

Effect of Environmental Enrichments on Behaviour and Welfare of Broiler Chickens

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At present broiler chicken industry in Sri Lanka is moving towards more intensive closed-house systems. This study aimed to assess the effect of providing environmental enrichments (elevated platforms, hanging compact discs, straw bales, and paddy husk area for dust bathing) on behaviour, fear level, welfare (footpad dermatitis, hock burn, plumage cleanliness, and litter quality) and body weight of broiler chickens. On the 10th day of age, 240 Indian River commercial broiler chicks were randomly distributed into four pens (n=60). Two replicates per control (no enrichment) and treatment groups were allocated and the study was carried out in two batches. Data were collected during a four-week period. Behaviour was assessed by scan sampling method using live observations. The tonic immobility and novel object tests were performed to measure the fear level of broiler chickens. Welfare parameters were assessed using a scoring system. The generalized linear mixed model, Kruskal-Wallis and one-way analysis of variance tests were used to analyze treatment effects. The frequency of preening behaviour was significantly higher ($P<0.05$) in treatment groups than control groups in the daytime and the resting behaviour was lower ($P<0.05$) in treatment groups than control groups in day and night in all weeks. The fear level was higher ($P<0.05$) in control groups than in treatment groups. The footpad score, hock burns (except the first week), plumage cleanliness (during the last two weeks) and litter quality (except the first week) was better ($P<0.05$) in the treatment groups compared with control groups. Growth rate of birds was also improved in treatment groups. Overall, the results indicated that providing environmental enrichments enhanced behaviour, welfare and growth performance of broiler chickens under closed-house systems.

Keywords: Behaviour, Broiler chickens, Environmental enrichments, Fear level, Welfare

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