



COMPARATIVE EFFECT OF EARLY WET AND LATE WET SEASON ON THE GROWTH PERFORMANCE OF BUNAJI CALVES

Akinlade, J.A. and Adigun, U.O.

Department of Animal Production and Health, P.M.B. 4000, Ladoke Akintola University of Technology,
Ogbomoso, Oyo State, Nigeria

Corresponding Author: adigunolagoke@gmail.com

ABSTRACT

This study was conducted to determine the effect of early wet and late wet season on the growth performance of Bunaji calves. Six male calves aged 10 – 12 months of Bunaji breeds were used for the study. They were allowed to graze after the sun had risen and in the evening before they were confined into the paddock. Water intake was measured in the mid afternoon and evening while the growth parameters measured every week were body length, body circumference, tail length, thoracic girth, height at wither and body weight. It was observed that there was significant ($P < 0.05$) changes in the body parameter of the animals during the early wet season and higher values were noted during the late wet season ($p < 0.05$). It was concluded that the growth performance of the animals during late wet was better due to the availability of forage of good quality and quantity than that of the early wet season and farmers should grazed their animal during this period so as to improved livestock production.

Keywords: Bunaji, Early wet season, Late wet season and Growth performance.

INTRODUCTION

Seasonal investigation will dependably be a basic ideal concept in planning, implementing and development programmed in livestock production (William *et al.*, 2003). Agricultural planning is affected by seasonal fluctuation and leading to changes in the health status/morbidity of diseases laying emphasis on the need for the continuity of seasonal studies (Chambers, 1979). Ruminants feed within the period of scarcity during dry season and even the feed that are available are low in nutrient content because they would have become fibrous thus affecting severely the high performance of animals (Ogunbosoye and Babayemi, 2010; Akingbade *et al.*, 2006). Taiwo *et al.* (2005) reported early wet season to last from June to September in Northern Nigeria and this is followed by the harmattan season, a period of cool dry weather which last from mid-October to late January. The major concern of ruminant keeper is the strategic provision of feed to meet the nutrient requirement of the livestock during the dry period. Therefore the objective of this study was to avail information on the effect of season on the growth performance of Bunaji calves.

MATERIALS AND METHODS

Experimental Site

The study was carried out at the cattle, sheep and goat unit of the Teaching and Research farm of Ladoke Akintola University of Technology, Ogbomoso, Oyo State. Ogbomoso is located in the derived savanna



zone of Nigeria and lies within latitude 8°15'W and longitude 4°15'E. The area has an annual rainfall of 1247mm with altitude between 300-600m about sea level; the mean temperature is about 27°C (BATC, 2004).

Experimental animal and management

Six growing calves of Bunaji breed aged 10-12 months were used for the experiment. The animals were acclimatized for 2 weeks; during the period of acclimatization, the animals were treated with long active antibiotics, multivitamins, Iron-D and later dewormed with ivermectin®. The animals were restricted and were later allowed to graze throughout the period of the experiment. They were also provided with water and medication.

Data collection

Data collected include the following on weekly basis: Body Weight (BW), Body Length (BL), Height at Withers (HW), Tail Length (TL), Body Circumference (BC) and Thoracic Girth (TG) using measuring a tape.

Experimental design

The design used was the completely randomized design.

Statistical analysis

Data collected during the experiment analyzed using the general linear model and t-test procedures of SAS (2003).

RESULTS AND DISCUSSION

Table 1 revealed the mean body weight, water intake and body measurements of Bunaji calves. Bunaji calves responded to seasonal change with significant ($p < 0.05$) differences observed in the body parameters and water intake. The effect of early and late wet season on body weight, water intake and body measurements of Bunaji calves is presented in Table 2. It shows that body length and water intake were significantly ($p < 0.05$) affected by feeding within early and late wet season while the other body measurements and body weight of the calves were not affected ($p > 0.05$) by early wet or late wet season feeding of the animals. Ryan (1997) observed that growth rate in the early wet season is unlikely to be independent of that in late wet season. Therefore, good quality feeding during any of the seasons will impact on growth rate and general body condition of animals. The higher water intake during late wet season could be related to the need for more water as the environment begins to heat up. Akinlade *et al.* (2007) reported that season, climate, age, sex, physiological state of the animal, feed and the animal itself all affect water intake. The importance of body size as a measure of growth in farm animal has led to the measurement of variables associated with body size such as linear body measurement (Udeh *et al.*, 2011). Linear body measurements have been used to evaluate growth performance and characterize farm animals (Ozoje and



Herbert, 1997; Ogungbayi *et al.*, 2003) and also enable the breeder to understand the relationship between the body weight and the body parameters (Udeh *et al.*, 2011). The non-significant nature of the body measurements (except body length) seems to indicate that season (early and late wet season) did not seriously impact on them and hence animals could be reared in both seasons.

Table 1: Mean body weight, water intake and body measurements of Bunaji calves

Parameters	1	2	3	4	5	6	SEM
BL (m)	33.11 ^{ab}	32.50 ^{bc}	31.69 ^c	33.50 ^a	33.34 ^{ab}	32.57 ^{abc}	0.143
BC	48.72 ^b	44.27 ^c	50.54 ^a	48.33 ^b	48.35 ^b	48.85 ^b	0.243
TL	28.76 ^a	22.04 ^e	27.69 ^c	28.38 ^{ab}	27.92 ^{bc}	26.88 ^d	0.273
TG	16.04 ^{bc}	15.98 ^{bc}	16.54 ^b	17.47 ^a	15.23 ^c	16.58 ^b	0.136
HAW	47.65 ^a	43.12 ^d	46.31 ^b	47.54 ^a	44.96 ^c	43.54 ^d	0.248
WI (litre)	14.87 ^{ab}	16.20 ^{ab}	14.37 ^b	14.71 ^{ab}	15.72 ^{ab}	16.29 ^a	0.250
BW (kg)	73.17 ^a	58.70 ^b	74.47 ^a	72.23 ^a	72.02 ^a	71.76 ^a	0.839

^{abc}: Means with different superscripts along rows are significantly different ($p < 0.05$). SEM: Mean standard error of mean, BL: mean body length, BC: mean body circumference, TL: mean of tail length, TG: mean thoracic girth, HAW: mean height at wither, WI: mean water intake, BW: mean body weight. 1-6: each animals used.

Table 2: Effect of early and late wet season on body weight, water intake and body measurements of Bunaji calves

Parameters	EWS	LWS	Significant
BL(m)	31.85 ^b ±0.107	33.59 ^a ±0.107	*
BC	47.41±0.317	48.83±0.332	NS
TL	26.34±0.408	27.47±0.352	NS
TG	15.43±0.168	17.05±0.120	NS
HAW	44.54±0.322	46.45±0.311	NS
WI(litre)	14.09 ^b ±0.402	16.45 ^a ±0.191	*
BW(kg)	66.03±0.860	74.135±1.08	NS

^{abc}: Means with different superscripts along rows are significantly different ($p < 0.05$), NS: not significant ($p > 0.05$), EWS: mean early wet season, LWS: mean late wet season, BL: mean body length, BC: mean body circumference, TL: mean of tail length, TG: mean thoracic girth, HAW: mean height at wither, WI: mean water intake, BW: mean body weight.

CONCLUSION AND RECOMMENDATION

Early wet and late wet season had no negative effect on the body weight and most of the body measurements of the animals studied. However, late wet season is recommended for farmers to graze their animals in the study area as the quality of herbage during this period was good enough to promote better animal performance.



REFERENCE

- Akingbade, A. A., Akinlade J. A. and Aderinola O. A. (2006). Basic concepts in pasture science. Positive Press, University of Ibadan, Nigeria.
- Akinlade, J.A., Tona, G.O. and Asaolu, V.O. (2007). Beef and dairy cattle production, A working Document 1:1-24
- BATC (2006). British American Tobacco Metrological station, Ogbomosho.
- Chamber, R. (1979). Health, agricultural and rural poverty discussion. Institute of Development Studies, University of Sussex, Sussex.
- Ogunbosoye, D.O. and Babayemi, O.J. (2010). Voluntary intake of non-legume fodder offered simultaneously to West African Dwarf goats for a period of 6 hours. *Proceeding of 3rd Annual Conference of the Nigeria Society of Animal Production, Ibadan, Nigeria* pp: 518-520
- Ogungbayi A. T., Abiola S. S. and Ozoje, M.O. (2003). The study of linear body measurements of West African Dwarf (WAD) lambs and kids under traditional management system. *Nigeria Journal of Animal production*. 30(2): 197-202.
- Ozoje M.O. and Herbert U. (1997). Linear measurements in West African Dwarf (Wad) x Red Sokoto goats. *Nigeria Journal of Animal Production*. 24(1): 13-19, 1997.
- SAS (2003). Statistical Analysis System. Version 8, Carry, North Carolina, USA.
- Ryan, W.J. (1997). Beef cattle management specialist Ds 8-9, June 1997.
- Taiwo B.B.A., Buvanendran, V., and Adu I. F. (2005). Effect of body condition on the reproductive performance of Red Sokoto goat. *Nigeria Journal of Animal production*. 32:1-2.
- Udeh, I., Isikwenu J. O. and Ukughere, G. (2011). Performance characteristics and prediction of body weight using linear body measurement in four strains of broiler chickens. *International Journal of Animal and Veterinary Advances* 3(1): 44-46.
- William J.A., Payne, M.A. and Trevor W. (2003). An introduction to animal husbandry in the Tropics. 2nd edition. Blackwell Science Limited.