

Effect of Dietary Supplementation with Different Oils on Productive and Reproductive Performance of Quail

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Abstract :

To assess the effects of dietary oil source on productive and reproductive traits, sunflower oil, flax oil, corn oil or fish oil were induced in quail diets. One hundred and sixty eight 7 weeks old Japanese quail were randomly assigned to 4 groups (12 males and 30 female each) with 3 replicates per group containing 4 males and 10 females each and fed for 13 weeks (including one week as adaptation period) on a commercial diet supplemented with 3% of sunflower oil (T1), Flax oil (T2), corn oil (T3), or fish oil (T4). The birds received water and feed ad libitum during the study. Results of experiment revealed that dietary supplementation with different sources of oil had no significant effect on male body weight, female body weight and feed consumption of quails. Dietary fish oil at the inclusion level of 3% (T4) recorded the best results ($p < 0.05$) in regard to egg weight, hen-day egg production, egg mass, cumulative egg production, feed conversion ratio, fertility, hatchability of eggs set, hatchability of fertile eggs and embryonic livability, followed by the results of flax oil (T2), whereas the lowest values for these traits recorded for corn oil (T3) followed by the results of sunflower oil (T1) which recorded the lowest means with relation to characteristics included in this study. However, there was no significant difference between T2 and T3 in respect to feed conversion ratio during the entire period of experiment. In general it can be recommended that use of fish oil (T4) and flax oil (T2) at levels of 3% in Japanese quail diet during the laying period get higher economic efficiency without adverse effects on productive and reproductive performance. Therefore, providing fish oil or flax oil to quail throughout their laying period may be a simple means to enhance reproductive efficiency of these birds.

Key Word :

Different oil sources, productive and reproductive performance, quail