significant. The average total feed consumption per chik on rations A, B and C was 1780.3, 1889.9 and 1652.7 grammes respectively. Apparently the feed consumption of ration B was highest, but

TABLE 2. Average weight gain, feed consumption and feed efficiency of chicks fed different experimental Rations

Rations	Weight gain (gms)	Feed consumption (gms)	Feed efficiency
A (3 per cent blood meal)	702.2	1780.3	2.53
B (5 per cent blood meal)	731.7	1889.9	2.58
C (7 per cent blood meal)	697.2	1652.7	2.37

the analysis of variance showed non-significant differences among the consumption of various rations. The chicks fed on ration C consumed minimum feed per unit gain in weight as compared to rations A and B. However, the differences in feed efficiency for different rations were non-significant. The improvement in feed efficiency with increased level of blood meal in the rations could be attributed to the presence of lysine in blood meal, since sesame meal is deficien in lysine. These results are in agreement with the findings of Almquist and Grau (1944), Serfontein (1947), Patrick (1953) and Saquibb and Braham (1955), who reported that supplementation of such protein sources with Lysine or blood meal resulted in better weight gain. The economic comparison of the rations (Table 3) revealed that ration C containing 7 per cent blood meal as a partial replacement of sesame oil cake was most economical than the other two rations. It was concluded that partial substitution of sesame oil cake with blood meal is beneficial. However,

further investigations are needed to find an optimal level of blood meal for use in such ration.

TABLE 3. Economics of the Experimental Rations

PARTICULARS	RATIONS		
	A	B	C
Cost of 100 lbs of feed (in rupees)	29.36	29.12	29.89
Average feed consumed per chick (in pounds)	3.92	4.16	3.64
Average cost of feeding (per chick (in rupees)	1.14	1.21	1.09
Average weight gain per chick. (in pounds)	1.54	1.61	1.53
Cost per pound of gain (in rupees)	0.74	0.75	0.71

LITERATURE CITED

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