SHORT COMMUNICATION

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EFFECT OF DIFFERENT LEVELS OF HIMAX BS-7 (SODIUM BENTONITE) ON THE PERFORMANCE OF COMMERCIAL LAYERS

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ABSTRACT

Ninety layers chicks of White Leghorn (commercial Babcock 40 weeks old) were employed for this study to determine the effect of sodium bentonite on the performance of adult layers. The birds were fed commercial layer ration without or with supplementation of sodium bentonite at the rate of 1.0 and 1.5 per cent. Results indicated that sodium bentonite feeding significantly improved egg production, feed intake and feed conversion efficiency when added in the layer's diets.

Keywords: Layers, performance, sodium bentonite

INTRODUCTION

Bentonite is one of the additives that have been used successfully in poultry feeds without any harmful effect (Olver, 1988). Bentonite is composed mainly of 75% or more clay minerals and is a complex material with SiO_2 53.788%, Al_2O_3 22.378%, Fe_2O_3 3.90%, CaO 1.65%, MgO 2.123%, Na_2O 1.96%, K_2O 0.693% and organic matter 13.43% (Butt *et al.*, 1984). Improvement in egg production on supplementation of diets with bentonite has been reported by Vasilev and Mirzaliev, (1989). It is, therefore, hypothesized tht less feed will be required to achieve a required gain in weight and to increase profit margin. The present project was designed to examine the effect of sodium bentonite on the performance of commercial layers and to economic feasibility of inclusion of sodium bentonite in their rations.

MATERIALS AND METHODS

The study involved ninety commercial layers of White Leghorn (Commercial Babcock 40 weeks old) for a period of eight weeks at Livestock Production Extension Nucleus, Depalpur, District Okara. The birds were divided into three groups. Each group consisted of three replicates of ten birds each. The birds were maintained in nine separate pens each measuring 16 x 10 feet on littered floor under optimal management conditions. The birds were fed a balanced layer ration *ad libitum* without or with added a commercial product Himax BS-7 (sodium bentonite) at a rate of 1.0 and 1.5%. Data on weekly basis were collected for average egg production and feed intake. Feed conversion ratio (feed/dozen of egg) was calculated from these data. The study was conducted according to completely randomized design (CRD). The data thus evolved were subjected to statistical analysis using analysis of variance technique (Steel and Torrie, 1984).

RESULTS AND DISCUSSION

The data on average egg production, feed consumption and feed conversion ratio along with statistical analysis are presented in Table 1. The results showed that dietary sodium bentonite supplementation improved ($P<0.01$) egg production in layers. The improvement in egg production was found to be 10.21 and 17.72%, respectively with 1 and 1.5% sodium bentonite. Significantly better results were obtained with 1.5% than with 1.0% bentonite. Addition of sodium bentonite to layer's ration resulted in significant ($P<0.01$) improvement in their fee intake. The increase in feed intake was observed to be 5.44 and 7.14 per cent with 1.0 and 1.5 per cent sodium bentonite, respectively. The results further indicated that the addition of sodium bentonite to layers ration resulted in significant ($P<0.01$) improvement in their feed efficiency.

The results of present study are substantiated by the findings of Olver (1988) who observed beneficial effects of sodium bentonite at 2 per cent level on egg production and feed intake of layers. Improvement in egg production of birds has been suggested to be due to better energy and protein utilization brought about by sodium bentonite which prolonged feed passage time thus allowing more time for absorption of digested nutrients in the intestinal tract of the birds. Moreover, the binding action of the bentonite enables it to tie up the heavy metals and mycotoxins unable to be absorbe by the animals (Anonymous, 1992; Monks, 1992). Th

results of present study indicting improvement in egg production and feed conversion rato with sodium bentonite are in line with the findings of Quisenberry (1966) who reported improvement in egg production and feed conversion efficiency of layers with 2.5 to 5 per cent addition of sodium bentonite in the diets. Vasilev and Mirzaliev (1989) indicated improvement in egg production and feed conversion ratio with addition of 2.5 per cent sodium bentonite in the feed. The results of the present study provide evidence to show that supplementation of poultry rations with 1.5 per cent sodium bentonite may improve laying performance. The economical picture (Table 1) shows that the inclusion of sodium bentonite to poultry rations is cost effective.

Table 1: Performance of layers on different sodium bentonite levels.

Particulars	Bentonite levels (%)		
	0	1.0	1.5
Av. Egg production (dozen/bird)	3.33 a	3.67 b	3.92 c
Av. Feed intake (kg/bird	5.88 a	6.20 b	6.30 c
Av. Feed conversion ratio (feed/ dozed eggs)	1.77 a	1.69 b	1.61 c
Cost of feed/dozen of eggs @7/kg	12.39	11.83	11.27
Price of per dozed eggs	18	18	18
Profit	5.61	6.17	6.73

Values with different letters in a row differ significantly ($P<0.05$).

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