

## Performance and Behaviour of Broilers under Three Different Artificial Light Colours

Senaratna D<sup>1</sup>, Samarakone T<sup>2</sup>, Atapattu NSBM<sup>1</sup>, Paranawithana DR<sup>1</sup> and Chandrasiri WCJ<sup>1</sup>

<sup>1</sup>Department of Animal Science, Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya

<sup>2</sup>Department of Animal Science, Faculty of Agriculture, University of Peradeniya, Peradeniya

### Abstract

Light is a complex phenomenon that is classically explained with a simple model based on rays and wave fronts. To investigate the effect of three different colours of light on performance and behaviour of broilers, a total of 96 Hybro P.G. Plus broiler birds were exposed to blue (BL), green (GL) and white (WL) light treatments from 21 to 39 days of age. All light sources were equalized on the intensity of 20 lx and artificial light period was 9 hrs daily during night time providing an increased photoperiod (20L:4D). Complete randomize design was used with 4 replicates. Water and feed were provided *ad libitum*. Behavioural changes under respective lights were assessed on 12 broad mutually exclusive categories; walking, standing, litter eating, drinking, aggression, feather pecking, bird interaction, lying, dust bathing, wing flapping, vocalization and other by adopting scan sampling method using an ethogram. Birds were weighed weekly. Daily feed and water intakes were measured. The colour of light had no significant ( $P>0.05$ ) effect on any of the performance parameters such as weight gain, final body weight and FCR. Feed and water consumption were also similar in all treatments and, irrespective of the treatment birds consumed significantly ( $p<0.05$ ) higher feed and water during day time compared to night. Except pecking behaviour, none of the other behaviours were affected by the colour of light. Pecking was significantly low under WL both during day and night times. It is concluded that blue, green or white colour light had no effect on the performance and behaviours other than feather pecking which was reduced under WL.

**Keywords:** behavior, broiler, light colour, performance