The optimum ambient temperature of Dandarawi laying hens for optimum productive and reproductive performance.

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Abstract:

A total number of one hundred and ninety eight 32 weeks old Dandarawi laying birds (180 hens and 18 cocks) at peak production until 44 weeks of age were used to evaluate some productive and reproductive performance of Dandarawi laying hens under different ambient temperatures. The birds were randomly divided into 3 groups. Each group included sixty hens and six cocks. All birds were housed in 3 floor pens. Each group was kept in an area of 10 square meters provided with deep litter of wheat straw (10 cm). The first, second and third groups were raised under 20 to 22ºC, 24 to 26ºC, and 28 to 30ºC, respectively. The obtained results could be summarized as follows: The birds of groups 1 and 2 were achieved higher (P≤0.01) final body weight (BW) by about 4.5 and 6.0 % and also higher (P≤0.01) body weight change (BWC) by about 6.6 and 9.6 %, respectively, than those in group 3, while no significant differences (P≤0.05) were observed between groups 1 and 2 in final BW and BWC. The birds in group 2 showed significantly (P≤0.01) higher hen day egg production (HDP) by 4.4 and 6.7%, hen housed egg production (HHP) by 4.4 and 8.9%, egg number (EN) by 2.2 and 3.4 eggs, and egg mass (EM) by 4.1 and 7.7% than those in groups 1 and 3, respectively, while no significant differences were observed in HDP and EN between groups 1 and 3. However, HHP and EM in group 1 increased (P≤0.01) by about 4.8 and 3.8%, respectively than those in group 3. No deaths occurred in birds of group 2 at all age periods studied, while the mortality rate was 1.7 and 6.7 % in groups 1 and 3, respectively. The group 1 showed significantly (P≤0.05) higher feed consumption by 3.1% as compared with that in group 3, while the group 2 had an intermediate value. No significant differences in cumulative feed conversion (FCR) among the three groups were detected. However, the birds of group 2 had insignificantly (P≤0.05) better cumulative FCR by about 4.5 and 6.8 % than that of groups 1 and 3, respectively. There were no significant differences among groups in egg weight, egg shape index, and egg yolk index. However, the eggs of birds in groups 1 and 2 had significantly (P≤0.01) higher Haugh units (HU) by 5.3 and 5.3% and shell thickness (ST) by 3.1 and 3.8%, respectively than those in group 3. The yolk percentage in groups 1 and 2 was significantly (P≤0.05) higher by about 2.8 and 3.6 %, respectively than that in group 3, but the albumen percentage in group 3 was significantly (P≤0.01) higher by about 1.7 and 2.2% than that in groups 1 and 2. However, no significant differences (P≤0.05) among groups were observed in shell percentage, fertility, and hatchability of total and fertile eggs percentages. But, the chick weight at hatch in group 2 was significantly (P≤0.05) higher by about 1.8% than that of group 3, while the group 1 had an intermediate value. Economic efficiency (EE) in group 2 exceeded that of groups 1 and 3 by 17 and 29%, respectively, while the EE in group 1 exceeded that of group 3 by 12%. The group 2 recorded the best EE percentage as compared with the other two groups. The recommendation of the present study is raising Dandarawi laying hens during the period from 32 to 44 weeks of age under 24 to 26ºC to obtain higher productive and reproductive performance.

Keywords:

Dandarawi laying hens, optimum ambient temperature

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