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عنوان مقاله:

Effects of Peppermint (Mentha piperita L.) Alcoholic Extract on Carbon Tetrachloride-induced Hepatotoxicity in Broiler Chickens Under Heat Stress Condition

محل انتشار:

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خلاصه مقاله:

In order to investigate the effects of peppermint (Mentha piperita L.) alcoholic extract on liver injury caused by the oxidant carbon tetrachloride (CCl4), an experiment was performed as a completely randomized design in a factorial arrangement (2 × 2) with 4 replications of 10 broilers each. Factors included two levels of peppermint leaf alcoholic extract (0 and 2 mL/Kg body weight) and CCl4 (0 and 1 mL/Kg body weight). Results showed significant (P) interactions for body weight gain (BWG), feed intake (FI) and feed conversion ratio (FCR) on d 42 of the experiment. The alcoholic extract of peppermint leaf did not improve growth performance, whereas CCl4 worsened BWG and FCR (P). The interaction between peppermint extract and CCl4 indicated an ameliorative effect of peppermint extract on BWG and FCR (P). The interaction effects between peppermint extract and CCl4 significantly differed for blood serum concentrations of total protein, albumin, albumin:globulin ratio, glucose, triglyceride, total cholesterol, HDLC, LDLC, LDLC:HDLC ratio, and VLDLC as well as the amount of blood liver enzymes (P). Peppermint extract significantly increased blood serum concentrations of total protein, albumin, triglyceride and HDLC, whilst CCl4 decreased those concentrations (P). Blood serum concentrations of total cholesterol, LDLC, LDLC:HDLC ratio, VLDLC and glucose were decreased by peppermint extract, whereas those concentrations were increased by CCl4 (P). A significantly higher level of liver enzymes was found in blood serum of birds treated by CCl4 than those by peppermint extract (P). A moderate effect on blood serum liver enzymes was observed by the interaction between 2 mL of peppermint extract and 1 mL of CCl4 (P). Generally, this study indicated that in vivo administration of peppermint alcoholic extract ameliorated the adverse effects of CCl4 on growth performance and liver function, therefore it might be useful for the prevention of oxidative stress-induced hepatotoxicity in broilers.

کلمات کلیدی:

CCl4, liver, Broiler, Peppermint, Oxidative stress

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