

Abstract

In this research, the detoxification effects of methionine (MET) on performance, immunity, and microbial population of Japanese quails fed aflatoxin B1 (AFB1) were studied. Nine experimental diets with 3 levels of MET (i.e., 0.5, 0.6 and 0.7% of diet) and 3 levels of AFB1 (i.e., 0, 2.5, and 5 mg/kg) in a completely randomized design and 3 × 3 factorial arrangement were fed to 360 quail chicks from 7 to 35 days of age. Dietary treatments significantly affected quail performance so that the highest feed intake was observed in birds received 0.7% MET without AFB1 and lowest feed intake was observed in birds received 5 mg AFB1 per kg and 0.5% MET ($P < 0.05$). The birds received 5 mg AFB1 per kg and 0.5% MET showed the lowest G ($P < 0.05$) and lowest feed conversion ratio was attributed to the birds received 0.6% MET ($P < 0.05$). The birds fed 5 mg AFB1 per kg and 0.5% MET had the lowest live weight and highest relative Gizzard ($P > 0.05$) and the highest relative weight of liver ($P > 0.05$). The highest antibody production against sheep red blood cell antigen was observed in birds received 0.7% MET without AFB1 ($P < 0.05$), and while the lowest skin thickness response to DNCB challenge was attributed to the birds fed 0.5% MET and 2.5 mg AFB1 per kg ($P > 0.05$). The birds fed 0.7% MET without AFB1 had the highest lactic acid bacteria population while the lowest lactic acid bacteria population was observed in birds received 0.5% MET with 5 mg AFB1 per kg ($P < 0.05$). The highest E.coli population was observed in birds fed 0.7% MET without AFB1 ($P < 0.05$).

Key words: Japanese quail, Methionine, Immune system, Microflora, Aflatoxicosis



University of Zabol
Graduate school
Faculty of Agriculture
Department of Animal Science

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Supervisor:

Dr. Mehran Mehri

Advisers:

Dr. Farzad Bagherzadeh Kasmani

Dr. Ali Maghsoudi

By:

Adel Ghorbani

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