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Growth Response, Carcass Evaluation and Hematology of Broilers Fed Graded Levels of Enzyme Treated Cocoa Bean Shell Based

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Abstract

Cocoa bean shell (CBS) is a waste from cocoa processing industries in Nigeria and it constitutes a serious disposal problem. Previous trials revealed that addition of Rovabio (a multi-substrate enzyme) reduces theobromine (an anti-nutrient in CBS). Hence this study focused on evaluating the growth response, carcass characteristics and hematological parameters of broilers fed graded levels of enzyme treated CBS based diets.

A total of 150 day old broiler chicks were randomly distributed to five dietary treatments in a completely randomised design with each treatment having 3 replicates of 10 birds per replicate. The treatments were: A (0% CBS-control diet); B (5% CBS with the enzyme Rovabio); C (10% CBS with enzyme); D (15% CBS with enzyme) and E (20% CBS with enzyme). Each of the diet was fed *ad libitum* and the trial lasted 8 weeks. There were no significant differences ($p > 0.05$) in feed conversion ratios of birds fed control diets and those on diets B (2.13), C (2.23) and D (2.40), however, those on diets E had the significantly highest value of 2.60. The hematological parameters of the experimental animals showed no significant ($p > 0.05$) difference between birds fed the control diet and their counterpart on the different levels of CBS inclusion. Although no significant variation was observed for liver weight among birds fed enzyme treated diets (means varying from 2.76% to 3.38%), birds on the control diet had the highest liver weight (4.20%). The gizzard and heart percentages of birds on the control diets increased significantly ($p < 0.05$) compared to those on the enzymes treated diets.

The result revealed that enzyme (Rovabio) treated CBS can effectively replace up to 15% maize in the diets of broilers without a deleterious effect.

Keywords: Broiler, carcass, cocoa bean shell, feed intake, hematology