Effect of daily feeding time restriction on broiler chicken performance under summer season conditions of Upper Egypt.

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Abstract:

A total number of one hundred and fifty of one-day old brown shaver broilers chicks were used to study the effect of daily feeding time restriction on broiler chicken performance and mortality rate under summer season condition of Upper Egypt. The chicks were randomly divided into 5 experimental groups, (control and 4 treatments). Each group included three replicates of 10 chicks. Group 1 (FFC) was used as control in which the birds were fed ad libitum from 1 to 49 days of age. In groups 2 (EFR6) and 3 (EFR9), the feed was removed for 6 or 9 hours per day from 2 to 4 weeks of age, respectively. In groups 4 (LFR6) and 5 (LFR9), the feed was removed for 6 or 9 hours per day from 5 to 7 weeks of age, respectively. The birds were subjected to heat stress during the experiment since the temperature ranged between 26 and 38 °C. The obtained results could be summarized as follows: At 7 weeks of age, broilers of EFR6 group had significantly (P≤0.05) higher body weight (BW) than those of FFC, EFR9 and LFR9 groups, while the broilers of LFR6 group had an intermediate BW. Also, the broilers of EFR6 group showed a significantly higher (P≤0.05) daily weight gain than those of FFC, EFR9 and LFR9 groups, but not than those of LFR6 group. Time of feed restriction had no effect on the overall mean of feed consumption (FC) and in cumulative feed conversion ratio (FCR) among all groups, however birds in LFR-6H, EFR6 and EFR9 groups had better cumulative FCR by about 5.4, 3.6 and 2.3 %, respectively than that of FFC group. The broilers of all restricted fed groups had fewer deaths than their controls, while the mortality rate was 13.3, 0.00, 6.70, 0.00 and 6.70% for FFC, EFR6, EFR9, LFR6 and LFR9 groups, respectively. Broilers of EFR6 and EFR9 groups had significantly heavier (P≤0.05) carcass weight compared to those of FFC, LFR6 and LFR9 groups. It was found that the birds of EFR9 had significantly heavier breast (P≤0.05) percentage than those of LFR6 and LFR9, while FFC and EFR6 groups had an intermediate percentages. The broilers of EFR6 had significantly lower (P≤0.05) percentage of liver than those of FFC and LFR9; gizzard and giblets than those of FFC, LFR6 and LFR9, but there are significant (P≤0.05) differences in the fat percentages of abdominal, subcutaneous, neck and total of those groups. The EFR6 and EFR9 groups had insignificantly lower percentage of total fat by about 21.1 and 19.9%, respectively than that of FFC group. Time of feed restriction at different ages had no significant effect on the percentage of other carcass (yield and parts) and body organs weight. All restricted fed groups (EFR6, EFR9, LFR6 and LFR9) showed increased economical efficiency by 70, 36, 85 and 28%, respectively as compared with FFC one. It could be concluded that, the most suitable and economically efficient feeding program during high environmental temperature was feed restriction for 6 hours per day (from 9 a.m. to 3 p.m.) from 5 to 7 weeks of age.

Keywords:

broilers performance, time of feed restriction, high temperature, economical efficiency

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