

MITHUN CALF MORTALITY : CAUSES AND THEIR MANAGEMENT



S. Rajkhowa
A. Dhali
C. Rajkhowa



National Research Centre on Mithun (ICAR)
Jharnapani, Nagaland – 797 106

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AND
THEIR MANAGEMENT**

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**S. Rajkhowa
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Authors:

S. Rajkhowa

A. Dhali

C. Rajkhowa

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Foreword

The technical report prepared on the basis of the microbial and parasitic causes of calf mortality in mithun (*Bos frontalis*) by Rajkhowa and others of the National Research Centre on Mithun (ICAR), Jharnapani, Nagaland is unique as there is hardly any comprehensive report on the prevalence of infectious agents associated with diarrhoeic conditions of mithun in India. Mithun is a pride animal particularly for the hill states of the North Eastern Region, India. The Indian Council of Agricultural Research, New Delhi funded National Research Centre on Mithun at Jharnapani, Nagaland is playing important role in improving the productivity of mithun and taking keen interest to conserve the germplasm. Diarrhoea has been considered as one of the important causes of mortality of mithun's calf. Therefore, the study was appropriate to find out the etiological agents of diarrhea so that suitable therapeutic, control and preventive measures can be adopted to reduce the mortality. The important bacterial, viral and protozoan pathogens associated with diarrhoeic conditions of animals have been detected and characterized. The study showed that the mithuns reared under semi intensive management system are more prone to suffer from rota and coronavirus infections. Similarly the semi intensive management system favours cryptosporidial infection in mithun. Detail study on *Escherichia coli*, the important bacterial pathogen of diarrhea has been undertaken and the results are presented systematically. Though routine techniques have been used for isolation and identification of bacterial pathogens, but the newer sensitive techniques like multiplex PCR for detection of virulent genes and RAPD-PCR for molecular typing of the *Escherichia coli* isolates have increased the weight of the report. Indiscriminate use of antibiotics has favoured the development of resistant strains of

bacteria and there is an impact on the health of mithun as most of the *Escherichia coli* isolates from diarrhoeic conditions of mithun were resistant to commonly used antibiotics. Judicious use and selection of right antimicrobials for treatment of bacterial infections will facilitate speedy recovery and reduce antibiotic resistant strain of bacteria. Development of an effective control programme for diarrhoeic condition of mithun is essential. The attempt on producing a vaccine against *Escherichia coli* is encouraging. The report is worth publishing and I hope the report will be a useful document.



23/10/57

Dr.D.K.Sarma
ICAR National Fellow
Deptt. of Microbiology
Assam Agricultural University
Khanapara, Guwahati-781022

PREFACE

Apart from traditional livestock component, the tribal populations of North eastern hilly region rear some special livestock like mithun, yak, long hairy goat and small sized pigs suitable for the ecosystem of this region.

Mithun is one of the important components of livestock production system practiced in the states of Arunachal Pradesh, Nagaland, Manipur and Mizoram. Mithun is considered as the pride of North Eastren Hill region of India. This animal plays an important role in the social, cultural and economic life of the local tribal population. The ownership of mithun is considered to be the sign of prosperity and superiority of an individual in the society. Farmers mainly rear mithun for meat purpose. Besides, this animal is also used as marriage gift and sacrificial animal for different social and cultural ceremonies.

The National Research Centre on Mithun (ICAR) has been taking initiative to understand the disease profile of this animal with their etiological causes. Much emphasis has been given to understand the epidemiology of important disease of mithun. Attempts were also made to standardize available reliable and rapid diagnostic tests for the diagnosis of important diseases of mithun. Likewise emphasis was also given for the control of economically important diseases of this animal.

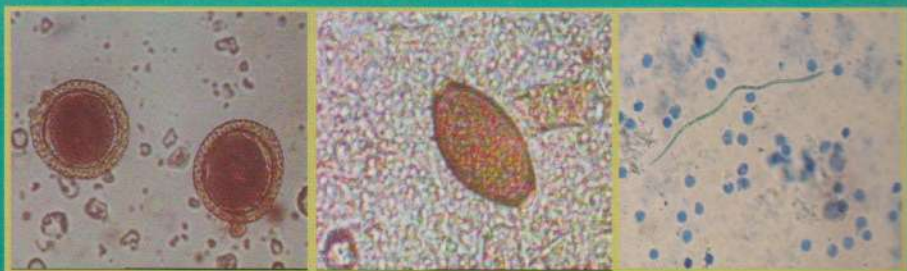
This document describes the important microbial and parasitic causes of mithun calf mortality and measures for their possible prevention and control.

We hope this document will be able to give support to the readers/workers engaged in the field of livestock production in general and mithun husbandry in particular.

S. Rajkhowa
A. Dhali
C. Rajkhowa

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