

Investigation of economic traits on the hybrid broiler (Ross 308) differing genotypically for insulin gene hormones using correlation and regression coefficients

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Corresponding author:**Al-Anbari EH****ABSTRACT:**

The objective of the present study was to investigate the correlation and regression for some economic traits on hybrid broiler Ross 308 that differ on the genotype for insulin gene. Two hundred one- day-old chicks of Ross 308 were reared for five weeks in a closed system and divided based on the genetic structure of the insulin gene into two groups *viz.*, hybrid and dominant structures. Initial Body weight (IBW), Initial Length of Body (ILB) and some physical characteristics were measured. The results showed a high correlation ($P<0.01$) between the Live Body Weight (LBW) and Carcass Weight (CWT). It was 0.97 for the dominant structure while 0.56 for the hybrid structure. Significantly, the correlation between body length A_5 with the length of keel bone C_5 and the circumference of the breast B_5 in the dominant structure was 0.35, 0.34 respectively, and between the breast circumference B_5 and thigh circumference D_5 was 0.50 for dominant structure. As for the hybrid structure, the correlation value was of high significance ($P>0.01$) between C_5 with D_5 when the correlation value was 0.70. And significantly, the correlation values were 0.56, 0.61, 0.58, 0.50, and 0.48 between LBW and CWT and B_5 with C_5 and D_5 , and between A_5 with D_5 and C_5 respectively. The dominant genotype showed a significant regression coefficient $P<0.05$ for the relative weight of thighs Y_3 by IW which was 0.004 and for wings Y_5 by ILB which was 0.0009 at the same level of significance. The hybrid structure showed a significant regression coefficient for Y_3 in IW, and for Y_2 in ILB was 0.02 and 0.04 respectively. The regression coefficient for relative weight of the breast B_5 for ILB was 0.003 higher significantly ($P>0.01$) for the hybrid structure. Meanwhile, in the dominant structure, LBW and CWT compared to the by ILB were recorded as 0.04 and 0.02 respectively. It can be concluded that the correlation and regression values for some economic traits can be used for early selection of chicks for breeding as a preferred genetic structure or as required by the market on the basis of genetic structure of the insulin gene.

Keywords:

Ross 308, Insulin gene hormone, Correlation and regression coefficients, Broiler economic traits.