

## Effect of Genotype and Genotype – Environment Interaction on Productive Performance of Japanese Quail Varieties

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:To cite this article

Khalid Hamid Hassan, Ali Rafea Abd–Alsattar. Effect of Genotype and Genotype – Environment Interaction on Productive Performance of

Japanese Quail Varieties. American Journal of BioScience. Vol. 4, No. 4, 2016, pp. 49-52. doi: 10.11648/j.ajbio.20160404.12

Received: July 25, 2016; Accepted: August 9, 2016; Published: August 25, 2016

**Abstract:** Two experiments were conducted at the poultry farm of Department of Animal Production – College of Agriculture University of Diyala / Iraq, the first experiment performed in Autumn season using 324 birds and the second experiment performed in Spring season using 397 birds reared for ten weeks, the study aimed to detect the productive performance of three varieties of Japanese quail (White, Black and Brown plumage color) in the natural conditions of Iraq during Spring and Autumn seasons and the effect of genotype  $\times$  environment interaction ( $G \times E$ ) on meat and egg production. The statistical analysis done according to factorial experiment in Completely Randomized Design ( $3 \times 2$ ) with three replicates. The results showed significant superiority of the Black variety in the body weight measurements during the first 5 weeks of age, while there were no significant differences found in body weight between Black and Brown varieties during 6 and 7 weeks of age. There were significant differences due to  $G \times E$  in body weight measurements of all weeks of rearing. The results showed significant superiority of the Black variety compared

with White variety in feed consumption and weight gain traits, and also there were a significant superiority of measurements during Spring season rearing compared with Autumn season rearing in respect of weight gain and feed conversion traits, also there were significant G×E effect in feed conversion. There was a significant superiority of measurements during Autumn season rears in the age of sexual maturity of females, hen day egg production (%), and the number of eggs per hen

Keywords: Japanese Quail, Variety, Season Effect, G×E Interaction