

COMPARISON BETWEEN YOGHURT POWDER (AS PROBIOTIC) WITH IMPORTED PROBIOTIC AGAINST PATHOGENIC BACTERIA IN THE SMALL INTESTINE OF BROILERS

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ABSTRACT : The research has been conducted to evaluate the number of benefits bacteria (total bacteria, lactic acid bacteria and *Escherichia coli*) in the gastrointestinal tract of broilers fed diets supplemented with yoghurt powder loaded with wheat bran, yellow corn and lentil. 210 one day old broilers Ross 308 were used in this study. There were seven experimental diets namely, each containing three replications (10 chicks in each replicate). The control treatment was supplemented with a basal diet without any addition, while the T2, T3, T4 treatments were fed diets supplemented with 3% of lentil, yellow corn and wheat bran loaded on the yoghurt powder (30 mg/kg diet), respectively. Also, T5, T6, T7 treatments were fed diets supplemented with 0.05% of imported probiotics, which is Labazyme, Biolac and Interzym (0.5 mg/kg diets), respectively. At 35 days of age, the lactic acid bacteria significantly increased ($P<0.05$) in broiler fed wheat bran, labazym, yellow corn and lentil respectively compared to the control and other treatments. But the number of total bacteria significantly decreased ($P<0.05$) in wheat bran, yellow corn, lentil and labazym treatments compared to the control and other imported probiotics treatments. On the other hand, *Escherichia coli* in the broiler gut significantly decreased ($P<0.05$) in the wheat bran, lentil and yellow corn compared to the control and other treatments, respectively. However, the pH more decreased in treatment (4) compared with control and other treatments especially in jejunum and ileum of the intestinal tract of broilers.

Key words : Broiler, yoghurt, wheat bran, yellow corn, lentil, lactic acid bacteria and *Escherichia coli*.

INTRODUCTION

At the moment, attention focused on replacing imported feeds with alternative feeds at affordable prices as the production of poultry feed approaches 70 percent of total production costs (Abd El-Gawad *et al*, 2014). Increasing evidence shows pathogenic bacteria regulate and colonize the gastrointestinal tract in poultry and causes significant losses in the poultry industry. *Escherichia coli* (Ballou *et al*, 2016) is an impotent pathogenic bacterium. *Escherichia coli* is a pathogenic bacterium that affects the health of humans and livestock. Livestock is the carrier of these bacteria, where they reside in the intestinal tract and then contained in human-eaten meat (van den Bogaard *et al*, 2001).

All animals, including avian species have a digestive system has a dynamic property that adjust itself according to current circumstances and physiological requirements. The comparatively acidic (pH) of the birds gastrointestinal tract (GIT) also depends on certain factors like poultry nutrition, nutrients form and more specifically (GIT) content of microflora. A mutual correlation exists between content microflora and pH with

nutrients and microflora (Sarra *et al*, 1985). In specified (GIT) areas the pH level is a factor that determines a particular population of microbial. Additionally, pH level influences absorption value of maximal nutrients and the digestibility. The pathogens mostly grow near (7) pH or slightly higher. On the other hand, beneficial microorganisms survive in pH (5.8-6.2) and competition with pathogens, so reducing pH improves the absorption of nutrients (Boling *et al*, 2001).

Previous studies reported that fermentation foods have decreased crude fiber content but increased crude protein content, so yogurt is fermented probiotic products that have an excellent anti bactericidal effect on foodborne pathogens (Yesillik *et al*, 2011). It also contains a large number of lactic acid bacteria that function as probiotics in chickens ' intestines which control microflora and works to exclude pathogenic bacteria from the digestive system.

Wheat bran is rich in B vitamins and minerals. Bran is made up of more than half water-insoluble fiber, bran made up of fiber components (53%). While the chemical composition of wheat bran fiber is complex, it primarily includes cellulose and pentosans that closely linked to