GENOTYPE-BY-ENVIRONMENT INTERACTIONS ON THE EGG-LAYING PERFORMANCE OF TWO COMMERCIAL STRAINS OF BOVAN CHICKEN (BOVAN BROWN AND BOVAN NERA) IN THE HUMID TROPICS

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The genotype-by-environment interaction (GXE) effect was studied on the egg-laying performance of 4,000 hens of Bovan Brown (BB) strain and 2,500 hens of the Bovan Nera (BN) strain during the laying period between 19th week and 70th week of age (December,2000- November, 2001). Data were collected from the Zartech Limited, Ibadan, Nigeria. The birds were kept in battery cages and housed at 2 birds per cage with 0.008m^2 cage space. The genetic characteristics were achieved by providing the birds with all its requirements. These include, but not limited to, good quality feed and water, good housing, and proper management. Routine management procedures were followed all through the production cycle. Data were collected on weekly hen-day egg production from each strain and were analyzed for differences in mean performance using t-test procedures (SAS, 2000) and the general linear models (GLM). Effects in the model include; strain, month-of-lay and strain by month-of-lay effects. Climatic data by months of lay range from the extremes of two major seasons, that is, rainy and dry seasons. Results indicated that month-of-lay differs in age of hens and also in climate covering the entire production cycle. There was no significant genotype-by-environmental (GXE) interaction between strain and month-of-lay. Also, both strains had comparable egg production performance and are thus suitable for commercial holdings in the humid tropics ($P>0.05$).

Conclusion

The results of this study indicated that the over all performance of the two strains, Bovan Brown and Bovan Nera were adequate for commercial purpose with both strains displaying comparable performance levels with the differences in the over-all mean hen-day egg production and months-of-lay not significant within and between the strains under study. Also, breeding and selecting for the egg-laying performance trait of the two strains (Bovan Brown and Bovan Nera) as commercial stocks can be improved in the humid tropics.

Key words: Strains, Bovan Brown, Bovan Nera, Egg-laying performance, humid tropics