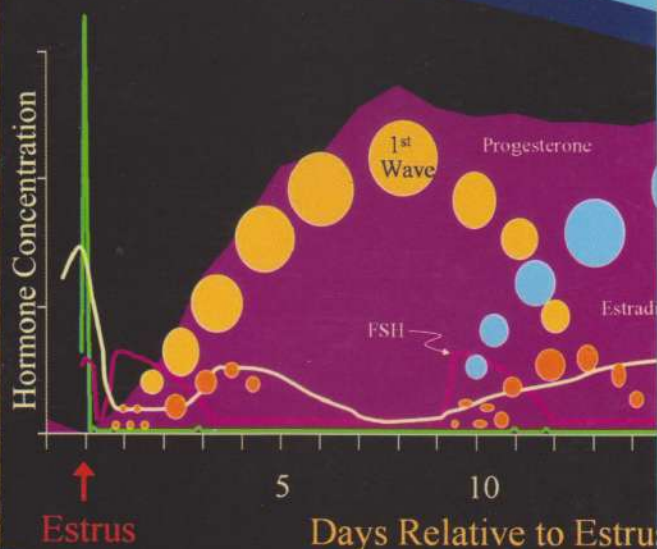


Development of Hormone Immunoassays and their Applications in Reproductive Endocrinology of Mithun



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PREFACE

Mithun (*Bos frontalis*), which is today believed to be the descendent of wild gaur (*Bos gaurus gaurus*) of India and Myanmar, is an animal of special significance for the tribal people of North Eastern Hills region of India. This animal is also known as "Pride of Northeast" and "Cattle of Mountain." Mithun is basically used for beef purpose besides its use in barter trade, marriage gift etc. It also serves as a prestigious asset to the owner. The local tribal population in the northeastern hills region of the country symbolizes their old tradition of keeping this animal as pride of the society. Probably, mithun is the only ruminant that can browse on biomass most efficiently on difficult steep hill slopes under adverse climatic condition prevailing in the region. Mentioning the importance of mithun, International Union for Conservation of Nature said ".....For centuries owners have allowed them to run semi-wild in small herds, browsing the dense jungle. Their genetic potential is such that they could have wide spread impact up-grading other cattle in the world. (IUCN, 2002)." The population growth of this unique hill animal is decreasing due to various biotic and abiotic pressures.

The problems of late maturity, silent estrus and long postpartum estrus in addition to inbreeding and crossbreeding are the main hindrances for making the mithun husbandry as a sustainable livestock enterprise. In this context, there is need to understand the basics of Mithun reproduction and to develop technologies for augmenting the reproductive efficiency of this species. In this context, endocrine research is paramount for understanding growth and reproduction in mithun. The research in the field of endocrinology is dependent on the hormone assays available. As no assays for estimation of hormone principles in mithun blood plasma were available, we therefore developed and validated several enzymeimmunoassays specific for mithun and these hormone assays are now an important tool for better understanding of this magnificent species of animal. Most importantly, the developed assays were found to be several times cheaper than commercially available kits, besides they are simple, reliable and highly sensitive.

We hope that this technical bulletin will be of immense help for the scientists, students, academicians and farmers for making mithun husbandry a sustainable and economically viable livestock enterprise in the country.

Date: March 15, 2013

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