

The Effect of type of laying house and cage location on environmental factors in laying hens

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Abstract

In order to evaluate the effect of the type of laying house (with roof ventilation opening (CA) or with closed roof (CC)) and cage location on environmental factors, a commercial farm of 124.014 egg-laying hens was studied for 10 months. The experimental laying houses were as follows: I: CC; II: CA simple vent, good drainage; III: CA double vent with bad drainage, 12 m wide and with conventional cages; IV: CC, 5.25 m wide and inverted cages. Lateral rows (HL) were considered as the external rows, and central rows (HC) were the rows in the center of the houses. The experimental design was completely random with factorial arrangement. The results evidence more favorable environmental conditions ($P < 0.05$) in laying house II with respect to I, in reference to relative humidity (HR: 59.8 vs 62.8%), ammonium concentration (CAM: 8.1 vs 10.8ppm) and luminosity (L: 12.3 vs 11.9 lux). The narrow laying house IV evidence better results with respect to II in CAM (5.5 vs 8.1ppm) and L (13.0 vs 12.3lux). These factors were more advantageous ($P < 0.01$) in the lateral rows with respect to the center, with no significant difference for HR. Between HL and HC the only significant differences ($P < 0.05$) observed were for HR in laying houses I and II, while CAM values were higher in wide houses, with non appreciable differences in narrow houses. Similar behavior occurred in HC in wide houses. These results suggest that the environmental conditions are superior in HL in narrow and wide laying houses with CA.

Key words: Environmental factors, laying hens, laying houses, cages.

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