

Early Sexual Maturity Characteristics in Bovan Nera and Isa Brown Parent Stock Layer Strains as Influenced by 10th-Week Bodyweight, Feed Intake and Weight Gain

Jesuyon, O. M. A. Pg 13-23

Abstract

The study was conducted to compare early sexual maturity characteristics in Bovan Nera and Isa Brown Parent stock chickens reared under same commercial breeding system in Ibadan, humid Tropical Nigeria. The effects of pullet weight at 10th week (PW10), feed intake from 11th week to first egg (FI11) and weight gain from 11th week to first egg (WG11) on growing-pullet weight at first egg (PWFE) and pullet age at first egg (PAFE) were investigated consecutively. Data on above traits were culled from the record books of a commercial parent stock breeding farm in the environment from 1999 to 2008. A total of 20 flocks of each strain were compared. Data were analyzed using GLM procedures of SAS® (1999) in randomized complete block (RCBD) design. Findings revealed that three body weight categories at 10th week (<700, 801-900 and >900 g) caused significant differences ($P<0.05$) between strains in WG11, PWFE and PAFE. The 701-800 g body weight category at 10th week produced no meaningful ($P>0.05$) differences between strains. At feed intake level of 2.1-3.0 kg (body weight=785-795gm) there were significant ($p<0.05$) differences in WG11 (712.79; 535.29 g) and PWFE (1507.74, 1321.00 g) between BN and IB; while the 3.10-4.00 kg feed consumption level (body weight=755- 765gm) revealed significant ($p<0.05$) differences between strains in FIFE (83.50; 71.12 g), PWFE (1510.45; 1387.69 g) and PAFE (123; 115 days). PWFE was positively related with PAFE in BN ($R^2=0.11$) and IB ($R^2=0.71$). Findings revealed that BN and IB strains could attain a minimum age of 115-121 and 103-115 days and minimum body weight of 1436-1504 and 1151-1351gms respectively before laying the first egg. Strain average parameters revealed significant ($p<0.05$) differences between strains in all characteristics, and this led to 6-day difference in PAFE between BN and IB strains. Equations obtained on WG11 and PWFE were significant ($P<0.0001$, $R^2=0.90$.) with basal differences between strains. The variabilities elicited by strains constitute some of the causes of genetic differences between Bovan Nera and Isa Brown parent stock chicken.

Keywords: Age, body weight, first egg, phenotypic correlations, regression equations, breeding, weight-gain management.

Department of Animal Production and Health, Federal University, P. M. B. 373, Oye - Ekiti, Ekiti State, Nigeria

Corresponding author's email: dr.oluwatosinjesuyon14@gmail.com Target Audience: Poultry Farmers, Poultry Industry Managers, Poultry Breeders, Researchers.

Target Audience: Poultry Farmers, Poultry Industry Managers, Poultry Breeders, Researchers.