

Effect of Herbiotic FS on Performance of Broiler Chicks in Hot Arid Zone of Rajasthan

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(Received on 03.01.2013; Accepted on 12.02.2013)

Abstract

Ninety (90) unsexed day-old, commercial broiler chicks were purchased from Sandhu Poultry farm, Bikaner. These chicks were weighed individually and uniformly distributed as 45 chicks in each of three groups. Each group was divided into three replicates with 15 chicks in each. The birds were offered feed and water ad-libitum. The chicks were fed with starter mash which contained crude protein 23% and metabolizable energy 2905 Kcal / kg up to three weeks of age. For next 3 weeks i.e. from 4 to 6 weeks of age with finisher mash which contained crude protein 20% and metabolizable energy 3120 Kcal/ kg. Group T₁ (control group) was fed standard broiler mash. Group T₂ was fed broiler mash + herbiotic FS @ 250 g/ ton of feed. Growth, feed consumption and feed conversion ratio of broilers in group T₂ (broiler mash + herbiotic FS @ 250 g/ ton of feed) was better than that recorded on control diet. Findings of present study suggested that supplementation of herbiotic FS was effective in improving performance in broiler chickens.

Keywords: Herbiotic FS; Broiler; Performance; Feed conversion ratio.

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Introduction

Antimicrobial growth promoters are used in poultry feed to increase growth, improve feed efficiency and decrease the incidence of diseases. A well established intestinal microflora competes with pathogens and hence, decreases the possibilities of salmonellosis, necrotic enteritis, colibacillosis etc. Use of synthetic antimicrobial growth promoters leads to resistance development to these and related antibiotics among pathogenic bacteria and makes them inert for the treatment of livestock, poultry and human. Different regulatory body for organic farming standards such as IFOAM basic standards (1998), EU regulation (1804/1999), Codex Alimentarius Guidelines (99/22A/1999) do not allow the addition of synthetic antimicrobial growth promoters to the animal and poultry feed because of the potential development of antibiotic resistant pathogenic bacteria after long use of antibiotic growth promoters in livestock and poultry diets. Therefore, alternative non antibiotic growth promoters are of great importance (Laughout, 2000; Parks *et al.*, 2001; Humphrey *et al.*, 2002).

Herbal growth promoters have been known to be useful in many ways in the diet of commercial broilers. These herbal products are well known for better health, production with

minimum side effects in animals and human beings and proven efficiency. These herbal growth promoters are cheaper and easily available as compared to these synthetic growth promoters (Rekhate *et al.*, 2004; Kumar *et al.*, 2005).

Keeping in view the above facts, the present study was undertaken to study the effect of Growth promoter on broiler performance and on economics of broiler production.

Materials and Methods

Ninety (90) unsexed day-old, commercial broiler chicks were purchased from Sandhu Poultry farm, Bikaner. These chicks were weighed individually and uniformly distributed as 45 chicks in each of two groups. Each group was divided into three replicates with 15 chicks in each. The birds were offered feed and water ad-libitum. The chicks were fed with starter mash which contained crude protein 23% and metabolizable energy 2905 Kcal / kg up to three weeks of age. For next 3 weeks i.e. from 4 to 6 weeks of age with finisher mash which contained crude protein 20% and metabolizable energy 3120 Kcal/ kg. Group T₁ (control group) was fed standard broiler mash. Group T₂ was fed broiler mash + herbiotic @ 250 g/ ton of feed.

Table 1: Means with respective standard errors for body weight (g) at different weeks

Treatment	Age in weeks					
	I	II	III	IV	V	VI
T ₁	104.09±0.77	257.25±1.84	507.26±4.60	865.00±9.11	1179.95±15.60	1396.72±21.28
T ₂	117.46±0.70	290.39±1.80	646.73±4.73	1064.82±10.03	1409.28±16.56	1718.78±22.99

Results and Discussion

The parameters studied were average weekly live body weight, weekly gain in body weight, weekly feed consumption and feed conversion ratio.

Body Weight

The body weight at sixth week of age revealed significantly higher body weight in group T₂ (1718.78 ± 22.92g) than that in control group T₁ (139672 ± 21.28g). The results of the body weight in the present study indicated

Table 2: Means with respective standard errors for body weight gain (g) at different weeks

Treatment	Age in weeks						
	I	II	III	IV	V	VI	I-VI
T ₁	60.14 ±1.06	153.16 ±3.23	250.01 ±4.5	357.73 ±6.49	314.95 ±5.69	233.56 ±9.3	1299.75 ±47.44
T ₂	73.37 ±1.11	172.93 ±2.97	356.33 ±5.5	418.09 ±6.68	344.45 ±7.43	309.50 ±6.06	1673.70 ±26.06

Table 3: Means with respective standard errors for feed consumption (g) at different weeks

Treatment	Age in weeks						
	I	II	III	IV	V	VI	I-VI
T ₁	172.75 ±1.54	458.05 ±8.31	747.57 ±18	703.90 ±34.95	926.83 ±43.41	1099.57 ±26.4	4108.70 ±116.2
T ₂	186.98 ±3.59	453.13 ±6.73	928.64 ±8.6	786.14 ±10.57	871.53 ±17.47	1067.95 ±3.84	4294.39 ±31.32

Table 4: Mean feed conversion ratio with respective standard errors at I - III, IV-VI and I-VI weeks

Treatment	Age in weeks		
	I-III	IV-VI	I-VI
T ₁	2.95±0.02	3.00±0.02	2.97±0.009
T ₂	2.60±0.01	2.54±0.02	2.57±0.011

significant effect of Herbiotic FS/Herbal preparation are in agreement with those reported by Dey and Samantai (1993), Wheeler (1994), Sundaramanna *et al.* (1996), Rajamane *et al.* (1997), Ye *et al.* (1998). (Details are in Table 1).

Body Weight Gain

Overall mean body weight gain (week I-VI) observed in T₂ group (1673.70 ± 26.06g) was significantly higher than control group T₁ (1299.75 ± 47.44g). The results of the body weight gain in the present study indicating significant effect of Herbiotic FS/Herbal preparation or control are in agreement with those reported by Qiao *et al.* (1998), Biswas *et al.* (1999), Akram *et al.* (2000), Gou *et al.* (2000), Sapcotei *et al.* (2000), Rekhate *et al.* (2004), Kumar *et al.* (2005) and Sabina *et al.* (2005). (Details in Table 2)

Feed Consumption

The overall feed consumption throughout the experiment (I-VI weeks) revealed that the significantly higher feed intake was of group T₂ (4294.39 ± 31.32g), Significantly lower average feed consumption was found in control group T₁ (4108.70 ± 116.2g). The results of the feed consumption in the present study indicating significant affect of Herbiotic FS/Herbal preparation or control are in agreement with those reported by Rajamane *et al.* (1997), Akram *et al.* (2000), Chitra *et al.* (2004) and Dani *et al.* (2008). (Details in Table 3)

Feed Conversion Ratio

The overall feed conversion efficiency (week I-VI) showed almost similar trend to that of starter phase, in which best feed conversion efficiency was observed in T₂ group (2.57 ± 0.01). The mean feed conversion ratio of control group T₁ (2.97 ± 0.00) was found to be significantly higher/poor. The results of FCR in the present study indicated that Herbiotic FS proved to be significantly effective in improving FCR. The results of the feed conversion ratio in the present study indicating significant affect of Herbiotic FS/Herbal

preparation are in agreement with those reported by Wheeler *et al.* (1994), Rajamane *et al.* (1997), Ye *et al.* (1998), Rekhate *et al.* (2004), Bharat *et al.* (2008), Dani *et al.* (2008) and Panda *et al.* (2009). (Table 4).

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