

ESTIMATION OF GENOTYPE × ENVIRONMENT INTERACTION FOR THE BROILER RABBIT

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The objective of this study was to test the possibility of genotype × environment interaction existence for the growth performance, average daily feed consumption and feed conversion in the HYPLUS broiler rabbit between test stations and fattening farms.



MATERIALS AND METHODS:

The influence of genotype × environment interaction on the performance (body weight, average daily gains, average daily consumption and feed conversion) of two genotype lines F_1 (PS59 PS19) and F_2 [(PS59 PS19) (PS59 PS19)] of HYPLUS broiler rabbits was analyzed. This study was carried out with 184 broiler rabbits in 5 independent experiments. Rabbits from commercial farms weaned at the age of 34 – 35 days were housed in stainless mesh cages placed in the experimental stable or in the fattening farm with *ad libitum* access to granulated feed and water. Performance traits were recorded in one-week intervals from 42 to 84 days of rabbit age.

STATISTICAL ANALYSIS:

The genotype × environment interaction was analyzed by the least-squares analysis using the GLM procedure (SAS, 2005). The following linear model was used:

$$Y_{ijkl} = \mu + GENOT_i + REPL_{ji} + ENV_k + (GENOT \times ENV)_{ij} + e_{ijkl}$$

y_{ijkl} - observation, μ - overall mean, $GENOT_i$ - fixed effect of the i -th genotype, $REPL_j$ - fixed effect of the j -th replication nested in the i -th genotype, ENV_k - fixed effect of the k -th environment, $(GENOT \times ENV)_{ij}$ - fixed effect of the ik -th interaction genotype × environment, e_{ijkl} - random residual error



RESULTS:

The genotype × environment interaction for the average daily consumption was significant ($P < 0.001$) during the whole fattening period with the exception of period from 42 to 49 days of rabbit age. The influence of genotype × environment interaction to the rabbit growth was non-significant.

CONCLUSION:

Results of this study suggested, that the average daily consumption and feed conversion of rabbits were influenced by the genotype × environment interaction. The genotype × environment interaction had no significant effect on the growth performance of broiler rabbits.