188B

Use of mannan oligosaccharides, mycotoxin binders and solid-state fermentation enzymes as alternative feed additives for broilers

K K J S De Alwis and K Samarasinghe*

Department of Animal science, University of Peradeniya, Sri Lanka

This study was carried out to investigate the use of mannan oligosaccharides and solid-state fermentation enzymes as alternatives for traditional antibiotics and the beneficial effects of Mycotoxin binders in Broiler feeds. Two hundred, day- old unsexed broiler chicks (Arbo acre) were brooded for 16 days. They were fed on a commercial broiler starter feed during brooding .A basal diet was formulated without any additive to contain all the nutrients required by broilers and taken as a negative control feed. Four test diets were produced by supplementing the basal diet with either 250 mg/kg Zinc bacitracin (T2), 250 mg/kg Bio-MOS (T3), 250 mg/kg Mycosorb (T4) and 500 mg/kg Allzyme SSF (T5). Five diets were randomly allocated to 20 groups of 10 chicks with 4 replicates per diet according to a Completely Randomized Design. They were fed on experimental diets during day 17- 45. Group body weight and group feed intake were recorded weekly. Weight gain and Feed Conversion Ratio were then calculated. Excreta were collected during two collection periods. The slaughter study was done at the 45th day. The body weight just before killing, dressed weight, weight of liver and abdominal fat pad was taken. The energy metabolizability and net protein utilization were estimated using an indicator method. Data were analyzed using Statistical Analysis System (1990). Means were compared using Duncan's multiple range tests.

Table 1: Feed intake and growth rate of broilers

Variable	Basal feed (T1)	Antibiotic (T2)	Bio-MOs (T3)	Mycosorb (T4)	Allzyme SSF (T5)
Final Body Weight (g)	1864^{a} ± 54.1	1959^{ab} ± 27.4	2024^{b} ± 58.4	1955^{ab} ± 66.0	2010^{b} ± 103.2
Average Weight Gain g/day	53.02^{a} ± 9.97	56.21^{ab} ± 10.46	58.72^{b} ± 15.65	56.26^{ab} ± 12.47	58.24^{b} ± 12.44
Average feed Intake g/day	96.86^{a} ± 27.57	102.30^{b} ± 27.71	104.35^{b} ± 29.19	101.59^{b} ± 27.55	102.45^{b} ± 28.05

Means with the same superscript are not significantly different ($p< 0.05$)

All additives resulted significant improvement ($p<0.05$) in final body weight, average body weight gain and average feed intake. Mycosorb and Allzyme SSF resulted significant improvement in energy metabolizability. This suggests that Bio-MOS and Allzyme SSF can be used to replace antibiotics (zink bacitracin) without affecting performance of broilers. Mycosorb also improves performance of broilers.

*ksam@pdn.ac.lk Tel: 081 2380127