



# INTELLECTUAL Property Profile



**ICAR-NATIONAL RESEARCH CENTRE ON MITHUN**

(An ISO 9001:2015 Certified Institute)

MEDZIPHEMA, NAGALAND – 797 106

Website: <https://nrcmithun.icar.gov.in/>

Nrc On Mithun NRCMITHUN Nrc Mithun



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#### **The Director**

ICAR – NRC on Mithun, Medziphema  
Dimapur, Nagaland – 797106

Email: [director.NRCMithun@icar.gov.in](mailto:director.NRCMithun@icar.gov.in)

Website: <https://nrcMithun.icar.gov.in>

### **Editor(s)**

J. K. Chamuah, Harshit Kumar, Plabita Goswami, Sanjeev Kumar Singh & Girish Patil, S.

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## Message from Director

It is with great pleasure that I present to you an overview of the intellectual property profile of ICAR-National Research Centre on Mithun. The Centre was established in 1988 under the auspices of the Indian Council of Agricultural Research (Department of Agriculture Research and Education, Ministry of Agriculture and Farmers' Welfare, Government of India) ICAR-NRC on Mithun has been at the forefront of pioneering research and conservation efforts dedicated solely to the advancement and preservation of Mithun (*Bos frontalis*).



Our institute, Centre of situated across two campuses in Medziphema, Chumukedima district, and Porba village of Phek district, Nagaland has continuously strived to lead the global charge in Mithun research and conservation. With state-of-the-art infrastructure and seven specialized research and development sections, including Animal Genetics & Breeding, Animal Physiology & Reproduction, and Animal Health, ICAR-NRC on Mithun has been instrumental in developing cutting-edge technologies and solutions for the benefit of Mithun farmers and stakeholders. In line with our commitment to innovation, we have made significant strides in intellectual property protection. I am proud to announce that ICAR-NRC on Mithun has been granted four patents on Mithun leather processing-related technologies, along with two copyrights and one design registration. These achievements not only underscore our dedication to innovation but also highlight our efforts to safeguard intellectual property rights.


Furthermore, our institute has been actively engaged in technology transfer and commercialization initiatives, facilitating the adoption of innovative practices and enhancing the economic viability of Mithun farming. The successful transfer of technologies such as mineral dispensers, ectoparasite expeller cum drug applicators, and value-added products from Mithun meat is a testament to our commitment

to translating research into practical solutions for the farming community. One of our most notable accomplishments in recent years has been the development and deployment of m-ANITRA, a block-chain application for Mithun herd registration, traceability, and online marketing. This groundbreaking initiative leverages cutting-edge technology to improve transparency, efficiency, and accountability in the Mithun value chain, further enhancing the economic prospects for Mithun farmers.

In addition, our institute has made significant advancements in reproductive management with the development and release of a urine-based pregnancy diagnosis kit for Mithun. This innovative solution provides Mithun farmers with a reliable and cost-effective tool for pregnancy detection, enabling better herd management and reproductive efficiency.

As we move forward, ICAR-NRC on Mithun remains committed to advancing Mithun research and conservation while continuing to uphold the highest standards of intellectual property protection. I extend my sincere gratitude to all our stakeholders, collaborators, and the dedicated team at ICAR-NRC on Mithun for their unwavering support and contributions to our mission.

Thank you for your attention, and I hope this document provides valuable insights into our institute's intellectual property profile.



**(Girish Patil, S.)**  
Director

# THE EXECUTIVE SUMMARY

The booklet on Intellectual Property Profile of ICAR-NRC on Mithun provides a comprehensive overview of the institute's achievements, research initiatives, and collaborations in the field of Mithun conservation and improvement. Established in 1988 under the Indian Council of Agricultural Research (ICAR), the institute is dedicated to the continual enhancement and preservation of Mithun (*Bos frontalis*), a unique bovine species found in the hilly forests of Northeast India. The institute, situated in Nagaland, operates with a clear vision, mission, and mandate, focusing on the preservation, propagation, and genetic improvement of Mithun for sustainable agricultural practices and socio-economic development of the farming communities. With state-of-the-art infrastructure and research facilities, including laboratories for molecular genetics and livestock management, the institute conducts multidisciplinary research across various domains such as animal genetics, reproduction, nutrition, and health. Over the years, the institute has achieved significant milestones, including the complete cytogenetic analysis of Mithun, development of reproductive technologies like embryo transfer and artificial insemination, and characterization of Mithun's genetic diversity through whole-genome sequencing. Additionally, the institute has formulated innovative technologies and practices for Mithun rearing, such as area-specific mineral mixtures, balanced feed blocks, and health management protocols. Collaborations with national and international institutions, as well as engagement with stakeholders and farming communities, have facilitated technology dissemination and adoption. The Institute's Technology Management Unit plays a pivotal role in promoting intellectual property rights, facilitating patent filings, and commercializing technologies developed by the institute.



The profile also highlights the demographic and socio-economic significance of Mithun in India, emphasizing its cultural value and economic potential for tribal communities. With a steady increase in the Mithun population and ongoing conservation efforts, the institute continues to play a crucial role in ensuring the genetic integrity and sustainability of this unique bovine species. Overall, the booklet on Intellectual Property Profile of ICAR-NRC on Mithun showcases the institute's commitment to scientific excellence, innovation, and socio-economic impact in the field of animal husbandry and agricultural research, contributing to the holistic development of the livestock sector in India.

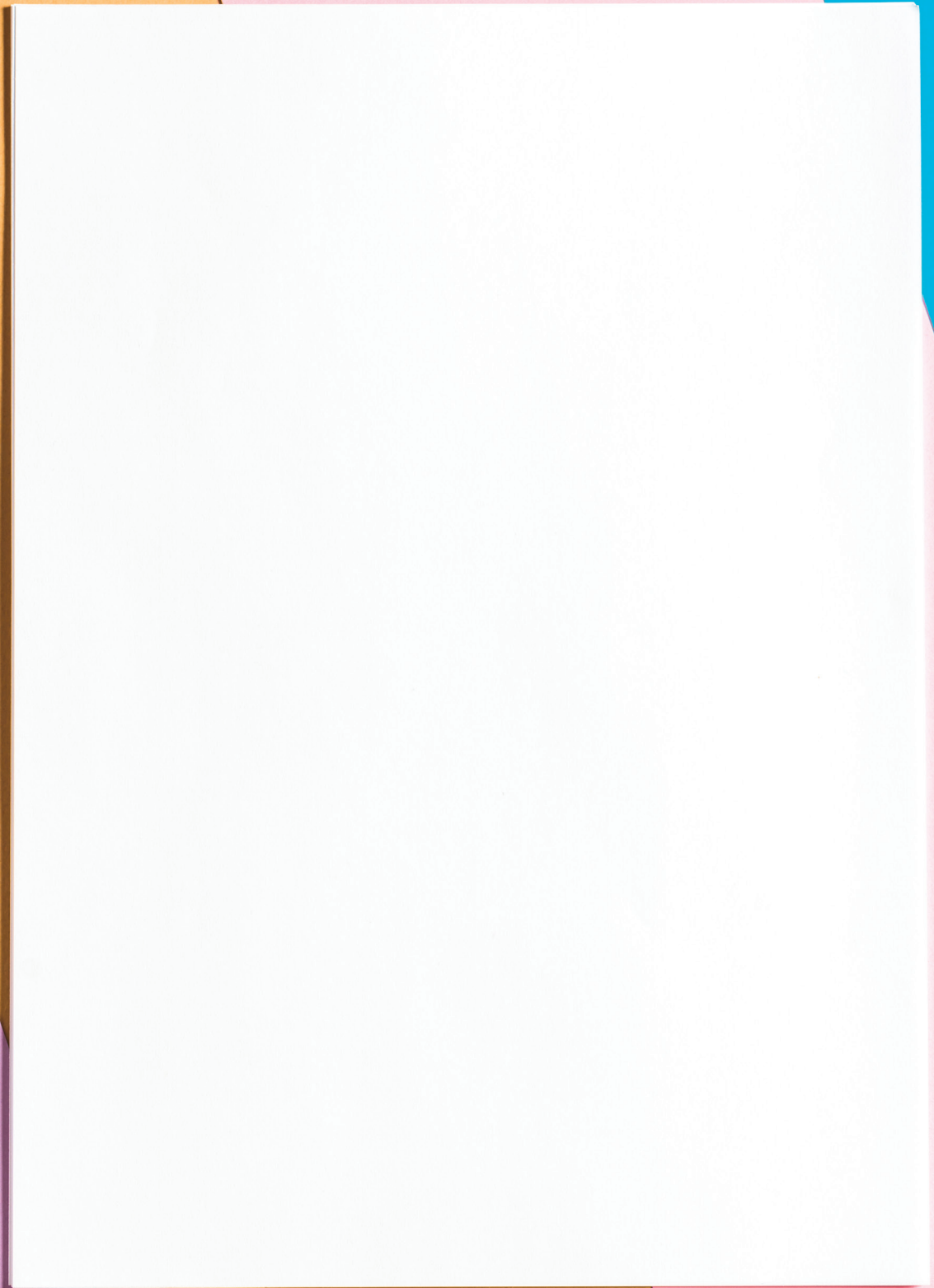


Figure: A picture showing a male and female Mithun (*Bos frontalis*)

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# 1. About the Institute

ICAR-National Research Centre on Mithun was established in the year 1988 under the aegis of Indian Council of Agricultural Research (Department of Agriculture Research and Education, Ministry of Agriculture and Farmers' Welfare, Government of India). The Institute has two campuses: the main campus is located at Medziphema, Chumukedima district, Nagaland and the other is located at Porba village of Phek district of Nagaland which is approximately 125 km from the main campus, Medziphema, 81 km from Kohima and 150 km from Dimapur. Krishi Vigyan Kendra (KVK-Phek) of the Institute is also located at the Porba campus. ICAR-NRC on Mithun is the only research organization in the world, exclusively working for the continual improvement and conservation of Mithun (*Bos frontalis*). The Research and Development (R&D) initiatives of the Institute are accomplished by seven sections viz. Animal Genetics & Breeding, Animal Physiology & Reproduction, Animal Nutrition, Animal Health, Livestock Production & Management, Livestock Production Technology and Veterinary Extension. Over the years the Institute has developed state-of-the-art infrastructure facilities; these include Biotechnology Infrastructure Facility-cum-Central Instrumentation Facility, Molecular Genetics Laboratory, Semen Processing Laboratory and Mithun Farm. The Library with online journal search facility and Agricultural Knowledge Management Unit (AKMU) cell caters to the needs of the scientists, research scholars and others staff members of the Institute as well as neighbouring Institutes. The Institute's Mithun Farm, located about 8 km away from the main campus on a hill-top, is housing 125-15 Mithuns under semi-intensive system of rearing. The second Mithun Farm is located at Porba campus of the Institute. ICAR-National Research Centre on Mithun, being the only research organization in the world, is exclusively working for the continual improvement and conservation of Mithun (*Bos frontalis*) with vision, mission, and with a clear mandate.

## Vision

To preserve, conserve and propagate superior quality Mithun germplasm for a sustainable production system and subsequent utilization for better nutritional and socio-economic support to the farmers.

**Mission:**

Formulation and adoption of scientific management, feeding practices, and advanced bio-techniques for reproduction and health with an ultimate objective to develop economically viable and sustainable technologies for the benefit of the farming communities rearing Mithun.

**Mandate:**

The National Research Centre on Mithun is functioning for developing the scientific and sustainable Mithun rearing system and for catering to the needs of Mithun farmers with the following mandates:

- Identification, evaluation, and characterization of Mithun germplasm available in the country.
- Conservation and improvement of Mithun for meat and milk.
- To act as a repository of information on Mithun.

During the last more than 35 years, the Institute has not only generated invaluable scientific data towards the understanding of this unique species but also the developed several packages of practices and technologies. Conservation efforts including taming of Mithun and demonstrating an alternative system of semi-intensive rearing of Mithun like other bovine species resulted in the complete domestication of the species.

Complete cytogenetic analysis including karyotyping and different chromosomal bandings (C-banding and R-Banding) carried out in the Institute and revealed that the normal diploid number of Mithun was 58 XY & 58 XX for males and female. In order to find out the karyotypic evolution of Mithun, the FISH technique was used on the metaphase chromosome of Mithun as well as the wild ancestral species, Gaur. Besides, several economically important genes including kappa casein, leptin, and growth hormones were also characterized. In the recent past, this section also carried out the microsatellite-based characterization of different Mithun populations and muscle transcriptome analysis. Presently, whole-genome sequencing of Mithun for the construction of a draft genome assembly and genomic characterization of Mithun using bovine HdChip estimating population diversity parameters in farm and field Mithun and delineation of the evolutionary relationship of Mithun with its wild ancestors (*Bos gaurus*). Like other animals, Mithun is also prone to suffer from various disease conditions including parasitic diseases. Since the animals are semi-domesticate, managed in fenced tracts of forests rather than being kept in or

near villages, they are exposed to the increased risks of getting and transmitting diseases of both the domestic and wild animals. Besides this tropical climates like high rainfall, high humidity (70%- 80%), varying temperature (15-35°C) highly favours different disease-causing organisms. During the past two decades, periodic studies conducted at the institute and the field level survey indicated that Mithun is also susceptible to a wide variety of diseases including viral, bacterial, fungal, and parasitic diseases. Many diseases have been recorded in clinical form while others have been recorded in seroprevalence studies conducted in the Institute farm as well as in field-level survey in Mithun inhabiting states. This section also prioritized on to developing safe, environment-friendly alternative therapeutics for animal health care by screening the rich floral biodiversity of NEH. The section is engaged in providing the health care services to institute Mithun farms at Medziphema and Porba as well advanced diagnostic services to Department of Veterinary & AH, Govt. of Nagaland.

The Institute's Technology Management Unit (ITMU) has been established to promote the development of infrastructural facilities for intellectual property registration. It aims to enhance the legal, institutional, and administrative framework to assist intellectual property owners and conduct training and capacity-building activities for scientists and other research workers. The ITMU unit at the NRC on Mithun has taken the lead in initiating the filing of patents, trademarks, and geographical indications. This unit collaborates closely with other scientific, technical, and administrative staff to ensure the smooth functioning of the unit. Under the ITMU cells initiative, two workshops and one Industry Scientist meet were organized in 2023. These events were part of a capacity-building program with the objective of educating and raising awareness among scientific communities about intellectual property rights in research activities. The Institute secured 6 copyrights, 7 designs, and 5 patents and 7 trademarks. Furthermore, five technologies were successfully commercialized, and the Institute obtained ten certified technologies from the council. In 2023, the Institute also applied for one patent with the Patents Office in Kolkata, demonstrating its commitment to innovation and the advancement of intellectual property.

## 2. MAJOR ACHIEVEMENT OF ICAR-NRC ON MITHUN FROM 2014-2023

Major Research Achievements	<ul style="list-style-type: none"><li>• Whole genome sequencing of Mithun</li><li>• Morphometric-cum-physical characterization of Mithun populations of Nagaland Arunachal Pradesh Mizoram and Manipur</li><li>• Phenotypic and Genetic Characterization of Mithun and determination of genetic relationship with gaur and other bovine species based on microsatellites and bovine HdChip</li><li>• Construction of a draft assembly through next-generation sequencing and identification of around 27000 genes in Mithun genome</li><li>• Standardization of semen collection using Electro-Ejaculation technique</li><li>• Superovulation and birth of first AI calf of Mithun through Embryo Transfer Technology</li><li>• Enhancing reproductive efficiency of Mithun using emerging technologies through oestrus synchronization protocols and AI in Mithuns</li><li>• Preparation of first ever R- and C-banded karyotypes of Mithun and a Cytogenetic Digital Album of Mithun</li><li>• Muscle transcriptome analysis of Mithun of divergent growth performance and identification of differentially expressed genes (Bio-Project ID PRJNA307305)</li><li>• Profiling gut microbiome of Mithun</li><li>• Chromosome profiling and genetic characterization (using RAPD Microsatellite hdChip and MASA) of different Mithun populations and delineation of evolutionary relationship of Mithun with its wild ancestors Gaur (<i>Bos gaurus</i>)</li><li>• Mitochondrial sequencing revealed a close genetic relatedness among the Mithun from different geographical locations and a common origin of Mithun and gaur from an ancient and extinct Bos species</li><li>• Development of simple methodology for determination of age of Mithun under field conditions and nutritional evaluations of 260 feed resources for incorporation in the total mixed ration</li><li>• Formulation of area-specific mineral mixture for Mithun</li><li>• Low cost complete feed block using locally available trees/shrubs and industrial by-products which improved the dry matter and gross energy intake</li><li>• Developed a method for drying high moisture content agro-industrial by-products (wet cake) for making paddy straw incorporated feed block suitable for feeding of Mithun during the lean season</li></ul>
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## INTELLECTUAL PROPERTY PROFILE OF ICAR-NRC ON MITHUN, NAGALAND

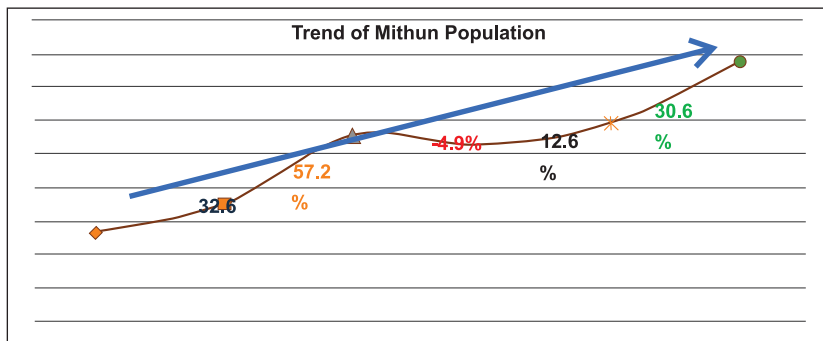
	<ul style="list-style-type: none"> <li>• Developed and standardized a protocol for collection and freezing of semen and artificial insemination (AI) in Mithun leading to the birth of AI calves in the farm as well as in farmers' field</li> <li>• Standardized the protocol for estrus synchronization, collection and cryopreservation of embryos in Mithun leading to the birth of first ET calf 'BHARAT' on May 2012</li> <li>• Surveillance and control of parasitic bacterial and viral diseases in Mithun</li> <li>• Developed a health calendar for better veterinary care and prophylaxis of Mithun</li> <li>• Qualitative characterization of Mithun milk and meat</li> <li>• Developed value added milk products, meat products and leather products</li> </ul>
Collaborations	<ul style="list-style-type: none"> <li>• College of Veterinary Science and Animal Husbandry Jaluki Paren Nagaland</li> <li>• College of Veterinary Science &amp; Animal Husbandry Selesih Mizoram</li> <li>• College of Horticulture &amp; Forestry Pasighat Arunachal Pradesh</li> <li>• Institute also had collaboration with</li> <li>• Assam agricultural University Jorhat Assam</li> <li>• Maharashtra Agriculture and Forestry university (MAFSU)</li> <li>• National Institute of Technology Nagaland</li> <li>• Patkai Christian College (Autonomous) Chumukedima Nagaland,</li> <li>• School of Agricultural Sciences &amp; Rural Development (SASRD) under Nagaland University</li> <li>• St. Joseph University Dimapur Nagaland</li> <li>• Karnataka Veterinary Animal and fishery sciences University Bidar</li> <li>• Assam Rifles Directorate of Veterinary Services &amp; Animal Husbandry of Mithun rearing states</li> <li>• Agriculture Technology Management Agency (ATMA) ATARI-Zone II and III NABARD</li> <li>• M/s Anitra Tech Pvt. Ltd Hyderabad Telangana</li> <li>• Hope Channel (Ebenezer Welfare Society) Dimapur-Nagaland</li> </ul>
Technology Generated	<ul style="list-style-type: none"> <li>• Package of practices for Semi-intensive Mithun rearing</li> <li>• Development of semi-intensive Mithun rearing model</li> <li>• Area specific mineral mixture</li> <li>• Low cost balanced feed block for Mithun</li> <li>• Semen collection and preservation</li> <li>• Estrus synchronization &amp; AI</li> <li>• Embryo Transfer technology in Mithun</li> <li>• Determination of age of Mithun through dentition pattern</li> <li>• Value added meat and milk products</li> <li>• Innovative Chicken Killing Cone</li> <li>• Poultry Maize Feeder</li> <li>• Meat Dryer</li> <li>• Portable mineral block dispenser with adjustable height</li> <li>• De-Save Portable Mineral Block Dispenser for Animals</li> </ul>

	<ul style="list-style-type: none"> <li>• Large Animal Ectoparasite Expeller cum Drug Applicator</li> <li>• Travis for restraining of bovines'</li> <li>• Method of preparing mineral block added with environment friendly materials</li> <li>• Preg-DM: Urine-based pregnancy diagnosis kit for Mithun</li> <li>• Mithun Semen collection by electro-ejaculation technique and cryopreservation</li> </ul>
Patent granted	Patent granted: 06
Designs	Granted: 07
Copyrights	Granted: 05 Filed: 11
Trade marks	Granted: 07
App developed	App developed: 01
Extension activities and Trainings organized	<p>A total of <b>148</b> extension activities viz.,</p> <ul style="list-style-type: none"> <li>• 23 nos. of Mithun farmers' trainings</li> <li>• 13 nos. Stakeholders' meeting</li> <li>• 22 nos. Mithun Mela</li> <li>• 32 nos. Health and vaccination camps</li> <li>• 50 nos. TSP input distribution for semi-intensive Mithun farming</li> <li>• 08 nos. bull exchange programme and</li> </ul>
No. of farmers benefited	20134 farmers
No. of semi-intensive unit established	50
Administrative reforms	<p>PFMS implemented since 2017</p> <p>MIS-FMS implemented</p> <p>e-procurement implemented since 2017</p> <p>GeM: implemented since 2017</p> <p>Cashless transactions through swipe machine</p>
Infrastructure developed/ Laboratory upgradation	<ul style="list-style-type: none"> <li>• Establishment of semen processing laboratory and semen Bank</li> <li>• Establishment of Meat processing laboratory</li> <li>• Development of bull shed at Institute Mithun farm</li> <li>• Development of 02 numbers of Experimental sheds at institute Mithun farm</li> <li>• Development of scientific slaughterhouse for Mithun is in progress</li> <li>• Establishment of 02 conservation and propagation unit of Mithuns at Thevopisu Phek district Nagaland and Khonoma Kohima district Nagaland</li> <li>• Establishment of Fodder museum and demonstration plot at Mithun farm Medziphema Nagaland</li> </ul>

### 3. A LITTLE ABOUT MITHUNS IN INDIA

Mithun (*Bos frontalis*) is rare bovine species of hilly forests of northeast India. It is considered to be originated from an ancient and extinct bovine species. Mithun (*Bos frontalis*), ‘the cattle of mountains’ are the pride of the north-east region of India which is distributed in four north-eastern states particularly of Arunachal Pradesh, Nagaland, Manipur, and Mizoram, and is known to be a symbol of status and prosperity, peace and harmony among the tribal people of this region. Mithun is not only found in India, but also found in Myanmar, Bhutan, Bangladesh, China, and Malaysia.

The animal plays a central role in the socio-economic & cultural life of tribal people. It is the State animal of Nagaland and Arunachal Pradesh. As per the 20<sup>th</sup> Livestock census, the total Mithun population in the country is 3.9 Lakhs, with a 30.6% increase in the population from the last census. Arunachal Pradesh is having the highest number of Mithun at 89.7%, 5.98% in Nagaland, 2.36% Manipur, and 1.02% Mizoram.



**Table: Mithun population dynamics across last different census**

STATE	2003	2007	2012	2019
Arunachal Pradesh	1,84,343	2,18,931	2,49,000	3,50,154
Nagaland	40,452	33,385	34,871	23,123
Manipur	19,737	10,024	10,131	9,059
Mizoram	1,783	1,939	3,287	3,957

## 4. INSTITUTE TECHNOLOGY MANAGEMENT UNIT (ITMU)

The Institute's Technology Management Unit (ITMU) has been established to promote the development of infrastructural facilities for intellectual property registration. It aims to enhance the legal, institutional, and administrative framework to assist intellectual property owners and conduct training and capacity-building activities for scientists and other research workers. The ITMU unit at the NRC on Mithun has taken the lead in initiating the filing of patents, trademarks, and geographical indications. This unit collaborates closely with other scientific, technical, and administrative staff to ensure the smooth functioning of the unit. Under the ITMU cells initiative, two workshops and one Industry Scientist meet were organized in 2023. These events were part of a capacity-building program with the objective of educating and raising awareness among scientific communities about intellectual property rights in research activities. The Institute secured six copyrights, seven designs, and five patents and seven trademarks. Furthermore, five technologies were successfully commercialized, and the Institute obtained ten certified technologies from the council. In 2023, the Institute also applied for one patent with the Patents Office in Kolkata, demonstrating its commitment to innovation and the advancement of intellectual property.

**The Composition Principal Investigator and Co-Investigator of ITMU under National Agricultural Innovation project:**

S. No.	Name of Scientist	Principal Investigator (PI)/Co-Investigator
01	Dr. Jayanta Kumar Chamuah	PI
02	Dr. H. Lalzampuia	Co-PI
03	Dr. Harshit Kumar	Co-PI
04	Dr. Plabita Goswami	Co-PI



## 5. INTELLECTUAL PROPERTY RIGHTS OF ICAR NRC ON MITHUN

### 5.1 Patents granted

S. No.	Date of filling Application IPR title (Provisional/ Complete)	Title	Patent number	Granted on
1	13.12.2012	A method for bio-preservation of Mithun hides	327187	11.12.2019
2	07.11.2012	An energy efficient post tanning process for Mithun hides	428786	13.04.2023
3	30.03.2012	A process of making leather without any large machinery	432257	19.05.2023
4	19.02.2013	A method of processing rabbit fur on leather	431823	15.05.2023
5	18/02/2013	A method of removal of chromium from chrome liquor obtained after processing of Mithun hides	442476	02.08.2023
6	07.11.2012	A novel method of chrome tannage of mithun hides with glyoxalic acid	510809	14.02.2024

## 5.2 Patent under Process

S. No.	Application/ Registration No	Name of Innovation/ Technology/Products/ Verities	Date of Filling/ Registration	Status
1	1334/KOL/2012	A method for processing rabbit pelts and fur	20/11/2012	Application in Hearing
2	1197/KOL/2012	An improved method for chrome Tanning Mithun hides	17/10/2012	In Order For Grant Under Section 3, Awaiting Nba Approval
3	202111013662	Method of preparing mineral block added with environment friendly materials	27.03.2021	Applied
4	202331027331	Process for drying agro-industrial by-products and using it as a component of animal feed block	13.04.2023	Applied

## 5.3 No. of design granted

S. No.	Name of design	Application date	Date of filing request examination	Date of submission of reply to FER	Granted on
1	Humane Chicken Killing Cone In Class 08-05 (330515-001)	27.06.2020	- There is no requirement to file a request separately. When an application is filed, it is examined	22.10.2020	02.02.2021
2	Poultry Maize Feeder For Backyard Chicken In Class 30-03 (330514-001)	27.06.2020	-same as above-	22.10.2020	04.01.2021
3	Dryer Class 15-05(330513-001)	27.06.2020	same as above-	22.10.2020	18.03.2021
4	Portable mineral block dispenser with adjustable height	06.11.2020	-same as above-	21.04.2021	10.11.2021
5	De-Save Portable Mineral Block Dispenser for Animals	23.12.2019	-same as above-	08.12.2020	11.11.2022

S. No.	Name of design	Application date	Date of filing request examination	Date of submission of reply to FER	Granted on
6	Large Animal Ectoparasite Expeller cum Drug Applicator	27.11.2020	-same as above-	08.01.2021	16.08.2022
7	Travis for restraining of bovines.	08.03.2023	-	-	25.05.2023

### 5.4 Copy right

Name of Copyright	Application/ Registration No	Name of Innovation/ Technology/Products/ Verities	Date of Filing/ Registration	Granted on
Cinematograph Film	12786/2021-CO/CF	Promotional video on semi-intensive Mithun farming (Registration No. CF-5014/2021)	09.06.2021	25.08.2021
Mithun Mitra App	7076/2020-CO/SW Software	Mithun Mitra App (Registration number: SW-13613/2020)	28.05.2020	17.08.2020
Cinematograph Film	Diary Number: 23232/2021-CO/CF	Documentary on NICRA Intervention: 2012-2020 KVK Phek	24.09.2021	31.12.2021
Cinematograph Film	Diary Number: 19874/2022-CO/CF	Estrus detection and Artificial Insemination (AI) in Mithun	20.09.2022	23.05.2023
Artistic work	Diary Number: 26993/2022-CO/A	Semi-intensive rearing model	23.12.2022	22.11.2023
Cinematograph Film	Diary Number: 19876/2022-CO/CF	Diversified Uses of Mithun	20.09.2022	15.11.2023



### 5.5 List of Trade mark

IPRs	Application/ Registration No	Name of Innovation/ Technology/Products/ Verities	Granted on
Trademark	2264166	μLEDER, (class 18) Leather product: jacket shoes wallet hand bags suitcase belt and key ring	15.10.2015
	2265996	μthimin (class 5), mineral Mixture	13.08.2015
	2267656	μeef (class 29), Meat of Mithun	02.05.2014
	2267657	μlk (class 29), Lassi, barfi, rasgulla paneer	12.08.2015
	2272255	μyym (class 29), Meat patties, smoke meat meat sauces, meat block, seasoned dried Mithun meat	14.10.2015
	2272256	Logo of Mithun head (class 5, 18, 29)	14.10.2015
	2272257	NRCM (class 5, 18, 29)	14.10.2015
			Renewal on 24.02.2022

### 5.6 Technology commercialization

S. No.	Name of technology	Commercialized through party	Date
01	Large Animal Ectoparasite Expeller cum Drug Applicator	Creative Displayers, West Bengal	24.02.2023
02	De-Save Portable Mineral Block Dispenser for Animals	Creative Displayers West Bengal	16.07.2023
03	Production of Value Added Products from Mithun Meat and Providing Incubation Services	M/s. North East Animal Farming Initiative LLP First floor Reid marwet next to boos lodge Opp CRPF 2nd gate 9th mile Ribhoi Meghalaya	01.09.2023
04	Production of Value Added Products from Mithun Meat and Providing Incubation Services	Life Ministry Learning Centre (LMLC) Ruve Khel Naga United Village 4th Mile Dimapur 797115	01.09.2023
05	Commercialization of two products of Mithun Meat (Nuggets and Sausages)	M/s. North East Animal Farming Initiative LLP First floor Reid marwet next to boos lodge Opp CRPF 2nd gate 9th mile Ribhoi Meghalaya	21.1.2023

### 5.7 List of technologies approved by ICAR

S. No.	Name	Year	Lead Developer	Associate Developer
1	Innovative Chicken Killing Cone	2020-21	Dr Debojyoti Borkotoky (Lead)	Dr Nazrul Haque Dr Rinku Bharali Dr Abhijit Mitra
2	Poultry Maize Feeder	2020-21	Dr Debojyoti Borkotoky	Dr Nazrul Haque Dr Hannah K. Asangla Dr Abhijit Mitra

## INTELLECTUAL PROPERTY PROFILE OF ICAR-NRC ON MITHUN, NAGALAND

S. No.	Name	Year	Lead Developer	Associate Developer
3	Meat Dryer	2020-21	Dr Debojyoti Borkotoky	Dr Nazrul Haque Dr T.Esther Longkumer Dr Abhijit Mitra
4	Portable mineral block dispenser with adjustable height	2020-21	Dr. Nazrul Haque	Dr Debojyoti Borkotoki Dr Saroj Toppo Dr Harish Chandra Yadav Dr Abhijit Mitra
5	De-Save Portable Mineral Block Dispenser for Animals	2019-20	Dr. Nazrul Haque	Dr Debojyoti Borkotoki Dr Saroj Toppo Dr Harish Chandra Yadav Dr Abhijit Mitra
6	Large Animal Ectoparasite Expeller cum Drug Applicator	2020-21	Dr Debojyoti Borkotoky	Dr Jayanta Kumar Chamuah Dr Abhijit Mitra
7	Travis for restraining of bovines'	2021-22	Dr. Sapunii Stephen Hanah	Dr KezhavituoVupru, Dr Kobu Khate Dr LaishramSunitibala Devi Dr J.K. Chamuah Dr Girish Patil S.
8	Method of preparing mineral block added with environment friendly materials	2021-22	Dr. Nazrul Haque,	Dr Kobu Khate Dr Debojyoti Borkotoki Dr Saroj Toppo Dr Abhijit Mitra
9	Preg-DM: Urine-based pregnancy diagnosis kit for Mithun	2020-22	ICAR-NRCM Dr. Vikram R. ICAR-CIRB Dr. Ashok Kumar Balhara	ICAR-NRCM Dr M. H. Khan Dr Abhijit Mitra  ICAR-CIRB Mrs Suman Sangwan Dr S K Phuli Dr R K Sharma Dr Sajjan Singh Dr T K Datta
10	Mithun Semen collection by electro-ejaculation technique and cryopreservation	2019-21	Dr. M. H. Khan	Dr Vikram R. Dr A. Mitra

## 6. GALLERY OF ICAR-NRCM TECHNOLOGIES APPROVED BY ICAR



Large animal ectoparasite expeller cum drug applicator



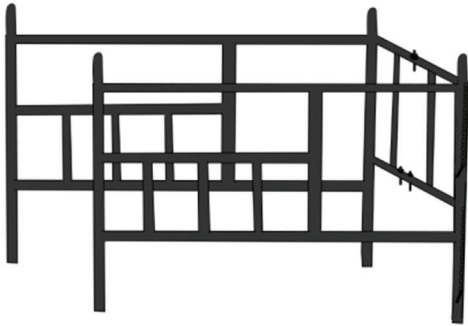
Innovative meat dryer



Portable mineral block dispenser with height adjustment facility



Desave mineral block dispenser for Mithun, cattle and buffalo



Modified travis for restraining of Mithun



Poultry maize feeder cum drinker



Collection by electroejaculation technique in Mithun





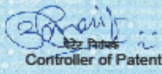


Preg-DM: Urine-based pregnancy diagnosis kit for Mithun



Innovative chicken killing cone

# GALLERY OF REGISTRATION CERTIFICATES

 <p><b>INTELLECTUAL PROPERTY INDIA</b> PATENTS   DESIGNS   TRADE MARKS GEOGRAPHICAL INDICATIONS</p>	 <p>भारत सरकार GOVERNMENT OF INDIA</p>	<p>क्रमांक : 033124054 SL No :</p>
		
<p>भारत सरकार GOVERNMENT OF INDIA पेटेंट कार्यालय THE PATENT OFFICE पेटेंट प्रमाणपत्र PATENT CERTIFICATE (Rule 74 of The Patents Rules)</p>		
पेटेंट सं. / Patent No.	:	428786
आवेदन सं. / Application No.	:	1277/KOL/2012
फाइल करने की तारीख / Date of Filing	:	07/11/2012
पेटेंटी / Patentee	:	NATIONAL RESEARCH CENTRE ON MITHUN (I.C.A.R)
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में बचावकटित AN ENERGY EFFICIENT POST TANNING PROCESS FOR MITHUN HIDES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2012 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p>		
<p>It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ENERGY EFFICIENT POST TANNING PROCESS FOR MITHUN HIDES as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of November 2012 in accordance with the provisions of the Patents Act,1970.</p>		
<p>INTELLECTUAL PROPERTY INDIA PATENTS   DESIGNS   TRADE MARKS GEOGRAPHICAL INDICATIONS</p>		
	 <p>Controller of Patent</p>	
अनुदान की तारीख / Date of Grant	:	12/04/2023
<p>टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2014 के सातवें दिन को और उसके पचास फ्रॉक वर्ष में उसी दिन देव होगी। Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7<sup>th</sup> day of November 2014 and on the same day in every year thereafter.</p>		





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA

पेटेंट कार्यालय  
THE PATENT OFFICE

पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 033124503  
SL No :



पेटेंट सं. / Patent No. : 432257  
आवेदन सं. / Application No. : 360/KOL/2012  
फाइल करने की तारीख / Date of Filing : 30/03/2012  
पेटेंटी / Patentee : NATIONAL RESEARCH CENTRE ON MITHUN, (ICAR)

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में प्रयाप्तकृत LEATHER MATERIAL DERIVED FROM THE HIDE OF THE BOVINE SPECIES OF MITHUN AND A METHOD FOR PREPARING THE SAME IN RURAL INDUSTRY नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2012 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled LEATHER MATERIAL DERIVED FROM THE HIDE OF THE BOVINE SPECIES OF MITHUN AND A METHOD FOR PREPARING THE SAME IN RURAL INDUSTRY as disclosed in the above mentioned application for the term of 20 years from the 30<sup>th</sup> day of March 2012 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 19/05/2013  
Date of Grant :

*(Signature)*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2014 के तीसरे दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30<sup>th</sup> day of March 2014 and on the same day in every year thereafter.



**INTELLECTUAL  
PROPERTY INDIA**

PATENTS | DESIGNS | TRADE MARKS  
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सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA

पेटेंट कार्यालय  
THE PATENT OFFICE

पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 14 Of The Patents Rules)

क्रमांक : C33109299  
SL No :



पेटेंट सं. / Patent No.	:	32718/
आवेदन सं. / Application No.	:	1402/KOL/2012
प्रदत्त करने की तारीख / Date of Filing	:	13/12/2012
पेटेटी / Patentee	:	NATIONAL RESEARCH CENTRE ON MITHUN (I.C.A.R)

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD FOR BIO-PRESERVATION OF MITHUN HIDES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 13th day of December 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR BIO-PRESERVATION OF MITHUN HIDES as disclosed in the above mentioned application for the term of 20 years from the 13th day of December 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/12/2019  
Date of Grant :

*AKSudhi*  
पेटेंट नियंत्रक  
Controller of Patents

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 13th day of December 2014को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
Note.- The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13th day of December 2014 and on the same day in every year thereafter.



**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA

पेटेंट कार्यालय  
THE PATENT OFFICE

पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 033124445  
SL No :



पेटेंट सं. / Patent No. : 431823  
आवेदन सं. / Application No. : 192/KOL/2013  
फाइल करने की तारीख / Date of Filing : 19/02/2013  
पेटेटी / Patentee : NATIONAL RESEARCH CENTRE ON MITHUN (I.C.A.R)

प्रमाणित किया जाता है कि पेटेटी को, उपरोक्त आवेदन में ब्ययाप्रकटित A METHOD OF PROCESSING RABBIT FUR ON LEATHER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2013 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF PROCESSING RABBIT FUR ON LEATHER as disclosed in the above mentioned application for the term of 20 years from the 19<sup>th</sup> day of February 2013 in accordance with the provisions of the Patents Act, 1970.




अनुदान की तारीख : 15/05/2023  
Date of Grant :


पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जनवरी 2015 के उन्नीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देना होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19<sup>th</sup> day of February 2015 and on the same day in every year thereafter.






**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

ब्रम सं/SL No.-033 33153



**पेटेंट कार्यालय, भारत सरकार | The Patent Office, Government Of India**


**पेटेंट प्रमाण पत्र | Patent Certificate**

(पेटेंट निगमनली का नियम 74) | (Rule 74 of The Patents Rules)

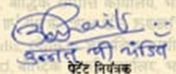
पेटेंट सं. / Patent No.	510809
आवेदन सं. / Application No.	1276KOL/2012
फाइल करने की तारीख / Date of Filing	07/11/2012
पेटेंटी / Patentee	NATIONAL RESEARCH CENTRE ON MITHUN (I.C.A.R)

प्रमाणित किया जाता है कि पेटेंटी को, ऊरोक्त आवेदन में यथाप्रकटित **A NOVEL METHOD OF CHROME TANNAGE OF MITHUN HIDES WITH GLYOXALIC ACID** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2012 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A NOVEL METHOD OF CHROME TANNAGE OF MITHUN HIDES WITH GLYOXALIC ACID** as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of November 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/02/2024  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patents

**टिप्पणी -** इस पेटेंट के नवकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2014 के सातवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note -** The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 7<sup>th</sup> day of November 2014 and on the same day in every year thereafter.

प्रश्न ओ - 2  
FORM O-2



भारत सरकार  
GOVERNMENT OF INDIA  
व्यापार चिन्ह रजिस्ट्री  
TRADE MARKS REGISTRY

क्रमांक  
No.

1240166

व्यापार चिन्ह अधिनियम, 1999  
Trade Marks Act, 1999

व्यापार चिन्ह के रजिस्ट्रीकरण का प्रमाणपत्र, धारा 23 (2) नियम 62 (1)  
Certificate of Registration of Trade Mark, Section 23 (2), Rule 62 (1)

व्यापार चिन्ह संख्या / Trade Mark No. 2264166 दिनांक / Date 10/01/2012 ज.संख्या / J.No. 1667

यह प्रमाणित किया जाता है कि जिस प्रकार चिन्ह की सम्पत्कृति इसके साथ संलग्न है, यह के बारे में दिनांक नाम से रजिस्ट्रीकृत हो चुका है।

Certified that the Trade Mark / a representation is annexed hereto, has been registered in the name(s) of

NATIONAL RESEARCH CENTRE ON MITHUN, (ICAR), JHARNAPANI, MEDZIPHEMA, DIST. DIMAPUR, NAGALAND-797106, INDIA, Indian., Manufacturer & Merchant, (Body incorporate)

In Class 18 Under No. 2264166 as of the Date 10 January 2012 in respect of  
Leather product- Jacket, Shoes, Wallet, Hand bags, Suitcase, Belt and Key ring included in class 18



मेरे निदेश पर आज के 15<sup>th</sup> मास के 15<sup>th</sup> दिव को इस पर मुहर लगायी गई।  
Sealed at my direction, this 15<sup>th</sup> day of October, 2015

*[Signature]*

*[Signature]*

व्यापार चिन्ह रजिस्ट्री,  
Trade Marks Registry, KOLKATA

व्यापार चिन्ह रजिस्ट्रार  
Registrar of Trade Marks

रजिस्ट्रीकरण अवधि की शुरुआत से 10 वर्ष के लिए है और अनुदान यह 10 वर्ष की अवधि के लिए और प्रत्येक 10 वर्ष की अवधि के अन्त में पर दो नवीनीकरण किया जा सकता है।  
Registration is for 10 years from the date of application and may then be renewed for a period of 10 years and also at the expiration of each period of 10 years.  
यह प्रमाणपत्र कानूनी कार्यवाही के प्रारंभ के लिए या विदेश में रजिस्ट्रीकरण अधिनियम करने के लिए नहीं है।  
This certificate is not for use in Legal proceedings or for obtaining Registration abroad.

टिप्पणी - इस व्यापार चिन्ह के स्वामित्व में कोई परिवर्तन होने पर, सहायक के मूल स्थान के पते में बदलाव में परिवर्तन के लिए भी रजिस्ट्रार को सूचित करने के लिए अनुरोध किया जा सकता है।  
Note: Upon any change of ownership of this Trade Mark, or change in address, of the principal place of business or address for services in India a request should AT ONCE be made to register the change.



Extracts  
from the Register  
of Copyrights



Date: 25/08/2021

1. Registration Number	: CF-5014/2021
2. Name, address and nationality of the applicant	: DIRECTOR, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN
3. Nature of the applicant's interest in the copyright of the work	: OWNER
4. Class and description of the work	: CINEMATOGRAPH FILM WORK
5. Title of the work	: PROMOTIONAL VIDEO ON SEMI-INTENSIVE MITHUN FARMING
6. Language of the work	: NAGAMESE (ENGLISH SUBTITLES)
7. Name, address and nationality of the author and if the author is deceased, date of his decease	: KAMNI PAJA BEAM, SCIENTIST ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. MERAJ HAIDER KHAN, DIRECTOR ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. STEPHEN SAPUNI HANAH, SCIENTIST ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. KORE KHATE, CHIEF TECHNICAL OFFICER ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. NAZRUL HAQUE, PRINCIPAL SCIENTIST ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. JAYANTA KUMAR CHAMUAH, SCIENTIST ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  MS. ALOLI BENGAM, AAO ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  SHEE UTPAL GHOSH, AF & AO ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DR. ABHIRT MITRA, DIRECTOR ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN
8. Whether the work is published or unpublished	: UNPUBLISHED
9. Year of first publication and name, address and locality of the publisher	: N.A.
10. Subsequent publications, if any, and names, addresses of the publishers	: N.A.
11. Nationalities of the owners of various rights in the work and the extent of rights held by them, particulars of assignments and licences, if any	: DIRECTOR, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHEMA, NAGALAND, INDIA-797106 INDIAN  DEPUTY REGISTRAR OF COPYRIGHTS
12. Names, addresses and nationalities of other persons, if any, authorised to assign or licence of rights comprising the copyright	: N.A.
13. If the work is an 'Artistic work', the location of the original work, including name, address and nationality of the person in possession of the work. (In the case of an architectural work, the year of completion of the work should also be shown)	: N.A.



*[Handwritten signature]*





Extracts  
from the Register  
of Copyrights



Dated : 30/12/2021

1. Registration Number	:	<b>CF-5056/2021</b>
2. Name, address and nationality of the applicant	:	DIRECTOR, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHARA, NAGALAND, INDIA-797306, INDIAN
3. Nature of the applicant's interest in the copyright of the work	:	OWNER
4. Class and description of the work	:	CINEMATOGRAPH FILM WORK
5. Title of the work	:	DOCUMENTARY ON MICRA INTERVENTION- 2012-2020, KVK, PHEK
6. Language of the work	:	ENGLISH
7. Name, address and nationality of the author and if the author is deceased, date of his decease	:	DR. DEBOPVOTI BORKOTOKY, KVK-PHEK, ICAR-NRC ON MITHUN, PORGIA, PFUTSERO, NAGALAND, INDIA-797307, INDIAN  DR. T. ESTHER LONGKUMER, KVK-PHEK, ICAR-NRC ON MITHUN, PORGIA, PFUTSERO, NAGALAND, INDIA-797307, INDIAN  DR. BENKU BHARALI, KVK-PHEK, ICAR-NRC ON MITHUN, PORGIA, PFUTSERO, NAGALAND, INDIA-797307, INDIAN  DR. HANNAH K ASANGA, KVK-PHEK, ICAR-NRC ON MITHUN, PORGIA, PFUTSERO, NAGALAND, INDIA-797307, INDIAN  MISS VESALI KHAPI, KVK-PHEK, ICAR-NRC ON MITHUN, PORGIA, PFUTSERO, NAGALAND, INDIA-797307, INDIAN  DR. MERAJ HAIDER KHAN, DIRECTOR, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHARA, NAGALAND, INDIA-797306, INDIAN
8. Whether the work is published or unpublished	:	UNPUBLISHED
9. Year and country of first publication and name, address and nationality of the publisher	:	N.A.
10. Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	:	N.A.
11. Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each, together with particulars of assignments and licences, if any	:	DIRECTOR, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, ICAR-NATIONAL RESEARCH CENTRE ON MITHUN, MEDZOPHARA, NAGALAND, INDIA-797306, INDIAN
12. Names, addresses and nationalities of other persons, if any, authorized to assign or license of rights comprising the copyright	:	N.A.
13. If the work is an 'Artistic work', the location of the original work, and the address and nationality of the person in possession of the original work, or in the case of an architectural work, the year of its construction (to be stated if the work is still standing)	:	N.A.
14. If the work is an 'Artistic work' which is used or capable of being used in trade, the applicant should file a declaration in Form (i) of Section 45 of the Copyright Act, 1957, in support of the claim.	:	N.A.
15. If the work is an 'Artistic work', whether it is registered under the Designs Act, 2000, and if yes give details.	:	N.A.
16. If the work is an 'Artistic work', capable of being registered as a design under the Designs Act 2000 whether it has been applied to an article through an industrial process and, if yes, the number of times it is reproduced.	:	N.A.
17. Remarks, if any	:	



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Design No. 330515-001  
Date 27/06/2020 20:17:00  
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Country

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 08-05 in respect of the application of such design to HUMANE CHICKEN KILLING CONE in the name of INDIAN COUNCIL OF AGRICULTURAL RESEARCH, KRISHI BHAVAN, DR. RAJENDRA PRASAD ROAD, NEW DELHI - 110001, INDIA

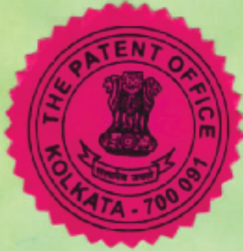
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Date of Issue 02/02/2021 17:15:33



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Design No. 335631-001  
Date 27/11/2020 14:09:50  
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Country

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in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

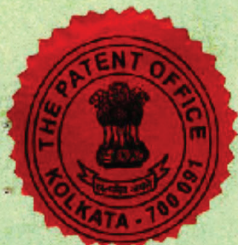
  
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ROAD, KOLKATA - 700 025.

Date of Issue 16/08/2022 13:08:55

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ORIGINAL

No. 96735

कर्मणो भवति

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CERTIFICATE OF REGISTRATION OF DESIGN

Design No. 330513-001  
Date 27/06/2020  
Reciprocity Date\*  
Country

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 15-05 in respect of the application of such design to DRYER in the name of INDIAN COUNCIL OF AGRICULTURAL RESEARCH, KRISHI BHAVAN, DR. RAJENDRA PRASAD ROAD, NEW DELHI - 110001, INDIA

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ROAD, KOLKATA - 700 025.

Date of Issue 18/03/2021 13:25:27



ORIGINAL

No. 104466

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THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No. 334974-001  
Date 06/11/2020 16:10:10  
Reciprocity Date\* 00:00:00  
Country

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 30-03 in respect of the application of such design to PORTABLE MINERAL BLOCK DISPENSER in the name of INDIAN COUNCIL OF AGRICULTURAL RESEARCH, KRISHI BHAVAN, DR. RAJENDRA PRASAD ROAD, NEW DELHI - 110001, INDIA

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Date of Issue 10/11/2021 16:10:24  
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Design No. 330514-001  
Date 27/06/2020  
Reciprocity Date\*  
Country

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 30-03 in respect of the application of such design to POULTRY MAIZE FEEDER in the name of INDIAN COUNCIL OF AGRICULTURAL RESEARCH, KRISHI BHAVAN, DR. RAJENDRA PRASAD ROAD, NEW DELHI - 110001, INDIA


in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.


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MADHUMITA MAJUMDAR,  
S. MAJUMDAR & CO., 5, HARISH MUKHERJEE  
ROAD, KOLKATA - 700 025.


Date of Issue 04/01/2021 15:36:53





**ORIGINAL**

मूल/No : 118353



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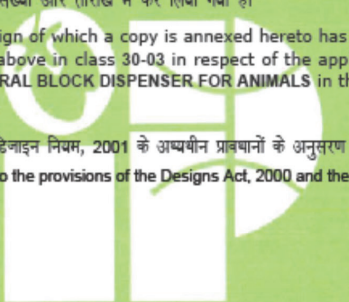
डिजाइन के पंजीकरण का प्रमाणपत्र  
CERTIFICATE OF REGISTRATION OF DESIGN

डिजाइन सं. / Design No.	:	324931-001
तारीख / Date	:	23/12/2019
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो DESAVE PORTABLE MINERAL BLOCK DISPENSER FOR ANIMALS से संबंधित है, का पंजीकरण, श्रेणी 30-03 में Indian Council Of Agricultural Research के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

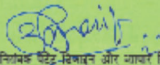
Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 30-03 in respect of the application of such design to DESAVE PORTABLE MINERAL BLOCK DISPENSER FOR ANIMALS in the name of Indian Council Of Agricultural Research.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अन्वये प्रारंभिक प्रावधानों के अनुसार में।  
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निर्गमन की तारीख/Date of issue : 11/11/2022

  
 महानिदेशक पेटेंट, डिजाइन और ट्रेड मार्क  
 Controller General of Patents, Designs and Trade Marks

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पारस्परिकता तारीख (यदि कोई हो) विदेशी अनुमति देश के नाम पर की गई है। डिजाइन का पन्नाधिकार पंजीकरण की तारीख से दस वर्षों के लिए होगा जिसका विस्तार, अधिनियम एवं नियम के अन्वये, दस वर्षों की अवधि तक अन्वये के लिए किया जा सकेगा। इस प्रमाण पत्र का उपयोग विधिक कार्रवाइियों अथवा विदेश में पंजीकरण प्राप्त करने के लिए नहीं हो सकता है।

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डिजाइन सं. / Design No.	:	381071-001
तारीख / Date	:	08/03/2023
पारस्परिकता तारीख / Reciprocity Date*	:	
देश / Country	:	

प्रमाणित किया जाता है कि संलग्न प्रति में वर्णित डिजाइन जो TRAVIS FOR RESTRAINING OF BOVINES से संबंधित है, का पंजीकरण, श्रेणी 30-02 में Indian Council Of Agricultural Research के नाम में उपर्युक्त संख्या और तारीख में कर लिया गया है।

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 30-02 in respect of the application of such design to TRAVIS FOR RESTRAINING OF BOVINES in the name of Indian Council Of Agricultural Research.

डिजाइन अधिनियम, 2000 तथा डिजाइन नियम, 2001 के अध्याधीन प्रावधानों के अनुसरण में।  
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निर्गमन की तारीख/Date of issue : 25/05/2023

सहायक पेटेंट, डिजाइन और वाणिज्य चिह्न  
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