Mithun Husbandry - Issues and Strategies in Papum Pare District of Arunachal Pradesh

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ABSTRACT

Mithun (*Bos frontalis*) is pride of Arunachal Pradesh and one of the major single most problems in mithun husbandry is ownership dispute, apart from crop raid, wild beast and other being viral, bacterial and parasitic infestation. To overcome the ownership dispute microchip implantation on the left side of neck region (anterior to the point of shoulder), while Lura system to mitigate crops raids, special training to mithun to come inside protected enclosure at night to curve out wild beast menace, followed by vaccination, antibiotic and anthelmantic drugs respectively for viral, bacterial and parasitic infestation have been suggested to the farmers of the area.

Key words: Micro-chip, Lura system, Mithun, FMD, Thelazia.

INTRODUCTION

Arunachal Pradesh has the highest Mithun (*Bos frontails)* population in the world followed by Nagaland, Jammu and Kashmir, Manipur and Mizoram. Mithun locally called as ***sabe, subu,*** and ***sobo*** in Nyshi, Apatani and Galo tribes, respectively have an intimate relation with socio-cultural life of the tribal people and is the oldest known domesticated animal being reared by the tribes of Arunachal Pradesh under wild and semi-wild conditions.These animals are allowed to move freely in the jungle after notching the ear with sharp knife for identification. The owner or care taker look after them by just spotting the animal in jungle through its ear notching mark and feeding hand full of common-salt by calling *ALLE-ALLE, LALLAE-LALLAE* and *AHA-AHA* in Nyshi, Apatani and other tribes, respectively as per their convenience since their forefather. They are reared until used for food on festive occasions, victory celebration, marriage feasts, for barters purpose and rituals scarification. However, as per the world Conservation Union, this species is vulnerable to extinction.

Therefore, the present study was undertaken to know the problems at grassroot level in mithun rearing faced by the farmers of Papum pare district through personal interview and self observation method and to advise them to follow the suitable corrective measures.

MATERIALS AND METHODS

The study was carried out in Papum Pare district of Arunachal Pradesh during the year 2011-12 in Doimukh block. Three villages namely Mani, Cheputa and Midpu were selected and from each selected village, twenty five Mithun farmers were selected randomly to make a sample size of 75 respondents. Through interview and self-observation methods mithun farmers were inquired regarding the grassroot level problems in mithun husbandry and the answers were recorded in each individual respondent's sheet and data were generated. The data were analyzed with the help of frequencies and percentages.

RESULTS AND DISCUSSION

A. Ownership dispute

A majority of farmers (92 %) reported that ownership dispute is one of the major problem in mithun husbandry (Table 1). Traditionally ear notching system was being practised by the farmers for identification but could not be considered as a fool proof system because ear mark of animal can be easily altered by sharp knife without injuring the animal much. As a matter of fact many mischievous people tend to notch the ear of animal in their own style, though that has been already notched or the young ones that have not yet notched by real owner. These animals are reared in semi-wild conditions so, in the very vast

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forest area often it is very difficult to spot the animal once in a month. By this time the freshly notched ear had been already healed and problems starts now. The real owner will identify his mithun by its body coats, whereas fraud owner will stick to the ear mark. These often leads to the saying might is right and it is very difficult tusk for the village leader give a judgement either in favour of them and number of times result in bloodshed between the real and fraud owner.

Table1. Problems in Mithun husbandry faced by the farmers.

Sr. No.	Problem	Frequency	Percentage(%)
01	Ownership dispute	69	92
02	Crop raid	75	100
03	Wild beast	75	100
04	Viral disease (FMD)	63	84
05	Bacterial disease (HS)	12	16
06	Parasitic infestation		
	i) Tick and mites	75	100
	ii) Leach	75	100
	iii) Maggot infestation	27	36
	iv) Eye worm (Thelazia)	52	69

Suggestions:

This ownership dispute can be resolved by use of micro-chip implant bearing unique 15-digit code which posses a character of tissue friendly, lifelong duration and tempered proof. Micro-chip can be implanted in animal body by injecting between the left side of neck and point of shoulder as shown in figure 2. One micro-chip is to be allotted to only one mithun, the 15-digit code is recorded and maintain in the forest department in their official register under the owner name of said animal and same number is retained by the animal owner for future investigation and identification.

At the time of conflicts on the ownership of the Mithuns, the microchip reader machine can be brought from the authority and the micro-chip number can be read by placing the reader near to the site of implantation of the micro-chip. This will annihilate any confusion about the identity of animal.

B. Crop raid

Unequivocally cent percent respondents said crop raid by mithun was the most common day-to-day problem in agriculture (Table 1). Basically, Mithun thrives on the jungle forages, tree fodders, shrubs, herbs and other natural vegetations Das *et al.,* (2008). It prefers to browse and move around the forest in search of selective forages but number of occasion's animal enters the agriculture field thereby damaging and eating up the crops grown over it. However it is not the fault of animal, if the alleged field is not well protected with fence or wall. The animals entered in the field are caught and imposed heavy fine to the owner or harm the animals with gun, spear, arrow and sword which is an unethical practice.

As per the respondents view the extent of economic loss caused by mithun is roughly estimated to be 5-17 per cent of the total agriculture output.

It has been observed that the common practise to prevent the crop raid was that every farming family puts fencing along with his portion of boundary of the cultivated area and animal are made to roam freely. Fences are made up of locally available material such as bamboos and woods, barbed wire is effective but due to its high cost it is not generally affordable by the villagers'. This practices is laborious, time consuming, ineffective and generally small area can be brought under protection.

Suggestions:

Crop raid can be mitigated by adopting ***"lura system"*** commonly practised by Adi and Galo community of East and West Siang district of Arunachal Pradesh. *Lura* refers to 'a demarcated area within a village community forest especially earmarked by the community as the best area with its natural conditions for rearing mithun in its natural habitat (Fig.1).The purpose is to rear mithun population of the village together, irrespective of individual ownership. This captivity is to be synchronized with the cultivation season of the slash and burn practice of the land use system prevalent in the area. This will serve as an effective measure to protect land under agriculture use by all the farming community of villagers (Heli, 2009).

C. Wild beast

Wild beast viz., wild dogs, tigers and leopards are main menace in free range system. All the respondents reported that especially during calving season, numbers of attack by wild dog and leopards were found to be increased because newly born calf becomes soft target of wild beasts.

On the other hand, hunting and killing of wild animals has been strictly prohibited by the forest department so mithun farmer had no option to mitigate this problem. More over it is against the ethics to eliminate wild beast from the same ecosystem.

Suggestions:

Wild beast attack mostly during night hours, therefore in order to tackle this problem there should be a community participatory approach made by barricading fencing with barbed wire or locally available materials and mithun should be trained to remain inside the enclosure at night by calling them or making some sound such as ringing bell at evening and offering handful of salt to each animal as the mithun have extra urge for salt. Similarly,the enclosure gate should be opened in the morning for free rang grazing purpose.

D. Viral Disease

Foot-and-mouth disease (FMD) is a highly contagious disease affecting mostly cattle, swine, sheep, goats and many species of wild ungulates (Brooksby, 1982). Majority of farmers (84 %) reported that FMD creates havoc in mithun husbandry practices in sporadic manner (Table 1). It has been observed that compared to other domesticated animal mithun are more susceptible to attack of FMD due to its semi-wild nature sharing the grazing area with other wild animals like deer and wild pigs. In case of mithun, the rate of morbidity is very high and mortality may go up to 60 per cent and above.

The virus exists in the form of seven serologically and genetically distinguishable types *viz.* O, A, C, Asia1, SAT1, SAT2 and SAT3, but the prevalent strains of FMD virus found in the state of Arunachal Pradesh is type "O", "A" and Asia-1(Sharma, 2010). Out of which type – O is more prevalent and often causing havoc to the Mithun population almost every year. It is hypothesized that the transmission of the FMD virus is mostly brought by the ploughing bullocks from Assam especially during cultivation season (Kharif), though the animal may not show the symptom but act as a carrier of FMD virus.

Suggestions:

To curb the FMD outbreak a routine "Ring vaccination" in the areas bordering Assam state and the rest of the animals has to be covered by "Barrier vaccination" in endemic area twice a year.

E. Bacterial disease

Haemorrhagic septicaemia (HS) is a contagious bacterial disease caused by two serotypes of *Pasteurella multocida*, B2 and E2. Few farmers (16%) reported that HS is one of the hurdle in mithun husbandry but the disease is often under go unnoticed and unattended (Table 1). The diseased animal often exhibits the symptom of dyspnoea, salivation, subcutaneous swelling and die within 2 to 3 days. The onset and course of the disease is generally rapid and leave little time to seek veterinarian help which is not possible due to their semi-wild nature and hilly terrain of their dwelling area.

Lura system

Eye worm(Thelazia)

Suggestions:

In endemic areas best way to prevent the occurrence of this disease is to follow up an immunization programme before the onset of monsoon every year. However, antibiotics such as sulphonamides, penicillin and tetracycline can be used successfully for treatment in the early stages.

F. Parasitic Disease.

All the respondents reported that ectoparasites like ticks, mites, leaches and biting flies are commonly found over the body of mithun due to semi wild nature of rearing system, causing constant irritation by biting and sucking blood which leads to dull, depressed, anaemic and stunted growth . Use of Ivermectin @ 0.15mg/kg body weight twice a year and dipping animal in Taktik (Amitrazin) solution @ 4ml/ litter of water for at least 2 minute every four month will reduce the burden of ecto-parasitic infestation. 36 percent of farmer said maggot infections were more evidence in calf as compared to adult animal. Navel of newly born calf were the soft target for maggot infection apart from any lacerated or cut wound mark in their body by thorn or sharp object during the course of grazing.

Suggestions:

Maggotic wound can be ruled out by clipping the entire hair around the wound and plugging with turpentine oil for few hours followed by thoroughly irrigated with 2 per cent potassium permanganate solution then manually remove the dead maggot with use of forceps, tropically a fly repellent (Topicure) must apply in order to prevent the further visit of fly in the affected area. A dose of antibiotic should be followed for at least 5 days to check secondary bacterial infection.

Eye worm infestatiion

A majority (69.0 %) of farmers said eye worm infestation was one of the major concerns because parasite present in the eye ball cause constant irritation that leads to lacrimation, opacity and ultimately blindness and in number of occasion result in death due to starvation or fall from cliff. Similar outbreak was reported from west siang district (*Panor, 2010).* It is caused by the genus Thelazia species and transmitted by different species of muscids. These worms live in the conjunctival sac (eyelid) of the eye . The worms measures up to 2.5 cm long and are thin and white in colour. (Fig. 2)

This can be treated by manual removal of adult worm after application of 2 per cent lignocane (anasthesia) in eye with the use of forceps but animal need to be restrained properly followed by thoroughly irrigated with aqueous solution of 2 per cent boric powder with concurrent use of Ciplox-D (Ciprofloxacin and Dexamethasone) and Ivermectin injection @ 0.15mg/kg body weight Kennedy and Phillips (1993).

CONCLUSION

Mithun husbandry practices can be significantly improved amongst the mithun rearing farmers through the blend of traditional practices and scientific methods suggested. There is a large scope for creating awareness regarding scientific package of practices of mithun rearing because most of the farmers are still following the methods learnt from their fore father. Similarly, mithun needs be reared under intensive farming system rather than under semi wild conditions as practiced in the region which results in ownership dispute amongst the farmers. This species needs to be well taken care of in order to prevent its extinction.

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