MITHUN *(Bos Frontalis)*: Animal with a difference

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Livestock sector plays an important role in Indian economy and is contributing 5.22 percent to gross domestic products and 28 percent of the value of output of agriculture. As per the recommendation of ICMR the requirement of milk, eggs and meat/day/ capita is 250 gm (milk), 180 nos. (egg) and 11 kg (meat). As per the data available for Nagaland State there is a deficiency of 9.1% of meat, 55% milk and 85.8% eggs. Based on the data we can see that there is a huge deficiency of all these items in the state. In this regard, the urgent need of the hour is to find an alternative source of meat production from other species of animals like Mithun (Bos frontalis) which can play a pivotal role in augmenting the total meat production of the country in general and North - Eastern Hill Region (NEHR) in particular.

Mithun (Bos frontalis), the cattle of mountain, probably originated more than 8000 years ago and is considered to be domesticated from wild gaur. The Mithun and Gaur are considered to be different species earlier; however, at present taxonomically mithuns and Gaur are grouped into the same species "Bos frontalis". Mithun and Gaur are identical in karyotype and both of them contain 29 pairs of chromosomes. At present there are four defined strains of Mithun in India, namely Arunachal, Mizoram, Manipur and Nagaland named

after the North - Eastern Hilly State where they have originated and defined on the basis of phenotypic characters.

DISTRIBUTION

This free - range bovine species has a limited geographical distribution and mainly found in the North - Eastern Hilly Region of India and in many locations of South - East Asia like Myanmar, Bhutan, China and Bangladesh. Mithuns are distributed on mid altitude hills from the Patkai in the North - East and Arkan and Chin hills of Myanmar through Chittangong tracts of Bangladesh and Lushai, Manipur and Naga hills in the South - East. In India, it is mainly found in the tropical rainforest of the North - Eastern hill states (Arunachal Pradesh, Nagaland, Manipur and Mizoram). Livestock census of 2007 shows that out of the total population of mithun in India (0.26 million), 81.9 percent is found in Arunachal Pradesh followed by 12.63 percent in Nagaland, 3.8 percent in Manipur, 0.7 percent in Mizoram, 0.01 percent in Jammu and Kashmir and 0.01 percent in Himachal Pradesh. The mithun population has declined by 4.9 percent over the last census.

HABBITAT

Mithuns are generally found at an altitude between 1000 - 3000 m MSL and are quite adaptable in that range. This animal thrives well in hot humid and hilly terrain. At higher altitude, the territories of Mithun are shared by Yaks, while at lower

altitudes domestic cattle and Mithun cohabit. The peculiarity of this animal is its ability to browse on steep slopes of hills or forest where other animals cannot reach. Mithun has got nibbling habit like goat and utilize mature forages, which are not preferred by other species of livestock. They plays a vital role in the economy of its rearers as the scope of arable agriculture is limited in these areas because of steep topography, prolong and severe winter, shallow soil and lack of irrigation facilities.

IMPORTANCE

The mithun is reared primarily for meat and its ownership is considered to be the sign of prosperity and superiority of individual in the society. On important occasions, mithuns are sacrificed for communal feast. The value of mithun differs from one tribe to another tribe and from place to place. In olden days, mithuns were used for barter system of trade, but now a day, they fetch a good price in the market. In some places, they are exchanged for purchase of land, paying tribute, fine and for bride price. Now a day's people are able to utilize the milk as well as can sell the hides of Mithuns which fetches a very good price in the market when compared to Cattle and Buffalo hides.

Physiological parameters of Mithun

1. Body temperature : 100.3-100.50F
2. Pulse rate (per minute) : 71.4-73.8
3. Respiration rate (per minute) : 25.2-30.6

Growth rate in Mithuns: An average growth rate of 350-600 gm/day has been recorded under farm conditions in Mithun of different age.

PRODUCTION PARAMETERS

Milk Production: Mithun produces about 0 .87-1.5 kg / day and contains 7.72-10.25% fat, 6.31-6.78% protein, 20.94-22.62% total solids and 13.41-13.70 SNF%. Milk can be used for daily consumption as well as for preparation of different dairy products such as lassi, rasgullas, ghee, burfi etc.

Meat production: Mithun meat is a delicacy and is slaughtered during festive seasons and ceremonies and fetches a premium price in the market. Dressing percentage varies from 58-62%.

Leather production: Superior quality of leather is obtained from mithun hide which fetches a good price in the market. Leather can be used for the production of goods like shoes, garments, bags, jackets and purses.

Housing Management: In Nagaland Mithuns are generally kept in the jungles without any proper shed and the owners maintains the bond with animals only during offering of salts. Proper housing if provided will help the farmers to reduce mortality in mithuns especially during harsh climatic condition, detection of disease, identification of mithuns and administration of oral medicines to prevent /treat the disease of mithuns.

Feeding of mithun: Since, Mithuns are not kept in confined conditions feeding of Mithuns entirely depends on the pasture land and available jungle fodder. During the flush season they get abundant of green grass, fodder, herbs and shrubs, while during the lean period there is scarcity of available local fodders. However, if farmers can provide shed to the mithuns they will be able to feed the mithuns with concentrate rations fortified with salt and mineral mixture to overcome the stress during lean season. It is advisable to follow scientific feeding in mithun for better productive and reproductive performance.

REPRODUCTION IN MITHUN

Mithun bred throughout the year and no definite breeding season is observed. Mithun is polyestrous animal. The adult female shows repeated estrus cycle after every 19-24 days interval with silent estrous without bellowing and having standing heat period ranging from 4-16 hours. The length of the gestation period is 290-310 days. The service period is 49-114 days. The age at first heat and age at first calving varies from 505-762 days and 996-1230 days, respectively. The inter-calving period is 343-248 days. The expression of estrus behavior is silent in mithun unlike cattle and is difficult to detect heat in female mithun by clinical symptoms. In jungles it becomes very difficult to know which bull has cross therefore inbreeding is generally seen which should be prevented for maintaining better germplam of this unique animal.

Some of the common disease which is prevalent in Mithuns are:

1. **Foot and mouth disease (FMD):** It is a highly communicable disease and causes a huge loss to the farmers which are mainly attributed due to non vaccination of FMD vaccine in time. The disease characterized by blister like lesions on tongue, nose, muzzle, teats and between the toes. The blisters cause flow of sticky and foamy saliva that hangs from the mouth. Vaccination of mithuns with suitable FMD vaccine is the best control measure. Other viral disease like IBR, Coronavirus infection,Papillomatosis and Malignant catarrhal fever are also common.
2. **Bacterial disease:** Some of the important bacterial disease of mithun is Tuberculosis, Johne's and Brucellosis which causes economic losses.
3. **Parasitic disease:** Several ecto and endo parasitic infestation have been recorded in mithuns. For ecto parasitic infestation such as ticks farmers can spray butox @2ml in 1 litre of water or Ivermectin injection@1ml /50 body weight (S/C). For endo parasitic infestation broad spectrum anthelminthic drug i.e. Albendazole, Fenbendazole, Menbendazole bolus @7.5 mg/kg body weight should be administered orally.

4. **Other disease:** Leech infestation in nasal cavity is a major problem in free range mithuns. The common symptoms of nasal leech infestation are inserting tongue into nasal orifice, presence of house flies around nose, muzzle and frequent sneezing. There is no specific treatment for leech infestation however spraying Ivermectin solution (2ml Ivermectin and 3 ml water) or saturated salt solution of common salt (10 ml) into nasal cavity with the help on syringe is sometimes useful.

CONCLUSION:

In India, Nagaland stands second in terms of mithun population and have a National Research Centre on Mithun at Jharnapani where lot of work has been done for increasing the productivity and reproductivity of the mithuns which can serve as resource centre for the Mithun rearers. Till today mithuns are reared in free grazing system and contributions of Mithun farmer's remains very inadequate in terms of feeding, housing and healthcare practices. If Mithun farmers can follow some of the managemental techniques it will surely help to increase the performance of Mithun and reduce the disease occurrence in Mithun their by uplifting their socioeconomic conditions.

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