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Investigation on performance ,immune system and the growth pattern of the Arian line at 1 to 40 days of age

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Abstract

In order to evaluate performance traits at different ages and immune responses (end of rearing period) of Arian broiler experimental lines a 720 chicks were replaced in floor pens. Experimental design was based on completely randomized design with 6 experimental lines. Each experimental group had 6 replications, with 20 chicks in each replication. At the end of this experiment, carcass percentage, breast, leg and abdominal fat of 8 birds from each pen were measured. Performance traits measured included: body weight, feed intake, carcass cuts, immune factors (heterophil and lymphocyte percentage) and immune organ (spleen and bursa fabricius) weights. Each replicate was weighed at 0, 4, 7, 10, 13, 16, 21, 25, 30, 35 and 40 days and feed intake was recorded. At the end of experiment 8 birds from each pen slaughtered for assaying carcass, breast, thigh, abdominal fat pad, wing and dorsal part.

The results were consistent with the breeding process of the experimental lines so that body weight and feed consumption in the male line were significantly higher than the female line. The feed conversion ratio was significantly better in male lines than in female lines. Body weight and feed intake were the highest in line B and the lowest in line C at all ages ($P < 0.05$). Feed intake and body weight were higher in line E than in line A. There was no significant difference in terms of feed intake between lines A and D, but body weight of line D was significantly lower than line A ($P < 0.05$). Feed conversion ratio, carcass percentage and breast percentage were statistically significantly better in male lines than in female lines ($P < 0.05$). Conversely, the thigh percentage in female lines was higher than male lines. There was no significant difference in the percentage of abdominal fat pad, gizzard, heart, spleen and bursa fabricius.

Key words: Arian, broiler line, performance, immune status