Darkness and partitioning of darkness – does it affect the behaviour of commercial broilers?

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Behaviour was recorded for broilers given 14L:10D, 17L:7D, 20L:4D or 23L:1D lighting programs at either 27 or 42 days (d) of age using an infra-red camera system. Instantaneous scan samples were monitored each 10 min for a full 24 hours (h), with 2 replications per lighting program. Data were analysed with Proc GLM of SAS, and all non-normalised data was transformed prior to analysis. Behaviour was significantly impacted with the addition of a dark period. Birds raised under near-continuous photoperiods spent the most time inactive resting, with the least amount of time walking, running, standing, preening, and leg/wing stretching, feeding, foraging and dust-bathing. For most behaviours, the percentage of time spent performing them was similar for 14L and 17L. Sound in each of the rooms was measured in one experiment at 47d of age. Birds under the near-continuous photoperiod were the quietest (quadratic relationship with birds under 20L being the loudest). Partitioning a 9h dark period into 2 or 3 periods produced minor differences in behaviour. Over a 24h period, comfort behaviours were reduced when the dark period was divided. Behaviour differed between the dark periods as well. When the dark period was given in 2 sections, birds rested less, and fed and drank more in the second section. If darkness was given in three sections, activity increased in the third section as compared to the first and second. To conclude, exposure to varying lengths of darkness impacts behaviour. Birds on long photoperiods are generally inactive and do not perform, or perform little of, many behaviours suggesting that welfare is impacted negatively. Little differences are noted between 7 and 10h darkness, implying that 7h is an acceptable amount of darkness from a behaviour perspective. Partitioning the darkness suggests that rest is not as complete in the second section, which may affect the quality and length of sleep available for the birds.

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