Effects of Replacing Soybean Meal with Blood Meal and Aflatoxin Contamination on Broiler Performance

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ABSTRACT

Farmers have been facing challenges of high feed cost due to costly raw material; soya bean meal and low quality due to aflatoxin contamination in feed in Kenya especially at the coast province owing to the favourable weather conditions for mould growth. The major concern on impact of aflatoxin is the reduced quality of feed leading to high cost of production of broilers and health risk with extended period of exposure. On the other hand, blood in abattoirs is readily available and could be the alternative for protein supplementation in feed. The purpose of the study is to determine the impact of the different levels of aflatoxin B1 (0-20ppb) in feed and replacing soya bean meal with blood as a source of protein on the performance of broiler. It further tests the efficacy of sun drying in reducing the concentration of aflatoxin in feed. Aflatoxin contaminated feed will be fed to 200 broilers at different levels, 5ppb, 10ppb, 20ppb in 4 replicates from day 7 to slaughter time on both broiler starter and broiler finisher and further test of feed ration with blood meal replacing soya at 0%, 25%, 50%, 75%, 100%. Feed with different levels of aflatoxin B1 concentration will be sundried for 1, 3 and 5 days and toxicology test done to determine the concentration of aflatoxin B1 and the variation as a means to reduce concentration in feed. Blood meal will be prepared by mixing it with molasses in the ratio 80:20 respectively before sun drying. The soybean meal (SBM) in the diet will be replaced with blood meal (BM) at the rate 0, 25, 50, 75 and 100% replacement of SBM with BM as the main source of protein. Data will be analysed with the mixed model procedure of SAS. The model will include the fixed effect of the treatment factors (blood meal and aflatoxin) and the interaction the factors, with time considered a repeated effect in the model. The means of the response variables having a significant treatment effect (P < 0.05) will be tested for linear and quadratic effects of blood meal effects and aflatoxin concentrations. Differences between the treatments will be declared significant at P < 0.05.