Performance of force molted chicken hens affected by high temperature. 2. Effect on egg quality traits and egg components.

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Abstract:

Two hundred and forty chicken hens, 70 weeks old, divided randomly into five experimental groups, including five genotypes; namely New Hampshire (NH), White Selected Lohman (LW), Naked neck strain (NA), Cross of Naked neck X New Hampshire (NANH) and Cross of Naked neck X White Selected Lohman (NALW) were used in the present study. Forty eight hens per genotype (group) were equally classified into subgroups: 1 and 2, in which birds were exposed to 32 ºC (high temperature, HT) and 20 ºC (Normal temperature, NT), respectively. All birds were force molted by feed restriction during 21 days and thereafter were fed ad libitum on the layer ration. Four newly-laid eggs were taken every four weeks per each hen after the restart of laying throughout a period of twenty-eight weeks to evaluate the egg quality traits and the egg components. The achieved results indicated that inducing force molt under HT decreased significantly the studied egg quality traits (Egg weight, egg shape index, deformation of the egg, egg specific gravity, eggshell strength, Haugh units and egg yolk index) as well as the egg components (albumen, yolk and shell percentages) for the tested genotypes as compared to their corresponding values under NT. Concerning the crossing effect, the minimal decreases in egg weight, deformation of eggs, eggshell strength, Haugh units and egg yolk index under HT were found in the NALW as compared to NANH, indicating that the NALW was the highest tolerant genotype to the high temperature. Taking these results in consideration, the force molting induction in chickens is only recommended under comfortable temperature.

Keywords:

High temperature, Force molt, Chicken hens, Egg quality)

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