Effect of Probiotic Administration Through Drinking Water on Growth Performance and Gut Microflora of Broiler

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Abstract

To study the effect of probiotic (Bactosac™) administration through drinking water in broiler, four hundreds one-day old chicks (ROSS 308) were used in completely randomized design and were assigned to two groups (with and without probiotic administration in drinking water). Each group had four replicates, which consisted of 25 male and 25 female per each. Effective microorganism such as *Lactobacillus* sp., *Bacillus* sp., *Pediococcus* sp. and *Saccharomyces cerevisiae*, which are generally recognized as safe (GRAS) are formulated for the commercial probiotic product namely Bactosac™. Probiotic was given through drinking water at 1 ml/5 L. Growth performance of broiler were studied in three periods of growth (1-21, 21-35 and 36-42 day of age), as well as the whole period (1-42 day of age). Furthermore, the distal gut digesta were collected at 10 and 21 day of age to evaluate the population of lactic-acid bacteria and *Escherichia coli*, which represented for the beneficial and pathogenic microbes, respectively. Probiotic administration provided the significantly improvement of growth performance in term of body weight gain as well as the feed conversion ratio of broiler, especially in the stress condition such as in finishing period (36-42 day of age). Additionally, increasing of the lactic-acid bacteria population and the reduction of *Escherichia coli* as well as ammonia concentration in distal gut were also found by probiotic application. The improvement of gut-microflora balance promoted the animal health and improved the nutrient digestion and absorption that caused the improvement of growth performance in consequence.