

Efficacy Of BG-MAX Supplementation In Mycotoxin Contaminated Diets Fed To Broilers*

Introduction: Mycotoxin contamination of livestock feed is a significant concern and additives are commonly used to minimize the toxic effects. BG-MAX™ has shown both toxin binding effect in *in vitro* studies as well as mycotoxin ameliorating effects in animals.

Objective: To evaluate the effect of BG-MAX supplementation in mycotoxin contaminated broiler diets on broiler performance. Corn with naturally occurring aflatoxin and wheat with naturally occurring DON was used for this purpose.

Materials and Methods: A typical broiler starter (d 1-14), and grower (d 15-35) diet consisting of soybean meal, corn, and wheat was fed to Ross 344 x 708, male broiler chicks. Chicks were randomly assigned to litter floor pens with 17 chicks/pen, resulting in 6 replicate pens/treatment. 5% DDGS were incorporated in all diets to allow for increased fiber content and to mimic typical commercial diets. The starter diet was in crumble form and the grower diet was in pellet form. Broilers were fed either clean diets or diets contaminated with aflatoxin and DON. Contaminated starter and grower diets contained 131 and 95 ppb aflatoxin and 0.6 and 0.2 ppb DON respectively treatments tested were Control (no additive) and BG-MAX 2 kg/MT in starter and 1 kg/MT in grower diets. Birds were weighed at placement, 2, 3, and 5 weeks by pen. Feed intake (FI) was determined by pen. Mortality (and body weight) was noted daily and used to adjust feed conversion ratio (adjFCR). Feed and water were provided *ad libitum*. Data was analyzed using cage as the experimental unit for body weight (BW) and feed conversion. For other parameters, the bird was considered as the experimental unit. All data were analyzed using the GLM procedure of SAS (SAS Institute). Where there was a treatment effect observed, treatment means were separated using the least significant difference procedure with $P < 0.05$ unless otherwise stated.

Results: Diet interactions were noted for BW, FI and feed conversion ratio (FCR). BW and FI were lower and FCR was higher at 14, 21, and 35 days ($P < 0.05$) in birds fed mycotoxin diets compared to birds fed control diets (data not shown). Treatment interactions were noted for BW but not for FI and FCR. BW at 35 days increased ($P < 0.05$) in birds fed mycotoxin diets supplemented with BG-MAX compared to birds fed only mycotoxin diets (Fig. 1). Cumulative FI (Fig. 2) and adjFCR (Fig. 3) were not affected by treatments.

Conclusions: These results show that the combined effects of feeding naturally occurring mycotoxins to broilers causes decreased growth rate and feed intake and increased FCR. Supplementation of contaminated diets with BG-MAX™ could improve BW and FI which may lead to improved feed efficiency.

Fig. 1 Effect of treatment on BW of broilers fed mycotoxin contaminated diets

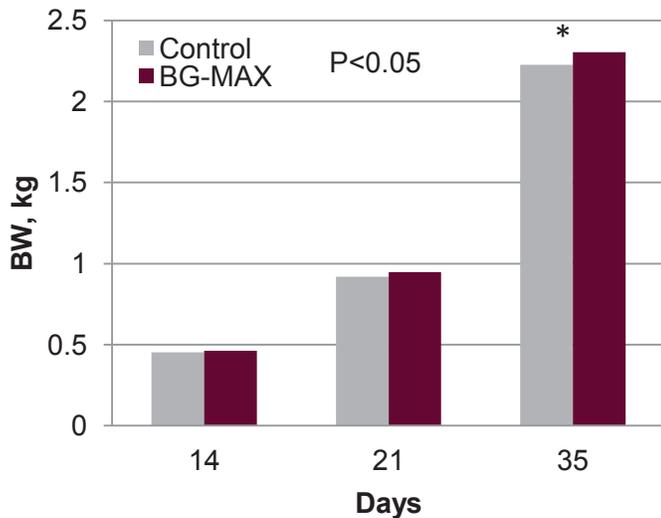


Fig. 2 Effect of treatment on FI of broilers fed mycotoxin contaminated diets

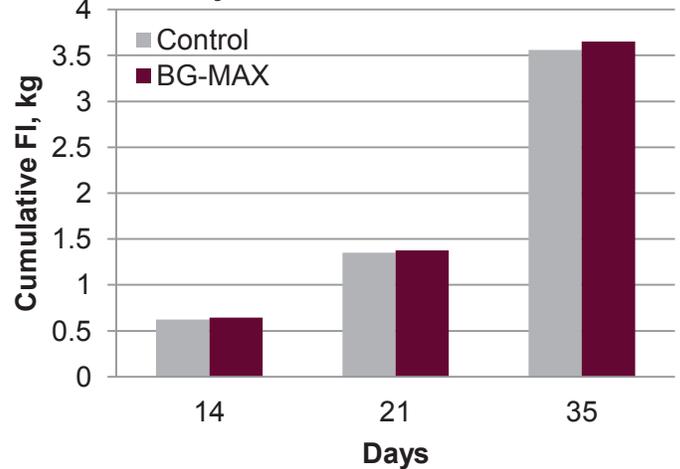
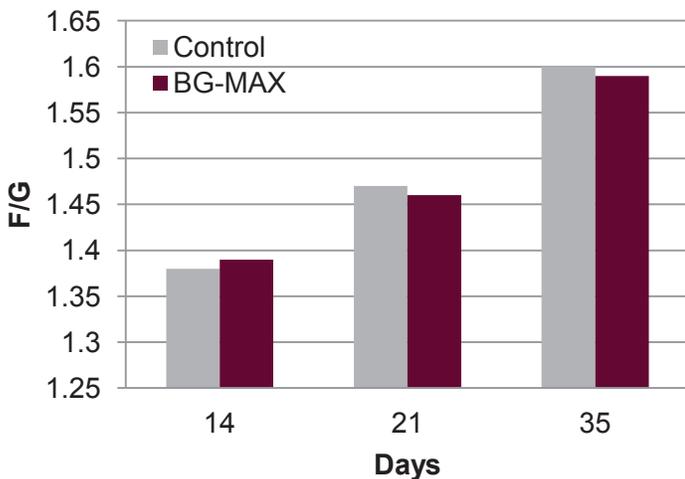


Fig. 3 Effect of treatment on adj.FCR of broilers fed mycotoxin contaminated diets



*Based on a study done by J. Nixon, J. Grimes, and J. Brake, Department of Poultry Science, North Carolina State University

