

LOW COST POULTRY RATIONS BASED ON INGREDIENTS AVAILABLE IN GOA: III. LAYER RATIONS

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ABSTRACT

Two layer rations with 25 and 15% maize (LR 1 and LR 2, respectively) were formulated incorporating locally available cheaper by-products and their efficiency tested along with a standard ration. LR 1 was found to be most efficient and economical with a feeding cost of Rs. _____ eggs.

INTRODUCTION

Profitable egg [production largely depends upon feeding adequate quantities of nutrients at a reasonable cost. With the increase in price of coarse grains and oil cakes, which constitute the major portion of poultry ration, there has been a search for unconventional feed items as substitutes. Research conducted in the poultry science division of the Indian Veterinary Research Institute (Central Avian Research Institute, at present) and agricultural universities had identified many by-products of grains and animal waste products, which could be incorporated in poultry rations. The selection of these items depends upon their local

availability, price, nutritive value and presence of any deleterious factors. In the present study, locally available by-products like rice bran, brewery grain waste, molasses and fish meal were incorporated as partial substitute in layer rations and the efficiency was studied.

MATERIALS AND METHODS

Two test rations (LR 1 & LR 2) were formulated by reducing the costly ingredients like maize and ground nut cake and substituting with locally available by-products namely rice bran, brewery grain waste, molasses and fish meal. The feed formulae are furnished in Table 1.

A commercial layer ration was taken as standard ration (SR) for comparison.

The three rations were analysed for their chemical composition as per AOAC (1970) and the results are furnished in Table 2.

The efficiency of these rations were tested through feeding trial for a period

Table 1. Feed formulae of test layer rations (LR)

Sl. No.	Ingredients	Percentage inclusion	
		LR 1	LR 2
1.	Maize	25	15
2.	Rice bran	26	36
3.	G.N. Cake	15	10
4.	Fish Meal	10	15
5.	Brewery grain waste	10	10
6.	Mollasses	10	10
7.	Shell grit	3	3
8.	Vit. + Mineral mixture	1	1
Total		100	100

Table 2. Chemical composition of rations

Sl. No.	Rations	Percentage composition			
		C.F.	C.P.	E.E.	
1.	LR 1	8.80	16.62	3.57	8.15
2.	LR 2	11.0	15.75	3.68	7.04
3.	SR	7.82	17.50	4.20	7.92

Table 3. Comparative efficiency of rations.

Sl. No.	Rations	Av. egg production	Av. feed intake (g)	Price of feed Rs./Q	Feeding cost/dozen of eggs	Feed efficiency.
1.	LR 1	33.83 ^a	120.20 ^a	152.23	3.30	2.17
2.	LR 2	33.28 ^a	139.90 ^b	139.90	3.66	2.62
3.	SR	33.28 ^a	119.80 ^a	172.00	3.87	2.25

Averages within the same column having same superscripts are not significantly different (P < 0.05).

of ten weeks. Eighteen White Leghorn layers seven months old randomly selected from the same stock, were allotted to each treatment. The trial was conducted in individual cages. Feeding and watering were ad libitum and all other management practices were similar.

The data on egg production and feed intake were recorded. The initial two weeks data was excluded to eliminate the carry over effect of earlier feeding schedule. Subsequent 8 weeks data was analysed as per Snedecor and Cochran (1967). The feed efficiency and feeding cost for producing one dozen eggs were calculated groupwise for comparison.

The comparative efficiency of the rations are given in Table 3.

EGG PRODUCTION

From Table 3 it could be seen that there was no significant difference in egg production among the groups, as all groups recorded an average production of about 33 eggs per hen during the experimental period. This is suggestive that the test rations also provided adequate nutrients to maintain egg production at par with that of SR.

FEED INTAKE AND FEED EFFICIENCY:

In case of feed intake, significant difference was observed between the test rations. However, the feed intake of LR 1 and SR were at par. The test ration LR 1 was consumed considerably less (120 g/hen/day) as compared to LR 2 (140 g/hen day). Similarly, LR 1 was found most efficient (feed efficiency 2.17), followed by SR (2.25) and LR 2 recorded poor efficiency (2.62). The higher intake and

poor efficiency of LR 2 may probably be due to its higher fibre content (11.7%) which was higher than recommended level (ISI, 1968).

FEEDING COST

Calculated feeding cost per dozen of eggs was lowest (Rs. 3.30) for LR 1 followed by LR 2 (Rs. 3.60). Cost of feeding was highest for SR (Rs.3.87).

Although LR 2 was cheapest (Rs.139.90/100 kg), the economic advantage was lost due to significantly higher feed intake for meeting the energy requirement LR 1, having 25% maize, had feed efficiency comparable to SR. But when maize was reduced to 13% in LR, 2 the feed efficiency was decreased significantly. This is indicative that maize can not be reduced to 15% by substituting with cheaper by-products. Similar result was obtained by Sugandi et al. (1978). From the overall results it was clear that LR 1 was the best out of the three rations tested and thus can be recommended as an economic layer ration.

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