

Varaporn Hirunvong 2007: Suitable Characteristics of Lactic Acid Bacteria Affecting Microbial Changes in Broiler Intestine. Master of Science (Microbiology), Major Field: Microbiology, Department of Microbiology. Thesis Advisor: Assistant Professor Patoomporn Chim-anage, Dr.Eng. 119 pages.

Four isolates of lactic acid bacteria were examined as good probiotics. They inhibited the growth of foodborne pathogenic bacteria i.e. *E. coli* and *Salmonella* spp. very well. They were identified as *Enterococcus faecium*, Rumen bacterium and *Lactobacillus plantarum* (two strains). These strains survived well at pH and bile of broiler intestinal conditions. They could grow best and produce high acid(1.2 to 2.1 % ) at 30°C and a little bit lower at 42°C(body temperature of broilers). The four lactic acid bacterial strains were supplemented to the broiler feed and examined for the microbial changes in ileum and cecum of birds. The results revealed that these probiotics influenced the population of lactic acid bacteria and *E. coli* in broiler intestines. The cell number of lactic acid bacteria in the ileums of birds consuming commercial probiotics, single culture(4 strains) and mixed culture during rearing period tended to be higher( $P<0.01$ ) while *E. coli* in ceca of the same treatments were lower( $P<0.01$ ) than control group. However, the population of lactic acid bacteria was higher than *E. coli* in both ileums and ceca of birds.



Student's signature



Thesis Advisor's signature

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