Reduction of Crude Fiber Content in Palm Kernel Meal by Cellulase Enzyme and Effects of Various Level of Treated Palm Kernel Meal in Betong Chickens

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Abstract

Experiment 1: The study of reduction of crude fiber content in palm kernel meal (PKM) by cellulase enzyme. Palm kernel meal was treated with six different cellulase enzyme (0 , 0.15, 0.3, 0.6, 1.2 and 2.4 mg/kg PKM) for 24 hour in room temperature. The results indicated that palm kernel meal was treated with cellulase enzyme from both 1.2 and 2.4 mg/kg PKM were the best decreased crude fiber when compared with the other group (P<0.01).

Experiment 2: An experiment was conducted to evaluate the performance of betong chick fed PKM – based diet supplemented with cellulase enzyme. Six experimental diets were formulated such that diet T_1 which served as the control, contained 0% PKM and without emzyme supplementation. Diets T_2 T_3 T_4 T_5 and T_6 contained 10, 20, 30, 40 and 50 of PKM supplemented with enzyme 1.2 mg/kg of PKM (From experiment 1) respectively. Three hundred and thirty (330) 1 day-old betong chicks were randomly assigned to the six diets in a completely randomized design (CRD). Each treatment was replicated five (5) with eleven (11) birds per replicate. The experiment lasted for 42 day. Results of starter phase (0-6 weeks of age) showed that the birds on diets control T_2 T_3 and T_4 had a greater average daily gain and feed conversion ratio than those fed diets T_5 and T_6 (P<0.01). The results of the finishing phase indicate that birds fed the diet T_2 had the highest average daily gain and best feed conversion ratio, though this was not significantly higher than those fed diets control and T_4 (P<0.01). Therefore the betong chick can fed PKM supplemented with cellulase enzyme in the diets at up to 30 % without the affect on growth performance.

Keywords : cellulase enzyme, betong chicken, palm kernel meal