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

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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 as 1 day, 5 day, 10 day, and 15 day eggs stored before incubation at 18°C and 70% humidity. The antibody levels of layers and maternal antibody levels of day old chicks (DOCs) were determined by an ELISA test using 30 blood samples obtained separately from layers and each of the four treatments of DOCs. The experimental design was a completely randomized arrangement. The results demonstrated that the antibody levels in layers 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 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 the highest level of maternal antibody levels compared to 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.

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