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COMPARATIVE STUDY OF GROWTH PERFORMANCE OF BROILERS AS AFFECTED BY DIFFERENT COMMERCIAL COCCIDIOSTAT

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An experiment was conducted with 240 day old India River broiler chicks to examine the efficiency of various coccidiostat namely Elancoban. Robistat and coxistac. The use of coccidiostat improved weight gain and feed consumption significantly ($P<0.05$) with a non-significant differences among the various coccidiostat used. The feed efficiency was not significantly affected' Economics of rearing broiler chicks was improved by use of coccidiostat.

INTRODUCTION

Poultry industry is confronting a substantial economic loss due to environmental stress including temperature, disease incidence, low quality feed, poor quality chicks, early chick mortality, and lack of uniformity of marketed birds. These factors affect the performance and production cost by reducing the net profit per birds. Despite recent innovations in the field of preventive medicine to combat and to control various disease problem of poultry. It has been estimated that approximately 35.2%, 25.0% and 22.5% mortality in poultry occur due to parasitic, bacterial and viral diseases respectively. Coccidiosis alone accounted for more than 70% of the total mortalities due to parasitic diseases. (Sheikh *et al, 1985).* Coccida are almost universally found wherever, chicken are being raised (Hofstad *et al.* 1978). The present study was designed to observe the comparative efficiency of three coccidiostat namely, Elancoban, Robistat coxistac as feed additives in broiler rations.

MATERIALS AND METHODS

The experiment was conducted at Poultry Experiment Centre, University of Agriculture, Faisalabad, with a total number of 240 day old "Indian River" broiler chicks. The chicks were wing banded for identification and randomly divided into 12 experimental units, consisting of 20 chicks each. Three experimental units were randomly allotted to each of the treatments i.e., A.B.C.. and D in the following manner..

A = Control (No coccidiostat)
B = Elancoban (Monensis Sodium)
C = Robistat (Robenidine)
D = Coxistac (Salinomycin)

Elancoban, Robistat and Coxistac were added on the recommended rate of the manufacturing companies concerned i.e., 40, 25, 50 gms, respectively per 50 kg of ration. The starter ration was offered for first 4 weeks thereafter the finisher ration was fed for 5th to 6th weeks. The coccidiostat were withdrawn 5 day before slaughtering of the experimental birds.

The chicks under trials were kept on deep littre in the individual pens of 4 x 7 square ft. The poultry pens were covered with a special manufactured wire. The chicks were brooded at 35° C during the first week and thereafter the temperature was reduced by 3°C every week upto to the 3rd week. After that chicks were kept on room temperature. Continuous 24

hours light was provided to all groups at all the time. The birds were fed *ad libitum*.

Castle disease through intraocular route' at the age of 8 day and intramuscularly at the age of 30th day.

The following observation were recorded during the study.

1. Day old weight per chick ..
2. Weekly weight per chick.
3. Weekly feed consumption per group.
4. Mortality

The recorded data were subjected to standard statistical techniques for significance *(Steel and Torrie, 1984)*.

RESULTS AND DISCUSSION

An experiment was conducted to examine the efficiency of various coccidiostat as feed additives namely Elancoban, Robistat and Coxistac in broiler ration.

A. Performance

The mean values of weight gain, feed consumption and efficiency of feed utilization during starter and finisher rations along with final total values are given in Table-I.

Weight gain: The maximum weight !ain during starter ration (0-4 weeks) was observed in group D (478.08) followed by B (449.35), C (468.60) and minimum (372.01) in group A (Control). Statistical analysis of the data revealed that coccidiostat supplementation had a significant ($P<0.05$) effect on weight gain. The multiple comparison of mean values of gain showed that coccidiostat fed groups gained significantly more weight than control group. Although coccidiostat fed groups i.e., B, C and D gain 26.17, 25.96 and 28.51 percent more weight than group A but the observed differences among these groups were non-significant.

Statistical analysis of the tabulated data during finisher ration shows that the observed mean differences among the various experimental groups were significant. During finisher ration was observed in group "C" followed by D (868.58), B (849.66) and A (812.83) Table-I.

The pooled data during starter and finisher ration showed that group C gained maximum (1348.35) followed by D (1346.60.), B (1319.01) and A (1184.84) Table-I. Groups C, D and B gained 13.15, 13.02 and 10.78 percent respectively more weight as compared to control group A. When the pooled data were subjected to statistical analysis the results revealed that coccidiostat fed groups gain significantly ($P<0.05$) more weight than control groups. The paired comparison of the coccidiostat fed groups showed that the observed differences among these groups were non-significant. These results are in close agreement to the findings of *Edgar ad Flan{l$,arz,(1?79) 1Ill cDouglad et al, (1990), Hayat et al,* (1991) *and Ramisz and Balicka-Laurans* (1991). They all reported that feeding of coccidiostat improved weight gain.

The non-significant difference during finisher ration may be due to the fact that the coccidiostat were fed almost for onc week and were with drawn during next week for depletion to avoid their adverse effect on human/consumers health.

Feed consumption

The mean feed consumption in experimental groups A, B, C and D during starter ration is given in Table-I. The analysis of variance revealed significant ($P<0.05$) difference in feed consumption among the various experimental groups. The paired comparison of means showed that coccidiostat fed groups i.e., B, C, and D consumed significantly more feed than control groups A. The group B, C and D consumed 10.44, 8.26 and 11.37% more feed than control group A. The differences in feed consumption among coccidiostat fed groups B, C and D were non

significant. There was non-significant difference in feed consumption during finisher ration.

influenced although the addition of coccidiostat in the feed, affected the weight gain and feed consumption. Although the mean

Table 1: Average values of weight gain, feed consumption and feed efficiency in broilers Chicks feed rations supplemented with different coccidiostats.

Description	Control A	Elancoban B	Robistat C	Coxistac D
Weight gain				
0-4 weeks	372.01[b]	449.35'	468.60"	478.08'
5-6 weeks	812.83	849.66	878.75	868.58 NS
Total 0-6 weeks	1184.84[b]	1319.01'	1348.35"	1346.60'
Feed consumption				
0-4 weeks	1027.10[b]	1134.33"	1111.96"	1143.86'
5-6 weeks	1446.36	1665.50	1703.66	1682.83[NS]
Total 0-6 weeks	2473.46[b]	2799.83'	2815.62"	2826.69"
Feed efficiency				
0-4 weeks	1.93	2.0	1.93	1.96 NS
5-6 weeks	2.73	2.4	2.40	2.36 NS
Total 0-6 weeks	2.33	2.2	2.17	2.16
Mortality	2	–	–	–
Net Profit (Rs.)	21.91	26.09	26.21	27.13

Same superscript for means in rows show non-significant difference; NS = Non-significant.

However mean feed consumption was maximum in groups "D" followed by C and B while minimum was recorded in group A Table-I. The pooled data during starter and finisher ration showed significantly more feed consumption in coccidiostat fed groups (Table-I), but with non-significant differences among themselves, The coccidiostat fed groups B, C and D consumed 15.15, 17.80 and 16.35% more feed than control group A. The result is confirmed by the findings of *McDouglad et al (1990), Hayat et al* (1991) and Ramisz and *Balicka-Laurans* (1991). They reported that the addition of coccidiostat improves feed consumption.

Feed efficiency

The calculated feed efficiency from the recorded data on various experimental groups during starter, finisher ration and total period is shown in Table-L The results of analysis revealed that the feed efficiency is not differences were non-significant but on the average the feed efficiency is better in group A and C in comparison to Band D groups during starter ration. The results revealed that the efficiency during finisher ration was reversed. On the average it was better in group D and C followed by group B and minimum in group A. Although the differences were statistically non-significant.

The results of the pooled data during starter and finisher ration revealed that the differences in feed efficiency were non-significant But on the average the feed efficiency was best in groups D followed by C and B. The efficiency was poor in control group A. These results are confirmed by the findings of *Edgar and Flanagan* (1979), *Hayat et al* (1991) and Ramisz and *Balicka Laurans* (1991).

Mortality

The death of only two birds at the age of 5th weak was record. The symptoms and post

mortum results confirmed that these birds belonging to control group A died due to infection of coccidiosis. No death was recorded in coccidiostat fed groups.

Economics

The economic to confirm the feasibility of the use of coccidiostat in broiler ration was calculated. The average production cost per bird in A, B, C and D groups was rupees 27.53, 28.59, 28.71 and 28.75 and net profit per bird was Rs. 21.91, 26.09, 26.21 and 27.13, respectively. On the basis of these findings it is recommended that the commercial producers must use coccidiostat to earn maximum profit. The cost of labour electricity, and rent of building is not included in the calculations.

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