

Effect of the Flock Age and Eggs Storage Time on the Hatchability and Apparent Fertility of Broiler Grandparent Stock Eggs

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This research was conducted to determine the effects of flock age and storage time of eggs on the hatchability, apparent fertility, hatch of fertile and embryonic mortality of 30 to 59 weeks aged broiler grandparent eggs. The experiment was conducted with eggs from Cobb 500 broiler grandparent breeders from 30-39 weeks, 40-49 weeks and 50-59 weeks of age. For each age groups eggs were stored at 12-15 °C and storage time grouped as 1-8 days, 9-16 days and 17-24 days respectively. After the storage period, eggs of all the groups were incubated for 21 days in single stage incubator. After 21 days chicks were counted and the hatchability was determined. Unhatched eggs were broken to determine fertility, and if fertile, the stage of embryonic death was recorded. The results indicated that the storage period significantly affects the apparent fertility, hatchability, hatch of fertile, early dead, mid dead and late dead, total embryonic mortality and contaminated eggs but not for pips ($P < 0.05$). The best apparent fertility, hatchability and hatch of fertile (96.56 ± 0.24 , 87.28 ± 0.45 , 90.39 ± 0.50) and lowest percentages early dead, mid dead and late dead (3.72 ± 0.45 , 1.00 ± 0.17 , 2.67 ± 0.19) were obtained in 30-39 weeks flock age group. The Flock age significantly affects ($p < 0.05$) on apparent fertility, hatchability, hatch of fertile, late dead and contaminated eggs but not on ($P > 0.05$) early dead, mid dead, total embryonic mortality and pips. Combined effect of Flock age x storage period did not have a significant effect ($p > 0.05$) on hatchability, apparent fertility, hatch of fertile and embryonic mortality. It is evident that, the eggs of 30-39 weeks flock age group stored within 1-8 days period had the highest hatchability (87.28 ± 0.45) and the eggs of 50-59 weeks flock age group that stored within 17-24 days had the lowest hatchability (60.17 ± 1.51). The study shows that the eggs which were stored for a shorter period in the storage have given higher hatchability than the eggs stored for a prolonged period in the storage.

Key words: Apparent fertility, Hatchability, Embryonic mortality, Flock age, Storage period