COMPARISION OF CHICK QUALITY PARAMETERS BETWEEN TWO TYPES OF MULTI STAGE INCUBATORS

M.T. Udawaththa[1], G.A.S.N. Gamlath[2] and A.M.J.B. Adikari[1]

[1]Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka
[2]Bairaha Farms PLC, Ellakkala, Pasyala, Sri Lanka

Cooling system of egg incubators influences the quantitative and qualitative parameters of day old chicks. Different types of incubators such as water cooling (WC) and air cooling (AC) are used by commercial hatcheries to hatch eggs. This study was carried out to evaluate the chick quality parameters between air cooling and water cooling types of multi stage incubators. The experiment was conducted at the hatchery, Bairaha Farms PLC in a Complete Randomized Design with two treatments each with four replicates and each replicate consisted of 150 eggs. One thousand two hundreds (1200) eggs from MX male x Cobb 500 female (35-40 wk. of age) were collected from the breeder farm. Eggs were incubated in water cooling and air cooling incubators separately. Egg quality parameters; egg weight reduction and hatchability, were measured at the end of the setter period. Live chicks and hatch residues were collected separately at the end of incubation period. Chick quality parameters such as chick weight, chick length and pasgar score were measured. Break out test was conducted with hatch residues. Data was statistically analyzed using two sample t-tests in SAS. Results revealed that there were significant differences ($p<0.05$) in egg weight reduction, hatchability, chick length and chick weight between two incubators. Higher values for egg weight reduction (9.7%), hatchability (90.4%), chick weight (42.4 g) and length (18.8 cm) were observed in WC incubator compared to AC incubator. Pasgar score did not show any significant difference ($p>0.05$) between two incubators. Break out analysis showed that higher embryo mortality occurred in AC type incubator. Therefore, it can be concluded that WC incubator performs better than AC incubator. The WC incubator could be recommended for commercial broiler hatcheries to produce good quality day old chicks.

Keywords: Hatchability, Hatch Residue, Incubators, Pasgar score