EFFECTS OF LIGHT DURING STORAGE AND INCUBATION PERIODS ON PRE AND POST HATCH PERFORMANCE OF JAPANESE QUAIL

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Abstract:

The current study was conducted to investigate pre and post hatch performance of 800 Japanese quail eggs stored and incubated under different light conditions. All eggs were randomly distributed into four groups, stored for 7 days and then incubated under the recommended conditions with or without lighting as follows: The first group (control, C) was stored and incubated under dark conditions (0L:24D), The second groups (T1) was stored under dark conditions (0L:24D) and incubated under continuous light conditions (24L:0D). The third group (T2) was stored under continuous light (24L:0D) and incubated under dark conditions (0L:24D). The fourth group (T3) was stored and incubated under continuous light (24L:0D). The results showed that the effect of light treatments during storage and incubation periods on embryonic weight was significant (P≤0.05) at 6, 10 and 12 days of incubation, hatchability and live pipped. However, early and late death embryo, dead in shell, moisture and fat content of the embryos were not change between treatments. Egg weight loss percentage was significantly (P≤0.05) higher in eggs subjected to T3 (15.92%) followed by T1 (15.66%) then T2 (15.51%) and control (14.11%) groups. Chick weight at hatch was significantly (P≤0.05) heavier in group of eggs exposed to continuous lighting during storage and incubation periods (T3; 7.99 g) than eggs of groups T1 (7.60 g), T2 (7.04 g) and control group (6.98 g). Lighting treatments did not affect significantly each of chick weight loss (%) and chick quality (%). Birds produced from eggs exposed to light during incubation period had significant higher (P≤0.05) daily gain (3.82g/day). Also, the feed conversion for growth of birds produced from eggs exposed to light during storage and incubation periods (T1 and T3) was significantly (P≤0.05) improved (3.92 and 3.94 g feed/ g gain, respectively) than those produced from dark conditions (C and T2). However no significant differences in egg mass and feed conversion during egg production period were found among all groups. It could be concluded that exposing eggs of Japanese quail to lighting during incubation only or/and storage and incubation leads to an improvement in each of embryonic development, hatching performance and post hatching performance.

Keywords:

LIGHT, STORAGE AND INCUBATION , HATCH PERFORMANCE , JAPANESE QUAIL

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