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Chemical detoxification of AFB1 in experimental quails using commercially available toxin binders

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AFB1 causes public health hazards by affecting 25% of world's food crops. For optimum production performance from poultry, proper detoxification of AFB1 in feed is mandatory. This study was designed to analyze the chemical detoxification potential of four commercially available toxin binders (activated charcoal, kaolin, vitamin E and selenium, myco-AD) in experimental quails fed with AFB1 added diets. For this purpose, 360 quail birds (divided in 6 groups) were reared in experimental conditions. Positive and negative control groups were fed basal diet and basal diet with 0.5mg/kg AFB1, respectively. Treatment groups were fed 4 different experimental diets with 0.5 mg/kg of AFB1 contamination and chemical binders added according to recommended dose rate. Growth parameters (feed intake, body weight gain & feed conversion ratio), hematology (hemoglobin, hematocrit, erythrocyte sedimentation rate, total leukocyte count), immune response and histopathology of soft organs (liver, kidney, lungs) of all the experimental birds were weekly recorded for 6 weeks and results were analyzed by Repeated Measure of ANOVA and Duncan Multiple Range Test. Results showed significant reduction in all the deleterious effects of AFB1 in all the tested parameters during the course of study. All the toxin binders brought significant changes ($P < 0.05$) in tested parameters. The active ingredient of Myco AD (Hydrated sodium calcium aluminosilicate, HSCAS) and Vitamin E and selenium were found as better detoxifying agent among the toxin binders used in this study. This study reports the success of commercially available toxin binders as chemical detoxification agent for the quails, an emerging protein source in thickly populated developing countries.

Biography

Muhammad Younus has completed his PhD at the age of 38 years from University of Veterinary & Animal Sciences, Lahore and postdoctoral studies from University of Minnesota, USA. He is the Principal of College of Veterinary & Animal Sciences, Jhang Sub-Campus, University of Veterinary & Animal Sciences, Lahore-Pakistan. He has published more than 135 papers in reputed international journals and has been serving as Professor of Pathology & Public Health. He has won at least six academic merit scholarships, Star Award 2009 by South Asians Publications, Excellence Award 2013, 2014, 2015 and 2016 by PVMC and PVMA, Research Productivity Award 2013, 2014 and 2015 by PCST, Govt. of Pakistan, Best University Teacher Award 2014 by HEC, Islamabad. Distinguished leadership award international, 2016 by University of Minnesota, USA.

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