# COMPARATIVE STUDY OF BODY WEIGHT AND SOME BIOMETRIC PARAMETERS OF PROGENIES OF INDIGENOUS CHICKENS AND THEIR NAPRI X CROSSES

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INTRODUCTION

* Indigenous chickens are essential part of the Nigerian society

* Characteristics of indigenous chickens

* Cross breeding using advantageous as a major tool of Enhancing indigenous and commercial breeds

* Body weight= function of frame work or size of the animal and its condition

* Linear body measurements can be used to predict body weight in broiler.

* NAPRIX has been selected for fast growth for several years

* Limited attention has been given to the upgrading of indigenous non-descriptive chicken types using high performing broiler breeds.
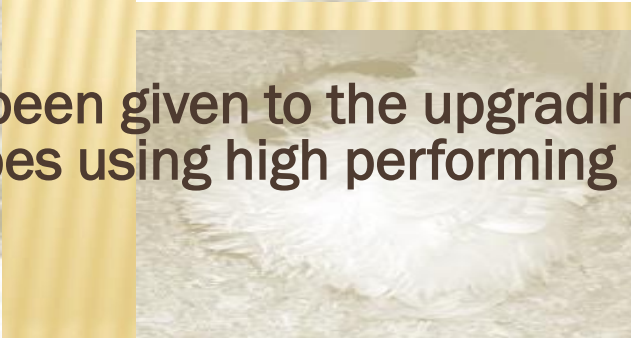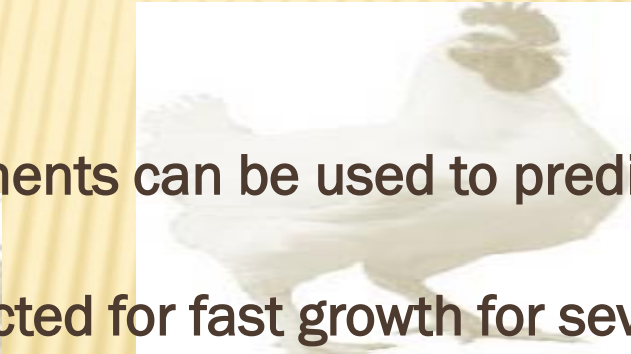
OBJECTIVE

To evaluate bodyweight and biometric traits resulting from progenies produced from three genotypes of Nigerian indigenous chickens and their crosses with NAPRI X broiler chicken.

MATERIALS AND METHODS

- **Study location**: Poultry Unit ABU (Akpa *et al*. 2002)
- **Experimental Animals**-A total of 115; 30 N, Na and F hens each, 5 N, Na and F cocks each and 10 cocks of the exotic broiler (NAPRIX)-raised on deep litter

- Three genotypes and NAPRIX

- **Mating**- naturally -pure breeds
              -artificial insemination local X NAPRIX cocks
- **Offspring** -3 pure and 3 crossbred progenies
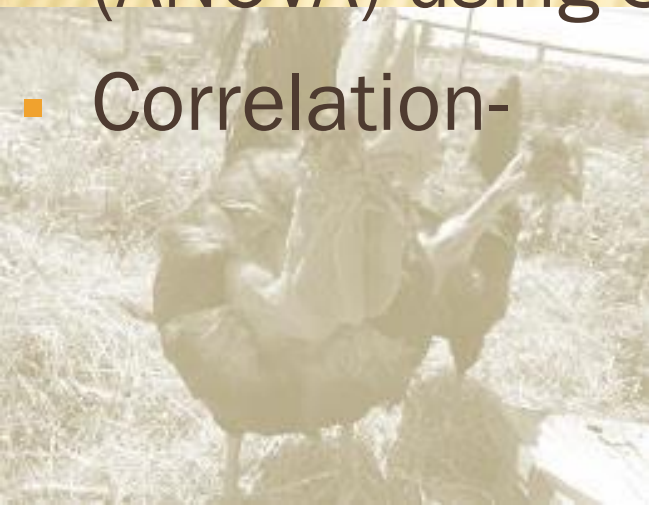
× **Traits measured**

- Body weight (BW)

- Breast girth(BG)

- Body length (BL)

- Shank length (SL)

× **Data analysis**

- (ANOVA) using SAS, 9.2(2003).... DMRT

- Correlation-

RESULTS AND DISCUSSION

TABLE 1: LEAST SQUARE MEANS OF BODY WEIGHT AND BIOMETRIC TRAITS AT 28DAYS OF INDIGENOUS CHICKEN AND THEIR CROSSES WITH NAPRIX

	BW(g)	BL(cm)	BG(cm)	SL(cm)	TL(cm)
28 Days					
Normal	196.00[b]	27.52[b]	11.12	2.59[b]	5.40[b]
Naked	172.10[b]	26.02[b]	11.28	2.21[c]	5.29[b]
Frizzle	157.80[c]	25.92[c]	10.27	2.43[b]	4.94[c]
NNPX	353.06[a]	33.43[a]	13.93	4.03[a]	7.00[a]
NaNPX	306.22[a]	31.44[a]	13.10	3.64[a]	6.15[a]
FNPX	277.07[a]	30.90[a]	12.74	3.26[a]	6.12[a]
SEM	67.87	3.81	3.21	1.20	0.91

Means in the same column with different superscripts are significantly different (p<0.05).BW=bodyweight NNPX= Normal x NAPRIX, NaNPX= Naked neck x NAPRIX, FNPX= Frizzle x NAPRIX.

TABLE 1 Cont...LEAST SQUARE MEANS OF BODY WEIGHT AND BIOMETRIC TRAITS AT 56 DAYS OF INDIGENOUS CHICKEN AND THEIR CROSSES WITH NAPRIX

	BW(g)	BL(cm)	BG(cm)	SL(cm)	TL(cm)
56 Days					
Normal	464.69[b]	42.80[b]	18.88	5.27[b]	8.35[b]
Naked	467.27[b]	42.02[b]	19.19	5.42[b]	8.28[b]
Frizzle	467.27[c]	40.15[c]	19.27	4.55[c]	8.01[b]
NNPX	846.65[a]	53.37[a]	22.75	6.56[a]	10.43[a]
NaNPX	798.61[a]	50.96[a]	22.18	6.32[a]	10.05[a]
FNPX	722.73[a]	51.40[a]	21.87	6.17[a]	9.81[a]
SEM	56.41	1.78	2.27	0.32	0.41

Means in the same column with different superscripts are significantly different (p<0.05).BW

TABLE 1 Cont....: LEAST SQUARE MEANS OF BODY WEIGHT AND BIOMETRIC TRAITS AT 84 DAYS OF INDIGENOUS CHICKEN AND THEIR CROSSES WITH NAPRIX

	BW(g)	BL(cm)	BG(cm)	SL(cm)	TL(cm)
84 Days					
Normal	599.15^b	52.31^b	25.08	7.32^b	11.83^b
Naked	580.63^b	52.72^b	25.13	7.41^b	11.78^b
Frizzle	574.12^b	50.89^b	24.59	7.22^c	12.02^b
NNPX	1469.62^a	59.31^a	30.07	8.21 ^{a}	13.20^a
NaNPX	1365.92^a	74.91^a	29.45	8.05^a	13.03^a
FNPX	1363.73^a	58.23^a	29.58	8.08^a	13.08^a
SEM	80.95	19.52	0.59	0.17	0.16

Means in the same column with different superscripts are significantly different ($p<0.05$).BW=bodyweight NNPX=

	TL	BG	BL	BWT
TABLE 2: PEARSON CORRELATION OF BODY WEIGHT AND BODY MEASUREMENT TRAITS AMONG THE THREE INDIGENOUS CHICKEN GENOTYPE				
NORMAL				
SL	0.97**	0.95**	0.99**	0.92**
TL	-	0.97**	0.96**	0.90**
BG		-	0.96**	0.86**
BL			-	0.92**
NAKED NECK				
SL	0.96**	0.97**	0.98**	0.91**
TL	-	0.96**	0.95**	0.90**
BG		-	0.96**	0.90**
BL			-	0.95**
FRIZZLE				
SL	0.91**	0.62**	0.92**	0.90**
TL	-	0.63**	0.93**	0.94**
BG		-	0.67**	0.69**
BL			-	0.96**

TABLE 2 CONT... PEARSON CORRELATION OF BODY WEIGHT AND BODY MEASUREMENT TRAITS AMONG THE THREE INDIGENOUS GENOTYPES X NAPRI X BROILERS

CROSSES				
NNPX				
SL	0.98**	0.95**	0.95**	0.90**
TL	-	0.97**	0.96**	0.93**
BG		-	0.95**	0.94**
BL			-	0.87**
BW				-
NaNPX				
SL	0.95**	0.95**	0.98**	0.85**
TL	-	0.97**	0.94**	0.88**
BG		-	0.93**	0.88**
BL			-	0.31*
BW				-
FNPX				
SL	0.97**	0.97**	0.95**	0.88**
TL		0.98**	0.95**	0.91**
BG		-	0.96**	0.91**
BL			-	0.85**

CONCLUSION

× The breeders could exploit the potentials of normal feathered chickens and linear measurements that have high positive correlation with body weight for selection for improved body weight.

THANK YOU FOR LISTENING