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Effects of *Rhizopus stolonifer* Detheobromized Cocoa Pod Husk Meal on Blood and Serum Indices of Pullet Chicks

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Abstract

Blood and serum indices of pullet chicks were evaluated in response to the effects of *Rhizopus stolonifer* detheobromized cocoa pod husk meal (CPHM) based diets. Cocoa pod husks were sundried, milled to produce CPHM and thereafter fermented with *Rhizopus stolonifer* for 14 days. The fermented CPHM was evaluated for nutrient, fiber fraction and anti-nutrient compositions. It was thereafter included in pullet chick's diets at 0, 10 and 20 % with ronozyme multigrain enzyme supplementation of 0 and 200 mg kg^{-1} in 3×2 factorial arrangement of completely randomised design in a trial that lasted for 12 weeks. Two hundred and forty (240) Isa brown day-old chicks were randomly allotted to the dietary treatments of four replicates with 10 chicks per replicate. The crude protein of fermented CPHM was significantly ($P \leq 0.05$) higher than that of untreated CPHM with 38.24–94.49 % as days of fermentation increased. Crude fiber and ether extract contents decreased progressively with increased fermentation days (5.13–14.69 % and 2.66–22.52 % respectively). Theobromine concentration of fermented CPHM was reduced by 77.27 % after 14 days. Tannin, phytate and fiber fraction contents also decreased significantly ($p < 0.05$) with increased days of fermentation. Results of animal trial showed that the haematological parameters of the pullet chicks fed the test diets were not significantly ($p > 0.05$) affected. While the cholesterol content of the pullet chicks decreased as fermented CPHM inclusion increased in the diets, the AST increased though within normal range. Conclusively, inclusion of fermented CPHM up to 20 % may not precipitate deleterious effect on the health status of pullet.

Keywords: Chemical composition, fermentation, health status

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