

Abstract

In order to evaluate the effects of different levels of alpha lipoic acid supplementation to diet on performance, meat quality, immunity response and blood biochemical parameters of Japanese quails, an experiment was carried out using 200 Japanese quails in a completely randomized design with 5 experimental treatments and 4 replicates. The experimental treatments consisted of one basal diet without alpha lipoic acid supplement (control), and 4 basal diets respectively, supplemented with 50, 100, 150 and 200 mg/kg alpha lipoic acid. Birds fed with alpha lipoic acid had greater weight gain than control group entire the experiment ($P < 0.05$). Birds fed with 100 mg/kg of alpha lipoic acid had higher feed intake compared to control and 50 mg/kg alpha lipoic acid groups ($P < 0.05$). Birds fed with alpha lipoic acid had lower feed conversion ratio than control from 7 to 14 days of age ($P < 0.05$). Different levels of alpha lipoic acid had no significant effect on relative weights of carcass, thigh, breast, heart, liver, spleen, bursa of Fabricius and intestine, but birds fed with 50 and 100 mg/kg alpha lipoic acid, respectively, had smaller gizzard and proventriculus than control ($P < 0.05$). Experimental treatments had no effect on antibody titer against sheep red blood cells and Newcastle virus. Alpha lipoic acid at the level of 100 mg/kg, decreased serum triglyceride, cholesterol and LDL without any negative effect on the liver ($P < 0.05$), but had no effect on hematocrit. Experimental treatments had no effect on meat drip loss and water holding capacity, but birds fed with alpha lipoic acid had lower concentration of malondialdehyde in the meat compared to control ($P < 0.05$). Although effect of experimental treatments on cooking loss were not significant, but this loss was decreased by increasing the levels of alpha lipoic acid in diet.

Key words: Alpha lipoic acid, Quail, Immunity, Feed conversion ratio, Malondialdehyde



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