

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
KRISHI BHAVAN, NEW DELHI

F.No.11-3/2008-IA-I

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Dated : 25.2.2008

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To

The Director,
National Research Centre on Mithun,
Jharnapani, Medziphema,
Nagaland-797106

Subject :- Proceedings of the RAC meeting of NRC on Mithun, Nagaland held on 26th October, 2007 – Approval reg.

Sir,

I am directed to refer to your letter No.NRCM(G)163/06/8821 dated 18.1.2008 on the subject cited above and to convey the approval of the Council to the implementation of the following recommendations of the RAC made in its meeting held on 26th October, 2007 as mentioned against each :

Agenda Items	Recommendations	Comments of the Director	Comments of the Council
1. Technical	1. Documentation of different technologies that developed in the institute should be available for the benefit of mithun farmers in the form of technical bulletin	1. PME Cell has been entrusted for taking action in this regard.	Agreed. This is an important activity and should be carried out within a time frame.
	2. In future multidisciplinary research efforts are required to address the scientific problems related to mithun farming.	2. There are few multidisciplinary programmes already going on in this institute. More emphasis will be given in multidisciplinary approach for future programmes.	Agreed.
	3. Regular training programme for the farmers should be conducted in different mithun rearing areas to encourage scientific rearing of this animal.	3. Institute has already conducted some training in Nagaland. Efforts will be made to conduct such training in different mithun rearing areas of other states.	Agreed. Emphasis be given for regular training programmes. A package of practices for Mithun farmers be developed.
	4. Efforts may be initiated to	4. Initiative will be	After collecting the

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Mithun
7/3/08*

*Dr. K.K. Bhanu
POWER Dept.
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of the institute*

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	<p>identify the different ITK in mithun grazing areas because the natural flora available in these areas may be rich in medicinal values.</p> <p>5. Efficient recording system should be introduced in the farms for maintaining the pedigree and performance records of individual animal.</p> <p>6. Nuclear herd of each mithun strain should be maintained.</p>	<p>taken in this regard. The service of KVK under this institute will be utilized for this purpose.</p> <p>5. Farm Manager and scientists of AGB has been entrusted to refine the existing record keeping procedures.</p> <p>6. Although the process of maintenance of nuclear stock is being followed, however, it will further be strengthened through procurement and maintenance of quality stock of animals in this institute.</p>	<p>ITKs few may also be validated at institute level for further research.</p> <p>Agreed.</p> <p>Noted</p>
<p>2. Scientific</p>	<p>1. Flushing equipment required to be imported.</p> <p>2. In addition to MOET, Embryo collection in every cycle without injection of hormone, splitting of embryo 2-4 embryos can be prepared. or <i>in vitro</i> fertilization (IVF-ET) oocyte to be obtained from the slaughtered animal. Technology need to be developed. Superior animal for ETT programmes may be included.</p> <p>3. Survey of incidence of postpubertal and postpartum anestrus may be conducted since no data is available. Research in the area is to be taken up on the basis of incidence supported by hormonal status.</p> <p>4. Mineral nutrition work is important in improving reproductive efficiency so in the</p>	<p>The concerned scientist has been instructed to refine their programmes based on the suggestions given by the RAC.</p>	<p>Agreed.</p> <p>Agreed</p> <p>Agreed</p>

	<p>project Animal Nutritionist may be included.</p> <p>5. Survey of incidence of silent estrus in mithun may be conducted.</p> <p>6. Excellent work on hormonal levels both peptide and steroids need to be continued.</p> <p>7. Work on stress physiology may be conducted in view of the impending climate change.</p> <p>8. Study need to be conducted on identifying rumen microorganism which has the ability to detoxify mimosine as Mithuns are mostly reared on tree leaves/ shrubs.</p> <p>9. Establishment of metagenomic library of rumen microorganisms may be carried out.</p> <p>10. Total yield of milk throughout the lactation of the mithun should be conducted.</p> <p>11. Medicinal value of milk products to be undertaken in Mithun also being a unique species.</p> <p>12. Studies on parasitological diseases should be continued because of its importance.</p> <p>13. Studies on zinc and vitamin A inter relationship should be conducted for knowing the incidence of corneal opacity.</p> <p>14. Common disease prevalence in farm and field condition should be identified.</p>		<p>Agreed</p> <p>Agreed</p> <p>Study to include development of molecular markers (HSP) for heat stress.</p> <p>Agreed</p> <p>Agreed. Any new microorganism identified to be documented and sent to NIANP, Bangalore where rumen microbe repository is being developed.</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed</p>
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	<p>✓15. Studies on providing anthelmintics in feed block/salt rock may be explored as Mithuns are affected by endoparasites more often.</p> <p>16. Feeding standard of Mithun for different production parameters need to be developed.</p> <p>17. Tannin content of the tree fodder should be documented.</p> <p>18. Studies on quality hide and leather and its products may be taken up with reference to their feeding and management.</p> <p>19. Very good research has been conducted in the area of natural and cultivated fodder. Nagaland is rich in natural foliage which is required to be studied not only for their nutritive value but also for their medicinal values.</p> <p>20. Simultaneous study on macro- and micro-nutrients is advised to be done in soil, plants and animals region wise in order to come out with strategic supplementation of deficient nutrients.</p> <p>21. Study should be conducted to identify botanical name in addition to local name of tree leaves/shrubs and their proximate composition and mineral content and anti nutritional factors if any should be documented which will generate a database.</p> <p>22. Microbial protein synthesis studies need to be studied in addition to other rumen biochemical parameters. ,</p> <p>23. Effect of tannin on the methanogenic archia should be conducted to see the effect on metahhnogenomics.</p>		<p>Agreed. Also detailed study on the higher need for salt by Mithun to be conducted.</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed</p> <p>Agreed.</p> <p>This should form the part of the study at Sr. No.20.</p> <p>Agreed.</p> <p>Other interventions like use of feed blocks, TMRs and feed additives on methanogenesis</p>
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	<p>24. In order to know chromosomal abnormality of Mithun, all animals should be screened.</p> <p>25. Molecular characterization of different strain of mithun like Arunachal, Nagaland, Manipur and Mizoram required to be done for their maintenance and conservation.</p>		<p>should also be studied.</p> <p>Agreed.</p> <p>Agreed</p>
	<p>26. Reproduction data like age at first estrus, AI, first calving, calving interval etc are required to be worked out.</p> <p>27. Care should be taken while designing experiments by taking appropriate and adequate number of replicates to meet statistical norms.</p>		<p>Agreed. May be taken up on priority.</p> <p>This should be common for all research projects.</p>
<p>3. Administrative</p>	<p>1. Training hostel is essential in order to impart training to students and farmers. The institute may approach to establish the facilities and may pursue the matter with headquarter.</p>	<p>1. Request proposal will be sent to the ICAR Headquarter</p>	<p>Facilities available in the neighbouring institutes should be shared.</p>
<p>4. Miscellaneous</p>	<p>1. A seed project of mithun should be taken in collaboration with NGO and State Govt. in order to propagate these valuable animals</p>	<p>1. Provision has been kept for this programme in XIth Plan proposal.</p>	<p>This is not very important at this stage as minthuns are concentrated in only few states.</p>

Yours faithfully,



(PITAMBER)

Under Secretary(AS)

