EFFECTS OF STRAIN ON GROSS TESTES MORPHOLOGY OF THREE STRAINS OF NOILER COCKS

***S Amur., D.J.U Kalla & Y.P Mancha**

Department of Animal Production Abubakar Tafawa Balewa University Bauchi, Bauchi State Nigeria

**Corresponding author: amursamaila@gmail.com mobile No: 07063937365*

ABSTRACT

A study was conducted to determine the effects of strain on gross testes morphology of three strains of noiler cocks (brown, black and spotted). The study was conducted at the poultry unit of the Bauchi State Agricultural Development Project (BSADP). The study lasted a period of eight months. A total of 45 normal feathered Noiler cocks were used for this experiment which were procured at nine weeks of age from the BSADP farm and fed commercial diet throughout the duration of the experiment. They comprised of three strains (15 brown, 15 black and 15 spotted). Testes were collected from all cocks. Testes were trimmed of all adhering fat and tissue, and weighed to the nearest 0.01mm using an electronic scale. Testis length and width were measured using a Vanier calliper to the nearest 0.01mm. Using a measuring cylinder containing known quantity of water, the testis was dropped in the cylinder and the volume of water displaced was recorded as value. The result showed that live weight, paired testes weight, paired testes volume, left testes volume and right testes volume were statistically different ($P<0.05$) among the strains. There were no significant differences observed from the other parameters across the strains which comprises of the right and left testes weight, length, width. The results showed that brown strain was superior to black and spotted. Testis weight of all the three strains fell within the range of 9-30g. From the finding of this study it is concluded that strain had significant effect on the gross testes morphology of Noiler Cocks.

Keywords: Strain, Testes, Noiler, Cocks, Morphology

INTRODUCTION

The most commonly reared poultry in Nigeria are chickens, turkeys, ducks, guinea fowls, pigeons and more recently ostriches. Those that are of commercial importance are chickens, guinea fowl's quails and turkeys. Local chickens are reared through extensive or semi-intensive system, thus reducing cost of production. They are more tolerant to endemic diseases and environmental conditions, as compared to the exotic breeds (Okpe etal, 2010). The recent ban on the importation of poultry and their products has constituted a major challenge to the indigenous poultry industry to meet up the immediate and future protein needs of the country. This challenge calls for improvement and/or change in the traditional production system and optimization of poultry reproductive traits such as fertility, hatchability and chick quality. Despite the advantages of the local chickens, most poultry improvement programmes in Nigeria have been directed towards introduction of specialized or exotic breeds, (Ikanni and Annatte, 2000). Efforts have been geared towards the development of indigenous chicken breed with improved meat and egg production and these efforts has led to the development of the Noiler breed by Amo farm sieberer hatchery limited. Therefore this research was designed to investigate the gross testes morphology of three strains of Noiler cocks.

MATERIALS AND METHODS

The study was conducted at the poultry unit of the Bauchi State Agricultural Development Project (BSADP) Bauchi State, Nigeria. It lies between latitude 9.30° and 12.3° north of the equator, and Latitude 8.48° and 11° East of the Greenwich meridian. The study lasted a period of eight months. A total of 45 normal feathered Noiler cocks were used for this experiment, they were procured at nine weeks of age from the Bauchi state Agricultural Development Program (BSADP) farm and fed commercial diet throughout the duration of the experiment, they comprised of three strains (15 brown, 15 black and 15 spotted).

Gross Morphology of Testes

Testes were collected from all cocks. Testes were trimmed of all adhering fat and tissue, and weighed to the nearest 0.01mm using an electronic scale (SF – 400). Testis length and width were measured using a Vanier calliper to the nearest 0.01mm (Bath and chaudhari, 2002). Volume was obtained using Archimedes principle. Using a measuring cylinder containing known quantity of water, the testis was dropped in the cylinder and the volume of water displaced was recorded as the volume.

Statistical Analysis

The data collected was subjected to analysis of variance procedure as contained in statistical package for social sciences (SPSS) 2011 version. Significant means were separated using Duncan Multiple Range Test (DMRT) procedure.

RESULTS AND DISCUSSION

Table 1 Gross Testes Morphology of Three Strains of Noiler Cocks.

Parameter	BLACK	SPOTTED	BROWN	SEM	LS
Live weight (kg)	3.53b	3.43b	3.83a	0.942	*
Paired Testes weight (g)	33.00b	32.66b	37.00a	0.846	*
Left Testis weight(g)	15.00	15.66	18.00	0.503	NS
Right Testis weigh (g)	17.00	17.00	18.33	0.412	NS
Left Testis length (mm)	39.84	40.07	44.46	1.049	NS
Right Testis length(mm)	40.50	39.81	42.70	0.866	NS
Left Testis width(mm)	20.56	21.39	22.94	0.554	NS
Right Testis width(mm)	21.47	31.53	21.63	0.497	NS
Paired Testis volume(ml)	34.02b	29.95b	41.07a	1.88	*
Left Testis volume(ml)	16.85b	15.17b	19.97a	0.715	*
Right Testis volume(ml)	17.17b	15.14b	21.10a	1.02	*

NS = Not Significant ($p>0.05$), LS = level of significant, * = significant ($p<0.05$), a b = means within the same row bearing different superscript varies significant.

Table 1 shows the influence of strain on gross testes morphology. Live weight, paired testes weight, paired testes volume, left testes volume and right testes volume were statistically different ($P<0.05$) between the strains. There were no significant difference ($P<0.05$) observed from the other parameters across the strains which comprises of the right and left testes weight, length, width. The results showed that the brown strain was superior to black and spotted. Testis weight of all the three strains fell within the range of 9-30g which has been widely reported for chickens at sexual maturity. Testicular length and width were slightly lower than values reported by Chidozie et al. (2010). The width diameter for the different strains recorded in this study are lower than the average reported by Chidozie et al. (2010) for the Nigerian local chicken.

CONCLUSION

From the finding of this study it is concluded that strain had significant effect on the gross testes morphology of Noiler Cocks.

REFERENCES

Bath, GS and Chaurdhari, SUR (2002).Sperm Reserve and its Relationship to Parameters of the Testis, Epididymis and Vas Deferns of Local Cocks in the Sahel Region of Nigeria. International Journal of Agricultural and Biology.1560-8530/2002/04-4-562-564.

Duncan, D.B. (1955). Multiple range and multiple F tests. Biometrics 11:1-42.

Ikani, E. I. and Annatte, A. I. (2000). Improving the performance of local chickens. Extension Bulletin No. 92, Poultry series No.6, National Agriculture Extension and Research Liaison Services, Ahmadu Bello University Zaria, Zaria, Nigeria.

O.G Chidozie, N Ugochukwu and A Kenneth (2010). Morphometric study of the testes of the Nigerian localbreed of chicken. *Animal Research International* 7(2): 1163 – 1168.

Okpe, G. C., Nwatu, U. and Anya, K. (2010). Morphometric study of the testes of the Nigerian local breed of chicken. *Animal Research International,* 7(2): 1163 - 1168.

SPSS (2011) SPPSS Statistics for windows, version 20.0 Armonk, NY.IBM Corp.