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Evaluation of performance of improved indigenous hens in rural areas

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Abstract

This study was carried out to investigate the growth and egg production performance and livability of improved indigenous chickens kept in rural area and two climate conditions of five different Iranian provinces including Esfahan, Azarbayejangarbi, Fars, Khorasan Razavi, and Mazandaran. Accordingly, 1500 indigenous chickens were used in a Block Completely Randomised design. Initially, day old chicks provided from indigenous breeding center of each province, reared for 45 days under a similar diet. Then, for evaluation of their growth and egg production performances, two dominant climatic regions were determined for each province. In each climate, two towns and three villages in each town chosen. Furthermore, six families were determined as experimental units in each village. Twenty to twenty-one chicks of 45 day-old ages with 7 to 1 hen to rooster ratio delivered to each family. Body weight of the hen and roosters were measured on 8, 12, 24, 48 and 72 weeks of age. Additionally, number of eggs produced by the hens in each family were recorded daily basis. Produced eggs in each family also were collectively weighed and recorded biweekly. The egg quality characteristics including eggshell breaking strength, albumen height, Haugh unit, shell weight, shell thickness, yolk and albumen weight to egg weight ratio were recorded 3 times during the experimental period. Total average body weight of indigenous hens were 639.6, 965.7, 1491.6, 1795.1 and 1920.4 at 8, 12, 24, 48 and 72 weeks of age, respectively. Differences between average body weight for different provinces at these ages were significant ($P < 0.05$), while climate had no effect on average body weight. Average egg production performance was affected by province ($P < 0.05$) while no effect observed for climates. Least average egg production belonged to Azarbayegangarbi (22.2%) that was significantly ($P < 0.05$) lower than Esfahan (32.4%), Khorasan Razavi (39.1%), Fars (37.8%) and Mazandaran (36.1%) provinces. Province had significant effect on average egg weight in most stages and total production period ($P < 0.05$), but climate had no effect on this parameter. The egg quality characteristics were significantly ($P < 0.05$) influenced by province. Totally, according to the results of this experiment, average egg production percentage, annually number of eggs and egg weight of improved Iranian indigenous hens in rural area are 33.7%, 123 and 50.7 g, respectively. Average livability of the indigenous chickens also during rearing and laying periods in rural conditions were 81.4 and 63.5%, respectively. These averages for rearing

period in cold and warm climates were 77.4 and 85.4% and for laying period were 64.6 and 68.2%, respectively.

Key words: Indigenous hen, egg production, egg weight, livability, rural conditions