

Karuna Trongphotha 2009: Effects of Complex Enzymes Supplementation in Cassava Diets on Growth Performance and Nutrient Digestibility in Broilers. Master of Science (Animal Nutrition and Feed Technology), Major Field: Animal Nutrition and Feed Technology, Department of Animal Science. Thesis Advisor: Associate Professor Uthai Kanto, M.S. 99 pages.

Efficacy of complex enzymes (including NSPase, phytase, amylase and protease) supplementation in broiler diets containing high level of cassava and soybean meal was studied by using 960 day-old Ross broilers. The animals were allocated with Randomized Complete Block Design (RCBD) by divided into 4 groups of 240 animals in each which was further divided into 8 subgroups for 4 males and 4 females of 30 animals each. Each group of the animals was randomly fed one of the four experimental diets as follows for 42 days; T1: Positive control diets which was formulated to contain all nutrients according to the standard nutrient requirement, T2: T1 but supplemented with the complex enzymes at 0.2 kg/ton, T3: Negative control diet which contained 50 kcal/kg, 0.1 % and 0.1 % less ME, Ca and available P, respectively than T1, T4: T3 but supplemented with the complex enzymes at 0.2 kg/ton. Supplementation of the enzymes in cassava and soybean meal diets both in the positive control diet (T1) and negative control diet (T3) have demonstrated a positive effects on the improvement of the animals performance in the starting period (1-21 days; $P < 0.05$), finishing period (22-42 days; $P < 0.01$) and the overall growing period (1-42 days; $P < 0.01$). However, the enzymes supplementation in the standard nutrient content diets (T1) always provided a better responision of animal performances than those in the sub-optimal nutrient content diet (T3). There were no statistical differences ($P > 0.05$) in amount of microbial population, pH-value in digestive tract, volatile fatty acid levels and gut morphology among the animals fed the experimental diets. However, supplementation of the complex enzymes to birds in T2 group significantly improved ileal and total tract digestibility of dry matter ($P < 0.05$) of the diet in both growing and finishing period of the broilers. This study clearly demonstrated the relationship between growth performance and nutrient digestibility in broilers. Results of the study indicated that supplementation of the complex enzymes in cassava and soybean meal diets could improved growth performance and nutrient digestibility in broilers.

Student's signature

Thesis Advisor's signature