



Mithun Digest

The bi-annual panorama.....

NATIONAL RESEARCH CENTRE ON MITHUN

Vol 7 No. 1

January- June 2010

A hearty greetings from NRC on Mithun family!

DR.S AYYAPPAN TAKEN OVER THE MANTLE AS THE SECRETARY, DARE AND DIRECTOR-GENERAL, ICAR.



A New Year has come and Dr. S. Ayyappan has taken the office of the Secretary, DARE and Director General, Indian Council of Agriculture research, New Delhi on the New Year eve of 1 January, 2010. Born on 10 December, 1955 at Alakere in Karnataka, Dr. S.

Ayyappan started his career in ICAR system as a Scientist at CIFRI, Barrackpore in 1978 and rose to a distinguished career. He served as Director, CIFA, Bhubaneswar; Director, CIFE, Mumbai and Deputy Director-General (Fisheries) and acting Deputy Director-General (Animal Sciences) before taking up the present prestigious charge.

Dr. Ayyappan received a number of coveted awards including Zahoor Quasim Gold Medal, 1996-97; ICAR Award for Team Research for 1997-98; and V.G. Jhingran Gold Medal, 2002 for his accomplishments. Presently, he is Fellow and Vice-President of National Academy of Agriculture Sciences, India; and Vice-President, Indian Society and Coastal Agriculture Research, 2008-2011. CIFA bagged the 'Best ICAR Institute Award 1996' under his able guidance. He was the founder Chief Executive of the National Fisheries Development Board, DAHD&F, Hyderabad.

Dr. S. Ayyappan is well known for his dynamism in action and his simplicity as well as firmness in dealing with things in ICAR system. He has taken up the crusade to bring a fresh attitude in the ICAR system with his able guidance and zeal to perform.

Sir, We, the members of NRC on Mithun family, do congratulate you for your great achievement and take pledge to be with you to fulfill your aspirations and expectations.

DR. K.M.L. PATHAK TAKEN OVER THE MANTLE AS THE DEPUTY DIRECTOR-GENERAL (ANIMAL SCIENCES), ICAR.



It is our immense pleasure to convey our heartiest greetings to Dr. K.M.L. Pathak who assumed the charge of Deputy Director General (Animal Sciences), ICAR, Krishi Bhavan, New Delhi on 27 January, 2010.

Dr. K.M.L. Pathak was born on 7th December, 1953 in a farmer's family of Etah District, Uttar Pradesh. After obtaining B.V.Sc. & A.H.(Hons.) in 1977, M.V.Sc. in 1979 and Ph.D. in 1982 from G. B. Pant University of Agriculture and Technology, Pantnagar, all in 1st division and distinction in all the subjects, he embarked upon a career which was twined with research ambitions in the area of veterinary parasitology. Amid in his career, Dr. Pathak availed post-doctoral fellowship in biotechnology at Salford University, UK. in 1992-93.

Dr. Pathak started his career as Research Associate (1980-82), Assistant Professor (1982-86) at G.B.P.U.A.&T. Pantnagar. He was appointed as Associate Professor at Rajasthan Agricultural University, Bikaner in 1986 and elevated to the position of Professor & Head in 1995 and Director Research (Veterinary & Animal Sciences) in 2003. He joined ICAR as Director, National Research Centre on Camel, Bikaner in December 2006 before assuming the coveted post of Deputy Director General, Animal Science, ICAR in January, 2010.

Sir, We, the members of NRC on Mithun family, do congratulate you for your great achievement and take pledge to be with you to steer the livestock sector towards new horizons of progress.



INSTITUTIONAL ACTIVITIES

Republic Day Celebration



The Institute staff celebrated the 64th Republic Day of the nation on 26 January, 2010 in a befitting manner with a pledge to work for the benefit of the motherland. The Director unfurled the tricolor in the morning and encouraged all the staff to work with a purpose and remain ever vigilant for safeguarding the reputation of the Institute in particular and the nation in general. The children and family members also a vibrant part of this celebration.



RAC Meeting



3rd RAC meeting was held in the Institute on 27 – 28 March 2010 under the chairmanship of Dr.N.Balaraman, former V.C., TANUVAS, Chennai. Dr. B.K. Sahoo, former Dean, OUAT; Dr. R. N. Goswami, Dean, Veterinary College, AAU and Dr. Ramesh Rawal, Vice President, BAIF was also present in the meeting along with others members of RAC. They reviewed the research work undergoing in the Institute and gave their critical inputs and guidelines for betterment of the ongoing projects.



Institute Management Committee Meeting

The Institute Management Committee (IMC) Meeting chaired by the Director was held on 28 March 2010. Dr. R.N. Goswami, Dean, Veterinary College, Khanapara and Dr. Madan Tamuli, PS, NRC on Pig attended the meeting.



Institute Research Council Meeting

The Institute Research Council (IRC) Meeting chaired by the Director was held on 30 March 2010. All the scientists presented their research highlights as well as a couple of new projects were also presented. Dr. Satyen Baruah, Deputy Register, and Dr. Manoranjan Das, Associate Director of Assam Agricultural University attended the meeting as outside experts.





RESEARCH HIGHLIGHTS

Study on dentition patterns of Mithun

A pilot study on the dentition pattern of Mithun has been taken up as a part of main research project of Morphometric and Genetic Characterization of Mithun. Identification of all the Mithun present at the Institute herd belonging to four different strains has been done by inserting microchip.



Buccal cavity showing falling of 1st pair of deciduous incisor in Mithun.

Dentition pattern of deciduous teeth of calves has been studied for determining the age of Mithun. It has been observed that there were quite difference as far as

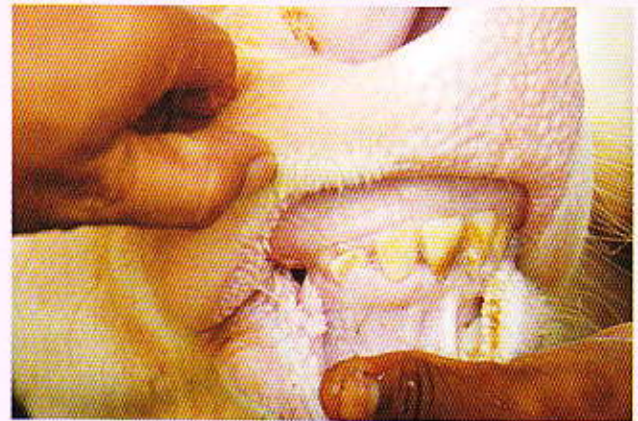


Buccal cavity showing two pairs of permanent incisor in a Mithun.

age determination by eruption of permanent teeth was concerned between Mithun and cattle. In Mithun full mouth condition comes only when the animal was 6 years or more than that as against 4 years in cattle. The first pair of permanent incisor was erupted from 22 months to 3 years, whereas two pairs of permanent incisors were erupted in between three to four years. The third pair of permanent incisors was erupted from four to six years.



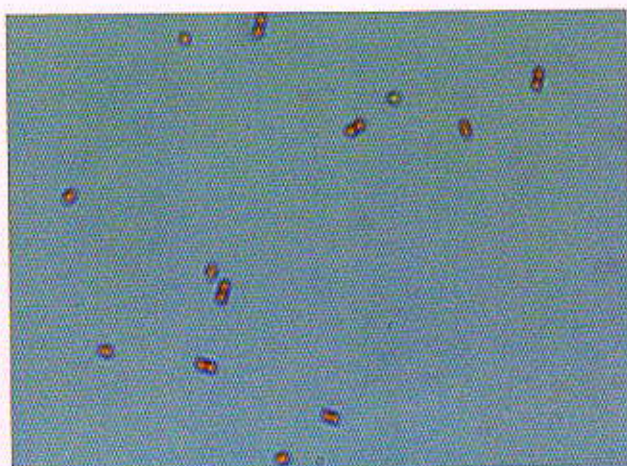
Mithun buccal cavity showing four permanent incisors



Mithun buccal cavity showing fifth permanent incisor eruption

Isolation and characterization of fibre degrading bacteria

About 60 fibre degrading bacteria were isolated from the rumen of mithun and the isolates were subjected to analysis for fibre degrading enzyme i.e. CM-cellulase, xylanase, β -glucosidase, avicelase, acetyl esterase and in vitro Gas Production. Eighteen rumen bacteria were found to be superior in fibre degradation. Most of the bacteria were gram negative and cocci. Some of the superior fibre degrading bacteria when characterized were found to be *Fibrobacter succinogen*, *Ruminococcus albus* and *Butyrivibrio fibrisolvens*.



Isolated fibre degrading bacteria



Band showing amplification of bacterial DNA using specific primer *Ruminococcus albus*

Feeding strategy of Mithun using unconventional feed resources



Brewers' spent grain

Four adult non-lactating, non-pregnant Mithun cows were fed on brewers' spent grain based ration supplemented with green napier for 35 days and conducted a metabolism trial for 4 days. The dry matter intake was 40.0 g per kg metabolic body size. The ratio of spent grain and green Napier ratio on dry matter basis was 7.97:1. The dry matter digestibility of the ration was 61.69 percent.

Animal Health Study

All the animals in the farm were examined for routine blood parameters and few of them found to be anaemic. All these animals were subsequently treated with heamatinic and mineral mixture. During this period, complete PM was conducted and recorded for six animals which died in the farm premises. All the animals were examined for tick infestation and pilot study was started for treatments using various drugs. All the calves were examined for worm infestation and subsequently treated accordingly.



PERSONALIA

New Appointment

- Dr. J.K. Chamuah joined as Scientist (Veterinary Parasitology) on 22.04.2010
- Dr. Vidya Singh joined as Scientist (Veterinary Pathology) on 23.04.2010

Transfer

- Dr. P.R. Dutta, Farm Manager (T6) transferred from KVK, Phek to NRC on Mithun, Jharnapani on 30.03.2010.
- Sh. Vizekrol Kikhi, Driver transfer from KVK, Phek to NRC on Mithun, Jharnapani on 01.04.2010.

Honours and Awards

□ Dr. Sabyasachi Mukherjee, Sr. Scientist was awarded NAIP sponsorship for International training on 'Genome Resource Conservation' at Iowa State University of Science and Technology, Ames, USA from 26 March to 23 June, 2010.



□ Dr. K.K. Baruah, Principal Scientist (Animal Physiology): Received Overseas Fellowship from Department of Biotechnology, Govt. of India, for Post Doctoral training at Wisconsin University, Madison, USA.



□ Dr.K.C.Das, Senior Scientist (Animal Nutrition): was awarded DBT Overseas fellowship awarded by Department of Biotechnology, Govt. of India to receive research training/education in the field of Rumen Biotechnology at Lakehead University, ThunderBay, Canada



□ Dr. Mohan Mondal, Senior Scientist (Animal Physiology): Received Prof. G.P Talwar Middle Career Scientist Award, 2010 by the ISSRF for significant contribution in the field of Reproductive Health in Mithun.

VISITING DIGNITARIES

□ Sri T.R. Zeliang, Hon'ble Minister for Animal Husbandry, Govt. of Nagaland visited our Institute farm on 27 February 2010



MISCELLANY**Technology Injection Programme**

A technology injection programme was conducted at Khonoma village of Kohima district on 1 April 2010 for making the Mithun owners aware of ONBS scheme under XI plan of the Institute.



The programme was inaugurated with the orientation of the farmers of Khonoma village. 41 villagers has participated actively in this programme along with scientists and technical officers under the

guidance of the Director, Dr. C. Rajkhowa. The meeting was very successful and the scientists also visited the site selected for ONBS scheme.

In continuation of the above programme, a PRA survey was also conducted in the Khonoma village for studying the socio-economic status of the farmers with special reference to the Mithun farming on 16th May'2010. Survey was conducted from 13 Mithun owners in a format specially developed for this purpose.



A survey of Mithun owners in progress for data collection.

Training/Refresher Course/Seminars/Conference/ Symposia Attended

Name & Designation	Name of the Programme	Duration
Dr Sabyasachi Mukherjee	Indian Science Congress, Trivandrum	3-7 January, 2010
Dr. N. Haque Dr. Naresh Prasad	"Nagaland Strategy Development Workshop" launched by North East Initiative of the Sir Ratan Tata Trust, Kohima	12 February, 2010
Dr K K Baruah	Chaired one session of 55 th Technical Session of the Assam Science society, Guwahati University	15 February, 2010
Dr. K K Baruah	ICAR Training-cum-Workshop on Intellectual property and Technology Management, IINRG, Ranchi.	19-20 February, 2010
Dr. Nazrul Haque	Training programme on "General Management" at NIRD, Guwahati organized by Central Institute of Horticulture, Medziphema, Nagaland.	8-10 March, 2010

Sports Activities During ICAR Eastern Zonal Sports Meet, Cuttack



Ms. Virginia - High Jump (Women) Gold Medalist



Basket Ball (Men) Team-Silver Medalist



Mr. Thopovuyi-Shot Put (Men) Silver Medalist



Mr. Vevo - High Jump (Men) Bronze Medalist



Players of Champion Team - Volleyball (Smashing)

From the Director's Desk



It gives me immense pleasure to present this document of Newsletter of our Institute for the period January to June 2010. We have already published six volumes of this document with wide circulation. Due to this wider circulation, in Mithun inhabited areas; we are receiving lots of queries in regard to various aspects in Mithun husbandry from the people who are engaged in Mithun rearing. I must congratulate the editor for making this document attractive and popular.

During January to June 2010, the Scientist could generate many valuable information in regard to various aspects of Mithun husbandry. To mention a few, the studies on dentition patterns, isolation of fiber

degrading bacteria and use of unconventional feed resources has given us a new insight in our research strategies towards this magnificent animal.

During this period, one of our Scientist Dr. Mohan Mondal, received a prestigious awards "Professor G.P. Talwar Middle Career Scientist Award, 2010" for his significant contribution in the field of Reproductive health in Mithun. This is a significant achievement for our Scientist working in such a remotely located Institute.

Recently two young Scientists have joined our Institute in the field of Animal Health. I hope with their joining, we will be able to place many valuable information in regard to health aspects of Mithun in the coming days.

During this period, we successfully conducted RAC, IRC as well as IMC meetings where experts of different field of studies visited our Institute. The proceedings of those meetings helped us to refine our research programmes.

Lastly, I pray to Lord Almighty to bless us all for knowledge, wisdom and skill so that we can deliver maximum for the benefit of tribal Mithun rearers.

(C. Rajkhowa)
Director

The editorial escapade



Another year has arrived with new light of hope and energy. We are here too with a fresh copy of our bi-annual *avatar!* Little else to say, Mithun Digest has become the panoramic glimpse of NRCM. The activities of this Institute are highlighted in all its hues and grandeur – albeit in abridged manner. NRCM, situated on the eastern most fringe of this wonderful country has developed a good rapport with the local tribal community of traditional Mithun rearers and owners by virtue of its service and dedication of research work for this unique species of livestock. The scientists and staff

of this Institute, braving different difficulties arising out of remote locality, have been working for the benefit of tribal populace. We try our best to put all sorts of information about the Institute including research highlights, her personnel, her recent news and most importantly – her opportunity of service among the farmers and Mithun keepers in this Mithun country. We wish these will be helpful and serve the purpose of the Institute, community, individual researchers and for that matters anybody else associated with Mithun. Only then our sincere efforts to present all the information here would be worthwhile.



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