

EVALUATION OF AVERAGE MILK YIELD OF BUNAJI COWS IN RAINY AND DRY SEASONS IN IGBOORA, OYO STATE.

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ABSTRACT

The objective of this study is to evaluate the average milk yield of bunaji cows in both rainy and dry seasons in Igboora, Oyo state. A total of twelve (12) lactating cows kept under traditional management system were involved. Milk yield was measured in litres per cow for three times at four weeks' interval in rainy and dry seasons. Milk yield was influenced by both seasons. The average milk yield of the cow per day was 1.38 ± 0.45 in rainy season and 1.02 ± 0.24 in the dry season. Cows that calved in the major rainy season had the best milk yield followed by those lactated in the minor rainy season and those during dry season had the least milk yield. Lactation length (month) was 7.92 ± 1.01 during rainy season while that of dry season was 7.32 ± 1.04 . Total milk yield (litres) throughout the study was 6.29 ± 0.79 in rainy season while 2.61 ± 0.31 was recorded during the dry season. It was observed in the study 40% of collected milk were consumed by the household while 60% was sold at the market by the women. The local cheese commonly called "wara" in the local dialect is the only dairy product sold in this area. It could be concluded that lactating cows should be provided with supplementary feed in the rainy and mostly in dry seasons to increase milk yield.

Keywords: Bunaji, milk, season, lactating cow, Igboora.

INTRODUCTION

Livestock production, precisely cattle production in Nigeria like other African countries is faced with a number of constraints, which on the long run result in low productivity and reduced profitability. Cattle are raised as livestock for meat (beef and veal), as dairy animals for milk and other dairy products, and as draft animals (Ajmorne-Marsan *et al.*, 2010). Domestic milk production in Nigeria is largely by smallholder agro-pastoral producers who often settle around the major cities and sell their dairy products in urban centres (Ehoche *et al.*, 2001). Although the demand for dairy products in the country is high (Jansen 1992) and estimated cattle population is also high (FLD 1993), milk output from smallholder systems is low especially during the dry season. This is considered to be one of the major limitations to dairy productivity (Olafadehan, 2007). The grasses which are mostly annuals, are nutritious at the beginning of the rains but with the onset of dry season there is rapid decline in nutrient contents especially nitrogen and phosphorus (Ehoche *et al.*, 2001). At this time, the low quality of natural pastures and the inefficient use of fibrous crop residues result in inadequate feeding of the stock with

adverse implications on reproductive efficiency and milk production as feed nutrients become inadequate to support the potential yield of the animals (Preston and Leng, 1984; Adamu *et al.*, 1993). Thus, the nutritional requirements of dry-pregnant and lactating cattle for milk synthesis and let-down are not sufficiently met (Olafadehan and Adewumi, 2008).

The objective of this study was to evaluate the milk yield of Bunaji lactating cows in dry and rainy season.

MATERIALS AND METHODS

The study was conducted on-farm with agro-pastoralists in Igboora, Oyo State. The study area which is located on lat-long $7^{\circ}15'N$ and $3^{\circ}30'E$ has two distinct seasons – the wet season (March – October) and the dry season (October – March) separated by a lull precipitation between November and February. Annual rainfall is between 1,500 and 2,000mm and follows a bimodal distribution. The temperature ranges from $22 - 27.42^{\circ}C$. Twelve (12) Bunaji cows with ages ranging from 2 and $2^{1/2}$ years and body weights between 250 and 280 kg were purposively selected for the study. These animals were kept in kraals after daily routine grazing of

about 7 hours (9:30am to 4:30pm). Animals were grazed on natural range. Milking of the cows began one week after calving to allow calves access to colostrum, but milk yield recording began two weeks after calving. Hand milking was done in the morning between 7:00am-8:30am while calves were used to initiate milk let-down.

Data Analysis

All data collected were subjected to analysis of variance in a completely randomized design using General Linear Model of SAS (1999).

RESULTS AND DISCUSSION

Average daily milk production, consumption and quantity sold are presented in Table 1. The average milk yield of the cow per day was 1.38 ± 0.45 in rainy season and 1.02 ± 0.24 in the dry season. The value fell below the value of 1.8L per day of local milk reported by Ndambi *et al.* (2008) for local cow. Adewumi (1997) reported that in the emerging peri-urban dairy production systems, poor quality of feed resources has invariably resulted in low milk production. The mean daily yields of milk constituents by Bunaji cows obtained in this study were lower than the values reported by other workers (Adebawale, 1976; Apori, 1988 and Belewu, 1995). This was due to the lower milk yield values obtained in this study. Milk production was predominantly highest in the wet season where compared to the dry season. This is expected as rainy season is characterized by abundant forages and water. The highest milk yield was recorded in the major rainy season, followed by the minor rains, with the dry season recording the least. This observation agrees with the finding of Epaphras *et al.* (2004) and Hatungumukama *et al.* (2006). This can be explained by the availability and quality of pasture. In the dryer and hotter periods, as a result of feed inadequacy and low nutritive value of the natural pastures, milk yield tend to be low (Epaphras *et al.*, 2004). Lactation length (month) was 7.92 ± 1.01 during rainy season while that of dry season was 7.32 ± 1.04 . The highly significant contribution of lactation length to total milk yield is supported by various reports on Bunaji cows and other cattle breeds (Camoens *et al.*, 1976; Adeneye and Bamiduro 1985 and Adeneye, 1993). Adeneye (1993) reported that lactation length is a major determinant of milk

production, though both the period of calving and lactation number also had recognizable effect. It was observed that 40% of milk produced was consumed by the household, implying that 60% were sold. Adult women formed the majority in the sales. Ndambi *et al.* (2008) revealed that there were two major ways for selling: hawking and rural market. Women were involved in the marketing and distribution of cheese locally called "wara". Women, process the milk, market the product and in some cases milk the cow (Ndambi *et al.*, 2008). The local cheese commonly called wara in the local dialect is the only dairy product sold in this area.

CONCLUSION

It could be concluded that lactating cows should be provided with supplementary feed in the rainy and mostly in dry seasons to increase milk yield.

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Table 1: Average daily milk production, consumption and quantity sold

Parameters	Wet season Mean S: D	Dry season Mean S: D
Number of Lactating animals	4.54±1.75	2.56±1.28
Lactation length (month)	7.92±1.01	7.32±1.04
Quantity Produced per animal/day (litre)	1.38±0.45	1.02± 0.24
Total Milk yield (litre)	6.29±0.79	2.61±0.31
Quantity sold (litre)	3.76±0.42	1.30±0.15
Quantity consumed (litre)	2.51±0.32	1.21±0.27

Source: Field survey, 2016. *S: D = Standard deviation