

Assessing Factors Affecting Chick Quality in Broiler Parent Stock Farms in The Western Province of Sri Lanka: A Comparison Parameter Between Nest Eggs and Floor Eggs

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Abstract

Poultry, as one of the most significant livestock subsectors, provides affordable, high-quality animal protein in the form of eggs and meat. This study aimed to investigate the differences in hatchability, fertility, and chick quality between nest eggs and floor eggs in the Ross 308 broiler breed at Marist Brothers Poultry broiler farm. The experiment, conducted at a hatchery, employed a Complete Randomized Design (CRD). A total of 640 eggs and each group consisted of 320 nest eggs and 320 floor eggs from Ross 308 male x Ross 308 female breeders (39 weeks of age) were collected for the experiment. Criteria for assessing egg quality included measuring the shape index and initial egg weight. Chick quality parameters were evaluated using the Pasgar score method. Data analysis was performed using the independent sample t test. The results revealed significant differences ($p < 0.05$) in hatchability, fertility, and initial weight between the two types of eggs. Nest eggs exhibited higher fertility (89%), hatchability (86%), and chick quality than floor eggs. However, no significant differences ($p > 0.05$) were observed in the egg shape index and Pasgar score between the two egg types. Additionally, specific Pasgar score components, including reflex, leg, and beak, showed no significant differences ($p > 0.05$) and the navel and belly were significantly different between nest eggs and floor eggs. In conclusion, nest eggs exhibit higher hatchability, fertility, and chick quality rates compared to floor eggs. The aforementioned numerical statistics were identified as the most successful output of the research.

Keywords: Fertility, Floor eggs, Hatchability, Nest eggs