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Comparative Study of with or without Perches on the Production and Behaviour of Broiler

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Abstract: Birds naturally have flying habit and using perches over 24 hours, to fell more safe and also to provide more space at floor for others while using perches. 106 day old chicks were purchased and randomly divided in two groups i.e. Group A (50) and b (56). Chicks housed by providing similar broding rearing and growing managements at poultry Experiment Station, Department of Poultry Husbandry, Tandojam, Starter and finisher feeds (both iso-nitrogenous and iso-caloric) and water were offeed ad libitum and light was provided over 24 hours for 42 days of experimental period for production and behaviour studies. Results shows that both average total feed and water intakes were higher for B than A group (3.322 and 3.255 kg b^{-1} and 6.694 and 6.570 litre b^{-1}, respectively) and also their Interaction between groups and weeks were also significant $P<0.001$). Both average live body weight and weight gain were slightly more for B than A (1.836 vs. 1.827 and 1.791 vs. 1.782 kg b^{-1}), respectively. The mortality was least in group B than A (5.4 vs. 8.0 percent). Profit for use of perches (B) was Rs. 81.6 and Rs. 0.0 for without perch group (A). Both average feeding and drinking behaviours were higher in group A than B (422.1 vs. 217.1 and 117.4 vs. 74.8 min 24 $hrs^{-1}b^{-1}$, respectively) and its interactions between groups and weeks were also found significantly ($P<0.01$). Chicks of group B begin using perches from its first week and increased in its using length in 24 hours upto third week but later significantly decreased each week, (13.1 min 24 hrs^{-1} b^{-1}) against no perch used in A. It concludes that broiler has begin using perches from first to sixth weeks of age and perches become economical and profitable.

Key words: Broiler, perch, feed and water intake, live body weight, mortality, profit, feeding, drinking and perching behaviours

Introduction

Poultry is one of the important disciplines of livestock sector, which provides food like eggs and meat for human being and also offers more employment opportunities at various levels. Traditional method of poultry rearing was free range which have some merits and demertis. However, with the introduction of intensive poultry rearing method which allows farmers to house more birds in a limited space. The housing arrangement varies according to the weather condition of the area and system of poultry rearing.

In construction of the poultry houses, use of perches or roosts have also been reported as one of the measures to comfort the birds. The chicken as a wild junge fowl, rest on the high libs of the trees. Birds prefers roosting on long wooden bars of two square inches round at the top and flat at the bottom of round bumboos, having diameter two inches. The perches hsould be fixed at the height of 16 inches above the ground level and at least 10 inches away from rear walls in such a way that are easily removable for cleaning and disinfectin of the house. The distance between two perches should be 12-14 inches. The perches should be painted occasionally with creasote to prevent insects (Das, 1994). The most common material used for perches was 2 by 3 or 2 by 4 inch lumber. This may be laid in the side or placed on edge in either case it was wel to flat the upper edges (Card and Nesheim, 1974).

Materials and Methods

In an experiment 106 day-old chicks were purchased and randomly divided into two groups i.e. group A (50) and treated as control group without perch introduced on 1.0sq.ft $bird^{-1}$ and B (56) with two perches introduced on 0.9 sq.ft $bird^{-1}$, respectively. Broiler were brooded for two week sand kept at Poultry Experiment Station, Department of Poultry Husbandry, Faculty of Anima Husbandry and Veterinary Sciences, Tandojam. The starter feed was offered during initial period and finisher feed in the final rearing period *ad libitum* and water was given manualy 24 hours. Sun light dried wooden dust was used as litter 2-3 inches depth at floor. Mortality was recorded on daily basis and using 60 watts electric bulbs provided 24 hours light. The birds were individual weighed at the beginning and later each work.

The behaviour recording data sheet was prepared to record the feeding, drinking and perching behaviours of the chicks with one minute interval over 24 hours in their groups once each week by Time Sampling Technique (Rind, 1995).

The data so collected were tabulated and analysed by

using General Linear Model in Minitab Microsoft statistical Programme, U. S. A. (M. T. B., 1992).

Results

Feed intake: Results (Table 1) show that average total feed intake of broiler in group B took significantly ($P<0.05$) greater amount of feed than A (3322 vs 3255 g b^{-1}), respectively. The interaction of groups and weeks (Table 1) show that the broiler kept with or without perch groups consumed more feed intake continually upto their time of marketing (6th week). Kambe, *et al.*, (1997) reported that layers facilitated with perches show similar results that birds were almost moved to feed before or after use of perches.

Table 1: Average total feed intake of broiler kept with or without perches (g b^{-1})

Weeks	Group		Prob.
	A	B	
1	107	96	
2	278	217	
3	540	465	
4	594	675	0.001
5	759	856	
6	977	1012	
Total	3255	3322	0.001

Table 2: Average total feed intake of broiler kept with or without perches (ml b^{-1})

Weeks	Group		Prob.
	A	B	
1	194	205	
2	531	469	
3	1012	974	
4	1256	1353	0.001
5	1629	1658	
6	1948	2035	
Total	6570	6694	0.001

Table 3: Average total feed intake of broiler kept with or without perches (ml b^{-1})

Days	Group	
	A	B
1st	45	45
42nd	1827	1836
Weight Gain	1782	1791
Mortality (%)	8.00	5.4
Perch profit (Rs./Perch)	0.00	81.6

Water intake: Water intake (Table 2) was significantly ($P<0.01$) greater in group B, (6694 ml) than A, (6570 ml), respectively. The interaction of groups and weeks show that water intake was continuously increased with the progress of period in the broiler, irrespective of groups.

Table 4: Average feeding behaviour of broiler kept with or without perch (min 24hrs^{-1} b^{-1})

Weeks	Group		Prob.
	A	B	
1	348.8	187.1	
2	365.2	220.1	
3	487.1	249.6	
4	437.2	207.8	0.001
5	399.5	212.3	
6	494.8	225.6	
Average	348.8	217.1	0.001

Table 5: Average drinking behaviour of broiler kept with or without perch (min 24hrs^{-1}b^{-1})

Weeks	Group		Prob.
	A	B	
1	83.3	68.5	
2	97.7	71.3	
3	133.8	89.1	
4	134.1	73.2	0.001
5	118.1	63.5	
6	137.4	82.9	
Average	17.4	74.8	0.001

Table 6: Average perching behaviour of broiler kept with or without perch (min 24hrs^{-1} b^{-1})

Weeks	Group		Prob.
	A	B	
1	0.0	0.7	
2	0.0	14.9	
3	0.0	22.1	
4	0.0	19.8	0.001
5	0.0	13.8	
6	0.0	7.0	
Average	0.0	13.1	0.001

Weight gain, Mortality and Profit: Final live body weight (Table 3) was heavier for group B (1.836 kg); than group A (1.827 kg), per bird and similarly followed by weight gain for both groups of broiler (1.791 vs. 1.782 kg b^{-1}), respectively.

Mortality was higher with perch group A (8%) than with perch group B (5.4%)

Economic efficiency of broiler kept with perch (Table 3) was worked out Rs. 81.60 per perch in group B,

respectively.

Feeding behaviour: Average feeding behaviour (Table 4) show that broiler without perch group A spent significantly greater time (422.1 min) than with perch group B (217.1min) over 24 hours broiler^{-1}, respectively. Furthermore, the interaction between groups and weeks shows continuous increasing trend in feeding behaviour upto third week but later decreased significantly (Table 4) during 4th and 5th week and lastly all the broiler in various groups were comparatively tried to extend in their feeding time during 6th week.

Drinking behaviour:Drinking behaviour (Table 5) reveal that broiler in group A kept without perch, spent significantly ($P<0.01$) greater time (117.4 min) than group B kept with perch (74.8 min) per broiler over 24 hours, respectively. The interaction between groups and weeks illustrated increasing tendency for drinking behaviour upto third week without and with perch treatments while later decreased significantly during 4th and 5th weeks (Table 5) but again increased during final (6th) week in all groups, respectively.

Perching behaviour: the perching behaviour (Table 6) of the broiler kept in group B spent 13.1 min over 24 hours bird^{-1}. Furthermore, the interaction between groups and weeks shows increasing trend in perching behaviour upto third week and later started decreasing upto last 6th week.

Discussion

Kambe, *et al.* (1977) studied layers using perches that birds were frequently using the perches and with or without its use, layers frequently returned to feed rewards.

Niekerk and Reuvekamp (2000) worked with pullets which frequently uses the perches in cages and reported that baout more than 70 percent birds were using perches. The feed intake was lower for perch using bird, this might be due to the submission of pullets to other dominating birds those may be occupied the space around feeders but in this study of broilers feed available over 24 hours and perch use birds almost joined feeders without any competition as well as on the way back.

Conclusion

Itconcludes that broiler facilitated wth more number of perches were spent lesser time for their production assisting behaviours, with more frequent using of perch each hour than without perch broilers but net return increased with increase of density of birds per area povided perches. It can be suggested that best use of perches for broilers housed in various densities, uplifts the economics of each broiler can be explored on commercial level.

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