

Title: Best practice lighting management for Australian layers

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Summary

In a recent consultation exercise (conducted by Australian Eggs) with industry leaders, lighting was identified as an area where concentrated development and extension projects would be of great benefit.

Lighting is a complex topic because it includes several characteristics (photoperiod, intensity, and spectral composition), which can have many interactive effects. Modern poultry systems (both egg and meat production) use the manipulation of light in an attempt to control behaviour and improve production.

Globally, layer chickens are housed in a variety of different systems – including outdoor enclosures, which utilise natural daylight; and large caged units, which incorporate predominantly artificial lighting programmes. The increasing environmental complexity seen in laying hen systems is an effort to drive productivity and address welfare concerns.

Most commercial poultry are produced in indoor housing, with the majority of birds being exposed to artificial lighting rather than natural daylight. Factors such as photoperiod (light-dark cycles), light intensity, wavelength (and therefore type of light source) will all exert separate and combined effects.

This review considers lighting conditions during the pullet rearing and laying periods. It takes into account the effect of lighting on bird welfare (health and behaviour) and production (laying performance, onset of lay, egg weight, growth, and timing of sexual maturity).

In addition to the review of scientific literature, a series of interviews with industry leaders, (producers and technical experts) were conducted, to provide context to the scientific research and provide a practical insight into optimum lighting conditions. Respondents felt that much of the scientific information and extension material was written in a European context and did not always take into consideration the Australian environment and farming systems.

The review also presents a number of recommendations for further research and industry extension, in the context of the current understanding of production requirements, animal welfare concerns and advancement in lighting technology.