

Effects of feeding metabolite combinations from *Lactobacillus plantarum* on plasma and breast meat lipids in broiler chickens.

ABSTRACT

The effects of feeding different doses of metabolite combination of *L. plantarum* RS5, RI11, RG14 and RG11 strains (Com3456) on cholesterol reduction in plasma and breast meat in broiler chickens and the possible mechanism was studied. A total of 504 male Ross broilers were grouped into 7 treatments and offered with different diets: (i) standard corn-soybean based diet (-ve control); (ii) standard cornsoybean based diet + neomycin and oxytetracycline (+ve control); (iii) standard corn-soybean based diet + 0.1% metabolite combination of *L. plantarum* RS5, RI11, RG14 and RG11 strains (Com3456); (iv) standard corn-soybean based diet + 0.2% of Com3456; (v) standard cornsoybean based diet + 0.3% of Com3456 (vi) standard corn-soybean based diet + 0.4% of Com3456 and (vii) standard corn-soybean based diet + 0.5% of Com3456. The metabolite combinations supplemented in the diet of broilers reduced protein, cholesterol esters concentration in very low-density lipoprotein particles. The present of organic acids and proteinaceous compound in the metabolite combinations as found in previous study also increased lactic acid bacteria count in small intestine digesta and improved bile salts deconjugation ability of lactic acid bacteria.

Keyword: Chicken; Cholesterol; *Lactobacillus plantarum*; Metabolite combinations; Very low density lipoprotein.