Evaluation of illumination time and intensity on laying performance and economic benefit of native breeder hens [1]

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Received: Aug. 22, 2016; Accepted: Nov. 3, 2016

Abstract

The purpose of this study was to investigate the effects of white LED light illumination time and intensity on laying performance of native breeder hens in traditional house. LRI native chickens Tai-shu no.12. A total of 360 experimental animals were used. Completely random design was used in this experiment design. There were two light length (16, 17 h) and two light intensity (10-30, 60-100 Lux) during laying period used as factorial treatments. Three hundred and sixty hens were randomly divided into four treatment groups inclusion of (A) 60-100 Lux, 17 h white LED light, (B) 10-30 Lux, 17 h white LED light, (C) 60-100 Lux, 16 h white LED light and (D) 10-30 Lux, 16 h white LED light. Data of laying performance from the first egg to 60 weeks of age were collected and economic benefit was evaluated. The results indicated that 16 h light length produced 91.5 eggs (mean of C and D) and 17 h light length produced 86.4 eggs (mean of A and B) from the first egg to 40 weeks of age, which shawed significant difference ($P < 0.01$). There was no significant difference between 16 h and 17 h on egg production from 40 to 60 weeks of age. From the first egg to 60 weeks of age, 16 h light length produced 169.5 eggs (mean of C and D) and 17 h light length produced 162.2 eggs (mean of A and B), which shawed significant difference ($P < 0.05$). Weekly increase of 30 minutes white LED light at night till 16 h can have the best egg production, hatched chicks and economic benefits from the first egg to 60 weeks of age.

Key words: Native breeder hen, Light program, Egg production performance, Economic benefits.

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