**Effect of feeding different levels of palm kernel cake fermented by Paenibacillus polymyxa ATCC 842 on broiler growth performance, blood biochemistry, carcass characteristics, and meat quality**


ABSTRACT

A feeding trial was conducted to investigate the effect of palm kernel cake fermented by *Paenibacillus polymyxa* ATCC 842 (FPKC) on broiler performance. A total of 245 1-day-old broiler chicks (Cobb 500) were raised in the conventional open-sided house. The birds were fed diets containing 0 (Control), 5%, 10% and 15% palm kernel cake (PKC) and 5%, 10%, 15% FPKC. The bodyweight and the feed intake were recorded. The bodyweight gain (BWG) and feed conversion ratio (FCR) were calculated. Carcass characteristics and meat quality were measured at the end of the experiment, whereas blood was collected at 21 (starter) and 42 days (finisher) to determine blood biochemistry. The results showed that the addition of 10% or 15% PKC in broiler diets led to a significant ($P$<0.05) decrease in BWG and increase in FCR during the finisher phase or overall performance. However, BWG and FCR were improved ($P$<0.05) in chickens fed with 10% or 15% FPKC compared with those fed with 10% or 15% PKC or the Control group. The relative weight of the gizzard was higher ($P$<0.05) for the broiler group fed with 15% PKC compared with those birds fed the Control diet or FPKC at 3 weeks of age. No significant differences were observed among the dietary treatments in blood biochemistry, breast meat colour, drip loss, cooking loss and tenderness. In conclusion, the present experiment showed that palm kernel cake fermented by *P. polymyxa* ATCC 842 could be fed to broiler chickens up to 15% in their rations without any adverse effect on the growth performance and meat quality.



K**eyword**: Cellulolytic bacteria; Non-starch polysaccharides; Solid state fermentation