

EFFECT OF PROBIOTIC AND HUMIC ACID ADDITION ON PHYSIOLOGY AND IMMUNITY TRAITS OF BROILER CHICKS

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ABSTRACT: The current study aimed to investigate the possible effects of probiotic (BioSB-Gold) addition and humic acid both alone or together to broiler diets and determine the effects on physiological traits and immunity in broiler chicks. 120 one day of age and unsexed chicks (class Ross) were used with average weight of 47.7 gm/ chick. The chicks were reared in closed enclosure divided of pens (3m²/pen) and chicks distributed randomly inside pens. Four treatments were used: T1 (standard diet), T2 (standard diet with 1gm probiotic/ kg feed), T3 (standard diet with 1gm humic acid/ kg feed) and T4 (standard diet with 1gm of probiotic and 1 gm of humic acid/ kg feed). 30 chicks were (3 replicates) were used for each treatment and experiment continue to 5th week of age. Results showed no significant differences in hemoglobin and the level of directed antibodies against Newcastle and Gamboro diseases while a significant enhancement in the chicks that fed on diets with probiotic and humic acid both alone or together in PCV, WBC and RBC.

Key words : Probiotic, humic acid, broiler chicks.

INTRODUCTION

Poultry industry is one of the main sources in the economy for many countries around the world because of the fast equity capital cycle and its provide the consumers with food. Last decades, many problems faced the world resulted from the increase of population which lead to food deficiency, therefore, the world began to took a big importance of poultry industry to replenish of food. Many factors encourage the poultry breeders to develop this industry such as high growth rate, increase of feed conversion, short of production cycle and the small or limit area which needed for breeding. Probiotic is a useful microbial culture which contain one or more species of microbiology and effect positively on body health and enhance the production performance for domestic animals (Al-Kazaz, 2007). The microbiology behave as a probiotic and covered the epithelial cells receptors in the intestine canal and prevent the pathogens bacteria to make attachment with this cells and expelled it outside body. In addition, the microbiology are contribute of microbial balance of microflora when the birds exposure to stress factors such as high temperature of environment or diseases infection (Zinedine *et al*, 2005). The probiotic is play a crucial role for increasing the resistance against the disease in birds in addition to enhance the production performance (Mountzouris *et al*, 2007). It's also

contribute of balance the intestinal environment and help the vitamins manufacturing (Fuller, 1989). The probiotic can help for improving the meat quality and its safe products on human health compared with antibiotic (Dibner and Buttin, 2002). In last years, importance increased with nature growth tonics such as organic acids (Vogt *et al*, 1982) because its play important role in improving the production of poultry through the inhibition of harmful intestinal bacteria which reflex positively on birds health (Thompson and Hinton, 1997). One of these organic acids is humic acid which can be characterized as complex acid formed from organic materials analysis and charcoal (Alhameed and Jaloob, 2016). This acid contain of carboxy and aromatic active groups (MacCarthy, 2001) and act as an inhibitor factors against pathogens such as fungi and bacteria and make a thin layer on the mucus membrane of the epithelial cells to protect the digestive channel from diseases (Kühnert *et al*, 1991; Chen *et al*, 2002). The major aim of the current study is to determine the effect of probiotic and humic acid both alone and together on some of physiological and immunity traits in broiler chicks.

MATERIALS AND METHODS

The farm experiment was conducted in poultry farm belonging to University of Kufa, College of Agriculture during the period of 1-10-2016 to 5-11-2016 to determine