

THE EFFECT OF USING BIOGEN AS PROBIOTIC ON BROILER PERFORMANCES IN COMPARISON WITH NEOMYCIN AS ANTIBIOTIC

M. H. Tabidi^{1*}, Mukhtar A. Mukhtar¹, Bhagi el, Taifour¹ and Mohamed A. Mahir²

¹Department of Animal Production, ²Department of Economics, College of Agricultural Studies, Sudan University of Science and Technology, Sudan.

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ABSTRACT

The experiment was conducted to study the effect of Biogen as feed additive for broiler chickens in comparison with antibiotic (Neomycin) via drinking water of broiler chicks and growth attributes. 72 chicks days old abreaker strain day old with an average weight of 43 grams were subjected to 38 days experimental period. The chicks were randomly divided into three experimental treatment groups' probiotic and antibiotic, and control group. Each group with 3 replicate (8 chicks per replicate) chicks in the first group were supplied with biogen in the additive 11 grams Biogen 121 grams diet although experiment period and Neomycin was used via drinking water (as recommended by the company) 1 gram Neomycin/ 1 liter drinking water although experimental period. The treatment of Neomycin stopped before a week of slaughter as safety period. The control group remains without feed additives. Results of experimental showed is significant difference ($P < 0.05$) in body weight gain, feed conversion ratio and final body weight gain (gm). For feed intake there is no signification difference between biogen and Neomycin. In conclusion the results obtained in this indicate that dietary inclusion probiotic (Biogen) and antibiotic (Neomycin) a supported strong performance of chicks and can be applied Biogen as probiotic growth promoter substitutions in broilers diet.

INTRODUCTION

In the digestive system in broiler chicks the microorganisms in gastro intestinal play a big role in the health and performance of broiler. The antibiotic and probiotic are substance produced by some species of bacteria and fungi that have rate to kill or inhibit the growth of bacteria or microorganism are minute her ability to counter the growth of bacteria or micro to kill inhibit the growth of bacteria or microorganism are minute her ability to counter the growth of other microorganism disease.

The antibiotic they have used in three objectives: therapeutic, preventive and feed additive. However, due the fact that continued use of tends to stimulate development of resistance from harmful bacteria there is currently an outcry from consumer society and health sector obtained their use as feed additives in poultry feed (1 ;2; 3) prophalaxy (4;5) and hypocholestermic effect (1; 2). Probiotic consider is a live microorganism very useful as a natural feed additive to increase the effectiveness of the body usually non-existent bowel as an increase in the neighbor hoods over the possibility of digestion and produced immune and reduce the incidence of certain disease and reduce the proportion of blood cholesterol, which materials are often certain nutrients given to animal to stimulate beneficial micro tins.

Corresponding Author

Mohammed Tabidi
mtabidi@hotmail.com

Research Article



Probiotic can be used as feed additive supplements in food and to replace the use of antibiotic as growth promoter or chemical resistance to antibiotics and residues in chicken meat product can be harmful for that recommended to be banned by European Union [1-6]. Consequently several alternatives have been investigated to replace antibiotic. Because of the general problem of increase resistance of bacteria and the decreasing acceptance of consumers (or antibiobacterial growth promoter (AGP) different substances referred to as natural growth promoters (NGP) have been identified and safe alternative to AGP).

There is many a large number of natural growth promoters available in poultry market, including probiotics are defined as live microbial supplements which affect the host animal by improving some beneficial functions in its intestinal microbial balance [7]. They have been used in poultry management to enhance production performance [1; 4, 2] to develop and stimulate the immune response and to reduce mortality. The use of probiotics has become widely accepted as a natural means to promote health for both humans and animals. The health promoting effect of probiotic in the gastrointestinal tract has been mainly associated with their capacity to stimulate the immune response and to inhibit the growth of pathogenic bacteria [8]. Pathogenic of conventional and prohibited AGPs with probiotics has received much attention in the recent years one of the major reasons for increased interest in the use of probiotics is because they are natural alternatives to antibiotics for growth promotion in poultry sector.

The objectives behind this study were to investigate the effects of a commercial probiotic (Biogen) supplementation to the diet of broiler chickens in comparison with antibiotic (Neomycin) and with use of control without any of the treatments on the growth performance of broiler chickens.

MATERIALS AND METHODS

This experiment was conducted at poultry production farm, College of Agricultural Studies, Sudan University of Science and Technology, during the period from 8th April to 23rd May 2014, in an ambient temperature ranged between 27.6 and 35.3°C.

Total of 72 one day old a sexed Aberaker strain of broiler chicks with average weight of about 41 grams were subjected to 43 day experimental period. The chicks were randomly divided into three experimental groups, group one as probiotic (Biogen) group as antibiotic (Neomycin)

treatment group and group three as control without any additives. Each group with equal numbers included 3 replicates (8 chicks per replicate). The basal diet fed to the chicks in all groups was the same and was formulated to meet the requirement of broiler chicks according to the recommendation of [9] for broiler chickens. The birds in all groups were reared under the optimum environmental condition and feed were provided ad libitum. Based on local vaccination program, chicks in all groups were vaccinated against Gumboro D78 disease (IBD) at 10 days old.

The birds in group one were fed based diet supplemented by Biogen probiotic as feed additive 11 gm/ 21 gram feed. Second group was supplied Neomycin via drinking water 1 gm/ 2 liter water which stopped at 7 days before slaughtering (safty period) the third group was untreated without any additive as control.

The measured performance parameters include final body weight (gm) body weight gain, feed intake feed conversion ratio, and mortality rate collected data were analyzed by ANOVA using SPSS Inc [10] program.

RESULT AND DISCUSSION

Results obtained for experimental broiler chicks were shown in Table (1) Results of the experiment showed significant differences ($P < 0.05$) in body weight gain, feed conversion ratio (FCR) and final body weight gain. For feed intake and mortality rate (%) showed no significant difference between Biogen and Neomycin ($P > 0.05$) but both differ significantly in compare with control ($p < 0.05$). Broiler fed with probiotic statistically consumed more feed although experimental periods. In contrast feed conversion ratio did not improve in different periods in growth promoter supplement fed groups compare to control birds.

CONCLUSION

In conclusion the results obtained in this study indicated dietary inclusion of probiotic supported a superior performance of chicks and can be applied as antibiotic growth promoter substitutions in antibiotic growth. However many authors [11;12;13] reviewed the various benefits of feeding probiotic growth promoters and reported that antibiotic may control limit the growth and colonization of variety of pathogenic and nonpathogenic species of bacteria in chicks gut. Diet supplementation with probiotic statistically increased chick's body weight at 42 days of age relative to control.

Table 1. Effect of Using Biogen and Neomycin in comparison with control on performance values broiler feed

Performance Parameters	Dietary Treatments		
	Biogen	Neomycin	control
Final Body Weight	22865.5 ^a	2232 ^a	1976.7 ^a
Body weight	2104.8 ^a	2055.6 ^a	1853 ^b
Feed intake	3947 ^a	3925.9 ^a	3387.5 ^a
FCR	1.87	1.10	1.88
Mortality rate %	0.3 ^a	0.33 ^b	0.34 ^b



Figure 1. Effect of Using Biogen and Neomycin in comparison with control On n performance values broiler feed:

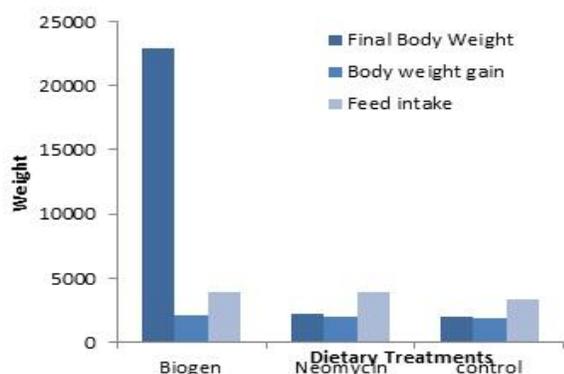


Figure 2. Effect of Using Biogen and Neomycin in comparison with control on performance values broiler feed:

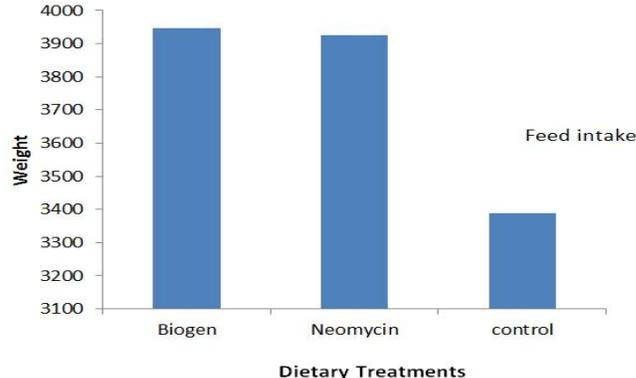


Figure 3. Effect of Using Biogen and Neomycin in comparison with control on the broiler chicks FCR:

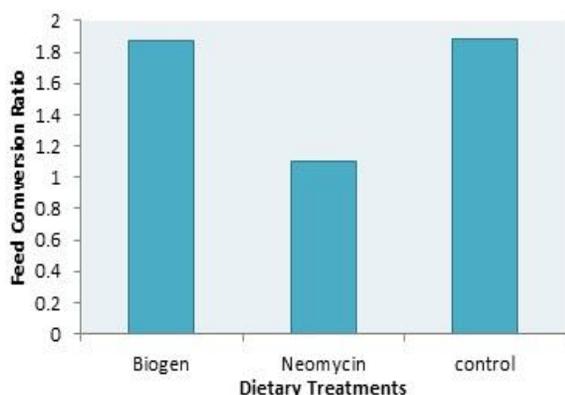
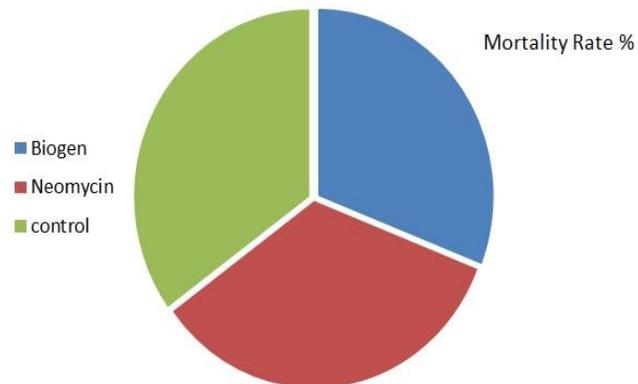


Figure 4. Effect of Using Biogen and Neomycin in comparison with control on mortality rate:



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