

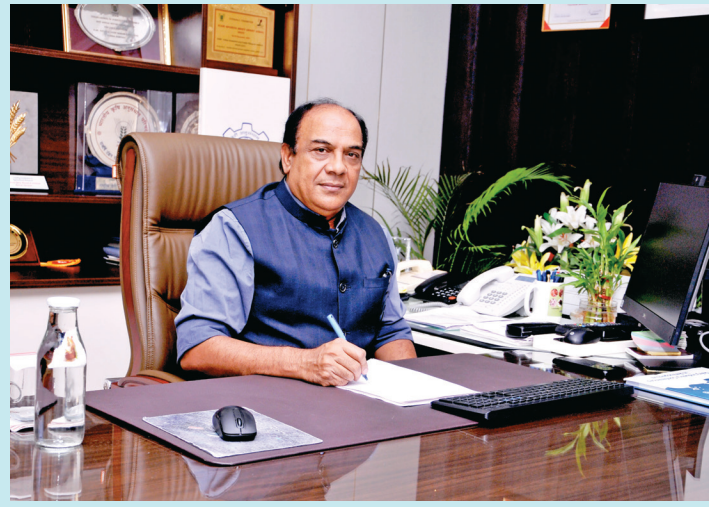


From the Director's Desk

Breed Registration of Karan Fries

It is a matter of immense pride that Karan Fries, the flagship crossbred cattle developed at ICAR-NDRI, Karnal, in 1982, has now on January 14, 2026 been accorded formal breed registration at the national level. This recognition by the competent breed registration authority is a historic milestone in the journey of ICAR-NDRI and a fitting tribute to decades of visionary work in dairy cattle breeding, genetics and farm management undertaken at this Institute. Consequent to this recognition, the Karan Fries cattle developed by ICAR-NDRI has been Gazette notified as a registered breed of India on February 10th 2026. As an impact, Karan Fries cattle will be promoted and utilized as an improver breed for enhancing the productivity and stability of the crossbred cattle population of the country.

Karan Fries represents a successful synthesis of high-yielding Holstein-Friesian germplasm with the adaptability and resilience of indigenous Tharparkar cattle, tailored specifically to Indian tropical conditions. Through systematic inter-se breeding followed by selection, performance recording and scientific herd management



at our Livestock Research Farm, Karan Fries Cattle have consistently demonstrated superior milk yield with consistent fat percentage, sound functional conformation and improved survivability under field-like conditions.

The breed registration of Karan Fries is not merely a technical formality; it is an institutional affirmation that NDRI's long-term breeding programme has delivered a distinct, stable and reproducible genetic resource for the country. This status will facilitate wider dissemination of quality breeding bulls and frozen semen, enable more precise genetic evaluation, and facilitate the inclusion of Karan Fries in national policies and schemes aimed at dairy development and breed improvement.

This achievement also underscores NDRI's enduring contribution to India's White Revolution and its ongoing efforts to enhance milk production, farmer income and nutritional security through science-led interventions. On this special occasion, sincere appreciation is placed on record for the sustained efforts of scientists, technical staff, livestock farm personnel, students and farming partners who have collectively nurtured Karan Fries from

an experimental crossbred into a nationally recognised dairy cattle breed.

The Institute remains committed to further strengthening research on genomic selection, fertility, health and climate resilience in Karan Fries so that this breed continues to serve as a robust genetic resource for India's dairy sector in the years to come. With the formal registration of Karan Fries, NDRI rededicates itself to

developing future-ready livestock technologies that will support sustainable growth in dairying and contribute meaningfully to the Atmanirbhar Bharat vision.

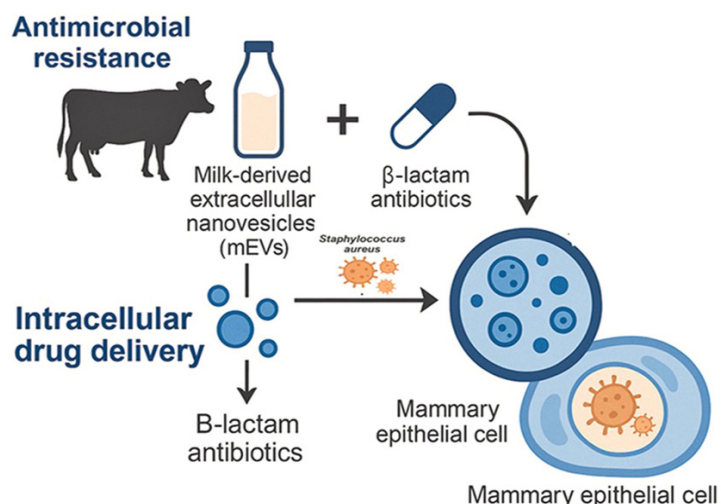

(Dheer Singh)
Director,
ICAR-NDRI, Karnal

RESEARCH

Milk extracellular vesicles deliver β -lactam antibiotics into mammary epithelial cells and combat intracellular mastitis causing *Staphylococcus aureus*

Jitendra Kumar, Sunil Kumar Onteru and Dheer Singh

Mastitis-causing pathogens such as *Staphylococcus aureus* can evade antimicrobial treatment by residing within mammary epithelial cells, resulting in persistent and recurrent infections. Conventional β -lactam antibiotics are highly water-soluble and exhibit limited intracellular penetration, thereby reducing their therapeutic efficacy. To overcome this limitation, milk-derived extracellular nanovesicles (mEVs) isolated from healthy bovine milk were evaluated as carriers for ampicillin (AMP) delivery. The mEVs were thoroughly characterized and demonstrated high biocompatibility, with only a marginal increase in particle size following drug loading (approximately 93 nm to 96 nm). The ampicillin loading efficiency achieved was 68.86%. The mEVs-AMP formulation significantly reduced viable *S. aureus* counts by 40.85% in extracellular conditions and 51.72% in intracellular environments within 4 hours, using doses four times lower than the standard minimum inhibitory concentration (MIC) of ampicillin. These findings demonstrate that mEVs can effectively enhance intracellular delivery and antimicrobial efficacy of ampicillin, offering a promising strategy for management of intracellular mastitis pathogens.



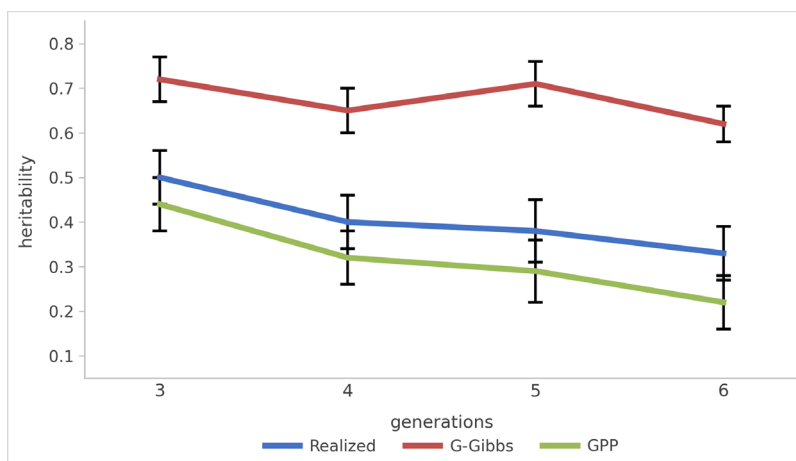
*Milk extracellular nanovesicles deliver β -lactam antibiotics into the intracellular niche of *Staphylococcus aureus**

Development of new methods for estimation of heritability and genetic correlations for large dimensional genomic data

G. R. Gowane

Large genomic data has a limitation of computing inverse of the genomic relationship matrix (GRM), due to which the already available methods such as REML, Gibbs sampler cannot be utilised for the estimation of genetic

parameters in large dimensional genomic data. This limitation forced genetic evaluation to use only pedigree-based estimates in large genomic models. To overcome this, Misztal and Gowane (2025, Genetics: doi: 10.1093/genetics/iyaf066.) developed new methods and formulae based on predictivity which can estimate these genetic parameters for any data size without any extra cost and in short time. The method is now called 'Genetic parameters via predictivity' or 'GPP' in short. This method was developed with research collaboration between ICAR-NDRI and University of Georgia (USA). This tool is readily available for use and adoption by animal genetic evaluation systems for accurate estimation of genetic parameters in real time.



Heritability estimates for a simulated production trait by generation based on true breeding values (realized), genomic Gibbs sampling (G-Gibbs), and predictivity (GPP). (Ref: doi: 10.1093/genetics/iyaf066)

Development of technology for milk protein supplemented jellified confections

Varsha, A.M., Hussain, S.A., Prasad, W.G., Singh, A.K. and Arora, S.

Milk protein was incorporated into gummies to enhance their nutritional value while maintaining desirable textural and sensory properties. The effects of different milk protein sources, namely whey protein isolate (WPI), whey protein concentrate (WPC), and sodium caseinate, on gummy characteristics were evaluated. At a supplementation level of 5% (w/w), WPI produced gummies with superior gel strength, optical clarity, and overall sensory acceptability. To further improve texture, two hydrocolloid combinations were investigated: guar gum–agar agar (GA) and κ -carrageenan–gellan gum (KG). Among these, the GA blend in combination with WPI significantly enhanced gumminess, chewiness, cohesiveness, and sensory quality. FTIR analysis confirmed effective interactions between proteins and hydrocolloids, contributing to improved structural stability of the gummy matrix. The optimized formulation contained more than 8% (w/w) protein, demonstrating its potential as a protein-enriched functional confectionery product.



Milk Protein Supplemented Jellified Confections

Institutional Technology Management Unit

Patents Filed: 04

S. No.	Title of Patent	Inventors	App. No. / Date of filing
1.	Formulation of Vitamin B12 Bio-fortified Fermented Whey-Based Beverage and Preparation thereof	Dr. Manorama Kumari, Dr. Pradip Vishnu Behare and Dr. Deep Narayan Yadav	202611004458 Filed on January 16, 2026
2.	Portable Self Powered Dry Type bovine semen straw thawing device	Dr. Ankit Deep, Dr. Kiran Goyat, Dr. Nishant Kumar, Dr. Pradyuman Barnwal, Dr. Chitranayak and Dr. Madan Lal Kamboj	202611025775 Filed on March 05, 2026
3.	Paper Strip-based Sensor for the Detection of <i>Escherichia coli</i> and ESBL resistant <i>E. coli</i> in milk	Dr. Raghu H.V., Dr. Pushplatha, Dr. Harish Devi, Dr. Prashant Goel, Dr. Naresh Kumar, Dr. Rashmi H.M., Dr. Shilpa Vij and Dr. Diwas Pradhan	202611033269 Filed on March 19, 2026

4.	Formulation for Enhanced Properties of Apricot Kernel Protein-based Films for Packaging	Dr. P. N. Raju and Dr. Deepak Kumar	202611037657 Filed on March 27, 2026
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Patent Granted: 01

S. No.	Title of Patent	Inventor (s)	Grant No. and date of Grant	Patent Filed Date
1.	Instant Desi Chhach Powder (DCP) & process of preparing the same (202411050894)	Dr. G.S. Meena, Mr. Subhadeep, Manik, Dr. Ashish Kumar Singh and Dr. Yogesh Khethra	581352 on February 03, 2026	July 03, 2024

Copyright Filed: 02

S. No.	Copyright Title	Author and Co-Author	Request No. or Dairy No.	Date of filing
1.	Burfi Tazgi Sanketak: A computer program to predict the shelf life of burfi, a milk-based confection	Dr. Narender Raju Panjagari and Dr. Tanya Harchandani	SW-14251/ 2026-CO	March 29, 2026
2.	Sandesh Tazgi Sanketak: A computer program to predict the shelf life of Sandesh, a milk-based confection	Dr. Narender Raju Panjagari and Dr. Shubam Kar	SW- 14263/2026-CO	March 30, 2026

EVENTS

Registration of Karan Fries Cattle Developed at ICAR-NDRI: A Milestone in Dairy Genetic Improvement

The Karan Fries cattle, a scientifically developed crossbred dairy breed known for its high milk productivity and adaptability to tropical conditions, was officially registered by the Government of India, marking a significant milestone in the country's animal genetic improvement programme. During a ceremony held on January 14, 2026, at the NAAS Complex, New Delhi, Shri Shivraj Singh Chouhan, Hon'ble Union Minister of Agriculture and Farmers' Welfare, presented the Breed Registration Certificate to the Director, ICAR-NDRI, scientist breeders, and the research team responsible for developing and maintaining the Karan Fries herd. The Hon'ble Minister described the registration as a testament to India's scientific achievements in livestock research and highlighted its importance in enhancing milk productivity, improving farmers' incomes, and strengthening the dairy sector.



Dr. Dheer Singh, Director, ICAR-NDRI, receiving the Karan Fries Breed Registration Certificate from Shri Shivraj Singh Chouhan, Hon'ble Union Minister of Agriculture and Farmers' Welfare, Government of India, in the presence of Dr. M.L. Jat, Secretary, DARE and Director General, ICAR, and other dignitaries on January 14, 2026

The event was attended by Dr. M.L. Jat, Secretary, DARE and Director General, ICAR; Dr. Raghavendra Bhatta, Deputy Director General (Animal Science), ICAR; and Mrs. Varsha Joshi, Additional Secretary, DAHD, along with other senior ICAR officials. The registration formally recognizes the breed's genetic stability, standardized characteristics, and consistent production performance, and includes Karan Fries in the National Register of Animal Genetic Resources with accession number INDIA_CATTLESYNTHETIC_0500_KARANFRIES_04002. Developed at ICAR-NDRI, Karnal through systematic crossbreeding of Holstein Friesian and Tharparkar cattle, Karan Fries combines high milk yield with heat tolerance and adaptability, making it a valuable genetic resource for sustainable dairy production in India.

Expert Lecture on Industrial and Biomedical Applications of Protein Folding and Aggregation

The Karnal Chapter of the Society of Biochemists of India (SBC) organized an invited lecture by Prof. Rajiv Bhat, Former Dean, School of Biotechnology, Jawaharlal Nehru University (JNU), New Delhi, on January 19, 2026. The lecture, entitled "Modulation of Stability, Folding and Aggregation of Globular and Intrinsically Disordered Proteins: Industrial and Biomedical Applications," focused on recent advances in protein biochemistry and their relevance to industrial and biomedical applications. The programme was attended by a large number of SBC members, scientists, research scholars, and students, providing an excellent platform for scientific interaction and knowledge exchange.

Awareness Programme on Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) Act

An awareness programme on the Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) Act (VB-G RAM G Act) was organized by the Krishi Vigyan Kendra (KVK), ICAR–NDRI, Karnal, on January 22, 2026. The programme aimed to familiarize sarpanches of Karnal district with the provisions and objectives of the proposed Act. Subject Matter Specialists of KVK briefed participants on the key features of the initiative, which seeks to enhance rural livelihood opportunities through increased employment generation, skill development, sustainable agricultural practices, and women's empowerment.

Dr. Dheer Singh, Director, ICAR-NDRI, Karnal, highlighted the role of the mission in contributing to the vision of a developed India through rural transformation. The programme also emphasized strengthening self-help groups and farmer producer organizations, along with promoting digital and infrastructure integration in rural areas. Experts stressed the importance of effective implementation and awareness generation at the village level. A total of 470 sarpanches from Haryana participated in the programme.



A view of Sarpanch Sammelan at ICAR-NDRI during the Awareness Programme on Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission on January 22, 2026

Workshop on Creation of Animal Husbandry Advisories using Kisan Sarathi Kosh

ICAR–NDRI, Karnal, organized a national workshop on "Creation of Animal Husbandry Advisories Using Kisan Sarathi Kosh" on January 22, 2026, under the research project "Kisan Sarathi 2.0: Enhancement, Operation, Maintenance and Support." The workshop aimed to strengthen the capacity of extension professionals in developing and disseminating timely, location-specific, and digital advisories for livestock farmers. Dr. Anil Rai,



Dr. Dheer Singh, Director, presenting a memento to Dr. Anil Rai, ADG (ICT), ICAR during the organization of Workshop on Creation of Animal Husbandry Advisories using Kisan Sarathi Kosh on January 22, 2026

Assistant Director General (ICT), ICAR, New Delhi, attended the programme as the Chief Guest and delivered the keynote address. The workshop included technical deliberations and hands-on training on the Kisan Sarathi 2.0 Portal. A total of 134 participants, including nodal officers from ICAR animal science institutes, participated in the programme.

Training Programme on Functional Starter Cultures and in Fermented Dairy Products

A hands-on training programme on “Functional Starter Cultures and in Fermented Dairy Products” was conducted at ICAR–NDRI, Karnal, from February 3–12, 2026, under the Developmental Action Plan for Scheduled Caste. The programme aimed to enhance the technical skills and practical knowledge of participants in dairy microbiology and processing. A total of 16 trainees participated in the programme and received comprehensive training through classroom lectures

and laboratory-based practical sessions. The training covered production and preservation of starter cultures, preparation of fermented dairy products, quality control procedures, and basic dairy plant operations. The programme contributed to capacity building and promoted the adoption of scientific dairy practices for improving livelihood opportunities.



Dr. Dheer Singh, Director, ICAR-NDRI interacting with trainees during the hands-on training programme

National Dairy Mela and Agri Expo-2026

A three-day **National Dairy Mela and Agri Expo–2026** was organized at ICAR–NDRI, Karnal, from March 6–8, 2026 to showcase the institute’s latest research achievements and technological innovations. The event was inaugurated by Dr. Raghavendra Bhatta, Deputy Director General (Animal Science), ICAR, New Delhi. More than 50,000 farmers from different states and around 2,000 school children participated in the event. A total of 110 organizations, including research institutions, private companies, and progressive farmers, exhibited innovations related to livestock feed,



Glimpses from the three-day National Dairy Mela and Agri Expo 2026 (March 6–8, 2026) organized by ICAR-NDRI

veterinary medicines, dairy machinery, and value-added dairy products.

A total of 233 elite dairy animals, representing breeds such as Holstein Friesian Cross, Murrah, Sahiwal, Tharparkar, Gir, and Hariana, competed in 28 categories of milk production and beauty competitions. The highest milk yields recorded were 76.983 kg (HF Cross), 31.140 kg (Murrah), 24.625 kg (Hariana), 23.550 kg (Sahiwal), 19.510 kg (Gir), and 16.714 kg (Tharparkar).

The expo also featured sessions on dairy entrepreneurship, start-up opportunities, and career prospects in dairy education for youth and school students. ICAR-NDRI technologies and successful start-up models were showcased to encourage innovation and enterprise development. Special emphasis was placed on promoting women-led dairy-based Farmer

Producer Organizations (FPOs) in collaboration with NABARD.

Winter School on Translational Research in Dairy-Based High-Protein Ingredients and Foods: Addressing Technological and Nutritional Challenges

An ICAR-sponsored Winter School titled “*Translational Research in Dairy-Based High-Protein Ingredients and Foods: Addressing Technological and Nutritional Challenges*” was organized from March 6 to 26, 2026 at ICAR-NDRI. A total of 11 participants from nine different institutes and Universities completed the training programme. The course provided insights into current market trends, emerging opportunities, and technological advancements in the development of high-protein dairy foods.



Glimpses of Winter School on Translational Research in Dairy-Based High-Protein Ingredients and Foods: Addressing Technological and Nutritional Challenges

Academic Fortnight Programme

Every year, ICAR-NDRI organizes an Academic Fortnight Programme preceding Convocation. The NDRI Academic Fortnight and Convocation Programme 2026 was a significant event that brought together scholars, researchers, and industry experts for a series of academic and celebratory activities. It commenced on February 26, 2026 with an inauguration ceremony, followed by the Best Division Award Presentations. An Innovative Research & Business Ideas Contest in dairying, animal sciences, and allied disciplines was organized to encourage innovation and nurture the business and entrepreneurial ecosystem on March 5, 2026. On March 8, International Women's Day was celebrated with discussions on gender equality, featuring distinguished guests and speakers. A major highlight of the celebration was the participation of farm women during the National Dairy Mela-2026 held during March 6 to 8, 2026.

A highlight of the Academic Fortnight Programme was the delivery of three prestigious memorial orations by eminent scientists. On March 2, 2026, Dr. D. Sundaresan Memorial Oration was honoured with a presentation by Dr. M. S. Chauhan, Vice Chancellor, G.B. Pant University of Agriculture and Technology, Pantnagar on the topic

"Assisted Reproductive Technologies (ART) in Dairy Animals: A Roadmap to Viksit Bharat 2047," emphasizing bridging the gap between potential and livestock production performance through assisted reproductive technologies.

On March 10, 2026, the Dr. N.N. Dastur Memorial Oration was delivered on "Institutional Excellence in India's Dairy Sector: Structures, Systems, and Sustainability," highlighting the role of dairy institutions in shaping the rural landscape of India. Finally, on March 13, 2026, the Dr. K.K. Iya Memorial Oration was delivered on "Risks and Rural Livelihoods: Strengthening Dairy as a Shock Absorber for Smallholders," highlighting the role of India's dairy sector as a critical climate shock absorber for smallholder farmers facing climate-related risks.

The programme also featured recognition of outstanding research contributions and thesis presentations by Master's and Ph.D. scholars on March 17 and 18, 2026, respectively, providing a platform for showcasing their research achievements.

22nd Convocation of ICAR-NDRI

The 22nd Convocation of ICAR-NDRI was held on March 20, 2026. Dr. M. L. Jat attended as the Chief Guest, while Dr. Raghavendra Bhatta was the Guest of Honour. A total of 252 students graduated, including 41 Undergraduate, 129 Master's, and 82 Ph.D. Scholars comprising 156 male and 96 female graduates.

Addressing the graduates, Dr. Jat congratulated the students and described the convocation as both a celebration of academic achievement and the beginning of their professional journey. On the occasion, Dr. R. S. Paroda and Dr. Harsh Kumar Bhanwala were conferred Honoris Causa degrees. Dr. Paroda was honoured for his visionary leadership in strengthening agricultural research and education while Dr. Bhanwala, a distinguished NDRI alumnus was recognized for his significant contributions to rural transformation and financial innovation in the dairy sector.

In addition, toppers from UG, PG, and Ph.D. programmes received medals, six students were awarded Best Thesis Certificates, and 37 students received merit certificates.



Glimpses of 22nd Convocation of ICAR-NDRI on March 20, 2026

Distinguished Visitors

Sr. No.	Name & Designation	Arrival Date
1.	Sh. Shaji K.V., Chairman, NABARD	March 13, 2026
2.	Dr. Mangi Lal Jat, Secretary, DARE & DG, ICAR	
3.	Dr. R.S. Paroda, Former DG, ICAR & Secretary, DARE	
4.	Dr. Harsh Kumar Bhanwala, Former Chairman, NABARD	
5.	Dr. Raghavendra Bhatta, DDG (Animal Science), ICAR, New Delhi	
6.	Dr. M.S. Chauhan, Vice-Chancellor (Academic), GB Pant University of Agriculture & Technology, Pantnagar	March 18-20, 2026
7.	Dr. N.V. Patil, Vice-Chancellor, Maharashtra Animal & Fisheries Sciences University, Nagpur	
8.	Dr. Naveen Pratap Singh, Former Member (Official), CACP & PS, ICAR-NCAP, New Delhi	
9.	Dr. N.K. Shivakumar Gouda, Former Dean & PS, ICAR-NIAMP, Bengaluru	
10.	Mr. Ajit Patel, Managing Director, Everest Instrument Pvt. Ltd., Ahmedabad	
11.	Dr. H.S. Jat, Director, ICAR-IIMR, Ludhiana	
12.	Dr. Rameshwar Singh, Former Vice-Chancellor, SVPUAT, Meerut	

ENTREPRENEURSHIP DEVELOPMENT

Extension

- 1) A training programme on “Value-Added Milk Products” was conducted on January 7, 2026, for 19 women farmers, aimed at enhancing their knowledge and skills in dairy product preparation and value addition for improved income generation and entrepreneurship.



Extension scientist of the Institute demonstrating the process for preparing value added milk products

- 2) Six field visits and awareness programmes were conducted in Nagla Roran, Kamalpur Roran, Padha, and Phurlak villages under the NASF and Farmer FIRST Programme, covering field monitoring,

climate change awareness, input distribution, and strawlage demonstrations, benefiting 132 farmers.

- 3) Fourteen Kisan Goshties/Scientist–Farmers’ Interaction Meets were organised, including Kisan Diwas at KVK, NDRI, with farmers from Chand Samand, Dabkoli Khurd, Goras, and Sheopur villages of Karnal district participating; 553 farmers benefited overall.
- 4) A one-day workshop on “Creation of Animal Husbandry Advisories using Kisan Sarathi Kosh” was held at ICAR-NDRI, providing hands-on training to 130 scientists and KVK personnel on developing location-specific advisories, aimed at strengthening digital advisory skills and coordination between ICAR institutes and KVKs.
- 5) An Animal Health Care Camp and field monitoring visit was conducted at Dabkoli Khurd village, benefiting 25 farmers.
- 6) A total of 94 exposure and educational visits were organised, with 5,305 students and staff visiting to learn about ICAR-NDRI’s research achievements.
- 7) Three exhibition activities were conducted: a three-day exhibition at the National Dairy Mela &

Agri Expo (March 6–8, 2026) at ICAR-NDRI, Karnal, and two at Kisan Melas held at ICAR-CSSRI, Karnal, and G.B. Pant University, Pantnagar, together reaching 6,023 participants.

Krishi Vigyan Kendra

- ♦ KVK conducted an awareness programme on Viksit Bharat–Guarantee for Rozgar and Aajeevika Mission (Gramin) at Barasat and Kohand villages of Karnal district on January 3 – 4, 2026. A total of 211 farmers and rural youth participated.



Farm women being explained the benefits of VB-GRAMG flagship programme at Kohand village

- ♦ KVK conducted a Prabhat Pheri at Dabri village on January 28, 2026, under the Crop Residue Management Programme, wherein a total of 90 farmers participated. During the programme, KVK experts delivered lectures on the role of students in environmental protection and the sustainable use of agricultural land for future generations.



Prabhat Pheri at Dabri village to sensitize the farmers about Crop Residue Management on January 28, 2026

- ♦ KVK conducted drawing competition at Dyal Singh college, Karnal on January 29, 2026 under Crop Residue Management programme. During the programme, KVK experts delivered lectures on sustainable use of agriculture land. A total of 70 students participated in this competition and winner students were given certificates.
- ♦ KVK conducted Prabhat Pheri at Manchoori village on February 11, 2026, under Crop Residue Management programme. During the programme, KVK experts delivered lectures on student's role in



Prabhat Pheri at Manchoori village on February 11, 2026

protecting environment for future and sustainable use of agriculture land. A total of 100 students and villagers participated in this awareness programme.

- ♦ KVK conducted Prabhat Pheri and drawing competition at Alawla village on February 12, 2026 under Crop Residue Management programme. A



Drawing competition at Alawla village on February 12, 2026

total of 100 students and villagers participated in this awareness programme.

- ♦ KVK organised live telecast of the National Launch of BHARAT-VISTAAR on February 17, 2026. A total of 62 participants attended this programme. The launch event was graced by Shri Shivraj Singh Chouhan, Hon'ble Union Minister of Agriculture and Farmers' Welfare, Government of India.
- ♦ KVK conducted Kisan Sangoshti on Dairy farming on March 7, 2026. During the event, scientists emphasized disease management and scientific dairy farming practices. A total of 250 farmers participated in the event and interacted with the scientists to seek solutions to problems related to agriculture and allied sectors encountered in their day-to-day farming activities.



Sangoshti on Dairy farming March 7, 2026 at ICAR-NDRI Campus

- ♦ KVK conducted Kisan Sangoshti on Fish Farming on March 7, 2026. During the programme, progressive farmers, District Fisheries Officers, fisheries scientists, and experts highlighted the potential of fisheries in Karnal and emphasized the adoption

of integrated fish farming systems. A total of 120 farmers participated in the awareness programme.



Sangoshti on Fish farming on March 7, 2026 at NDRI Campus

- ♦ KVK Karnal celebrated International Women's Day on March 8, 2026. During the programme, speakers emphasized the role and participation of women in the dairy and other agricultural sectors. A total of 1,200 participants attended the event.



International Women's Day celebration at NDRI Campus

- ♦ KVK, Karnal organized a live telecast of the release of the 22nd instalment of PM-KISAN by Shri Narendra Modi, Hon'ble Prime Minister of India, on March 13, 2026. A total of 406 participants attended the programme.

On Campus Trainings at KVK

S. No.	Training Title	Date	Total participants
1.	Training on Beekeeping	January 12–14, 2026	33
2.	Environmentally sustainable dairy production system	February 2–6, 2026	45
3.	Capacity Building Training Programme on Advanced Dairy Processing and Value Addition for Dairy FPOs	February 2–6, 2026	20
4.	Vermicomposting for improving soil health and profitable farming	February 10–12, 2026	21
5.	Sustainable dairy production system to improve farmer livelihood	March 10–12, 2026	35
6.	Environmentally sustainable dairy production system	March 9–13, 2026	35
7.	RAWE program	March 12–17, 2026	16

JOINING/ PROMOTION/ TRANSFERS/SUPERANNUATION

- ♦ Dr. Thirumala Rao Talluri, Principal Scientist, joined his duties in the forenoon of January 5, 2026, at ICAR-NDRI, SRS, Bengaluru, upon transfer from ICAR–National Research Centre on Equines, Hisar.
- ♦ Dr. Lata Jain, Principal Scientist, joined her duties in the forenoon of February 11, 2026, at ICAR-NDRI, Karnal, upon transfer from ICAR–National Institute of Biotic Stress Management (ICAR-NIBSM), Raipur, Chhattisgarh.

HONOURS/AWARDS

- ♦ Dr. Dheer Singh, Director, ICAR-NDRI, Karnal, received Lifetime Achievement Award from Indian Dairy Association in recognition of his outstanding contributions to dairy science, agricultural research, and institutional leadership during the inaugural ceremony of 52nd Dairy Industry Conference held at New Delhi from February 12–14, 2026.
- ♦ Dr. Rajan Sharma, Joint Director (Research), ICAR-NDRI, Karnal received Patronship Award from Indian Dairy Association during the inaugural ceremony of 52nd Dairy Industry Conference held at New Delhi from February 12–14, 2026.



Dr. Dheer Singh, Director, ICAR-NDRI, Karnal, receiving Lifetime Achievement Award from Sh. Chirag Paswan, Union Minister for Food Processing Industries in presence of Sh. S. P. Singh Baghel, Minister of State of Fisheries, Animal Husbandry & Dairying during organization of 52nd Dairy Industry Conference on February 12, 2026

राजभाषा एकक

संस्थान राजभाषा कार्यान्वयन समिति की बैठक

डा. धीर सिंह, निदेशक, भाकृअनुप–राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल की अध्यक्षता में संस्थान राजभाषा कार्यान्वयन समिति की 01 जनवरी से मार्च 31, 2026 तक की 110वीं तिमाही समीक्षा बैठक दिनांक फरवरी 6, 2026 को आयोजित की गयी। बैठक में संस्थान के 36 वरिष्ठ पदाधिकारी शामिल हुए। बैठक में कार्यसूची बिन्दुओं पर विस्तार से चर्चा की गई।

हिन्दी कार्यशाला का आयोजन

भाकृअनुप–राडेअनुसं, दक्षिणी क्षेत्रीय केन्द्र, बेंगलुरु द्वारा दिनांक मार्च 27, 2026 को गूगल मीट मीटिंग के माध्यम से राजभाषा कार्यान्वयन में आने वाली समस्याएं एवं समाधान संबंधी कार्यशाला का आयोजन संस्थान के श्री धीरज शर्मा, संयुक्त निदेशक (राजभाषा) द्वारा व्याख्यान दिया गया जिसमें राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल एवं दक्षिणी क्षेत्रीय केन्द्र, बेंगलुरु एवं पूर्वी क्षेत्रीय केन्द्र, कल्याणी के अधिकारी शामिल हुए।

SOUTHERN CAMPUS, BENGALURU

RESEARCH

Validation of Zein-Encapsulated Progesterone Delivery System for Estrus Induction in Dairy Cattle

Vedamurthy, G.V., S. Jeyakumar and A. Heartwin

A zein-encapsulated progesterone delivery system was validated at the Livestock Research Centre (LRC) in 27 Deoni and HF crossbred heifers and cows. A polyurethane sponge containing progesterone (0.7 g per animal) was administered intravaginally in combination with the Ovsynch protocol for estrus induction. Sponge retention rates ranged from 83–88%, while estrus induction efficiency ranged from 92.8–100%, accompanied by clear cervical mucus discharge and pronounced behavioural estrus responses. Artificial insemination coverage was 100%, resulting in a conception rate of 28%. The study demonstrated that the zein-encapsulated progesterone-based polyurethane sponge is an effective estrus induction system for both cyclic and non-cyclic cattle, with performance comparable to commercially available progesterone devices such as CIDR.

Comparison of Machine Learning Models for Estimation of Breeding Value in Deoni (*Bos indicus*) Cattle

D.N. Das, M.A. Kataktalware, Shivaswamy, G.P. and A.K. Sharma

The least squares means for first lactation milk yield (FLMY) and first lactation length (FLL) were estimated as 922.62 ± 32.13 kg and 239.71 ± 5.97 days, respectively. Breeding values for these traits were predicted using artificial neural network (ANN), k-nearest neighbours (KNN), random forest (RF), and support vector regression (SVR). Model performance was evaluated based on root mean square error (RMSE) and coefficient of determination (R^2). ANN emerged as the best model for predicting breeding values of FLMY, exhibiting the highest R^2 and lowest RMSE. For FLL, SVR and ANN showed comparable R^2 values (SVR: 0.8692; ANN: 0.8678), though SVR achieved lower RMSE. The study indicated that first lactation monthly milk yields in Deoni

cattle possess substantial genetic variation and are strongly correlated with total milk yield, reinforcing the importance of early lactation performance as a selection criterion. Machine learning approaches, particularly SVR and ANN, proved effective in accurate breeding value prediction based on early lactation data, suggesting their integration into genetic evaluation programmes to enhance breeding efficiency.

Other Salient Research Achievements

- ♦ A continuous cold plasma treatment system for whey was developed, extending the shelf life to more than 60 days and offering an alternative to ultra-high-temperature (UHT) processing.
- ♦ Chitosan-derived carbon quantum dots (CQDs) were synthesized using a hydrothermal approach and demonstrated potential as safe nanotherapeutic agents for controlling antimicrobial-resistant pathogens associated with bovine mastitis.
- ♦ A lactose-free spiced whey beverage was developed by the Dairy Processing Section at ICAR-NDRI, Bengaluru. The product contains black pepper extract, ginger, and cumin; is rich in antioxidants; and supports improved digestion.

EVENTS AND EXTENSION ACTIVITIES

Training Programme on Physico-Chemical, Technological and Microbiological Aspects of Milk and Milk Products

ICAR-NDRI's Southern Regional Station, Bengaluru, organized a two-month training programme on "Physico-Chemical, Technological and Microbiological Aspects of Milk and Milk Products" from December 22, 2025 to February 20, 2026, for postgraduate Microbiology students from Garden City University. The 17 participants (4 male, 13 female) were trained in microbiological, technological, and physico-chemical aspects of milk and dairy products. Microbiological topics included isolation and characterization of probiotic bacteria,

microbiological analysis of dairy products, and study of starter cultures, prebiotics, and fermented products. Practical sessions covered preparation of dairy products including butter, ghee, milk powder, curd, yoghurt, shrikhand, kulfi, ice cream, paneer, burfi, kunda, and various cheeses, followed by physico-chemical analysis for moisture, fat, protein, lactose, and minerals. The programme also covered quality control, FSSAI regulations, HACCP, adulterant detection, laboratory accreditation, GLP, and glassware calibration.



Participants along with faculty members during the training programme on Physico-Chemical, Technological and Microbiological Aspects of Milk and Milk Products at SRS, ICAR-NDRI, Bengaluru

ICAR-Sponsored Training Programme on Emerging Trends in Nanotechnology for Dairy and Food Applications

SRS, ICAR-NDRI, Bengaluru jointly organized a ten-day ICAR-sponsored training programme on “Emerging Trends in Nanotechnology for Dairy and Food Applications” from January 7–16, 2026. A total of 23 (13 Male + 10 Female) participants belonging to ICAR institutes, State Agriculture Universities and other Institutions attended this programme. The programme was inaugurated by Dr. Artabandhu Sahoo, Director, ICAR-NIANP, who emphasized the importance of practical applications of nanotechnology in the dairy and food sectors. The training covered key areas such as nanofluids for heat transfer, nanoencapsulation of bioactive compounds, nanocomposites for food packaging, nano-immobilization of enzymes, and applications of micro- and nano-emulsions. Advanced topics included computational biophysics, molecular modelling, nanosensors for milk quality assessment, nanofiber-based drug delivery systems, and carbon quantum dots as antimicrobial agents. The valedictory session was attended by Dr. S. N. Sushil, Director, ICAR-NBAIR, who distributed certificates to the participants. The programme provided valuable technical exposure and was well received by participants.



Participants along with faculty members during the ICAR-sponsored training programme on Emerging Trends in Nanotechnology for Dairy and Food Applications held at SRS, ICAR-NDRI, Bengaluru

Institute-Industry Meet, 2026

Southern Regional Station of ICAR-NDRI, Bengaluru organized the Institute-Industry Meet on February 24, 2026 to strengthen collaboration between research institutions and the dairy industry for technology transfer, innovation, and human resource development. The programme was presided over by Dr. Dheer Singh, Director, ICAR-NDRI emphasized the institute's commitment to facilitating industry adoption of innovative dairy technologies through a supportive and streamlined transfer process. A publication titled "Technologies



Dr. Dheer Singh, Director, ICAR-NDRI Karnal addressing the participants of Institute-Industry Meet on February 24, 2026

Available from ICAR-NDRI" was released, and Dr. Rajan Sharma, Joint Director (Research), presented an overview of institute technologies, highlighting that 51 technologies have been commercialized on 133 occasions in the past decade. The event witnessed participation from over 70 representatives from 30 industries, milk unions, and start-up including Cavinkare, Godrej, MTR, KMF, Doddla Dairy, and Stellapps. A panel discussion on "Expectations of Industry Perspective: Collaborative Research, Consultancy & HRD" featured experts from academia and industry.

Workshop on Future-Ready Dairying: Innovative Reproductive Technologies for Profitable Dairy Farming

The National Academy of Agricultural Sciences (NAAS), Bengaluru Chapter, in collaboration with the Southern Regional Station of ICAR-NDRI, Bengaluru, organized a workshop for field veterinarians of Karnataka at the station on March 24, 2026. The workshop was structured around two key themes: "Breeding for the Future: Fertile Bulls and Heifer-Rich Herds" and "From Infertility to Innovation: Modern Remedies and Assisted Reproductive Technologies in Dairy Practice." Dr. N. K. S. Gowda, Convener, NAAS Bengaluru Chapter, and The workshop witnessed active participation from 73 veterinarians and stakeholders, including veterinarians from the Karnataka Milk Federation and the Department of Animal Husbandry & Veterinary Services.



Field veterinarians participating in the workshop on Future-Ready Dairying: Innovative Reproductive Technologies for Profitable Dairy Farming at SRS, ICAR-NDRI, Bengaluru

EXTENSION ACTIVITIES:

Farmers' Training Programme on Quality Milk Production and Lameness Prevention

A Farmers' Training Programme under the DST-SEED-SCSP project on the theme "Quality Milk Production, Lameness Prevention and Small Ruminant Production" was jointly organized by the Southern Regional Station, ICAR-NDRI, Bengaluru, and ICAR-NIANP, Bengaluru at Gudibande Chinnenahalli village, Chikkaballapur district, Karnataka, on January 21, 2026. The programme focused on field-level applicability through expert lectures, live demonstrations, and hands-on sessions. Key topics included scientific feeding of milch animals and small ruminants, stage-wise nutritional management, mastitis detection using the California Mastitis Test (CMT), hygienic housing, hoof care, and value addition. A total of 60 farmers participated. Live demonstrations on mastitis screening and post-teat dipping were conducted, followed by hands-on practice. Quality Milk Production Kits and Lameness Prevention Kits were distributed to all participants to support the adoption of recommended practices.



Participants and field demonstrations during the Farmers' Training Programme on Quality Milk Production and Lameness Prevention at Gudibande Chinnenahalli village, Chikkaballapur district, Karnataka

Other Extension Activities:

- ♦ The Dairy Processing Section, SRS, ICAR-NDRI, Bengaluru organized a sponsored internship training programme for postgraduate students of PGP College of Arts and Science, Namakkal, Tamil Nadu, from December 1, 2025 to February 28, 2026.
- ♦ The Dairy Extension Section conducted a training programme for dairy farmers from aspirational districts of Karnataka on "Scientific Dairying and Value-Added Dairy Products" from February 16 to 27, 2026 under the RKVY project, with 50 participants (44 male and 6 females).
- ♦ A 90-day sponsored training programme was organized for eight students from the Department of Life Sciences, Christ University.
- ♦ A total of 94 students and 58 farmers participated in exposure visits to the campus.
- ♦ Under the ATMA programme, 58 farmers from Tamil Nadu visited the campus and underwent a one-day training-cum-exposure programme on Scientific Dairy Cattle Management.

HONOURS/AWARDS/RECOGNITION

Abhishek, K.M., Subash, S., Devi, M.C.A., and Sivaram, M. received the 'Best Paper Award' for their research paper entitled "Impact of Dairying on Livelihood Security of Dairy Farmers in Aspirational Districts of Karnataka," published in the *Indian Journal of Dairy Science* (Vol. 78, Issue 2, pp. 192–199) in 2025. The award was conferred during the 52nd Dairy Industry Conference held at New Delhi from February 12–14, 2026.

JOINING/PROMOTIONS/ TRANSFERS/RETIREMENTS

- ♦ Dr. Thirumala Rao Talluri, Principal Scientist, joined the SRS, ICAR-NDRI, Bengaluru on January 5, 2026, after being transferred from ICAR-National Research Centre on Equines, Hisar.

- ♦ Sh. M. Srinivasan, Multi-Tasking Staff, retired from service on January 31, 2026.

- ♦ **Obituary:** Dr. Bandla Srinivas, Principal Scientist (Animal Nutrition) and former Incharge Head of the station, passed away on March 11, 2026, after a brief illness.

RAJBHASHA EKAK (राजभाषा एकक)

केंद्रीय सरकारी कार्यालयों के लिए राजभाषा कार्यान्वयन की अनिवार्य गतिविधियाँ ('सी' क्षेत्र) विषय पर हिंदी ऑनलाइन कार्यशाला का आयोजन 5 मार्च, 2026 को किया गया। इस कार्यशाला से कुल 41 अधिकारियों ने लाभ प्राप्त किया।

EASTERN CAMPUS, KALYANI

RESEARCH

Arsenic-induced oxidative damages and toxicity in young goats: potential mitigation with vitamin E and phytogetic feed additives

Sushil Kumar Yadav, Tapas Kumar Dutta, Anupam Chatterjee, Asif Mohammad, Dilip Kumar Mandal, Partha Das

Arsenic intake was lowest in T_0 (11.52 $\mu\text{g/kg BW}$) and significantly greater ($p < 0.001$) in arsenic-exposed groups. Arsenic exposure markedly reduced antioxidant enzyme activities (superoxide dismutase, catalase, and glutathione peroxidase) and elevated ($p < 0.001$) hepatic enzymes (alkaline phosphatase, aspartate aminotransferase, and alanine transaminase). Supplementation with vitamin E, phytogetic additive, or both partially restored these enzyme levels and normalized daily body weight gain. Dietary arsenic exposure raised ($p < 0.001$) blood arsenic levels in goats, but supplementation, especially with vitamin E alone or with an herbal mix, effectively reduced it. Arsenic negatively affected blood Ca ($p < 0.023$) and Cu ($p < 0.012$) levels, while Mg, Mn, Zn, and Fe remained unchanged. Arsenic toxicity also led to visible symptoms, such as keratinization around the mouth, dermatitis, diarrhoea, and urine with a slightly reddish tint in experimental goats. These were partially alleviated by all interventions. Arsenic-challenged goats (T_1) exhibited severe hepatic damage, marked by hepatocyte degeneration and vacuolation. The combined administration of vitamin E and the herbal mixture (T_4) demonstrated superior efficacy in mitigating arsenic-induced toxicity in young goats.

EXTENSION

Input Distribution Programme for Tribal Farmers

The ERS, ICAR-NDRI organized an Input Distribution Programme for tribal farmers from Nadia and North 24 Parganas districts of West Bengal on January 13, 2026. Fertilizers and micronutrients were distributed to more than 500 farmers, aiming to strengthen sustainable agricultural practices, improve soil fertility and enhance crop productivity. This initiative supported resource-poor farming communities by providing essential inputs, thereby contributing to livelihood security and promoting inclusive rural development in line with ICAR-NDRI's mission of empowering marginalized farmers through scientific interventions.

Livestock Distribution Programme for Tribal Farmers at ERS, ICAR-NDRI Campus

A distribution programme was organized at the ERS, ICAR-NDRI campus on February 16, 2026, wherein 27 tribal farmers from Nadia and North 24 Parganas received 27 goats along with utensils required for animal husbandry and mineral mixture; subsequently, on February 20, 2026 at the same venue, another program was conducted benefitting 200 tribal farmers from the same districts, who were provided with 2000 chicks, 2000 ducklings, utensils for animal husbandry, mineral mixture, and feed, thereby strengthening livestock-based livelihood opportunities for marginalized farming communities.

Input Distribution to Tribal Farmers under TSP

At the ERS, ICAR-NDRI campus, an input distribution programme was organized under the Tribal Sub-Plan (TSP) project on February 27, 2026, benefiting tribal farmers from Chakdaha, Santipur, and Krishnanagar-1 blocks of Nadia district, as well as Bongaon and Bagda blocks of North 24 Parganas district in West Bengal. A total of 82 steel buckets, 65 quintals of goat feed were distributed among tribal farmers. Apart from these, sesame seed packets were provided to 50 farmers, while vegetable seeds including okra (30 farmers), ridge gourd (22 farmers), and bitter gourd (30 farmers) were distributed. Additionally, 65 farmers received agricultural sprayers to support improved cultivation practices. This initiative aimed to strengthen resource access, enhance productivity, and promote sustainable livelihood opportunities among tribal farming communities.



Input distribution and farmer–scientist interaction programmes conducted under Tribal Sub-Plan initiatives benefiting Scheduled Tribe farmers through livestock-based livelihood support

Awareness-cum-Input Distribution Programme for ST Farmers

An awareness-cum-input distribution programme was organized at Ramnagar village, Bolpur, Birbhum district on January 19, 2026, where 50 Scheduled Tribe farmers received ducklings, feeders, drinkers, and veterinary medicines along with a farmer–scientist interaction on improved animal husbandry practices. A similar programme was conducted at Gopalnagar village, Birbhum district on January 20, 2026, benefiting another 50 tribal farmers through input distribution for goat farming. Farmer–scientist interactions emphasized scientific livestock management and livelihood improvement strategies, thereby strengthening income generation and sustainable farming among tribal communities.

NEH programme organised at Manipur

The Eastern Regional Station, ICAR-NDRI, Kalyani organized a scientists' and farmers' interaction-cum-input distribution programme on scientific livestock rearing at the College of Food Technology, Central Agricultural University (CAU), Lamphelpat, Imphal, Manipur, in collaboration with the College of Food Technology on February 4, 2026. A total of 50 livestock

farmers from surrounding villages participated in the programme. Dr. Lalita Mohan Garnayak, Director of Research, CAU Imphal, Professor (Dr.) Ng. Iboyaima Singh, Dean, College of Food Technology, and other staff members participated in the programme.

During the interaction, livestock farmers were made aware of various aspects of scientific pig and poultry rearing. The importance of scientific animal husbandry practices for economic and livelihood improvement was discussed in detail. A total of 1000 one-week-old layer chicks, 5,675 kg pig feed, 600 kg poultry feed, veterinary medicines, mineral mixtures, vitamin supplements, feeding troughs (feeders), and waterers for chicks were distributed to selected beneficiaries. Scientists also visited farmers' households, observed livestock health and rearing practices, and provided on-the-spot guidance on scientific animal husbandry.

Livestock Development Activities under NEH Project in Morigaon District, Assam

Under the NEH project, livestock development activities were successfully implemented in Morigaon district, Assam, with the programme conducted at the KVK Morigaon campus on February 10, 2026. The event included awareness programmes, input distribution,

and a scientist–farmers’ interaction session, fostering direct engagement between researchers and farming communities. Staff from KVK Morigaon collaborated with the team from ERS, ICAR-NDRI to ensure smooth organization and implementation of the programme. Rooted slips, animal feed veterinary medicines, and Assam lemon planting materials were distributed among 50 farmers to support livestock and allied agricultural practices. Following the campus programme, visits were undertaken to farm households in Morigaon district to assess field-level requirements, particularly concerning the rearing and management of indigenous cattle.

Livestock development activities in collaboration with KVK Dhubri district, Bahalpur, Assam

A two-day programme was organized by ERS, ICAR-NDRI, at KVK, Dhubri, Assam Agricultural University campus under the NDRI–NEH project component on February 26 - 27, 2026. In this programme, 6,250 day-old chicks (Rainbow Rooster) and 500 ducklings (Khaki Campbell) were distributed. For initial support, 2,000 kg pre-starter feed and 3,000 kg starter poultry feed were also provided to beneficiary farmers. In addition, 2,000 kg goat feed (wheat bran) was distributed.

The poultry and duck farmers were provided with 250 poultry feeders and waterers to carry out scientific feeding practices for poultry and ducks. Calcium supplements (250 bottles of 500 ml each) were also distributed as input support. Further, 75 GCI roofing sheets (10 ft × 32 inches) for animal sheds were provided to farmers for construction of shelters.

The team of scientists from ICAR-NDRI, Kalyani also interacted with previous beneficiary farmers in different villages of Dhubri district by visiting their houses, observing animal rearing practices, and collecting feedback.

Scientific Animal Husbandry for Scheduled Caste Women of Birbhum

The ERS, ICAR-NDRI organized a three-day training programme on “Scientific Animal Husbandry for Scheduled Caste Women of Birbhum District of West Bengal” from January 5 – 7, 2026. The programme aimed to empower women participants with modern livestock management practices, covering scientific

rearing, feeding, and healthcare techniques to enhance productivity and income generation. By focusing on skill development and sustainable animal husbandry, the initiative contributed to livelihood improvement, capacity building, and inclusive rural development, aligning with ICAR-NDRI’s mission of disseminating scientific knowledge to marginalized communities.

Training Programme on Scientific Animal Husbandry

The ERS, ICAR-NDRI successfully organized a three-day training programme on “Scientific Animal Husbandry for Tribal Unemployed Youth” from January 27–29, 2026. The programme aimed to empower tribal farmers with modern livestock management practices, thereby enhancing livelihood opportunities and promoting sustainable animal husbandry. A total of 50 tribal farmers from Nadia and North 24 Parganas districts of West Bengal actively participated, including 13 male and 37 female trainees, reflecting strong participation of women beneficiaries. The sessions covered practical aspects of scientific rearing, feeding, and healthcare of animals, equipping participants with knowledge to improve productivity and income generation.

Training on Small Animal Rearing at Household Level for Farmers

A five-day training programme on “Small Animal Rearing at Household Level” was organized at the ERS, ICAR-NDRI from February 2 – 6, 2026 for farmers of Seraikela-Kharsawan district, Jharkhand. The programme aimed to build capacity among rural farmers in the scientific rearing of small animals such as goats, poultry, and ducks to enhance household nutrition, income generation, and livelihood security. A total of 23 male farmers participated in interactive lectures, practical demonstrations, and



Participants of training programme visiting villages Seraikela-Kharsawan district, Jharkhand

hands-on sessions covering feeding, housing, disease prevention, and climate-resilient practices. The training emphasized low-cost and sustainable methods suitable for household-level adoption, thereby equipping farmers with skills to improve productivity and contribute to rural development.

Training on Scientific Animal Husbandry for Tribal Unemployed Youth

A three-day training programme on "Scientific Animal Husbandry for Tribal Unemployed Youth" was organized at the ERS, ICAR-NDRI campus from February 10 to 12, 2026. A total of 50 participants, including 22 male and 28 female tribal farmers, attended sessions on scientific livestock management practices. At the conclusion of the programme, ducklings, steel buckets, and mineral mixtures were distributed among the trainees to support adoption of improved animal husbandry practices and enhance livelihood opportunities.

Training on Scientific Animal Husbandry Practices for Scheduled Caste Women

A three-day training programme on "Scientific Animal Husbandry Practices for Scheduled Caste Women of North 24 Parganas, West Bengal" was conducted from February 11 to 13, 2026. The programme focused on equipping participants with practical knowledge on livestock management, clean milk production, and climate-resilient practices to enhance livelihood opportunities. A total of 22 participants, including 20 women and 2 men, actively participated in interactive lectures, demonstrations, and group discussions.

Trainers' Training on Recent Advances in Livestock Production and Management Practices

A three-day trainers' training programme on "Recent Advances in Livestock Production and Management Practices with Special Reference to Lakhimi Cattle of

Assam" was successfully organized from February 24 – 26, 2026 at the ERS, ICAR-NDRI. The programme integrated both theoretical sessions and practical demonstrations, ensuring participants gained comprehensive knowledge on modern livestock production techniques and management strategies tailored to the Lakhimi cattle breed. A total of 20 participants, including 15 males and 5 female Subject Matter Specialists and Programme Assistants from KVKs of Assam, actively participated in the training. To provide hands-on exposure, a field visit to progressive farmers' households was arranged, enabling participants to observe best practices under field conditions.

"राजभाषा के रूप में हिंदी का उपयोग" विषय पर एक दिवसीय कार्यशाला:

एनडीआरआई के कल्याणी स्थित ईआरएस कार्यालय में 12 मार्च 2026 को "राजभाषा के रूप में हिंदी का उपयोग" विषय पर एक दिवसीय कार्यशाला आयोजित की गई। कार्यशाला में सभी वैज्ञानिक, तकनीकी अधिकारी, प्रशासनिक अधिकारी और कर्मचारी उपस्थित थे और उन्हें अधिक से अधिक मामलों में हिंदी भाषा का उपयोग करने के लिए प्रोत्साहित किया गया। प्रासंगिक मुद्दों पर विस्तार से चर्चा की गई। यह सुझाव दिया गया कि हिंदी में अधिक से अधिक लेख प्रकाशित किए जाएं। कई कार्यालयी दस्तावेज/फॉर्म द्विभाषी होने चाहिए। ईआरएस के प्रशासनिक कर्मचारियों को अधिक से अधिक फाइलों में हिंदी का उपयोग करना चाहिए। इस कार्यशाला में एनडीआरआई, करनाल के संयुक्त निदेशक प्रशासन श्री पी.के. जैन और एनडीआरआई, करनाल के राजभाषा उप निदेशक श्री धीरज शर्मा उपस्थित थे और उन्होंने हिंदी भाषा के उपयोग के लिए कुछ आगे के उपाय सुझाए। कार्यशाला की अध्यक्षता ईआरएस-एनडीआरआई के प्रमुख डॉ. शांतनु बनिक ने की।

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