

Liquid metabolite of lactobacillus plantarum and putrescine effects on growth, tissue polyamine, blood lipids and intestine morphology of broiler chickens

ABSTRACT

This experiment aimed to investigate the effects of liquid metabolite (LM) produced by *Lactobacillus plantarum* and dietary putrescine (PUT) on growth, blood lipids, villus height (VH), crypt depth (CD) and polyamines (PAs) content of intestinal tissue and ileal digesta in chickens. Six treatments, replicated six time each, were factorial arrangements of two levels of LM (0 and 0.3%) and three levels of dietary putrescine (0, 0.03 and 0.05%). Growth performance and PAs content of digesta and excreta (at 21 d) were measured, as well as small intestine VH and CD. Blood cholesterol, triglyceride and glucose were measured at 24, 33 and 40th d. Putrescine (0.05%) negatively affected body weight, feed conversion ratio and protein and energy efficiency ratio while increased duodenal VH significantly ($P<0.05$) as compared to the 0.03% putrescine. Aging was effective on blood cholesterol, triglyceride and glucose. Blood triglyceride decreased by 0.03% putrescine ($P<0.05$). Faecal spermidine was increased significantly ($P<0.05$) by 0.05% putrescine. Duodenal PAs declined in the chickens fed LM, whereas dietary putrescine had no effects on intestinal tissue polyamine. In conclusion, luminal PAs content was not affected by treatments. LM influenced intestinal tissue PAs but had no effects on growth and ileal digesta polyamine content. However, putrescine (0.05%) was harmful to the growth but increased duodenal VH.

Keyword : Blood lipids; Intestinal morphology; Luminal polyamines; Microbial metabolite; Putre-scine