**Effect of Egg Storage Period on Maternal Antibody Level against Newcastle Disease in Cobb 500 Broilers**

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Newcastle disease is one of the most common poultry diseases in Sri Lanka and has been successfully controlled. The purpose of this study was to ensure the success of the vaccination program and identify the effect of the pre-incubation egg storage period on maternal immunity levels in Cobb 500 broilers for Newcastle disease (ND). Hatchling eggs were collected and randomly assigned to 40 eggs for each treatment, and then samples were kept at 18°C and 70% humidity for different storage periods. The antibody levels of parents and maternal antibody levels of day old chicks (DOCs) were determined by an ELISA test using 30 blood samples obtained separately from parents and each of the four treatments of DOCs. The results demonstrated that the antibody levels in parents and chicks at 1 day, 5 days, 10 days, and 15 days of egg storage tested positive at 53%, 65%, 96%, and 54% maternal antibody (anti-ND) levels, respectively, indicating that the vaccination program was successful. The experimental design was a completely randomized arrangement. The pre-incubation period showed a significant difference (P<0.0001) in the chick maternal antibody levels against Newcastle disease. According to the Duncan test, the 10-day stored treatment had a greater effect on maternal antibody levels than the other treatments. According to these studies for Cobb 500 broilers, a 10-day storage period in a cool room at 18 °C and RH 70% could result in a higher level of transferred maternal antibody (anti-ND). These studies, which examined antibody levels in day-old chicks, which can also decrease with growth, suggest that scheduling vaccinations properly can lead to both successful broiler production and healthier progeny.

**Keywords**: *Cobb 500, Maternal Antibody, Newcastle disease, Pre-incubation storage period*