

Illumination in poultry houses: spectral sensitivity of laying hens

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Key words

Illumination of poultry houses, spectral sensitivity, domestic fowl, illumination intensity

Aim of the study

The project aims at reviewing and extending the sensitivity curve for poultry published by Prescott and Wathes (1999) with the help of the methodology of Operant Conditioning. This will serve as a reliable basis to accurately determine the brightness actually perceived by poultry.

Material and methods

By means of operant conditioning, laying hens learnt to peck at the lit key of two available keys. As soon as this was achieved, the light intensity was gradually reduced. When hens pecked the correct key less than 70% of the time it was concluded that they can't recognize this intensity at the tested wavelength. It was planned to repeat this procedure with 22 different wavelengths.

Results and significance

The method of operant conditioning was successfully applied. Hens learnt the task within the previewed time. But there were serious technical problems with the correct presentation of the light stimuli. The emerging problems could be solved successfully. However, to the end of the project it got clear that it was necessary to recalibrate all light modules with all wavelengths. This definitively surmounted the available resources (labor and finances). Therefore we are unfortunately unable to present reliable results.

Publications, posters and presentations

Colloquium Abteilung Tierschutz (Dr. H. Würbel, Fakultät Vetsuisse): Presentation and discussion of the planned work and the previous experiences. 15 January 2013

Project 2.12.06

Project duration 1. October 2012 till 30. September 2013