

EVALUATION OF INCUBATION AND CHICK QUALITY PARAMETERS WITH DIFFERENT AGE CATEGORIES OF BREEDER FLOCKS

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Eggs from broiler breeder flocks of indifferent age categories are used by the commercial hatcheries to produce day-old chicks. This study was carried out to evaluate the effect of age difference in breeder flocks on incubation and chick quality parameters. Broiler breeders of three different age groups such as younger (26-35 wks.), median aged (36-45 wks.) and older (46-65 wks.) were selected for the study. Six hundreds eggs from each age category of breeder flock (MX male x Cobb 500 female) were collected. Shape index of eggs was measured before the incubation. The experiment was composed of three treatments each with four replicates and each replicate consisted with 150 eggs. Eggs were incubated in *Petersime* multi-stage (MS) incubator. Incubation parameters (moisture loss of egg, hatchability, hatch of fertile, eggs breakout), chick quality parameters (chick weight, chick length, chick yield) and qualitative traits (pasgar score, activity, downs and appearance, eyes, legs, belly and naval area) were measured at the end of incubation period. Quantitative and qualitative data were statistically analyzed by two sample t-test and logistic regression using SAS, respectively. Shape indexes were significantly different ($p < 0.05$) among three groups. The favorable (74.37%) egg shape index was observed in the older flocks. Moisture loss of eggs, hatchability, hatch of fertile were significantly different ($p < 0.05$) among groups. The highest percentage of hatchability (90.5%) and hatch of fertile (94.59%) were observed in the median aged flock. Breakout data analysis showed that early stage dead of embryo was not significantly different ($p = 0.4$). But, middle and late stage dead of embryos were significantly different ($p < 0.05$). Median aged flock had the lowest dead embryo at middle and late stage incubation period. Quantitative chick quality parameters except chick yield were significantly differed ($p < 0.05$). The older breeder flock showed the higher chick weight (49.11g) and chick length (18.89cm). Qualitative chick quality parameters did not have any significant difference among three groups ($p > 0.05$). In conclusion, age category difference of broiler breeder flock is a fair predictor of incubation and chick quality parameters while median aged group showed best performance among three groups.

Keywords: Breeder, Chick, Chick yield, Hatchability, Hatchery, Incubator