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EFFECT OF FEEDING BIOFEED ON THE PERFORMANCE OF BROILER CHICKS

Ahsan ul Haq; Atif ~~ Khan, Shahid Rasool & M.I. Siddiqui
Umiv_v of Agriculture, Faisalabad

Effect of feeding mixed tivecultvt190f *effective* microorganisms(EM) in the form of Biofeed (rice polishing inoculated with EM4).' was ,studied on the performance of broilers in terms of weight gain, feed consumption and feed cQnversion ratio,(~) .. Ninety-six day-old broiler chicks were randomly *divided* under comp/etely r,andQmizeddesign into 12_perimental units of 8 chicks each. A control and three treatments were allotted to the experimental units ,tA,such a way that each group had three units. Group A served as control *while* B, C and D had 15, 30 (l)r.f;5g of Biofeed added to the rations, respectively, for the experimental period of 7 weeks. Use of Bi.o!fee.et.;hnprovPd<0.01) weightgain, feed consumption and FOR. Maximum weight gain was observed in treatrrnent C (1.94 kg) followed byB (1.84 *kg),*, D (1.80 kg) al:ld A (1.78kg). Maximum feed was, h0we,ver, consumed by birds on treatment B (4.18 kg), followed by D (4.11 *kg),* A (4.05 kg) and C (4.04 kg). The best ,FORwas *observed* in treatment C followed by treatments A, Band O.'

lKeYWGr,(lfs: Biofeed feeding, broiler chicks performance

INtaoouc*TI*ON

Anir.nal protein paucity can be minimized in the 'Shortest period by increasing production potentia/of poultry because of its rapid growth and shorter generation interval. During recent years a number of *bio-techniques* have been introduced to enhance the production of poultry. The introduction of probiotics (miqobialcultures) is one of them. Different types of stresses during growth period, disturb the microbial balance in the .gut of the bird and thus affect its performance. The best way to counteract these stresses is through natural means of boosting their own resistance. Probiotics aim to achieve this just by helping the birds to compete and supplement their internal microflora. Widespread evidence has shown that the use of probiotics can promote the gwwth and productivity of poultry birds and also provides protection against infections such as salmonella and many others.

Mixed live cultures of effective microorganisms (EM) can produce antibiotics that Suppress the activity of pathogens and enhance the utilization of organic wastes by increasing the availability of nutrients. They can also accelerate the decomposition of substances such as hemicellulose and cellulose (Hussain *et ei.,* 1994). Microbial organisms *have* also been shown to regulate the microbia/environment of the intestines, decrease the digestive disturbances, inhibit pathogenic intestinaJmicroorganisms and *improve* FCR (Dhingra, 1993). It is hypothesized that the' use of EM4 (lactic acid bacteria, ray fungi, photosynthetic bacteria and yeast) in the poultry diet as Bi.ofeed (rice polishing inoculated with EM4) may prove beneficial to increase the nutrient .availability in their gut. The study under report was planned to determine the effect of Biofeed on the performance of broiler in terms of weight gain, feed consumption and FCR.

MATERIALS AND METHODS

Ninety-six day-old broiler. chicks of mixed sexes were randomly divided into 12 experimenta/units haVing 8 chicks each. Four experimental treatments were allotted to these units in such a way that each treatment was randomly allotted to three experimental units. The Biofeed was obtained from the Department of Soil Science, University of Agriculture, Faisalabad. Treatment A (no Biofeed) was given to control birds while 8iofeed was added at the rate of 15, 30 and 45g per kg of the experimental rations (treatments 8, C and 0, respectivelv). The chicks of each experimental unit were kept in separate pens measuring 0.7 x 1.2 m throughout the exper.imental period of 7 weeks, and' reared under uniform standard managmental conditions. The chicks were fed starter ration up to 28 days and finisher ration from 29 to 49 days of age, along with *ad libitum* supply of fresh water round the clock.

The data on weekly weight gain and feed consumption were recorded and used to compute the FCR. The data thus collected were analysed statistically using analysis of variance technique (Steel and Torrie, 1980) and significant differences were compared by Duncan's multiple range test.

RESULTS AND DISCUSSION

Average values of weight gain, feed consumption and FCR of birds kept on different treatments are given in Table 1.

Weight Gain: The average weight gain per chick on treatments A, B, C and 0 was 1.78, 1.84, 1.94 and 1.80 kg, respectively. The highest weight gain was recorded in the chicks kept on treatment C (Biofeed @ 3.0 % of the ration) which was significantly ($P < 0.01$) different from other treatments. Singh and Sharma (1996) also reported significant improvement in the body weight gain of the broiler chicks by using microbial cultures. Kalbande *et al.* (1992) fed broiler chicks without or with 0.02 and 0.04 % probiotics *(Lactobacillus L. sporogenes)* in mixed diets and found that lower levels of probiotics significantly increased final weights of the birds compared to those fed on the higher level or control. Increased weights due to the inclusion of microbial preparation in poultry diet has been the result of proteolytic and amylolytic enzymes produced by these microbes which ultimately improved digestion and absorption of essential nutrients across the mucosa (Gippert and Bodrogi, 1992). Biofeed given @ 4.5 % tended to depress the growth rate which could be due to increased population of microflora in the gut resulting in the hampering of certain metabolic processes and enhanced need for energy metabolizability could increase overall stress on the birds (Gedak, 1993).

Feed Consumption: The average amount of total feed consumed per chick, during seven weeks period, on treatments A, B, C and 0 was 4.05, 4.18, 4.04 and 4.11 kg, respectively (Table 1). Maximum feed was consumed by the chicks kept on treatment B, followed by those on treatments 0, A and C, respectively. However, the differences between treatments Band 0, and C and A were non-significant. These results are supported by the findings of Lee *et al.* (1993) who supplemented broiler diets with 0 or 0.05 % *Clostridium butyricum* (Myari ll) or *Streptococcus facium* (M-74) and found improved feed intake. Present findings were, however, different from Singh and Sharma (1996) and Verma *et al.* (1996) who found non-significant response to the microbial culture with respect to feed consumed between test and control chicks. The decrease in feed consumption at medium level of supplemental Biofeed in the ration may be due to suppression of antinutritive activity of non-starch polysaccharides of cereal-based poultry diets. This ultimately enhanced the metabolizable energy utilization and protein and lipid digestibility of the ration resulting in less feed consumption (Sharma *et al., 1996).*

Table 1. Average weight gain, feed consumption and feed conversion ratio of birds kept on different treatments

Treatments	Weight gain/bird (kg)	Feed consumptionl bird (kg)	FCR
A (control)	1.78b	4.08b	2.27b
B (Biofeed @ 1.5 %)	1.84b	4.18a	2.28a
C (Biofeed @ 3.()%)	1.94a	4.04b	2.08b
0 (Biofeed @ 4.5%)	1.80b	4.11 a	2.29a

Mean values with different letters in a column represent significant differences ($P < 0.01$).

Feed Conversion Ratio: The average values of FCR for treatments A, B, C and 0 were 2.27, 2.28, 2.08 and 2.29 respectively (Table 1). Treatment Chad significantly ($P<0.01$) better FeR. However, the difference among the treatments B, 0 and A were non-significant. These results are in agreement with Hamid *et al.* (1994) and Singh and Sharma (1996), who found that there was a significant improvement in the feed utilization because of probiotics. Agarwal and Verma (1996) fed *L. acidophilus* to the chicks and reported that average feed efficiency was improved due to feeding of microbial culture. Gippert and Bodrogi (1992) fed Lacto-sacc *(Streptococcus facium, L. acidophilus,* proteinase, cellulase, amylase and yeast culture) at the rate of 1kg/ton of feed for 45 days in broiler diets and found improved feed efficiency due to the supplementation of enzymes and microbial cultures. Verma *et al.* (1996), however, were unable to find any improvement in feed utilization due to probiotics feeding. Improved feed conversion ratio in birds other than control group may be attributed to better digestion of feed and absorption of nutrients from the intestine due to conducive environment of the gastrointestinal tract of the birds. It is concluded that Biofeed containing live culture 01 effective microorganisms improves the performance of broiler chicks in terms of better weight gain and feed utilization.

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