Impact of some light sources on production and reproduction performance of Japanese quail


Abstract:

The present study aimed to investigate the impact of light, emitted from incandescent, fluorescent and saving lamps on the growth performance, carcass traits, some blood parameters, age and body weight at sexual maturity, viability, productive and reproductive performance of Japanese quail birds. Therefore, 126 one day old chicks were randomly distributed into three groups (three replicates each of 14 birds). Birds in first group (control) were subjected to light produced by incandescent light bulbs (INC, C), while those in the second and third groups were reared under fluorescent bulbs (FLU, T1) and saving light bulbs (SAV, T2), respectively. All birds were raised under photoperiods of 12 and 16 hours per day during the growing and laying periods, with light intensities of 4-6 and 14-16 Luxes, respectively. Feed and water were available ad lib. and all the other managerial conditions were similar during the experimental period. The results could be concluded as follow: 1- The body weight BW increased relatively in birds exposed to light from the saving lamp, while the increase was only significant in birds subjected to light from the incandescent lamp. 2- The body weight decreased significantly in birds by using the Flu. Lamp. 3- The BWG increased significantly in birds exposed to light from the incandescent lamp, while the increase was only relative by using the saving lamps. 4- The light sources had no effect on the mortality rate during the experiment. 5- The dressing and the heart percentages improved relatively, while the improvement in the liver was significant by using the saving and the incandescent lamps as compared to the fluorescent lamp. 6- The use of the saving lamp improved significantly and the glucose percentages, while the improvement was only relative in albumen and total protein as compared with the incandescent and Fluorescent lamps. 7- The age and BW at sexual maturity decreased significantly in birds exposed to light from the saving as compared with the incandescent and Fluorescent lamps. 8- The average egg production female increased significantly by exposure to light from the saving as compared to incandescent and the Fluorescent lamps during the laying season. 9- The lighting costs decreased by 56.35% and 34.76% by using the saving and Fluorescent lamps than the incandescent during a 6-months experimental period. Taking in consideration these advantages it could be concluded that the use of saving lamps is highly recommend for raising Japanese quail birds, especially by small farmers.

Keywords:

Quail – light Source – productive and reproductive performance

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