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Quantitative analysis of milk from various breeds of camel in Bikaner region

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Abstract
In the present study 27 lactation yield records of six parities and four years of calving were collected from N.R.C.C., Bikaner to analyse quantitative characteristics of Bikaneri, Jaisalmeri and Kachchhi breeds of camel. The least –square analysis of variance showed that effect of breed and parity were non significant. Only year of calving was significant on lactation yield. The overall average lactation yield was 1086.63 + 105.54 liters. The camel calved in the year 1997 produced highest milk 1503.17 + 129.099 liters as compared to 1992, 1993 and 1996. It was noticed that overall lactation milk yield was associated with high variability. Hence, there is great scope of genetic exploitation to further augment the lactation milk yield in camel.

Keywords: Milk, breeds, camel

Introduction
According to the National Commission on Agriculture (1976) [6], there are groups of camels with distinct characteristics by which these are classified into distinct types and could be recognized as breeds. The different breeds of camels are, Bikaneri, Jaisalmeri, Kachchhi, Marwari, Mewari, Sindhi and Shekhwati. A detailed scientific evaluation of Indian camel breeds is not available (Sahani *et al.*, 1996) [8].
In many of African countries camel is mainly reared for milk and meat whereas in India the camel is not considered to be a milch animal but its milk is consumed by traditional camel rearing communities in some rural areas.
Camel milk can play an important role especially in fulfilling the per capita milk requirement in desert where, during recurrent famines, an appreciable fall in milk production and availability of total milk from all milch species in the state is observed (Khanna & Rai, 1993) [4].The camel has the potential to produce 1872 lt. of milk in a lactation period of 12-18 months with daily average ranging from 3.4 to 18.2 kg (Choudhary & Beniwal, 1983) [1]. Such variation in milk production is attributed to stage of lactation, breed, parity, amount suckled by the calves as well as extent of differences in size of animals and general feeding management. The present study was conducted with objective of quantitative improvement in milk production of she camel. By improving the feeding, breeding and managemental conditions, and the potentiality of total milk production of camel can be, further increased which can be of some help to the villagers to meet out their milk requirement.

Material and Methods
Animals & Management
Information of lactation yield of she camels of different breeds was collected from National Research Centre on Camel (N.R.C.C.), Bikaner. At this farm Bikaneri, Jaisalmeri and Kachchhi breeds of camels are maintained.
Lactating females were kept under semi-intensive managemental conditions with no feeding of concentrate ration. The animals were taken out for grazing on adjoining pastures for about eight hours daily.

Statistical analysis
The following model was used for estimating the effect of breed, parity and year of calving on milk yield.

$$Y_{ijkl} = M + B_i + P_j + Y_k + e_{ijkl}$$

Where,
Y_{ijkl} = It is the l_{th} observation on k_{th} year of calving, j_{th} parity and i_{th} breed,
M = Overall mean,
B_i = Effect of i_{th} breed,
P_j = Effect of j_{th} parity,
Y_k = Effect of k_{th} year of calving and
E_{ijkl} = Random error.

Least square analysis was done with the Harvey`s computer programme of analysis (1987) [3] of this model.

Results and Discussion

Lactation Milk Yield

The result revealed that the effect of breed and parity was not significant, whereas, the effect of year was found to be significant ($P \leq 0.05$) on lactation milk yield. Least-square analysis of variance for lactation milk yield presented in Table 1.

Table 1: Least square analysis of variance for lactation yield (Litres) in camel

Source	DF	Mean Square	Inference
M	1	2152.456	
Breed	2	200496.576	Non-significant
Parity	5	87530.751	Non-significant
Year	3	234149.993*	Significant ($P \leq 0.05$)
Total	27		

*Significant at $P < 0.05$

The least-square means and their respective standard errors for lactation milk yield are depicted in Table 2. The highest lactation milk yield (1297.62 ± 149.177 liters) was observed in Kachchhi breed, followed by Bikaneri (1120.12 ± 106.101 liters) and Jaisalmeri (842.12 ± 188.828 liters) breeds. The overall mean (on 27 she camels) was found to be 1086.62 ± 105.539 liters.
Parity wise, the lactation milk yield was found to be 1226.89 ± 217.929 liters, 716.39 ± 165.085 liters, 925.01 ± 163.847 liters, 1024.43 ± 126.749 liters, 123.95 ± 343.679 liters and 1403.05 ± 343.679 liters in first to the sixth parities, respectively.

Table 2: The least-square means and their respective standard errors for lactation milk yield are depicted

Class	Number	Mean	S.E.
Overall	27	1086.62	105.53
Breed			
Bikaneri	12	1120.12	106.11
Jaisalmeri	6	842.12	188.83
Kachchhi	9	1297.63	149.18
Parity			
I	2	122.89	217.93
II	6	716.39	165.09
III	10	925.01	163.85
IV	7	1024.436	126.79
V	1	1223.955	343.67
VI	1	1405.055	343.68
Year of Calving			
First	6	674.43	230.01
Second	3	821.13	242.82
Third	13	1347.77	165
Fourth	5	1503.18	

The results revealed that after the first parity, the lactation milk yield had a sharp decline in the second parity and thereafter, there was a continuous increase in lactation milk yield up to sixth parity. Normally, the lactation milk yield should show a gradual and increasing trend as the parities progress after a particular parity lactation milk yield should gradually decrease. The trend of lactation milk yield in the present study may be either probably due to very small number of animals in the first, fifth and sixth parity or due to culling of low producing camels in subsequent parities. These findings are similar to those of Knoess (1980) [5], Sahani et al. (1996) [8]. However, Rao (1974) [7], Hartley (1980) [2] and Choudhary and Beniwal (1983) [1] reported the lactation milk yield to be higher, Ranging from 1373 to 4000 liters per lactation.
The year of calving had a significant effect on lactation milk yield. It was lowest (674.42 ± 230.011 liters) in the year 1992. Thereafter, it increased significantly (821.13 ± 242.282 liters) in 1993, (1347.771 ± 165.222 liters) in 1996 and (1503.17 ± 129.099 liters) in 1997.

References

1. Choudhary AL, Beniwal BK. Inheritance of body weight in Bikaneri camel. In Animal Genetic and Breeding Annual Conference and National Symposium, Haryana Agriculture University, Hisar, India 1983 March 11-13.
2. Hartley BJ. Camels in the horn of Africa. Provisional Report, International Foundation for Science. 1980;6:109-123.
3. Harvey WR. Users guide for LSMLMW PC-1 version. Mixed model least squares and maximum likelihood computer programme. Iowa State University, USA ;1987.
4. Khanna ND and Rai AK. Milk production potential of Indian camel. Asian Livestock, 1993, 19-21.
5. Knoess KH. Milk production of the dromedary, Provisional report, International Foundation for Science. 1980;6:201-214.
6. National Commission of Agriculture. National Commission on Farmers (NCF). Serving farmers and saving farming: Jai Kisan - A draft National Policy for Farmers, 4th Report. 1976, 217-219.
7. Rao CK. To what extent camels are milked and what the approximate yield is. Item Animal Husbandry Comissioner, New Delhi, 1976, 12(3).
8. Sahani MS, Khanna ND, Tandon SN, Raghvendra S Bissa UK, et al. Studies on qualitative and quantitative genetic parameters in Indian camel. Annual Report, N.R.C.C., Bikaner, 1996.