TECHNOLOGIES READY FOR COMMERCIALIZATION

भाकृअनुप
ICAR

I.C.A.R.
N.R.C. MITHUN-NAGALAND

राष्ट्रीय मिथुन अनुसन्धान केन्द्र
(भारतीय कृषि अनुसन्धान परिषद)
मेड्जीफेमा, नागालैण्ड - ७९७१०६

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a. Area-specific Mineral Mixture of Mithun

Minerals are essential for the growth, production and reproduction of animals. Mithun are naturally reared in forest based system on the hilly terrain of the north eastern region, which are deficient in many essential macro and micro minerals due to the leaching of minerals caused by heavy rains in the region. This has led to the development of a salt crazy behaviour in mithun and has drastically affected the growth, productive and reproductive efficiency of animals (mithun) in this region. In an analytical study of mineral content of fodder, tree leaves showed that the levels of calcium, magnesium and iron contents were higher whereas, concentration of phosphorous, copper and zinc were found to be lower than the standard levels. Based on this study, an area specific mineral mixture has been formulated. This mineral mixture has been tested, evaluated and validated in the farm as well as field condition and found to improve the growth, productive and reproductive efficiency in mithun.

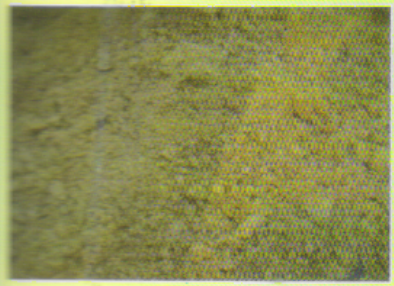
b. Low-cost high-nutritious feed block for Mithun

There is scarcity of fodder and feed for animals during the winter season in this region, which adversely affected the growth, production and reproduction of animal (mithun). However there are plenty of fodders, tree leaves, grasses available in this region during rainy season, which can

be preserved by different technologies and can be used during the scarcity period. Moreover, there are plenty of breweries wastes available in this region which are rich source of carbohydrates and can be used as binders for the preparation of feed block by incorporating nutritious tree leaves, fodders, paddy straws, other crop residues in different proportion. These feed blocks can be stored for longer period of time without any spoilage in comparatively lesser space. These are complete feed blocks and can be fed as feed or as concentrate supplement to the animal (mithun) during the period of fodder scarcity. Considering the requirement and need of the region, the Institute has developed different types of feed blocks using locally available resources, which have been tested and validated in the farm as well as field condition.

The feed blocks were made from locally available feed ingredients. Tree leaves, straw and concentrate feeds were mixed together and pressed by using feed block making machine. Similarly, feed blocks were also made from paddy straw and spent grains (a breweries industry by-product) with high moisture content (75-80%). Simultaneously, methods have also been developed for drying high moisture content by products (spent grain)/fodders more efficiently during rainy season. Performance of Mithun was found to be good with average daily growth (ADG) of 500 gm in tree leaves based feed blocks and 553.6 g from spent grain based feed blocks as against ADG of 396.2 g in control feeding.








Benefits, usefulness, problem solving, business opportunities from the technology to the Client(s):

The mineral mixture and feed blocks were prepared to supplement the mineral requirement and also as a concentrate replacement/complete feed, respectively for the animals (mithun) in this region. These have augmented the growth, production and reproductive ability of mithun and improved the socio-economic status of mithun farmers by increasing the income from mithun.

Number of successful commercial business operations a market can take and the estimated size of operation:
The total population of mithun in the region is about 2.64 lakhs and they are being reared in four states (Arunachal Pradesh, Nagaland, Manipur and Mizoram). There is a potential market for both the technologies in the region as it has direct effect on the growth, production and reproduction of mithun which will ultimately lead to the improvement of socio economic status of mithun farmers.

Competitiveness of the price of the Technology in the Market:
No similar products are available in the market exclusively for mithun, however, some products are available for dairy animals but they are not area specific and lack of specific minerals which are deficient in the soil-plant-animal system of NEH region.

Infrastructural requirement for the technology:

Land	:	0.5 Acres
Machinery	:	Packaging machine for mineral mixture and Feed block making machine for feed block
Other fixed assets	:	Small room and a store room
Manpower	:	Labours
Energy Requirement	:	Electricity

Year-wise investments and likelihood of profit generation for purchasing/ using the technology:
a. Area-specific Mineral Mixture of Mithun

1st year	:	
Non Recurring	:	One packaging machine (Rs. 3.0 lakhs approx.)
Recurring	:	Raw materials, electricity, man power etc. (Rs. 2.0 lakhs approx.
2nd Year onwards		
Recurring	:	Raw materials, electricity, man power etc. (Rs. 2.0 lakhs approx.
Profit Generation	:	The cost of commercially available mineral mixtures available for dairy animals is ranges from Rs. 100-150 per kg

where as the cost of production of area specific mineral mixture formulated by the Institute is only Rs. 52/kg including the packaging and labour charges. Therefore, it will be a highly profitable venture.

b. Low-cost high-nutritious feed block for Mithun

1st year	:
Non Recurring	: One Feed block making machine (Rs. 10.0 lakhs approx.)
Recurring	: Raw materials, electricity, man power etc. (Rs. 2.0 lakhs approx.
2nd Year onwards	
Recurring	: Raw materials, electricity, man power etc. (Rs. 2.0 lakhs approx.
Profit Generation	: The cost of tree leaves and spent grain based feed blocks is about Rs. 6.70/kg and Rs. 8.20/kg, respectively, where as the cost of concentrate feed is about Rs.14.00/kg. Therefore, it will be a highly profitable venture.

Socio-environmental influence of the technology:

In our field trials, the farmers have accepted these products (mineral mixture and feed block) as these have led to the improvement of growth, production and reproduction of mithun. Large scale implementation of these technologies would definitely be helpful for the farmers and will improve their economic status.

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