

SUMMARY

Effects of L-Carnitine Supplementation on Performance of Broilers Fed Different Dietary Fat Sources

This study was conducted to evaluate performance (weight gain, feed intake, feed conversion ratio), carcass yield, liver, heart, abdominal fat weights, serum cholesterol, triglyceride and magnesium levels of broilers fed diets with different fat types and L-carnitine.

A total of 320 1-d-old broiler chicks (160 male, 160 female) were divided into 4 experimental groups each containing 80 chicks from 0 to 42 days of the study. Each group was assigned to 4 replications each containing 20 birds per floor pen. Totally 20 birds were assigned to each pen as 10 male and 10 female.

From 1 to 10 d of age, a starter diet (vegetable fat added rations had 24,02% CP- animal fat added groups had 24,23% crude protein; 3010 kcal/kg ME), from 10 to 28 d of age a grower diet (vegetable fat added rations had 22,53- animal fat added groups had 22,22% crude protein; 3175 kcal/kg ME) and from 28 to 42 d of age a finisher diet (vegetable fat added rations had 20,81- animal fat added groups had 20,60% crude protein; 3225 kcal/kg ME) were fed. L-carnitine (150 ppm) was supplemented to diets including vegetable or animal fat sources.

In this study, body weights determined at 2, 3, 4, 5 and 6. weeks were affected from sex factor ($P<0,05$, $P<0,001$) and at 1, 2, 3, 4, 5 and 6 weeks were affected by different fat sources significantly ($P<0,001$). There was no significant effect of L-carnitine supplementation on body weights. At the end of the study, body weight gains of birds fed vegetable fat were higher ($P<0,001$) than groups fed animal fat.

Feed intake did not affected by L-carnitine supplementation or different dietary fat sources. According to feed conversion ratio findings determined from groups fed vegetable fat were more positive than groups fed diets with animal fat ($P<0,01$).

In the present study, sex of birds affected carcass, liver and heart weight significantly ($P<0,001$) but did not affect abdominal fat weight. According to this data, organ and carcass weights of male birds were determined higher. Beside this, carcass and liver weights of birds fed vegetable fat was higher ($P<0,001$) than birds fed animal fat sources. Also effects of L-carnitine on liver ($P<0,01$) and heart ($P<0,05$) weights were significant. In this experiment, L-carnitine supplementation did not affect carcass and abdominal fat significantly. Carcass yield was not affected from any dietary treatment or factor.

In this experiment, serum triglyceride levels were not affected from sex. Cholesterol levels obtained from male birds fed animal fat plus carnitine (group 4) were higher than female birds ($P<0,01$). However, magnesium levels of male birds were determined higher than female birds in groups 1 and 4.

Key words: Broiler, L-carnitine, fat sources, performance.