Influence Of Bacillus subtiils As a Probiotic On Escherichia coli Infection In Embryonating Eggs*

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ABSTRACT

This study included three experiments; the first one examined the effect of pathogenic *E coli* on the hatchability and embryo mortality of contaminated hatching eggs at the 1st and 18th day of incubation by dipping in a broth culture containing *E coli.* Contamination at the first day resulted in a non – significant effact in the number of the hatched embryo, whereas dead in shell embryo was significantly increased ($p<0.05$). Exposure on the 18th day exhibited a significant($p<0.01$) decrease in hatchability and an increase in the embryo mortality. Dipping on the 18th the day resulted in a significant ($p<0.05$) decrease of hatchability and increase of embryo mortality compared with of the 1st day. In comparison with the control the results of the second experiment revealed that a none – significant differences recorded neither at 1st nor 18th day of incubation, in hatchability and embryo mortality due to the contamination of hatching eggs with *Bacillus subtilis* alone. The third experiment which was conducted to explore the effect of probiotic, *B. Subtilis,* on the pathogenic *E. coli* exhibited that significant difference had not been recorded in hatchability on the 1st or 18th day of incubation which indicated that *B subtilis* has no effect on *E. Coli.* However significant increase ($p<0.05$) in embryo mortality was observed at both periods of treatment which revealed that *E. coli* was not affected with *B. Subtilis* as probiotic in this work.

INTRODUCTION

There is no doubt that *E coli* causes significant economic loss for all poultry species. Even best managed poultry unit, *E coli* is a normal inhabitant of poultry houses. Chicks and poults encounter the organism in ova, through the eggs shells, at hatching and in the brooder environment (Cortes *et al,.*2004). Drugs and good management are best method for controlling of this type of infection during the last years. Recently, probiotics have been used to prevent this bacterial infection. The word ((probiotics)) which is used to refer to living organism, bacteria or yeast or mold, which are vital to animal health (Fuller, 1977). Probiotics have many applications, including nutritional supplementation to sustain normal microflora or as competitive exclusion agents to ameliorate pathogens. Probiotics involves production

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