

PASTORAL BUFFALO PRODUCTION SYSTEM IN BANNI AREA OF KACHCHH (GUJARAT)

¹CHAUDHARY, A. P. AND ²SINGH, K. P.

¹PROFESSOR AND HEAD, LPM, SDAU, SARDARKRUSHINAGAR, BANASKANTHA, GUJARAT (INDIA).

AND

²PRINCIPAL SCIENTIST, AGB, CIRB-ICAR, HISSAR, HARYANA (INDIA)

E-mail : apc.lpm.sdau@gmail.com

ABSTRACT

Buffalo genetic resources of the Gujarat state are contributing significantly in the rural livelihoods security. Hence, present investigation was carried out during the period from 2008 to 2012, where buffalo production system followed in Kachchh and their peculiarity and knowledge of maldharis for rearing of Banni buffalo were studied. Pastoral buffalo production system followed in Banni area of kachchh had some significant features like night grazing, feeding concentrate mixture during milking through traditional system. It is very surprising that all the animals except new born calf remain in the open through out year without tying. Further it was observed that ITK used by the maldharis for rearing their animals shown their capabilities and knowledge of management of buffaloes under harsh climatic conditions, which is visualized by night grazing practices adopted by maldharis in the region. The housing system for owners is usually "Bhunga", types, which can sustain even during earth quake.

KEY WORDS: *Banni buffalo, maldharis, pastoral system.*

INTRODUCTION

Banni buffalo were originated from the Banni area of kachchh. which is a vast grazing land spread in about 3847 sq km area. Banni region is situated at 23° 19' N to 24° 70' N to 68° 60'E to 73° 90'E, under Bhuj taluka of Kachchh district, is home of Muslim nomadic pastoralists and Meghwal hindus. Banni is situated in Arid climate, with high temperature in most of time, which reached maximum up to 48°C -50°C during May to June and winter temperature goes down to 5°C - 8°C during December to January. Similarly, average annual rainfall, occurring through south-west monsoon between June to September, is very low of 317mm and recurring droughts was very common phenomenon in Banni area

before the earth quake of 2000, but thereafter annual rainfall is increased significantly and draught was not occurred.

Banni grassland emerged from the soils received from the rivers flown from north and central Gujarat to mainland of Kachchh and ends in the Greater Rann of Kachchh. Soils deposited by the rivers made the land of Banni richer enough that it could generate diverse grass species, where only 20 grass species including some shrubs remains and these are mostly palatable including saline grass species. This grassland attract many migratory birds in the wetland of Banni known as Chhari – Dhandh, a saucers shaped wetland, which was declared as protected area for birds. This grassland produces and supports Banni

Buffalo, a unique germplasm (very hardy and well adapted to harsh climatic conditions) conserved by the pastoralist community on the basis of their traditional wisdom on livestock keeping in general and animal breeding in particular. In this Banni pasture land, different species of grasses and shrubs were also found, whereas physical features of the area are characterized by ranges of hills and isolated peaks, rugged and deeply cut river beds and well tilled walleyes with tracts of rich pasture land. On the other hand, the tropical of cancer is also passes through this region.

Banni buffalo, a terrific germplasm, developed with extraordinary features due to special care and attention of animal breeders with strong wisdom of grassland ecology and their livestock. Banni buffalo which was raised in this grassland has typical quality of night grazing and goes about 3-8 km. every day for grazing, which increased to 15 km during stress period in summer. Banni buffalo can survive in water stress conditions and adopted very well with limited grasses to feed. The unique eco-system of Banni grassland, where this buffalo fed on various types of grasses resulted in high milk production. Banni buffalo is being considered as one of the most economic animals with high milk yielding capacity by feeding local resources with very low inputs. Recently study indicated that average lactation yield of Banni buffalo was 2913.05 ± 13.42 lit. per lactation, with high fat content. Similarly, grasses of Banni make this buffalo healthier enough to produce offspring every year with first calving at the age of 40.28 ± 0.25 months and attain peak yield in 38 days after calving. Pastoral communities in Banni developed this excellent germplasm over the period of times in arid region by withstanding natural calamities, never expecting others to support them externally.

MATERIALS AND METHODS

The present investigation was conducted during the period from 2008 to 2012, under the project i.e. "In-situ

conservation of Banni buffalo in Kachchh". Managerial practices including feeding, rearing of calves and measures for protection of health adopted by the maldharis for rearing their buffaloes, which is the main source of livelihoods security in the region were studied. About 297 maldharis belongs to 19 villages were selected randomly and data was collected in the form of questionnaire and presented here. Information on ITK collected by the maldharis for rearing their animals shown their capabilities and knowledge of management of buffaloes under harsh climatic conditions, which is visualized by night grazing practices adopted by maldharis in the region, were also presented and discussed in this manuscript.

RESULTS AND DISCUSSION

The information collected and analyzed were presented and discuss here as under:

Distribution of Banni buffalo :

The main livestock breed originated from this region and recently recognized as a breed by ICAR i.e. Banni buffalo; are distributed through out the Gujarat state. The distribution of breed is depicted in the Table-1, which shows that almost 32.00 per cent of population of Banni buffalo is falls under Kachchh district only and rest is spread in the state (Anonymous, 2007). However, animals of Banni breed were also kept by the livestock breeders in the adjoining states viz : Madhya Pradesh, Maharashtra and Rajasthan.

Natural habitats and production system of Banni buffalo:

(a) Extensive pastoral production system:

This system is adopted in the Nakhatrana, Hajipeer area (Small Banni area or West Banni area), where buffaloes go to the grazing / forest land on their own in after noon (4.00 to 5.00 pm), stay over night, graze and come back to the village / owner's door early in the morning (4.00 to 5.00 am) for giving milk. Maldharis offered concentrate, while milking and animals stay loose in the village nearby owner's house under trees / open area (Plate - 1) for which no special

housing and supplementary feeding is practices in Banni. The animals in small (Nani) Banni area specially adapted to this one time (morning) milking practices. This area is far away from main city “Bhuj” and hence has limited facilities for transportation of milk to the main city. Hence, only morning milk supply to Bhuj through private vehicles. During evening, limited demands for local consumption and no transport facilities are available for milk, which leads to one time morning milking practices in the area. These buffalo herds in the villages managed under extensive production system through night grazing.

In greater Banni area (East Banni area) i.e. Khavda and Bhirandiyara area, demand of

milk is more as compared to small Banni. This area have better transport facilities to the main towns and also surplus milk used for “*khova*” production, hence practices adopted for two times milking (morning and evening) under extensive production system, similar to west Banni. After evening milking (4.00 to 5.00 pm) animals go to the forest for night grazing (Plate - 2) and come back on their own village early in the morning. Maldharis in East Banni provides better management practices and concentrate feeding during milking as per milk production of the animals. Also, the dry animals, if pregnant (five months onwards) concentrate provides along with lactating animals



Plate - 1 : Banni buffaloes resting during day hours

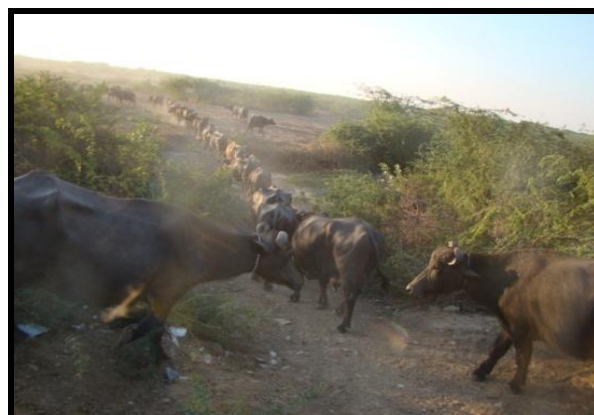


Plate - 2 : Banni buffalo going for grazing

(b) Semi - intensive pastoral production system

The adjoining area of Banni, Anjar, Mundra and Bhachau talukas of Kachchh, where crop production is prominent, semi intensive pastoral production system is followed. The maldharis adopted traditional system of hand milking only twice in a day, where they have better marketing facilities. The concentrate mixture is offered before milking to the milch animals only in beg, which is hang on its head. This concentrate mixture includes cotton seed cake (two parts) + wheat bran (one part) + empty cotton seed or wheat straw (one part). The proportions of

these may be differ depends upon the availability and market price. This mixture is prepared after water is splashed on it about 1 to 2 hours before feeding to the animals.

(c) Feeding management

Banni buffaloes are kept as loose in “Vathan” or personal “Vada” of maldharis in villages of Banni area. Maldharis never tied their animals. The animals are brought upon a free grazing model, where they leave, along with the other animals of the village in the evening and only return in the morning. They feed on the rich diversity of grasses and shrubs in the open grasslands of Banni and can cover up to 10-15 km in a single night. In monsoon,

when grasses are in ample amount then they can cover only 3-5 km, in winter animals can cover 5-8 km and in summer season they might have to cover about 10-15 km to gain their feed requirement. During milking they are given certain amount of concentrate feed additionally. In day time animals stay and rest near owner houses or under trees in the villages through traditional system. During day hours they also mud in the water area near

water source to maintain body temperature. For supplementary feeding generally home made concentrate provide to lactating animals (Plate - 3) as follows:

(@) Cotton seed cake (25%) + Wheat bran (75%) @ feed at the rate of 3 to 4 kg per animal or

(@) Ground nut cake (35%) + Wheat bran (65%) @ feed at the rate of 4 to 5 kg per animal.



Plate 3: Supplementary Concentrate feeding during milking through traditional system

During scarcity period (summer season) dry fodder / grasses supplied to livestock owners by the state government through Banni Development Scheme and maldharis also purchased cotton hails (locally called as “*thaliya*”) for feeding their animals in summer @ 4 to 5 kg per day per animal after 3 to 4 hours soaking in the water (Photo- 3 : Concentrate feeding during milking).

(d) Housing system

In Banni area of Kachchh, all animals reared in the open and no housing is provided (Plate - 4) except for calves, special enclosures are prepared either in the open or under the

shade of a tree for keeping the calves till completion of their lactation.

The housing system for human is usually “*Bhunga*” (Plate - 5), which is constructed either pucca or some times it is made up of woods of “*Prosopis juliflora*” covered from both side by mud. Some people have hut with thatch roof or plastic sheets. Some times, maldharis constructed the houses covered with either grasses or plastic sheets or tent in their villages (Plate - 6) depends upon their economical conditions. However, during temporary migration along with their animals, they have houses made-up in the open or under the shed of “*Prosopis juliflora*”.



Plate - 4: Banni buffaloes resting under the tree shade.



Plate - 5: "Bhunga" types of house in Banni area.



Plate - 6: Houses in Banni area.

CONCLUSION

The existing pastoral production system in Banni area of Kachchh is extensive pastoral production system and in adjoining to Banni area is semi - intensive pastoral production system, where animals does not provide any houses. However, maldharis have houses either of "Bhunga" type or roof

covered with tiles or grasses or plastic sheet, where they face many problems during extreme climatic conditions.

REFERENCES

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Table 1: District wise Banni buffalo population in the Gujarat

Sr. No	District	Population	Sr. No	District	Population
1	Kachchh	1,68,938	13	Anand	21,911
2	Banaskantna	35,142	14	Kheda	39,710
3	Patan	12,261	15	Panchmahal	8,436
4	Mehsana	8,449	16	Dahod	2,507
5	Sabarkantha	78,622	17	Vadodara	14,281
6	Gandhinagar	18,661	18	Narmada	1,214
7	Ahmedabad	4,168	19	Bharuch	4,311
8	Surendranagar	55,588	20	Surat	11,234
9	Rajkot	17,585	21	Navsari	1,523
10	Porbandar	606	22	Valsad	3,696
11	Junagadh	7,890	23	Tapi	6,386
12	Bhavnagar	1,896	24	Dang	Nil
	Gujarat State				5,25,015

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