

PERFORMANCE OF BROILER CHICKS UNDER DIFFERENT TYPES OF MANAGEMENT PRACTICES

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In general broilers are offered in *ad-libitum* to feed and water to achieve maximum growth rate. However, it is noticed that this is not always the best thing to apply in today's broiler production systems. Now a days, in more and more countries, growth rate is retarded to improve feed efficiency and to lower mortality due to metabolic disorders like ascites, heart failure and sudden death. To retard the early growth rate in broilers, it is necessary to reduce nutrient intake by means of diet dilution (Leeson; 1989). Therefore, poultry producers are forced to reconsider the conventional system of broiler housing and management in all aspects. Though the performance of extensive broiler production systems are not scientifically explained but in case of geese and ducks, the extensive management and feeding system can have both economical and ecological justification (Jamroz, 1996). Even in near future there is need to begin the organic production of table eggs and poultry meat for the home market and for export resulting from growing demand for "Eco-eggs and Eco-broilers".

Therefore, an attempt was made for broiler chicken production under different types of management practices. The experiment was conducted on 96 Vikram color broiler chicks to study their growth performance under intensive and semi-intensive system of management practices. The experiment was conducted into two phases. In first phase, the chicks were reared from day old to 28 days in three groups under deep litter in confined room maintaining room temperature. The birds were offered conventional mash diet that contained 22% dietary protein level (Table 1) and water in *ad-libitum*. The diet was analysed for proximate principle as per the procedure of AOAC (1980). In the second phase of study, 24 birds were taken randomly and allowed to graze (Fig. 1) in four groups for 6-8 hours daily for a period of 21 days in fenced area of groundnut fodder block (T3) after 28 days of common feeding. The birds were provided only water during grazing period. However, after grazing, the birds were again kept inside the house in four groups and offered feed in *ad-libitum*. The next 24 birds taken from previous common group were kept inside the house in four groups and provided feed in *ad-libitum* with groundnut fodder (T2). The groundnut fodder was cut daily and spread on the litter twice a day for a period of 21 days. Similarly, another 24 birds were also kept separately inside the house in four groups (T1) and provided only feed in *ad-libitum* for the same period.

The composition of feed offered in second phase was similar to that of the first phase. The initial and final body weights and cumulative feed intake were recorded

in both phase of study and from this average growth rate and feed conversion ratio (FCR) were calculated. The data were analysed for test of significance as per the procedure of Snedecor and Cochran (1981). Groundnut (*Arachis hypogaea*) fodder block was developed by transplanting C.V. AG-1 collected from IGFRI, Jhansi. The fodder yields recorded 50.3 t/ha from four cuts with an average of 23.4% dry matter containing 17% protein content on DM basis.

The result of growth performance of two phases of broiler chicks reared under different types of management practices are presented in Table 2. The growth rate (g/d) of birds ranged from 15.32-16.04 during first phase (0-28d) of feeding with corresponding FCR values 3.17 and 3.03 respectively. Similarly, the growth rate of chickens in second phase (28-49d) of feeding was varied from 37.34 (T3) to 42.81 (T1). However, the differences in growth rate was not significant ($P < 0.05$). The similar type of trend was also recorded for feed consumption and it varied from 125 to 128 g/d. The birds were habituated for grazing only after 4-5 days when kept on semi-intensive system. It was observed that birds were taken least interest to eat green groundnut fodder. However, birds were found to eat either insects or earthworm etc. in negligible amounts. When the birds were taken back to inside house at evening time they compensated their daily feed intake by consuming more quantity of concentrate feed. The FCR value was high for group T3 (3.38) than group T1 (3.00) and T2 (3.03). However, the differences were nonsignificant and it was probably due to more or less same values for feed intake and growth rate on all three groups.

It is revealed from present study that grazing of commercial broiler birds or providing fresh groundnut fodder did not show any beneficial impact on growth rate as well as saving of feed consumption. Therefore, the newly developed breeds of the country, which is suitable for rural poultry, might perform well in the said semi-intensive system of production.

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Table 1: Composition of conventional mash diet (4-28 days)

Feeds	kg/100Kg
Maize	50
Rice polish	11
Groundnut cake	17
Soybean meal	10
Fish meal	10
Additives*	02
Dietary Protein (%)	22

* Ventrimix, 30g; Anizyme, 100g and Mineral mixture, 1.870Kg

Table 2: Effect of different management practices on broiler performance

Particulars	T1	T2	T3
4-28 days (First phase)			
Body Wt. at 28d(g)	469	489	475
Growth rate (g/d)	15.32	16.04	15.54
Feed intake (g/d)	48.57	48.57	48.57
FCR	3.17	3.03	3.12
28-49 days (Second phase)			
Body Wt. at 49d(g)	1163±44.23	1169±22.82	1078±20.73
Growth rate (g/d)	42.81±1.98	42.34±0.96	37.34±1.95
Feed intake (g/d)	127.75±1.11	128.00±0.71	125.00±2.04
FCR	3.00±0.12	3.03±0.07	3.38±0.19