# Fecal microbial population, and growth in broiler fed organic acids and palm fat-composed diet


## ABSTRACT

Organic acids (OA) are natural constituents of plant and animal tissues and their uses as feed additives are now being studied worldwide. Organic acids consisted of different acids and mixtures of several acids have an antimicrobial function and promote the growth performance of animals. The current experiment was designed to study the inhibitory activity of the organic acids, palm fat (PF), a combination of organic acids-palm fat (OAPF) against various pathogens and investigate the performance in dietary inclusion of OAPF in broilers. A feeding trial was conducted to determine the growth performance and microbial population in the dietary inclusion of OAPF in broilers. A total number of 96 one-day-old chickens (Cobb 500) were used in this study and divided into two treatment groups with six replicates per treatment. The treatment group was T1 (diet without OAPF) and T1OA (diet with OAPF). The differences among treatment means were tested using an independent t-test. The results showed that T1OA had approximately two-fold inhibitory activity against Escherichia coli E-30 compared to T1. Broilers fed diet supplemented with OAPF had higher ($p<0.05$) final body weight (BW) and total weight gain (WG) compared to broilers fed T1. Broiler fed with T1OA had lower ($p<0.05$) feed conversion ratio (FCR) than T1. Inclusion of OAPF in the diet also increased ($p<0.05$) the lactic acid bacteria (LAB) and reduced ($p<0.05$) Enterobacteriaceae (ENT) cell population. The inclusion of OAPF in the diet showed significantly improved nutrient digestibility and had a beneficial effect on the growth performances of the broiler chickens with a positive effect on the bacterial population in GIT.



**Keyword:** Food pathogens; Inhibitory activity; Growth performance; Organic acids