



# Mithun Production and Management System in Papum Pare District of Arunachal Pradesh

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## ABSTRACT

Present study was carried out in three villages viz., Mani, Midpu and Chiputa, in 2011. It was found that all the farmers (100%) followed *free range system* of rearing, natural random mating system, zero-input feeding system and salt as medium to keep close contact with the Mithun. Less than 1 per cent farmers trained their Mithun to come near by their house timely by making sound and offer bunch of hay or grass along with salt. Majority of the farmers (69%) said age at first calving was 36 months and 64 per cent of the respondents said inter calving period was 13 months and 91 per cent of them had breeding bull. Deworming, ectoparasitic control and antibiotics were used by 9, 21 and 12 per cent farmers, respectively and only 25 per cent farmers vaccinated the Mithun against the foot and mouth disease. Weaning was done at 20 months of age by following natural method and male calves were never castrated. Sixty nine per cent of the respondents paid proper attention to the pregnant Mithun whereas 81 per cent farmers sell the animal at the time of adversity.

**Key words:** Mithun, Production, Management, Salt hunger, Tribal community.

## INTRODUCTION

Mithun (*Bos frontalis*) is one of the oldest domesticated animals known to the tribes of Arunachal, many a time mithun has been referred and quoted in folk lore of tribal community. Arunachal Pradesh has the highest Mithun population in India followed by Nagaland, Manipur and Mizoram. Mithun population density accounts highest in Papum Pare district of the state. So, there is a great potential for mithun production but barely any attempt has been made to record systematically and analyze the mithun production and management system, practiced by the farmers, in-spite of much deeply rooted in the socio economic and religious importance of the Mithun. Therefore, the present study was undertaken to understand the prevailing production and management system followed by the farmers in Papum Pare district.

## MATERIALS AND METHODS

The study was carried out in Papum Pare districts of Arunachal Pradesh, during 2011-12 in Doimukh block. Three villages namely Mani,

Cheputa and Midpu were selected to carry out this study. Total number of Mithun in the three villages was 433 (73 male, 198 female, 75 calf, 87 heifer) and from each selected village, twenty five Mithun farmers were selected randomly to make a sample size of 75 respondents. An uniform questionnaire was prepared on five different aspects of rearing, breeding, feeding, health care, and general care and management practices through interview and self-observation methods (fortnightly), the information was recorded. The respondent's answers and reasons for following certain practices were also recorded in each individual questionnaire sheet. The data were analyzed with the help of frequencies and percentages.

## RESULTS AND DISCUSSION

### Rearing practices

The prevailing rearing system followed by Mithun farmers (100%) is a "*free range system*" (Fig. No.1) where, the Mithuns are let-loose freely in the jungle, except during health problems and introduction of Mithun to new area. Another

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method known as tethering method, (Fig. No. 2) is followed for few days or months until the health of animal is stable or adapted to newly introduced area. Other method of rearing Mithun is not feasible at farmer's level because of its grazing habit and physical movement activity which needs larger area to keep them healthy and encounter harsh environment condition of hilly area. On interrogations, majority of farmers said that Mithun reared under *free range system* are healthier as compare to other system of rearing. However, wild beast– viz. wild dogs, tigers and leopards are main menace in free range system. Almost all farmers (99%) said that Mithun reared in tethering method are more susceptible to health problem and disease condition, apart from extra care and repeated changing of grazing area time to time, which is laborious and tedious job (Table 1).



Fig. No. 1 Free range



Fig. No. 2. Tethering system

### Breeding practices

Breeding age of mithun was reported to be 24 to 30 months for female and 48 to 54 months for male, all the farmers (100%) follow natural service through random mating. Artificial insemination (AI) on mithun was unknown to them except for the cattle, 25 percent of farmers

knew the AI method of breeding. Majority (69%) of the farmers said age at first calving was 36 months. A greater majority (64%) of the respondents said inter calving period of 13 months and 91 per cent of them in the study area were rearing breeding bull. Rearing mithun bull is considered to be prestigious and reflection of wealth within the farming community. Whereas 9 per cent of the farmers did not rear breeding bull, they sold or exchanged the male calf for female calf on economic point of view with the concept that female mithun will calve after attaining sexual maturity.

### Feeding practices

It is one of the most important aspects of livestock farming as it account for 65-80 per cent of total cost of production. However, Mithun is reared under *zero input system* by all the farmers. Basically Mithun thrives on the forages, tree fodders, shrubs, herbs and other natural vegetations. It prefers to browse and move around the forest in search of selective forages (Das *et al*, 2008). The commonly green grasses or fodder available in the forest are *Saccharum spontaneum* (thatch grass), *Carex crusiata*, *Thyssoleuna maxima* (phool jaru), *Seteria pamifolia* (aruna grass), *Moniliera curculiodes*, *Phrynium pubinerve*, *Dendrocalamus hamiltonii* (bamboo), *Musa paradisiacal*, *Boemeria species*, *Clerodendron kolebrokianu*, *Ficus semicaudata*, *Spondias pinnata*, *Bauhinia purpurea* (Kanchan) and *Bauhinia verigatea* etc. With no addition of concentrate diet in their ration except for little amount of slat they offered to the mithun on weekly basis while tracking their Mithun in forest. This system of feeding practices are followed by 99 per cent of the farmers, because it is



Fig. No. 3. Salt Feeding system

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**Table 1. Production and management practices followed by the farmers.**

Sl. No.	Name of the practice	Frequency	percentage (%)
A.	<u>Rearing practices</u>		
	Intensive	0	0
	Semi-intensive	0	0
	Free range	75	100
B	<u>Breeding practices</u>		
b.1	Age at first calving:		
	36 Months	52	69
	40 Months	23	31
b.2	Calving interval		
	13 Months	48	64
	15 Months	27	36
b.3	Rearing of bull for breeding purpose:		
	Reared	68	91
	Not reared	07	09
b.4	Service of Mithun:		
	Natural service with bull	75	100
	Artificial insemination	0	0
C	<u>Feeding practices</u>		
c.1	Method of feeding		
	Semi-range	01	01
	Free-range	74	99
	Stall	0	0
c.2	Types of ration used:		
	Roughage (Natural fodder)	75	100
	Roughage with concentrate	0	0
c.3	Feeds additives:		
	Salt used	75	100
	Salt not used	0	0
D	<u>Health care practices</u>		
d.1	Use of antibiotic:		
	Used	09	12
	Not used	66	88
d.2	Vaccination:		
	Practiced	19	25
	Not practiced	56	75
d.3	FMD vaccine		
	Cause abortion	5	7
	Cause death	8	11
	Protection against FMD	62	82
d.4	Deworming:		
	Used	12	09
	Not used	63	91
d.5	Use of ectoparasitic drugs:		
	Used	16	21
	Not used	59	79
E	<u>General Care and Management Practices</u>		
e.1	Weaning:		
	Practiced	0	0
	Not Practiced (Naturally)	75	100

e.2	Castration of Male calf:		
	Practiced	0	0
	Not Practiced	75	100
e.3	Special care to pregnant mithun		
	Taken	70	93
	Not taken	05	07
e.4	Special care to Mithun after calving		
	Taken	73	97
	Not taken	02	03

economically feasible and no extra labour is required for collecting feed and fodder. In contrary to this feeding practices very few farmers (<1%) in addition to *free grazing system* train their mithun to come near by their house timely by making noise or ringing bell periodically and offer bunch of hay or grass along with salt (Fig. No.3). It was revealed that mithun have an extra salt hunger behavior, so every farmer (100%) used salt as a source to remain close contact with their mithun. Similar finding was observed by (Prakash *et al*, 2007).

#### Health care practices

The most prevalent diseases of Mithun in the study area were diarrhea, ectoparasitic infestation like ticks, mites, leaches, biting flies and foot and mouth disease (FMD). Similar findings were observed by (Tayo *et al*, 2013). Routine de-worming and use of ectoparasites control were followed by 9 and 21 percent farmers, respectively and only few (12%) farmers used antibiotics (oxytetracycline) during the outbreak of any disease to mitigate further spread of disease. Few farmers (25%) vaccinated Mithun against FMD through the animal health camp conducted by the state department from time to time. Nevertheless, majority of the farmers (82%) said FMD vaccination had successfully prevented the occurrence of FMD in endemic area and mithun had developed immunity against the disease.

It was observed that animal health coverage programme like routine de-worming, vaccination and timely attending of common bacterial, viral diseases, parasitic infestation and other traumatic injury of animal is not practically feasible due to remoteness and hilly terrain topography of mithun dwelling area in different pocket of Arunachal Pradesh. This result in heavy morbidity and mortality (Sharma, 2010) at the time of any outbreak of disease.

#### General care and management practices

The study revealed that 100 per cent calves are weaned naturally at the age of 20 months under natural conditions. Castration of male calf was never practiced in Mithun except for cattle which are reared for drought purpose. All the farmers knew that castrated animal becomes docile and it can be easily targeted by the wild beast which is a predisposing factor and not suitable for the survival of Mithun in the forest. Ninety three per cent respondents paid proper attention to their pregnant animal and 97 per cent took special care after calving. The reason cited by the farmers was that the pregnant mithun need to be traced once in two days especially during last trimester so that immediately after parturition the calf ears can be notched as an identification mark. As such there is no established marketing system for Mithun. However, majority of the farmers (81%) sell their Mithun at the time of rundown when all most all the savings are exhausted so mithun is also considered as automated teller machine (ATM) among farming community (Panor, 2010). The pricing system is based on general appearance of body conformation and horn size is taken as unit to ascertain the age of Mithun. Mature male Mithun is more costly as compared to female Mithun of same age but conversely calves are cheaper than heifers because mature Mithun looks more majestic due to its beautiful longer horn and masculine appearance, as well as higher meat production per animal and its meat is most preferable meat in tribal community as compared to any other livestock meat.

Some of the notable constraints in Mithun production in prevailing rearing system are ownership dispute, crop raid, wild beast, parasitic infestation, viral and bacterial disease (Tayo *et al*, 2013).

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### CONCLUSION

Mithun management and production system can be greatly improved without much change in traditional practices by little intervention through scientific method on health issue viz. regular deworming, vaccination and nutritional management of pregnant mithun especially sodium chloride, which is present in very low level in soil as well as fodder of hilly area.

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