ISOLATION AND IDENTIFICATION OF BACTERIA TO EVALUATE THE HYGIENIC STATUS OF BROILER HATCHERIES

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Abstract

Many pathogens are known to cause decreased hatchability in broiler hatcheries, resulting in poor production. The objective of this experiment was to identify the pathogenic bacteria present in dead- in- shell samples collected from broiler hatcheries.

Three large scale hatcheries (> 100,000 chicks/week, Hatchery A, B and C) and three small scale hatcheries (< 15,000 chicks/week, Hatchery D, E and F) were selected for the study. The hatcheries were located in Western, North-Western and Central Provinces. Dead-in-shell samples were collected on two hatched dates in separate weeks from each hatchery. The embryos were cut open aseptically using a sterile pair of scissors, a scalpel blade and a pair of forceps. Organs such as heart, liver and yolk samples were collected separately and pooled to make a single sample from each organ. The pooled yolk and pooled homogenized liver samples were mixed separately and loopful of each sample was streaked on the surface of blood agar and MacConkey agar plates. The heart blood swabs were streaked directly on the same type of plates. All the plates were incubated at 37^0C for 24 hours. Following obtaining of pure colonies they were subjected to further identification to the genus level. Pathogenecity tests were carried out by injecting pure colonies (10^7 CFU/ml) into one day old chicks.

The results revealed the presence of pathogenic *E. coli* in all the hatcheries tested. Pathogenic Enterobacter species was recovered from hatcheries F and E. *Salmonella Gallinarum* and a motile Salmonella species were identified from hatchery D. *Staphylococus aureus* was isolated from hatchery A.

In conclusion, the results of the present study showed that a high level of pathogenic bacteria are present in broiler hatcheries and highlighted the necessity of imposing stringent control measures in both the poultry breeder farms and hatcheries.