

SUMMARY

This study was conducted to evaluate the effect of various stress factors such as feed deprivation, water deprivation and bird stocking density, on the humoral and cellular immune responses and the growth rate of broiler chicken. A total of 240 day old broiler chicks were reared from day 01 to 56th of age in the isolation unit in the Department of Zoology Government College University, Lahore. The chicks in the experimental group were administered vaccination against Newcastle Disease (ND), Infectious Bronchitis (IB), Infectious Bursal Disease (IBD), and Angara disease (Hydro-pericardium syndrome)(HPS). The chicks were reared at optimal condition at the age of 21st day.

The effect of feed restriction resulted lower TLC values in Group B (15.75 ± 0.23) and Group C (15.21 ± 0.32), lower the percentages of Heterophile and lymphocyte in Group B (54.5 ± 0.5) and C (55.5 ± 1.5) Basophiles observed lower in all groups, while the H/L Ratio was observed higher in group A (1.84 ± 0.29). The mean weight of lymphoid organs (Spleen, Bursa of fabricious and thymus) low in all stressed groups. GMT recorded lower in stressed groups at 36th and 56th day of age. Higher thickness (cm) of wattle was observed in control group D (1.71 ± 0.19). Highest mortality rate was observed in group C (15). The FCR values decreased in stressed groups.

The effect of water deprivation resulted no significant difference of TLC values in stressed groups. The percentages of Heterophile and lymphocytes significantly increased of all experimental. Basophiles observed lower in group C. Eosinophil and monocytes significantly decreased in stressed groups. No significant difference in H/L Ratio. The mean weight of lymphoid organs significantly lower in stressed groups. The GMT values significantly lower in post challenged groups. There was a significant difference was observed in cellular immune response of water restricted. Mortality recorded significantly higher in group A, B, and C than NDV vaccinated Control group D. FCR values observed lower in all groups during the stress period. A significant difference was observed in FCR values in all groups in every week.