ASSESMENT OF BODY WEIGHT AND LINEAR BODY MEASUREMENT OF YANKASA AND UDA SHEEP IN GOMBE CENTRAL.

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ABSTRACT

A total number of 180 yankasa and uda sheep from different household were used, The objectives to estimate and compare between breeds differences in body weight and linear body measurement of Yankasa and Uda in Gombe central. Some of traits were body weight (BW), body length (BL), body depth (BD), heart girth (HG), height at wither (HAW). Least square mean and standard errors of mean of linear body measurement was estimated using the general linear model procedures within the statistical package for the social sciences (SPSS) version 24. The result of the effect of location, showed that BW.BD,HG and HAW are higher significantly (P<0.001) different, with BL (P<0.01). Based on this study, the Yankasa are breeds has less body weight compared to the Uda sheep. This variation could be due to breeds or environmental factors, such as breed improvement based on the maximum utilization of genetic variation, the Uda can be used for improvement programmes of Yankasa.

Key Words: Yankasa, Uda, Breed, Weight Liner and Measurements.

INTRODUCTION.

Currently, the global sheep population is more than1 billion heads (FAO, 2015). On a global scale, sheep meat production is small, with less than 8.6 million tones. The largest producers of sheep meat are China, India, Sudan, Nigeria and Pakistan. The three largest destinations for sheep meat worldwide are China, EU and US, accounting for about 60% of global exports (FAO, 2015).Indigenous sheep and goat contribute over 98% of the total small ruminant population in Africa (FAOSTAT, 2011).

Recently Adejoro and Salako (2012), reported that both height at withers and rump have been considered limited in their values as indicators of weight and as having negligible value as indicators of type and function. Beyond just weights type and function as a better indicator of the usefulness of the animal is fast becoming more important. Ordinarily, even the value of weight itself is limited without some qualification and probably quantification of associated type and conformation.

Alderson (1999) reported that single linear measurements are more relevant for on-farm within-herd use. This is probably because of the reported significant influence of husbandry system on certain body measurements. However, different combinations of the measurements will likely be more useful. Alderson (1999), developed a system of linear measurements to provide an assessment of type in beef and overall value of an animal. This study was designed to test the same system for the assess type and function in two indigenous sheep of Nigeria-the WAD and Yankasa. This is considered most useful because it has a neutral correlation with age. Consequently, it will be useful as a measure in young animals to enable earlier assessment of breeding animals for selection and to predict mature rating. Indices are also considered a superior option for assessment of weight because it incorporates measures of desirable conformation, namely, length and balance (Alderson 1999). Salako (2006), it is expected to provide tested empirical alternative to the limited use of single measurements for the assessment of type, weight and function as well as enhance the ability of breeders to select potential breeding stock. It will provide potential purchasers with a reliable evaluation of animals since the measurements are associated with production characteristics.

The breed of sheep in Nigeria are kept for meat and sometimes for milk production Salako (2006). Most of these breeds are genetically unimproved leading to poor growth rate, small litter size amongst others. There is need for these local breeds to be improved through selection and crossbreeding, by assessing their attributes and provide a baseline data that could help in continuous improvements which may translate into greater productive efficiency.

MATERIALS AND METHODS

Experimental location.

This study was carried out in Gombe state. Gombe located in the Sudan Savannah zone in the North eastern part of the Nigeria. It falls on longitude 11°10'E and Latitude10°17'N. Gombe state has annual rainfall of between 850-1500mm that falls between mid-May and terminating in October with a 140 days growing period. The annual maximum temperature is 41°C obtained mostly in April and minimum annual temperature of 13°C obtained mostly in January.

Experimental Animals.

The experimental animals were matured male Yankasa and Uda male from different household of the owners.

Experimental design is nested model whereby; At Gombe Cental the two local government were selected, then three (3) ward were selected and under the three ward, then three community were also selected and three villages under each community.

Data Collection.

The data was collected of 160 sheep from Gombe central which comprises the two local governments. The animals were both matured males and females of Yankasa and Uda at different household.

Linear body Measurements

Parameters measures are:

1. **Body weight**: weighing scale..
2. **Body length (BL):** Refers to the distance from the base of the neck to the base of the tail (where it joins the body).
3. **Heart girth (GH**) otherwise called chest girth measured as the circumference of the body at a point immediately behind the forelegs and perpendicular to the body axis.
4. **Height at withers (HAW):** The distance from the surface of a platform on which the animal stands to the withers.
5. **Body depth:** Measured as half distance of the circumference of the body at center of the body.

Statistical Analysis

Least square mean and standard errors of mean of linear body measurement was estimated using the general linear model procedures within the statistical package for the social sciences (SPSS) version 24.

RESULT.

Table 1 shows the body measured by breed of Yankasa and Uda. The recorded value for body weight of Yankasa were 44.43 $\pm$ 1.32 and 49.12 $\pm$ 271 with overall mean of 46.78 $\pm$ 1.45, which shows that there was a high significant different ($P < 0.0001$) between the breed in term of body weight. Meanwhile, the value for body length of Yankasa (90.70 $\pm$ 0.74) and Uda (89.65 $\pm$ 5.34) with overall mean of 90.18 $\pm$ 3.22, is also significant $P < 0.01$.The value recorded for body depth were 89.73 $\pm$ 1.10 for Yankasa and 92.62 $\pm$ 1.93 for Uda with overall mean as 91.17 $\pm$ 1.12 and the value obtained for Hear Girth of Yanka and Uda were 76.85 $\pm$ 1.10 and 79.17 $\pm$ 1.41 respectively with overall mean as 78.01 $\pm$ 1.31. While the Yankasa and Uda values obtained in term of height were 79.91 $\pm$ 1.22 and 87.20 $\pm$ 1.80 respectively.

TABLE.1.BODY MEASUREMENT (Mean±SEM) BY BREEDS

PARAMETERS	YANKASA	UDA	Overall	LS
BODY WEIGHT(Kg)	44.43±1.32 [b]	49.12±2.71 [a]	46.78±1.45	***
BODY LENGTH(cm)	90.70±0.74 [a]	89.65±5.34 [a]	90.18±3.22	**
BODY DEPTH(cm)	89.73±1.10 [b]	92.62±1.93 [a]	91.17 ±1.12	***
HEART GIRTH(cm)	76.85±1.101 [b]	79.17±1.41 [a]	78.01±1.31	***
HEIGHT AT WITHER (cm)	79.91±1.22 [b]	87.20±1.80[a]	83.55±0.76	***

Table 2 shows the body measurement by location (AKKO). The body of Yankasa and Uda in Akko revealed (46.48 $\pm$ 0.78 and 55.46 $\pm$ 1.32) respectively with overall mean 50.97 $\pm$ 1.05 and in term of body length, the value recorded were 89.40 $\pm$ 0.049 and 95.42 $\pm$ 1.32 for Yankasa and Uda with overall mean of 88.67 $\pm$ 0.73. But for heart girth the values investigated were 75.16 $\pm$ 0.36 and 82.53

± 0.50 respectively for Yankasa and Uda and the recorded value for height at weather of Yankasa (73.71 ± 0.58) and Uda (79.42 ± 0.43) with overall mean of 76.57 ± 0.46. In all the recorded values in Akko, it shows that there were a significant different $P < 0.001$ for all the measurement which Uda performed better than Yankasa.

TABLE 2. BODY MEASUREMENT (Mean±SEM) BY LOCATION (AKKO)

PARAMETERS	AKK.YNK	AKK.UDA	Overall	LS
BODY WEIGHT(Kg)	46.48±0.78[b]	55.46±1.32[a]	50.97±1.05	***
BODY LENGTH(cm)	89.40±0.49[b]	95.43±1.32[a]	92.41±0.73	***
BODY DEPTH(cm)	83.99±0.53[b]	93.34±1.10[a]	88.67±0.73	***
HEART GIRTH(cm)	75.16±0.36[b]	82.53±0.50[a]	78.84±0.65	***
HEIGHT AT WITHER (cm)	73.71±0.58[a]	79.42±0.43[a]	76.57±0.46	***

Table 3 shows that body measurement by location (Yamaltu-Deba). The body measurement of Yankas and Uda in Yamaltu-Deba in term of body weight it shows that the Yankasa values (32.33 ± 0.50) and Uda (48.54 ± 2.24) and for body length 89.72 ± 0.63 and 96.23 ± 1.64 for Yankasa and Uda respectively with overall means as 92.88 ± 0.71. Meanwhile the value recorded for body depth of Yankasa (87.21 ± 0.93) and Uda (90.12 ± 1.61) respectively. But the values obtained for heart girth 74.69 ± 0.69 and 79.50 ± 1.13 for Yankasa and Uda with overall mean as 77.09 ± 0.68 and the last values were for height at wither which 70.01 ± 0.33 and 77.21 ± 1.21 for Yankasa and Uda. all the recorded values are highly significant $P < 0.001$ which shows that Uda performed very well.

TABLE 3. BODY MEASUREMENT (Mean±SEM) BY LOCATION (YDB)

PARAMETERS	YD.YNK	YD.UDA	Overall	LS
BODY WEIGHT(Kg)	43.33±0.50[cb]	48.54±2.24[a]	45.94±1.01	***
BODY LENGTH(cm)	89.72±0.63[b]	96.23±1.64[a]	92.98±0.71	***
BODY DEPTH(cm)	87.21±0.93[b]	90.12±1.61[a]	88.67±0.67	***
HEART GIRTH(cm)	74.69±0.67[b]	79.50±1.13[a]	77.09±0.68	***
HEIGHT AT WITHER (cm)	70.01±0.33[b]	77.21±1.21[a]	73.61±0.61	***

DISCUSSION

The value recorded for body weight of Yankasa (44.43±1.32) were lower to the value reported (51.09±1.49) by (Abbaya and Dauda, (2018)). And the value revealed for Uda interms of body length were (89.65±2.71) which is slightly higher than the value reported (67.30) by (Olaniyi et al., (2018)). Furthermore, the value recorded for Yankasa sheep interms of body depth (89.703±1.40) were is higher than the value reported by (Olaniyi et al., (2018)) is (74.06). The body weight shows that the Uda were larger than Yankasa for the analysed traits. This is an indication that the Uda are heavier breeds. This results agrees with report of Yakubu and Ibrahim (2011). The observed morphological differences are an indication of the inherent genetic constitute of each sheep breed Yakubu and Ibrahim (2011). Toro and Febelos (2005) reveals that the morphological variation could be a quiet attractive for screening of a quiet adaption of genetic diversity. Still the variation may be due to some factors, such as climatic condition, management and uncontrolled breeding.

CONCLUSION.

Based on this study, the Yankasa are breeds has less body weight compared to the Uda sheep. This variation could be due to breeds or environmental factors, such as breed improvement based on the maximum utilization of genetic variation, the Uda can be used for improvement programmes of Yankasa.

RECOMMENDATION.

We recommended that more researchers should carry out more research on linear body measurement of these breed in this location, so as to provide more information about these breed.

Government should provide more research farm or centres to avoid more challenges faced by the farmers for not cooperation to use their animals for the datacollection.

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