

**The Influences of age on lactation length and milk yield in
Kenana and Butana cows.**

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SUMMARY

The mean lactation milk yield for the Kenana and Butana herds were 2136 ± 168 kg and 1807 ± 592 kg produced in a mean lactation period of 283 ± 40 days and 283 ± 57 days respectively. In both herds the maximum lactation milk yield was attained in the third lactation. The maximum lactation milk yield was attained by Kenana cows 61/2 - 712 years of age and Butana cows 512-61/2 years of age.

INTRODUCTION

Kenana and Butana are local types of short-homed zebu indigenous to Northern Sudan and are considered the best milking local breeds (Osman 1984).

The present work is a study for the influence of age of cow on lactation length and milk yield in two herds one of Kenana and one of Butana Cattle.

MATERIALS AND METHODS.

The data:

The data were taken from the records of the Kenana herd at Urn Banein Station in the Blue Nile Province, at latitude 13° 4 N and longitude 33° 37 E, and of the Butana herd at Atbara Station in the Nile Province, at latitude 17° 4 N and longitude 33° 58 E. The data comprised 312 lactation records of 94 Kenana cows registered during 1969 to 1975 (see Table 1) and 41g lactation records of 94 Butana cows registered during 1970 to 1976 (see table 2). All lactation records used in this study covered lactation periods not less than 150 days.

Statistical analysis

To study the effect of age on lactation length and lactation milk yield, the data were grouped according to parity and according to age expressed in years (see table 1 and 2) and subjected to analysis of variance as described by Snedecor and Cochran (1976) for unequal groups.

Management

Cows in both herds were housed in groups and were offered forage

By the very nature of their habitat the Kenana cows had access to graze natural tropical pasture during the rainy season (July to October). Milking cows in both herds were offered a concentrate compound (sorghum grain, wheat bran and oil cakes) at time of milking. Ingredients and proportions of the concentrate compound were varied according to availability. Cows were hand milked twice a day, and were separated from their calves which were bucket fed.

RESULTS

Lactation length

The mean lactation length and S.D. for the Kenana and Butana herds were $283,0 \pm 40$ days and 283.2 ± 57 days respectively. The present work did not show that age whether expressed in parities or years had any particular trend or significant effect on lactation length (table 1 and 2).

Table 1: Effect of parity on milk yield and lactation length in Kenana and Butana cows.

Parity	Kenana cows			Butana cows		
	No. of records	Kenana Cows Milk Yield (kg) x±S.D	Lactation length (days) x±SD	No. of records	Butana Cows Milk Yield (kg) x±S.D	Lactation length (day) x±S.D.
I	94	2116±299	289±07	94	1674±225	300±44
II	94	2154±368	284±37	94	1766±526	272±53
III	65	218a502	281±46	94	1899±516	284±43
N	39	202a748	276±43	75	1888±595	290±35
V	21	210a731	276±49	61	1833±542	290-38
mean		2136±168	283±40		1807±592	283±57
+Se		15.0 NS	2.3 NS		18.3 NS	2.6 NS

Table 2 : Effect of age on milk yield and lactation length in Kenana and Botan cows

Age (Years)	No. of records	Kenana cows		Butana cows		
		Kenana Cows Milk Yield (kg) x±S.D	Lactation length (days) x±S.D	No. of records	Butana Cows Milk Yield (kg) x±S.D	Lactation length (day) x±S.D.
21/2-31/2	48	a 1975±582	291±23	49	a1738±708	300±58
31/2-41/2	71	b 2080±441	282±49	86	a1698527	278±76
41/2-51/2	73	c 2014±591	285±33	92	b 187a569	zsa46
51/2-61/2	49	d 2159±444	279±33	85	b 1918 ±578	280±56
61/2-71/2	28	c 2500±170	283±34	72	ab 181ft672	284±48
Older Cows	44	f 2347±206	279±44	34	a 171a562	279±41
SE of means		15.7*	2.3 N.S		19.1*	3.0 N.S

Means with different superscripts are significantly different (P<0.05).

Lactation milk yield

The mean lactation milk yield and S.D. of all parity groups for the Kenana and Butana herds were 2136 ± 168 kg. and 1807 ± 592 kg produced in a mean lactation period of. 286±40 and. 283±57 days respectively. In both herds lactation yield tended to inwease but slightly from the first to the third parity cows e.g 3% in case of the Kenana

cows and 13% in case of the Butana cows (see table 1 and 2). When the data were examined according to age of cows expressed in years (table 2), the lactation milk yield showed a gradual but inconsistent increase with age. In the Kenana herd the milk yield increased from the youngest age-group 21/2-31/2 - years (1975 ± 582 kg) to reach a maximum (2100 ± 175 kg) in cows 61/2 to 71/2 years of age i.e. 26.5% increase and tended to decline in older cows.

In the Butana herd the milk yield increased from the youngest age-group (1738 ± 708 kg) to reach the maximum (1918 ± 578 kg) in cows 51/2 to 61/2 years of age i.e. 10% increase and declined in older cows.

DISCUSSION

The mean lactation milk yield and lactation length for the Kenana (2136 ± 168 kg and 283 ± 40 days) and for the Butana cows (1807 ± 592 kg and 283 ± 40 days) were found higher than means reported by McLaughlin (1955); Alim (1960) and Saeed (1987) for Kenana Cattle, by Mini (1962); Gotbe (1968) and Fengali (1980) for Butana Cattle and by Mahadevan (1966) for unimproved zebu cattle in India. Milk production is a phenotypic expression of interaction between genetic and environmental factors. In tropical cattle there is considerable between and within breed variation in lactation length and lactation milk yield (Mahadevan, 1966). Variation in lactation length and milk yields is partly due to variations in

persistence and fluctuations in nutrition of the milking cows. In tropical cattle the maximum lactation milk yield is attained in the third lactation (Mahadevan 1966). The increase in milk yield of cows from the first lactation to the maximum in subsequent lactations is due to body development.

In the present study both Kenana and Butana attained the maximum lactation milk yield in the third parity. However, the increase from the first lactation to the maximum in the third lactation was found small i.e. 3% in kenana cows and 13% in Butana cows. This could be attributed to late age at first-calving. In the present study mean age at first calving was found to be 45 ± 7.5 months for the Kenana and 41.0 ± 6.5 months for the Butana. Therefore, it may be argued that heifer cows give their first calf when nearly body-matured and consequently do not show considerable change in yield with age. The results in this investigation showed that the peak lactation milk yield was attained in Kenana cows 6i12 to 7i12 years of age and in Butana cows 5i12 to 6i12 years of age: with a considerable increase from the youngest age-group (2i12-3i12 years). of cows which in the case of Kenana reached 26.5%. This may indicate the importance of early sexual maturity for maximum and long life milk production in cows. El Khidir *A* (1979) found in local Sudanese cows that early first calving could be achieved through improved nutrition.

The results of this study taken together with the findings of Mc Laughlin (1955), Alim (1960) and Gotbe (1968) emphasise the

importance of improved management particularly nutrition to help heifer calve at young age and maintain high lactation yield.

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