

Effects of coloured illumination of hen houses on the behaviour of laying hens

Andreas Suter, Peter Spring, Beat Huber-Eicher

Swiss College of Agriculture SHL, Bern University of Applied Sciences, CH-3032 Zollikofen

Key words

Coloured light, laying hens, animal welfare

Aim of the study

Poultry farmers start to use more and more coloured LED's (Ligth Emitting Diode) to illumination hen houses. They claim that coloured light (mainly red and green) may reduce problems with behaviour disorders like feather pecking and increased aggressiveness but scientific evidence is lacking. This study is looking at the effects that illumination with white, red and green LED's has on the behaviour and production parameters of laying hens.

Material and methods

24 Groups of 25 laying hens were kept in identical compartments (5.0 x 3.3 m) equipped with a litter area, raised perches, food and drinking facilities and Nestboxes. First they were kept under white LED's for 3 weeks to accustom. For the next 4 weeks 8 randomly chosen compartments were lit with red LED's and 8 other with green LED's. The hen's behaviour (separated in 12 categories) was recorded during the last 2 weeks (per compartment 32 scans randomly distributed over the whole day). Additionally weight gain, feed consumption and the onset of lay were registered.

Results and significance

Hens under red showed less signs of aggressiveness (measured as hacking other individuals and number of screams) than hens under white. There was a trend for hens under green LED's to spend less time with feeding than under red or white. Additionally hens under green light showed increased pecking of objects (when compared to red and white) and more time searching (when compared to red). No differences between treatments were found when comparing active and passive behaviour. Also no differences were found in food consumption and weight gain.

Hens under red light started 2 day earlier with laying than under green and 3.25 day earlier than under white.

Summing up, red led to less aggressiveness (compared to white) and an earlier maturation of the hens. Green light directed activities with the bill away from the feed and towards objects. No changes that could be relevant in respect to animal welfare were found in the behaviour of hens under green and red illumination when compared to white (at least not for the duration of the experiment).

Publications, posters and presentations

Suter A., 2010. Einfluss verschiedenfarbiger LED-Beleuchtung auf das Verhalten und die Leistung von Legehennen. Bachelor Thesis, Schweizerische Hochschule für Landwirtschaft SHL, Zollikofen, 40 S.

Project 2.10.02

Project duration June – October 2009