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Effect of feed restriction on performance, carcass characteristics and ascites related parameters in Arian broiler chickens in cold area

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Abstract

This experiment was conducted to investigate the effect of feed restriction on performance, carcass characteristics and immune responses of broiler chickens in cold area of Zanjan province. For this purpose, 600 Arian chicks 386 strain were considered in a completely randomized design with 5 treatments, 6 replicates and 20 chicks per replicate. In this experiment, all treatments except the control group were subjected to the following feed restriction (feed removal) during the breeding period for 96 hours from the 8th day: 1- Control treatment without feed restriction 2- removal of feed for 4 hours a day for 24 consecutive days 3- removal of feed for 8 hours a day for 12 consecutive days 4- removal of feed for 12 hours a day for 8 consecutive days 5 – removal of feed for 16 hours a day for 6 consecutive days. The results showed that dietary restriction reduced growth and body weight during the feed restriction period. The minimum time for the effects of feed restriction was 8 hours per day for 12 consecutive days and by the 35th breeding, all treatments were able to match the weight of the body with the control group. The amount of feed intake decreased significantly ($p < 0.05$) and a relative improvement in the feed conversion ratio was observed by severity of restriction. Characteristics of carcass, glucose, cholesterol, triglyceride, albumin, phosphorus, thyroid hormones and immune responses were not affected during compensatory growth, but total protein, globulin and thyroid hormones ratios were significantly different between treatment groups. In general, the results showed that in order to obtain the effects of feed restriction, reduction of mortality by ascites syndrome and the benefits of compensatory growth in Arian broiler chickens, the minimum daily deprivation of feed should be 8 hours.

Key Word: immune, broilers, performance, biochemical parameter, feed restriction