## Effects of feeding metabolite combinations produced by Lactobacillus plantarum on growth performance, faecal microbial population, small intestine villus height and faecal volatile fatty acids in broilers.

## Abstract

1. Four combinations of metabolites produced from strains of Lactobacillus plantarum were used to study the performance of broiler chickens. 2. A total of 432 male Ross broilers were raised from one-day-old to 42 d of age in deep litter pens (12 birds/pen). These birds were divided into 6 groups and fed on different diets: (i) standard maize-soybean-based diet (negative control); (ii) standard maize-soybean-based diet + Neomycin and Oxytetracycline (positive control); (iii) standard maize-soybean-based diet + 0.3% metabolite combination of Lactobacillus plantarum RS5, RI11, RG14 and RG11 strains (com3456); (iv) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RI11 and RG11 (Com246); (v) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RG14 and RG11 (Com256) and (vi) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RG14 and RG11 (Com256) and (vi) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RG14 and RG11 (Com256) and (vi) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RG14 and RG11 (Com256) and (vi) standard maize-soybean-based diet + 0.3% metabolite combination of L. plantarum TL1, RS5, RG14 and RG11 (Com2356). 3. Higher final body weight, weight gain, average daily gain and lower feed conversion ratio were found in all 4 treated groups. 4. The addition of a metabolite combination supplementation also increased faecal lactic acid bacteria population, small intestine villus height and faecal volatile fatty acids and faecal Enterobacteriaceae population.

Keyword: Broilers; Performance; Metabolite Combination; L. plantarum.