

# NDRI News

राष्ट्र के डेरी स्वप्नों को समर्पित  
Fulfilling Nation's Dairy Dreams

भाकृअनुप-राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल  
ICAR-NATIONAL DAIRY RESEARCH INSTITUTE, KARNAL

[www.ndri.res.in](http://www.ndri.res.in)

Volume 30 No. 3 | October - December, 2025

## From the Director's Desk

The ICAR-National Dairy Research Institute is a premier institute devoted to research on dairying. The main institute (Head Quarter) is located at Karnal, Haryana. The main objective of establishing the Eastern Regional Station is to identify the major constraints of dairy production in eastern and north eastern region of India and to offer plausible solutions through research and extension activities to these problems. It serves as a vital link between the NDRI, Karnal and the far-flung areas of the eastern and north eastern regions of the country for transfer of technology developed at the institute and provides appropriate feedback after trial for perfection. The research work undertaken at this station is mainly strategic and applied in nature and the thrust of research is to improve the socio-economic condition of dairy farmers of this region.



The Eastern Regional Station was established at the Central Dairy in Calcutta in 1964 and was shifted during 1966 to Kalyani, Nadia district; about 48 km north from Kolkata and was located in the Administrative Building of Kalyani University. The Regional Animal Nutrition Research Centre of the ICAR till then located at Haringhata, West Bengal, was merged with the ERS of NDRI with effect from June 1, 1968. In 1978 the Government of West Bengal granted 100 acres of land at Kalyani where cattle sheds, forage unit, staff quarters etc. were gradually built up. The Station built its own laboratory building and the entire station started functioning within the same campus from May, 1987.

The research works during the period of 1964-1972, were mainly related to Animal Nutrition, that during the period of 1972-1976, were related to Animal Nutrition and Dairy Chemistry and Bacteriology, that during the period of 1977-1985, related to Animal Nutrition, Animal Breeding, Soil Science, Dairy Economics and Dairy Extension, that during the period of 1986-1991, were related to Animal Nutrition,

Livestock Production and Management, Animal Breeding, Forage Production, Dairy Economics & Statistics and Dairy Extension and that during the period of 1992-1997, were related to Animal Nutrition, Livestock Production and Management, Animal Breeding, Forage Production, Dairy Economics & Statistics and Dairy Extension. Initiation of establishing Animal Biotechnology laboratory started 2005-06. The Animal Physiology and Reproduction Laboratory were also established in 2013-14. Goat Farm was established in 2014-15 in a small scale for research, education and training purposes. The Krishi Vigyan Kendra-II (additional), Nadia District of West Bengal was sanctioned in 2016-17 for establishment in the Campus of ERS-NDRI, Kalyani. The new facilities (Administrative and Farmers' hostel facilities) were inaugurated at Krishi Vigyan Kendra (Additional) Nadia in 2024.

The Eastern regional station of ICAR-National Dairy Research Institute has infrastructure facilities like Research Laboratories, Cattle Herd, Fodder Farm, Estate Section, Library, Computer

FROM THE DIRECTOR'S DESK	RESEARCH	EVENTS	EXTENSION	PERSONALIA	राजभाषा एकक	SOUTHERN CAMPUS, BENGALURU	HONOURS AND AWARDS	EASTERN CAMPUS, KALYANI
1	2	3	11	15	19	20	22	24

Section, Research Coordination Cell, Academic Cell, Student Hostels for boys and girls, and Guest House. The station has a total 11 faculty members which include Head of Station including an In-charge KVK.

Keeping in view the enormous demand for milk in the eastern region, low milk production potential of the native stock, shortage of feed and fodder resources and diversified agro-climatic and socio-economic conditions; this research station has a great role to play in the field of dairy development in this region.

For improving the livelihood through livestock-based farming in North Eastern region states of India namely, Meghalaya, Tripura, Sikkim, Nagaland, Mizoram and Arunachal Pradesh frequent livestock development programmes are being conducted by the scientists of ERS under the NEH project. Apart from these, through

TSP and SCSP programmes the station is also involved for upliftment of socio-economic condition of tribal and schedule caste farmers through livestock-based farming system for the eastern region. Quarterly programmes are being organized and inputs such as livestock (poultry birds, goats, piglets etc.), veterinary medicines, mineral mixture, concentrate mixture, fodder seeds, extension literatures etc. were distributed among the farmers from North Eastern region of India. Through scientists-farmers interaction several aspects of scientific animal husbandry practices were explained to the farmers for betterment of livelihood.

**(Dheer Singh)**  
Director,  
ICAR-NDRI, Karnal

## RESEARCH

### Technology for Development of Whey Based Carbonated Beverage

Ajay Yadav, Gaurav Deshwal and D. N. Yadav

A process technology was developed for the conversion of liquid whey into a ready-to-drink carbonated beverage with jeera flavour, enabling the efficient valorisation of whey. The formulated product constitutes a novel functional drink delivering multiple benefits within a single matrix, including effective hydration, a protein content of 0.35 g/100 ml, and the presence of essential minerals such as calcium (40 mg/100 ml) and potassium (58 mg/100 ml). The incorporation of carbonation significantly enhanced the sensory attributes of the beverage by improving freshness, mouthfeel, and overall consumer acceptability in comparison to conventional non-carbonated whey-based beverages. The shelf-life evaluation indicated that the product remained stable for up to 45 days under refrigerated storage conditions ( $4\pm 1^\circ\text{C}$ ) and 10 days under ambient conditions ( $27\pm 2^\circ\text{C}$ ).

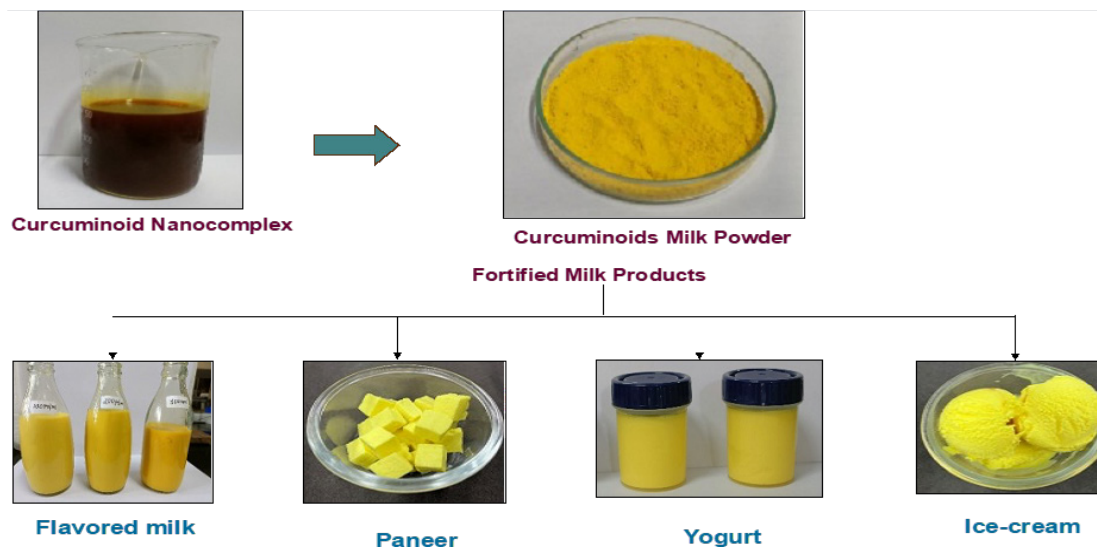


*Whey based carbonated beverage*

### Nanoencapsulated Curcuminoids Fortified Dairy ingredient

Rajesh Kumar Bajaj

A novel milk protein-based curcuminoid delivery system was developed to protect curcuminoids during manufacturing, storage, and simulated gastrointestinal digestion. The system provides protection against thermal degradation under various dairy processing conditions while forming a water-soluble, stable preparation that is readily dispersible in milk for incorporation into a wide range of dairy products. Application of this formulation for fortification of different dairy products resulted in acceptable sensory properties, with no detectable off-flavors. The formulation demonstrates strong potential for commercial-scale production and application as a functional ingredient in the food, dairy, and pharmaceutical industries.



*Nanoencapsulated curcuminoid enriched milk products*

## Institutional Technology Management Unit

### Detail of Patents Filed: 02

Sl. No.	Title of Patent	Inventors	Application No. and Date of filing
1.	Teat spray formulation for combating subclinical mastitis and process for preparation thereof	Dr. Sachin Kumar, Dr. Nitin Tyagi, Dr. Ashish Kumar Samanta, Dr. Ashish Kumar Singh, Dr. Pradip Vishnu Behare, Dr. Nutan Chauhan, Dr. Ojal Singh	202411093245 Filed on November 20, 2025
2.	An assay for rapid identification and detection of single nucleotide polymorphism in buffalo genes	Dr. Suneel Kumar Onteru, Dr. Priyanka Patel, Dr. Ankita Kapri, Dr. Suman Rani, Dr. Dheer Singh	202511130887 Filed on December 23, 2025

## EVENTS

### PM Dhan-Dhanya Krishi Yojana and Pulse Self-Reliance Mission

Krishi Vigyan Kendra (KVK), Karnal organized the live telecast of the launch of PM Dhan-Dhanya Krishi Yojana and the Pulse Self-Reliance Mission on October 11, 2025 in the presence of the Dr. Dheer Singh, Director, ICAR-NDRI, Karnal and Dr. Suresh Kumar Malhotra, Vice-Chancellor, Maharana Pratap Horticultural University, Karnal. The programme highlighted the importance of self-reliance in pulses, sustainable agriculture, and farmer-centric development, as emphasized by

the Hon'ble Prime Minister. About 640 farmers, FPO members, women SHGs, scientists, students, and line department officials participated and benefited from the programme. The programme was conducted with enthusiasm across NDRI campuses at Karnal, Bengaluru, and Kalyani. The objective of the programme was to create awareness about new government initiatives aimed at improving farmers' income and promoting sustainable agriculture. Following the broadcast, a technical session was organized for farmers, featuring expert lectures and demonstrations on clean milk production and reproductive management of dairy



*Officials of ICAR-NDRI attending live telecast of the launch of PM Dhan-Dhanya Krishi Yojana and the Pulse Self-Reliance Mission on October 11, 2025*

cattle. The programme strengthened farmers' knowledge, encouraged adoption of scientific dairy practices, and reaffirmed NDRI's commitment to the national goal of doubling farmers' income.

### **Curtain-Raiser Programme of Emerging Agriculture Technologies (EAT) for ESTIC-2025**

Dr. M. L. Jat, Secretary, DARE and Director General of ICAR, inaugurated the Curtain-Raiser Programme of Emerging Agriculture Technologies (EAT) for ESTIC-2025 on October 13, 2025, at ICAR-NDRI, Karnal. He emphasized the need for science-led, farmer-centric innovations to address climate change, food security, and farmers' socio-economic upliftment, stressing that agri-technologies must enhance productivity while safeguarding natural ecosystems. The EAT theme focuses on AI, robotics, precision farming, automation, and omics to build resilient food systems. Dr. Dheer Singh, Director ICAR-NDRI, and Dr. Raghavendra Bhatt, DDG (Animal Science), ICAR, were also present. ESTIC-2025, a joint platform of ministries, industry, and academia, will be held on November, 3-5, 2025 at Bharat Mandapam. A total of 673 farmers, faculty, and students participated in the event.



*Dr. M. L. Jat, Secretary, Department of Agricultural Research and Education (DARE) and Director General, ICAR, New Delhi, Chaired the curtain-raiser for Emerging Agriculture Technologies (EAT) under ESTIC-2025 at ICAR-NDRI, Karnal*

## Deeksharambh: Induction-cum-Foundation Course

ICAR-NDRI, Karnal, conducted "Deeksharambh: Induction-cum-Foundation Course," a two-week orientation programme held from November 12-18, 2025, for newly admitted students of B.Tech. (Dairy Technology, Food Technology, and Biotechnology), Master's, and Doctoral programmes. The programme aimed to familiarize students with the institute's culture, rules, and available resources, thereby facilitating a smooth transition into their academic careers.



*Dr. Dheer Singh, Director, ICAR-NDRI, Karnal, inaugurated the Deeksharambh: Induction-cum-Foundation Course on November 12, 2025, in the presence of faculty members and newly admitted students*



## PM Kisan Samman Nidhi Programme

PM Kisan Samman Nidhi Programme was released by the Hon'ble Prime Minister of India on November 19, 2025 and it was observed at ICAR- NDRI, Eastern Regional Station, Kalyani and ICAR- NDRI, Southern Regional Station, Bengaluru. The programme highlighted the Government of India's continued commitment to supporting farmers through direct income assistance. Under the PM- KISAN scheme, eligible farmers receive financial support to meet agricultural input costs and ensure income stability. The event reinforced the importance of farmer welfare, agricultural sustainability and inclusive rural development. ICAR Institutes participated in the programme to create awareness about the scheme and its role in strengthening the agricultural economy and improving the livelihoods of farmers across the country. A total of 101 farmers from various project-adopted villages actively participated in the programme.



*Shri. Jagmohan Anand, MLA, Karnal, attended the PM-Kisan Samman Nidhi Programme at the ICAR-NDRI, Karnal in the presence of Dr. Dheer Singh, Director, ICAR-NDRI, faculty members, and farmers from project-adopted villages*



## National Training Programme on 'Next-Gen Animal Breeding' Conducted

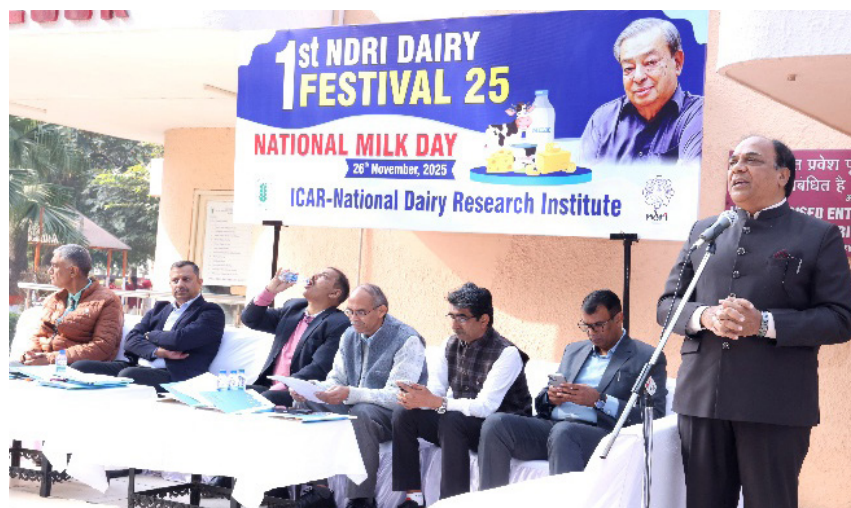
A 21-day National Training Programme on "Next-Gen Animal Breeding: Hands-on Approach to Genomics, Selection Strategies, and Artificial Intelligence in Dairy Animals" was successfully organized from November 19 to December 9, 2025, by the Centre of Faculty for Advanced Training in Animal Genetics and Breeding. The programme brought together researchers, faculty members, and postgraduate students from across the country to strengthen capacity in modern animal breeding approaches. The training focused on practical exposure to genomic data analysis, genomic selection methodologies, advanced statistical models, and the application of artificial intelligence in dairy improvement programmes. Participants received hands-on training in genomic evaluation, breeding value estimation, selection index construction, and the integration of AI tools for predictive breeding strategies. Interactive lectures by leading experts, software-based practical sessions, and group discussions enriched the learning experience. The programme significantly enhanced participants' technical competence in next-generation breeding technologies, contributing to the advancement of sustainable and precision dairy genetic improvement in India.



*Dr. Dheer Singh, Director ICAR-NDRI, Karnal, with participants of the National Training Programme on Next-Gen Animal Breeding during hands-on sessions on genomics and AI-based dairy breeding*

## National Milk Day Celebrated

National Milk Day was celebrated by organising First NDRI Dairy Festival on November 26, 2025 to commemorate the birth anniversary of Dr. Verghese Kurien, the Father of the White Revolution in India. Dr. Dheer Singh, Director, ICAR- NDRI, Karnal inaugurated the programme as Chairman and inspired the scientific community to develop farmer- and industry-centric technologies for holistic growth of the dairy sector. The celebration highlighted Dr. Kurien's legacy and India's achievements and future potential in dairying, which plays a crucial role in rural livelihoods, nutritional security, women's empowerment, and economic growth, engaging over 80 million rural households.



*A Glimpse of National milk Day Celebration on November 26, 2025 at ICAR-NDRI*

## Winter School on Application of Foodomics and Advanced Analytical Techniques for Ensuring Quality, Safety and Functional Properties of Dairy Foods

A Winter School on “Application of Foodomics and Advanced Analytical Techniques for Ensuring Quality, Safety and Functional Properties of Dairy Foods” was organized from December 6-26, 2025. The programme aimed to strengthen participants’ knowledge and skills in the use of advanced foodomics tools and modern analytical techniques in dairy research. The training focused on their applications in quality assurance, food safety assessment, and evaluation of functional properties of dairy products. A total of 20 participants from different institutions took part in the Winter School. The programme featured expert lectures, hands-on practical sessions, and interactive discussions, providing participants with exposure to emerging technologies and methodologies. Overall, the Winter School enhanced the research and analytical capabilities of participants and contributed to capacity building in the dairy sector by promoting scientific approaches for ensuring high-quality, safe, and functional dairy foods.



*Dr. Dheer Singh, Director, ICAR- NDRI, Karnal with the participants and faculty members of Dairy Chemistry Division*

## Certificate Course on Hands-on Training on Handling and Care of Laboratory Animals

ICAR- NDRI, Karnal conducted a certificate course on “Hands-on Training on Handling and Care of Laboratory Animals” from December 8-13, 2025. This programme was organized to equip students and young researchers with essential skills, ethical practices, and scientific approaches required for responsible laboratory animal handling. It is conducted twice a year or once every semester on a nominal fee basis, the training offered a comprehensive understanding of laboratory animal management. It covered topics ranging from the establishment of small animal houses to animal handling, sample collection, and processing in accordance with Committee for Control and Supervision of Experiments on Animals (CCSEA) guidelines. Participants gained valuable hands-on experience during practical sessions and were provided with a detailed training manual. At the conclusion of the course, trainees were awarded certificates, contributing to capacity building and promotion of ethical research practices in laboratory animal science.



*Dr. Dheer Singh, Director, ICAR- NDRI, Karnal with the participants and faculty members of Animal Biochemistry Division*

## Lecture Delivered on Technology Readiness and Valuation for Commercialization

A lecture on Technology Readiness and Valuation for Commercialization was delivered by Dr. Praveen Malik, CEO of Agrinnovate India Ltd., on December 9, 2025, at ICAR- NDRI, Karnal. The session addressed technology readiness levels, valuation methods, and effective commercialization pathways for agricultural innovations. Dr. Malik emphasized bridging the gap between research and industry through strong intellectual property management, market assessment, and industry partnerships. He highlighted Agrinnovate India Ltd.'s role in enabling technology transfer from research institutions to entrepreneurs and startups. The lecture offered valuable guidance to scientists, students, and innovators on converting research outputs into commercially viable solutions for agriculture and allied sectors.



*Dr. Dheer Singh, Director, ICAR-NDRI, Karnal along with Dr. Praveen Malik, CEO of Agri-innovate India Limited, New Delhi*

## Lecture Delivered on Digital and AI-Driven Transformation of India's Dairy Sector: Technologies, Talent, and the Road to 2047

A lecture was delivered on "Digital and AI-Driven Transformation of India's Dairy Sector: Technologies, Talent, and the Road to 2047" by Dr. Kavya Dashora, Associate Professor, IIT Delhi at ICAR- NDRI, Karnal, on December 10, 2025. Dr. Dheer Singh, Director, ICAR- NDRI, Karnal presided over the programme and highlighted the transformative role of artificial intelligence in agriculture and animal science, particularly in livestock management, disease prediction, and efficient resource use. He emphasized on integrating AI with dairy research to achieve the vision of Viksit Bharat



*Dr. Dheer Singh, Director, ICAR-NDRI, Karnal, formally welcomed the speaker, Dr. Kavya Dashora during the organization of a lecture on "Digital and AI-Driven Transformation of India's Dairy Sector: Technologies, Talent, and the Road to 2047" on December 10, 2025*

2047 through predictive, climate-smart and integrated dairy systems. Dr. Dashora discussed the need for digital and AI-driven solutions to address climate stress, animal health, and quality challenges, stressing data-based tools, skilled human resources, and interdisciplinary collaboration for effective AI adoption in the dairy sector.

### Freshers' Day Celebration

Freshers' Day was organized at ICAR- NDRI, Karnal on December 11, 2025 to warmly welcome to the newly admitted students. The programme aimed to create a friendly and supportive academic environment while introducing fresher students to the institute's rich academic and cultural traditions. Faculty members extended their best wishes and encouraged students to pursue excellence in academics, research, and innovation. The event featured cultural performances and interactive activities that showcased student talent and promoted camaraderie. Fresher's Day served as a platform for fostering confidence, teamwork, and a sense of belonging among the new entrants to the ICAR- NDRI academic community.



*Dignitaries, faculty members, and students during the Freshers' Day programme held at the ICAR-NDRI, Karnal*

### Swachhata Pakhwada

Swachhata Pakhwada was observed on December 16, 2025 with the objective of promoting cleanliness, hygiene, and environmental responsibility. The programme emphasized the importance of maintaining a clean workplace and surroundings as a collective responsibility. Awareness activities highlighted proper waste management, reduction of single-use plastics, and adoption of sustainable sanitation practices. Participants were encouraged to uphold cleanliness as a daily habit and contribute actively to the national vision of a clean and healthy India. The observance reinforced the message that Swachhata is integral to public health, environmental sustainability,



*Staff of ICAR-NDRI taking pledge on the occasion of Swachhata Pakhwada*

and overall societal well-being. A total of 986 staff members, faculty and students took pledge on this occasion to propagate the message of Swachhata Abhiyan.

## National Farmers' Day Celebration

Krishi Vigyan Kendra of the Institute organized National Farmers' Day on December 23, 2025 at ICAR- NDRI, Karnal. The programme was connected virtually with the national event addressed by the Hon'ble Union Minister of Agriculture and Farmers' Welfare, who highlighted the vision of Chaudhary Charan Singh ji for farmer-centric development and ongoing government initiatives for agriculture, employment, and rural livelihoods. About 390 participants, including farmers, FPOs, SHGs, scientists, students, and officials participated. Progressive farmers were felicitated for their innovative and sustainable agricultural practices.



*Dr. Dheer Singh Director interacting with farmers during celebration of National Farmers' day*

## Blood Donation Camp

The NDRI Student Council (NDRISC) organized and coordinated a series of academic, cultural, social, and sports activities at ICAR- NDRI, Karnal during October–December, 2025 with the objective of promoting student leadership, social responsibility, and holistic development. The activities commenced with a Blood Donation Camp on October 1, 2025 at the Community Health Centre, ICAR-NDRI, which witnessed enthusiastic participation from students, staff and resulted in the collection of approximately 60 units of blood, reflecting a strong commitment to community service.



*Dr. Dheer Singh, Director, ICAR-NDRI alongwith medical staff, members of NDRI Student Council during the organization of blood donation camp at Health Complex, ICAR-NDRI*

## Pre-Diwali Celebration and Clothes Donation Drive

As part of social outreach initiatives, a Pre-Diwali Celebration and Clothes Donation Drive was organized on October 16, 2025 in collaboration with NSS and the Environment and Social Outreach Club, during which clothes were collected and distributed to the needy. Further, NDRISC led a delegation of students to the National Agricultural Students Sammelan held on October 27, 2025 at NASC, ICAR-IARI, New Delhi, providing an opportunity for students to interact with ICAR leadership and highlight academic and welfare-related concerns.



*Distribution of clothes to beneficiaries during a community outreach initiative*

## Sports activities of Students

Sports and physical fitness among students were promoted through the organization of the Table Tennis Tournament and the NDRI Badminton League on November 22 - 29, 2025, which witnessed enthusiastic participation from students. Major engagements included Shishir Utsav-2025, a multi-day festival featuring literary, artistic, mass media, and cultural events, and the Freshers' Day Celebration 2025, wherein NDRISC coordinated various cultural performances to warmly welcome new students.



*Students participating in an indoor badminton match during a sports event*

## EXTENSION

### Dairy Extension Division

#### Extension Activities

- ♦ Six field day programme was organized under the Farmers FIRST Project in adopted villages, benefiting 214 farmers.
- ♦ A training programme on "Value-Added Milk Products" was organized for rural SC women of Padha village on October 16, 2025, with the participation of 30 farm women.



*Training programme on Value-added milk products in progress*

- ♦ A total of three animal health camps and one ecto-endo parasite control programme were organized in three villages, namely Kamalpur, Dabkoli, and Samora, in Karnal district, with the participation of 89 farmers.
- ♦ A total of 28 awareness programmes on climate-resilient dairy farming practices were organized in Punjab (Barnala and Kapurthala districts) and Haryana (Gudha and Furlak villages of Karnal district, and Hadwa, Ramnagar, and Hatt villages of Jind district). A total of 541 dairy farmers benefited from these awareness campaigns.
- ♦ Three demonstration programmes on mustard seed variety 'Riya' and wheat varieties HD-3386 and HD-2967 were conducted in the adopted villages of Chand Samand and Dabkoli Khurd under the FFP project, with the participation of 42 farmers.
- ♦ A Berseem seed distribution programme was organized in Padha village on October 16, 2025, during which 50 farmers received seeds.



Various programmes and visits organized in Punjab and Haryana under Farmers FIRST Project

## Agro-advisory Services

A total of 24 agro-advisory messages related to weather forecasting, crop and animal husbandry practices, etc. were sent to Farmers through WhatsApp groups. Advisory services were also provided to the farmers for timely agricultural practices to reduce losses and minimize the input costs.

## Exposure Visit

ICAR-NDRI, Karnal organized 78 visits comprising 4457 school students (2002 boys and 2184 girls). During these visits, the students were introduced to the institute's research achievements and infrastructural facilities.



*Students and other during exposure visit at ICAR-NDRI*

## Capacity Building Programme

The Zone-I Rashtriya Karmayogi Janseva Programme (Phase-II) was successfully conducted at ICAR-NDRI, Karnal, for three days from December 8-10, 2025 for 23 participants.

## Krishi Vigyan Kendra

### Fisheries Field Day Celebrated

Under the Fisheries FLD programme, field visits were conducted at Kalampura village (16.10.2025) and Koer village (17.10.2025) to assess field conditions and discuss scientific fish farming practices, with the participation of 17 farmers. A Fisheries Field Day was organized on

October 29, 2025 at Kamalpur Roran. Subject matter expert of fishery explained the role of fish nutrition and feed management in improving carp seed growth and survival. A total of; 35 fish farmers participated in this programme. In addition, a World Fisheries Day awareness programme was conducted on December 21, 2025 to highlight sustainable fisheries and fish nutrition which was, attended by 15 farmers.



*Subject matter expert of fishery explained the role of fish nutrition and feed management in improving carp seed growth*

## Crop Residue Management (CRM) Activities

Under the Crop Residue Management (CRM) programme, field days, field visits, and awareness programmes were conducted across several villages of Karnal district. An awareness programme was conducted on November 6,



*A view of farmers participating in Crop Residue Management (CRM) programme*

2025, at Alwala village. This was followed by field days organized on November 13, 2025, at Kalram and Kairwali villages, covering a total of 94 farmers. Subsequently, eight awareness programmes were conducted between November 20, 2025 and December 5, 2025 across seven villages, benefiting 142 participants. In addition, eight field visits were carried out from November 27, 2025 to December 9, 2025 in eight villages, covering 96 participants.

## Kisan Sanghoshti-cum-Exhibition at Madhya Pradesh

KVK of the Institute participated in the Kisan Sangoshti-cum-Exhibition organized by ICAR–NDRI from December 12-15, 2025 at Bhagwantpura village, Sanchi Block, Raisen district, Madhya Pradesh. The programme was organized for promoting scientific animal husbandry practices. The event was inaugurated by the Hon'ble Minister of Agriculture and Farmers' Welfare, and witnessed the participation of about 2,400 farmers, who were sensitized on improved livestock management, dairy technologies, and income enhancement through scientific farming practices.



*Kisan Sangoshti-cum-exhibition programme was inaugurated by the Shri. Shivraj Singh Chouhan, Hon'ble Minister of Agriculture and Farmers' Welfare in the presence of Dr. Dheer Singh, Director, ICAR–NDRI, Karnal*

## Women-Focused Awareness Programme at Gondar Village

An awareness programme on kitchen gardening, natural farming, and small-scale dairy farming was organized on December 16, 2025 at Gondar village. Twenty-five women farmers from SC category participated.



*Subject matter specialist of KVK-NDRI interacting with farm women*

## On Campus Training Conducted by KVK-NDRI

Sr. No.	Training Title	Date	Total participants
1.	Dairy production and reproduction management	October 10-17, 2025	14
2.	Milk processing and value addition	October 13-17, 2025	16
3.	Vermi-composting for improving soil health and profitable farming	November 18-20, 2025	34
4.	Preservation and value addition of seasonal fruits	December 1-5, 2025	13
5.	Crop residue management approaches with integrated farming system	December 1-5, 2025	15
6.	Environmentally sustainable dairy production system	December 15-19, 2025	37
7.	Integrated dairy cum fish farming	December 22-26, 2025	23

## PERSONALIA

### Training/ Seminar/ Symposium attended

Sr. No.	Name of Scientist with Designation	Title of Conf./Seminar/Symposium/ etc.	Period and place
1.	Dr. Sanjeev Kumar, Sr. Sci. Dr. Sunita Meena, Sr. Sci.	Global Research Initiative for Sustainable Agriculture and Allied Sciences	October 5-7, 2025 at MPUAT, Udaipur
2.	Dr. Bharati Pandey, Sr. Sci.	Workshop on "Bridging AI and Healthcare: A Workshop on Deep Learning for Biomedical Applications"	October 7-9, 2025 at University of Delhi
3.	Dr. Arindam Dhali, Head	5 <sup>th</sup> Annual Conference on "Next Generation Physiological Approaches for Climate-Adaptive Livestock Production"	October 9-10, 2025 at Karnataka
4.	Dr. Sadeesh E.M., Sr. Sci.	11 <sup>th</sup> Annual Conference on "Mitochondria in Health, Disease and Ageing"	October 9-11, 2025 at Manipal
5.	Dr. Gautam Mondal, PS Dr. Basavaprabhu H.N., Sci.	"Livestock Nutrition and Health Care Translating to Human Health"	October 16-17, 2025 at Bangalore
6.	Dr. Sanjit Maiti, Sr. Sci.	ACASA Write-shop on Climate Risks and Adaptions Options	October 28-30, 2025 at Mumbai
7.	Dr. Saurabh Kadyan, Sci. Dr. Manorama Kumari, Sci.	Training programme on "Laboratory Quality Management System and Internal Audit as per IS/ISO/IEC 17025:2017"	October 28-31, 2025 at Noida, U.P.
8.	Dr. Diwas Pradhan, Sci. Dr. Raghu H.V., Sr. Sci.	ASM Global Research Symposium on "One Health Approach"	October 29-31, 2025 at Bangaluru, Karnataka
9.	Dr. Indu Devi, Sci.	"Emerging Science Technology and Innovation Conclave-2025"	November 3-5, 2025 at Bharat Mandapam, New Delhi
10.	Dr. Ajmer Singh, PS	Training on "Advanced Econometric Models and Its application to estimate Expenditure Electricity's using Households consumption survey Data"	November 4-7, 2025 at ICAR-IARI, New Delhi
11.	Dr. Sachinandan De, PS	Annual Convention of "Indian Society Veterinary Immunology and Biotechnology" and International Conference on "Envisioning Livestock Production and Protection under the One Health Landscape"	November 6-8, 2025 at IVRI, Mukteshwar

12.	Dr. Saurabh Kadyan, Sci.	66 <sup>th</sup> Annual International Conference & Research Conclave of the Association of Microbiologists of India	November 12-15, 2025 at Dev Bhoomi University, Dehradun, Uttarakhand
13.	Dr. P. Barnwal, Head Dr. Chitranyak, PS Sh. Ankit Deep, Sci.	59 <sup>th</sup> Annual Convention on "Engineering Innovation for Agriculture 5.0 and International Symposium of Mechanotrics and Robotics in Pre and Post Production Agriculture"	November 10-12, 2025 at ICAR-CIAE, Bhopal
14.	Dr. Gopal Gowane, PS	International Conference & XIX Annual Convention of the Indian Society of Animal Genetics & Breeding"	November 13-14, 2025 at WBUAFS, Kolkata
15.	Dr. Vikas Vohra, Head Dr. Ashok Santra, PS Dr. M Karunakaran, PS Dr. Saroj Rai, Sr. Sci. Dr. Mohan Mondal, Sr. Sci. Dr. Rani Alex, Sr. Sci.	International Conference "Precision Animal Breeding through Genomics Artificial Intelligence and Machine Learning"	November 13-14, 2025 at WBUAFS, Kolkata
16.	Dr. Pawan Singh, Head Dr. A K Mishra, PS Dr. Sohanvir Singh, PS Dr. Chander Dutt, PS Dr. Goutam Mondal, PS Dr. Sachin Kumar, Sr. Sci.	21 <sup>th</sup> Biennial International Conference on "Global Resilience in Animal Nutrition: Innovation for Sustainable Future"	November 19-21, 2025 at College of Veterinary Science & Animal Husbandry & University of Agriculture & Technology, Ayodhya (UP)
17.	Dr. Sanjit Maiti, Sr. Sci.	International Conference cum Workshop on Climate Resilient Livestock Production Emerging Concepts and Technology for Sustenance"	November 23-24, 2025 at ICAR-NIANP, Bengaluru
18.	Dr. Sanjeev Kumar, Sr. Sci.	6 <sup>th</sup> International Agronomy Congress on "Re-Envisioning Agronomy for Smart Agri-Food System and Environmental Stewardship"	November 24-26, 2025 at National Agriculture Science Complex, New Delhi
19.	Dr. Udit Chaudhary, Sr. Sci. Dr. Gunjan Bhandari, Sci.	85 <sup>th</sup> Annual Conference "Assessment of Unrealized Export Potential Regulatory Barriers and Rejection Patterns in Indian Dairy Sector"	November 26-28, 2025 at Chaudhary Charan Singh Haryana University Hisar
20.	Dr A Manimaran, Sr. Sci.	25 <sup>th</sup> Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology and National Symposium on "Emerging Need for Novel Veterinary Drugs to Address Challenges of Livestock Health"	November 26-28, 2025 at Shivamogga Karnataka
21.	Dr. Pankaj Kumar Saraswat, Head	6 <sup>th</sup> International Agronomy Congress on "Reenvisioning Agronomy for Smart Agri-food Systems and Environmental Stewardship"	November 26, 2025, at ICAR-Indian Agriculture Research Institute, New Delhi
22.	Dr. Sonu K.S, Sci.	Two days training programme on "Measurement of Uncertainty"	November 27-28, 2025 at NITS, Noida, UP.
23.	Dr. Sachinandan De, PS	9 <sup>th</sup> Annual Convention of (SVBBI) and National Symposium on "Advancing Animal Health and Production through Biochemical and Biotechnological Innovations"	November 28-29, 2025 at WBUAFS, Kolkata

24.	Dr. Sachinandan De, PS Dr. Suneel Kumar Onteru, Head Dr. Rakesh Kumar, PS Dr. Rajani Kumar Paul, Sr. Sci.	9 <sup>th</sup> Annual Convention of Society of Veterinary Biochemists as Biotechnologists of India & National Symposium on "Advising Animal Health and Production through Biochemical and Biotechnological Innovations"	November 28-29, 2025 at West Bengal University of Animal & Fishery Science, Kolkata
25.	Dr. Rashmi H.M., Sr. Sci.	National Symposium on "Viksit Bharat: Challenges Opportunities and Way Forward for Indian Dairy Section"	November 28, 2025 at SRS, Bangaluru
26.	Dr. Goutam Mondal, PS	for participation to represent India in the Regional Stakeholder Workshop on the Enhanced Transparency Framework (ETF) organized by ICIMOD and UNFCCC	December 1-2, 2025 at Paro, Bhutan
27.	Dr. A. Kumaresan, PS & National Fellow	National Workshop on "Indian Dairy by Masses and Not Mass Production-The Way Forwarded"	December 1-2, 2025 at Chennai
28.	Dr. Subhasis Mandal, Head	33 <sup>rd</sup> Annual Conference of Agricultural Economics and Research Association, India	December 1-3, 2025 at ICAR-NAARM, Hyderabad
29.	Dr. S. De, PS	12 <sup>th</sup> Annual Convention of SVSBT & International Conference on "Bridging Science and Society: Biotechnology for Sustainable One Health"	December 3-5, 2025 at LRUVAS, Hisar
30.	Dr. Bharati Pandey, Sci.	Five-day short-term Course on "Transforming Healthcare and AI Driven Drug Discovery"	December 5-9, 2025 Online Mode
31.	Dr. Sonu K.S., Sci.	The Winter School on "Application of Foodomics and Advanced Analytical Techniques for ensuring Quality, Safety and Functional Properties of Dairy Foods"	December 6-26, 2025 at ICAR-NDRI, Karnal
32.	Dr. Hardev Ram, Sr. Sci. Dr. Rajesh Kumar Meena, Sci.	33 <sup>rd</sup> National Conference on "Land and Water Management for Ecological Restoration and Agricultural Sustainability"	December 08-10, 2025 at PAU Ludhiana
33.	Dr. Gopal R Gowane, PS	To deliver a talk in 40 <sup>th</sup> Annual Conference and National Symposium of Indian Poultry Science Association	December 09-11, 2025 at ICAR-DPR, Hyderabad
34.	Dr. Naresh Lalaji Selokar, Sr. Sci., Dr. Manoj Kumar Singh, Sr. Sci., Dr. Nishant Kumar, Sr. Sci., Dr. Vedamurthy, G.V., Sr. Sci./Dr. Rubina Kumari Baithalu, Sr. Sci.	International Conference on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities"	December 10-12, 2025 at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry
35.	Dr. Shilpa Shree B.G., Sr. Scientist	International Conference on "Women 5.0: Power Progress & Possibilities"	December 11-12, 2025 at IFHC, Hyderabad
36.	Dr. Rajan Sharma, Joint Director (Research)	To deliver a talk during 4 <sup>th</sup> National Dairy Summit	December 12, 2025 at New Delhi
37.	Dr. Pawan Singh, Head Dr. Vikas Vohra, Head Dr. Sohanvir Singh, PS Dr. Naresh Lalaji Selokar, Sr. Sci Dr. Rubina Kumari Baithalu, Sr. Sci. Dr. Indu Devi, Scientist	National Conference on "Buffalo Production and Health in a Changing Climate: Innovations for a Resilient Future"	December 15-16, 2025 at ICAR-IVRI, Bareilly, Izatnagar

38.	Dr. P. Heartwin Amaladhas, PS	31 <sup>th</sup> Indian Convention of Food Scientists and Technologists-2025 on the Focal theme "Innovation in Nutrition, Dietetics, Upcycling and Local Foods on Gastronomic Engineering"	December 18-20, 2025 at NIFTEM, Thanjavur
39.	Dr. Naresh Lalaji Selokar, Sr. Sci.	Training under the Lal Bahadur Shastri Outstanding Young Award 2021 Challenge Research Project	December 18, 2025 to March 17, 2026 at the Institute of Farm Animal Genetics, Germany
40.	Dr. Nitin Tyagi, PS	Technical Workshop on "Buffalo Milk Productivity Optimization"	December 19, 2025 at New Delhi
41.	Dr. Jai Kumar Kaushik, Head Dr. Diwas Pradhan, Sr. Sci. Dr. Pradip Vishnu Behare, Sr. Sci. Dr. P. Narender Raju, Sr. Sci. Dr. Raghu H.V., Sr. Sci. Dr. Kaushik Khamrui, PS Dr. Yogesh Khetra, Sr. Sci. Dr. Saroj Rai, Sr. Sci. Dr. Rashmi H.M, Sr. Sci.	International Conference on "Fermented Foods, Health and Social Well-being"	December 19-22, 2025 at West Bengal University of Animal and Fishery Sciences, Kolkata
42.	Dr. Dheer Singh, Director	To deliver a lecture on "Dairy Production in India"	December 21-23, 2025 at the Cornell Nutrition Conference, New York, USA
43.	Dr. Santanu Banik, Head Dr. Arindam Dhali, Head Dr. Nishant Kumar, Sr. Sci.	To receive Fellow Award during 23 <sup>rd</sup> Convocation of National Academy of Veterinary Sciences (India) cum National Scientific convention on "Strategic Framework for Transformation of India's Livestock, Poultry and Meat Sector for Viksit Bharat@2047"	December 22-23, 2025 at Bihar Animal Sciences University, Patna

## Joining/ Promotions/ Transfers/ Retirements

- ♦ Dr. Elizabeth Thomas appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Dairy Technology vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 21, 2025.
- ♦ Dr. Harshita Sonarhi appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Dairy Technology vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 27, 2025.
- ♦ Dr. Karuna Prakash Bambode appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Animal Physiology vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 27, 2025.
- ♦ Dr. Priyae Brath Gautam appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Dairy Chemistry vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 27, 2025.
- ♦ Dr. Maina Kumari appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Agricultural Extension vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 27, 2025.
- ♦ Dr. Catherine Skyongzin Paul appointed as Scientist (on probation) w.e.f. 07.07.2025 in the discipline of Dairy Microbiology vide Council's OM dated 19.05.2025 and joined her duties at ICAR-NDRI, Karnal w.e.f. October 27, 2025..
- ♦ Dr. Pawan Singh, Principal Scientist & Head, Livestock Production & Management, ICAR-NDRI, Karnal retired from Council's Service w.e.f. December 31, 2025.

- ◆ Dr. Arun Kumar Misra, Principal Scientist, ICAR-NDRI, Karnal retired from Council's Service w.e.f. December 31, 2025.
- ◆ Dr. Subrata Kumar Das, Principal Scientist, ICAR-NDRI-ERS, Kalyani retired from Council's Service w.e.f. December 31, 2025.
- ◆ Dr. Tapas Kumar Dutta, Principal Scientist, ICAR-NDRI-ERS, Kalyani retired from Council's Service w.e.f. December 31, 2025.
- ◆ Dr. Sachinandan De, Principal Scientist, ICAR-NDRI, Karnal retired from Council's Service w.e.f. December 31, 2025.

## राजभाषा एकक

### संस्थान राजभाषा कार्यान्वयन समिति की बैठक

#### भाकृअनुप-राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल की राजभाषा कार्यान्वयन समिति की दिनांक दिसंबर 19, 2025 को संपन्न हुई 109वीं समीक्षा बैठक का कार्यवृत्त

डा. धीर सिंह, निदेशक, भाकृअनुप-राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल की अध्यक्षता में संस्थान राजभाषा कार्यान्वयन समिति की अक्टूबर 01 से दिसंबर 31, 2025 तक की तिमाही समीक्षा बैठक दिनांक दिसंबर 19, 2025 को आयोजित की गयी। बैठक में संस्थान के 28 पदाधिकारी शामिल हुए।

संस्थान में दिनांक नवंबर 18, 2025 को ("हिन्दी कार्यान्वयन एवं पुरस्कार वितरण" संबंधी कार्यशाला) हिन्दी कार्यशाला का आयोजन किया गया जिसमें संस्थान के 50 अधिकारी एवं कर्मचारी शामिल हुए।

### नगरस्तरीय राजभाषा गतिविधियां

भाकृअनुप-राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल में हिन्दी दिवस पखवाड़ा समापन एवं वितरण समारोह-2025 दिनांक नवंबर 18, 2025 को किया गया। हिन्दी पखवाड़ा के दौरान दिनांक सितंबर 23, 2025 हिन्दी शोध पत्र/पोस्टर प्रदर्शन प्रतियोगिता का आयोजन किया गया। इसके पश्चात् दिनांक सितंबर 25, 2025 को हिन्दी टंकण प्रतियोगिता, दिनांक सितंबर 26, 2025 को हिन्दी निबंध प्रतियोगिता तथा दिनांक सितंबर 29, 2025 राजभाषा ज्ञान प्रतियोगिता के विजेताओं को प्रमाणपत्रों से सम्मानित किया गया। इसमें संस्थान के वैज्ञानिकों, अधिकारियों, कर्मचारियों एवं शोधकर्ता विद्यार्थियों ने बद्ध-चढ़कर हिस्सा लिया।

नगर राजभाषा कार्यान्वयन समिति, करनाल के अध्यक्षीय कार्यालय भाकृअनुप-राष्ट्रीय डेरी अनुसंधान संस्थान, करनाल में दिनांक नवंबर 28, 2025 को 82वीं नगरस्तरीय छमाही समीक्षा बैठक का डा. धीर सिंह, निदेशक की अध्यक्षता में आयोजन किया गया। इस बैठक में समिति के करनाल नगर के केन्द्रीय, कार्यालयों के प्रशासनिक प्रमुखों एवं प्राधिकृत अधिकारियों ने भाग लिया और सभी कार्यालाओं की छमाही समीक्षा रिपोर्ट पर चर्चा की। इन छमाही समीक्षा बैठक में करनाल शहर के 47 से अधिक कार्यालाओं के कार्यालय प्रमुख एवं उनके प्रतिनिधियों ने बैठक में शिरकत की।

14 सितंबर से पहले अर्थात् सितंबर 1 से 12, 2025 के दौरान नगर राजभाषा कार्यान्वयन समिति, करनाल के बैनर तले केन्द्र सरकार के कार्यालयों के अधिकारियों एवं कर्मचारियों के लिए 04 नगर स्तरीय प्रतियोगिताओं का भी आयोजन किया गया। 04 नगर स्तरीय प्रतियोगिताओं के विजेताओं को भी अध्यक्ष, नराकास, करनाल एवं संस्थान के निदेशक द्वारा प्रमाणपत्र वितरित किए गए। नराकास, करनाल के 06 सदस्य कार्यालयों में व्याख्यान दिया।

## SOUTHERN CAMPUS, BENGALURU

### RESEARCH

#### Chitosan-derived CQDs: A Safe Nanotherapeutic Candidates for Controlling Drug-Resistant Pathogens Causing Bovine Mastitis

Basavaprabhu, H.N.

Chitosan-derived CQDs synthesized via hydrothermal approach (yield: 0.69 mg/mL) were extensively characterized using HR-TEM, UV-vis, XPS, AFM, Raman, and other spectroscopic techniques. Antibacterial activity against bovine mastitis-causing *S. aureus* and *E. coli* (drug-resistant and sensitive strains) was confirmed through agar well diffusion, Kirby-Bauer disc diffusion, and microbroth dilution assays, yielding minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) values of 83.98 and 167.96 µg/mL, respectively. Time-kill assays showed MIC/MBC effects within 4–6 h, with elevated intracellular ROS levels suggesting oxidative stress as the primary mechanism. Crystal violet assay and confocal microscopy confirmed dose-dependent biofilm inhibition. ABTS and DPPH assays demonstrated antioxidant activity, while albumin denaturation assays indicated anti-inflammatory potential. Biocompatibility assessments confirmed CQDs to be non-hemolytic and non-toxic to HT-29 eukaryotic cells even above MBC, establishing their promise as safe nanotherapeutic candidates against drug-resistant bovine mastitis pathogens.

#### Validation of Progesterone Loaded Nanofiber Based Polyurethane Sponge System for Estrus Synchronization in Dairy Cattle

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

Progesterone (P4) is non-amenable to oral administration due to poor water solubility and rapid metabolism, limiting its bioavailability. Encapsulation in electrospun nanofiber delivery systems offers controlled, targeted release, making them ideal carriers for hydrophobic drugs like P4. In this study, P4 was successfully incorporated into Zein nanofibers via electrospinning for in-vivo validation in 22 cattle (Deoni and HF crossbred

heifers and cows). Encapsulated 0.7g P4 Zein NF-loaded PU sponges were inserted using a newly designed, cost-effective intravaginal sponge applicator, ensuring smooth, comfortable insertion. Combined with the Ovsynch protocol, intravaginal sponge retention ranged from 83–88%, with clear cervical mucus discharge. Estrus synchronization/induction efficiency and AI coverage achieved 100% in both Deoni and HF crossbred heifers and cows, confirming the system's efficacy for reproductive management in indigenous and crossbred cattle.

### Institutional Technology Management Unit

#### The lactose-free spiced whey beverage developed

Spiced Whey Beverage: The lactose-free spiced whey beverage developed by dairy processing section of SRS, ICAR-NDRI, Bengaluru was released by the Director and launched in institute parlour for sales. The whey beverage is lactose-free and contains spices such as black pepper extract, ginger and cumin. It is antioxidant rich and improves digestion.



*Release of Spiced Whey Beverage by the Director, ICAR-NDRI in the presence of Joint Director (Res), Head, SRS, Experts and faculties on November 11, 2025 at SRS*

Conducted consultancy work on texture analysis of paneer samples (4 nos) submitted by GCMFL, Quality assurance, Bengaluru. The revenue generated is Rs. 7080/-.

## Events

### Vigilance Awareness Week 2025

Vigilance Awareness Week 2025 was observed at the SRS of ICAR–NDRI from October 27 to November 2, 2025 as directed by the Central Vigilance Office, on the theme “Vigilance: Our Shared Responsibility.” Staff and students were encouraged to take the citizen’s e-Integrity Pledge on the CVC website. As part of the celebrations, a quiz competition for staff and a slogan-writing competition for students were organized with winners receiving certificates. A walkathon involving staff and students was held on October 31, 2025. An invited lecture was conducted on October 29, 2025 delivered by Shri J. Mathew, SAO, ICAR- NBAIR, Bengaluru aiming towards vigilance as a management tool and procurement procedures followed by an interactive discussion.

### The Deeksharambh–2025: Induction-cum-Foundation Programme

The “Deeksharambh–2025” Induction-cum-Foundation Programme was conducted from November 12-28, 2025 at the SRS of ICAR–NDRI, Bengaluru, for newly admitted UG and PG students. The programme aimed at holistic development and included sessions on yoga, communication and presentation skills, team building and leadership, personality development, time management, SDGs-2030 and Viksit Bharat-2047, tribal culture and indigenous knowledge, agribusiness, start-ups and entrepreneurship, and science, literature and creativity. As part of the programme, student cultural clubs such as the Literary, Music, Art and Craft, and Dramatics Clubs were constituted to promote creativity, teamwork and campus engagement. The programme concluded with a Freshers’ Day celebration on December 2, 2025 featuring vibrant cultural performances by students from the respective clubs.

### National Milk Day Celebrated

The Southern Regional Station of ICAR–NDRI, in collaboration with Indian Dairy Association – South Zone and the Alumni Association of NDRI SRS, commemorated National Milk Day on November 28, 2025 at the ICAR–NDRI SRS campus, Bengaluru. A one-day National Symposium titled “Viksit Bharat: Challenges, Opportunities and Way Forward for the Indian Dairy

Sector” was organized to mark the birth anniversary of Padma Vibhushan Dr. Verghese Kurien. The symposium was inaugurated by Dr. R. P. Aneja, former MD of NDDB, with Prof. V. Palanimuthu, Director of NIFTEM, as Guest of Honour. Speakers highlighted contributions to India’s dairy sector, milk quality, and emerging processing technologies. The event saw active participation of about 220 delegates from academia, industry, policy, and entrepreneurship.

### Internship Training Programme Conducted

Dairy processing section, SRS, ICAR-NDRI is organizing a training programme on “Physico-Chemical, Technological and Microbiological Aspects of Milk and Milk Products” for Garden City University PG students of Microbiology from December 22, 2025 to February 21, 2026 (2 months). Participants of Garden City University PG students of Microbiology attending the training programme on “Physico-Chemical, Technological and Microbiological Aspects of Milk and Milk Products”.



Group of PG students from Garden City University with faculty of SRS, Bengaluru

### An Exposure Visit

- ◆ An Exposure cum One Day Training Programme on Scientific Dairy Management was organised for 123 farmer trainees comprising farmers, farmwomen and farm youth from Tamil Nadu State under ‘Support to State Extension Programmes for Extension Reforms’ (SSEPERs) under ATMA scheme including visit of students from different institutions.

## HONOURS/ AWARDS/ RECOGNITIONS

- 1) Dr. Basavaprabhu H. N., Scientist (Dairy Microbiology), SRS-NDRI, received "Best Poster Award" in the National Milk Day Symposium on "Viksit Bharat: Challenges, Opportunities, and Way Forward for the Indian Dairy Sector" jointly organized by IDA and SRS-NDRI, Bengaluru on November 28, 2025.
- 2) Ms. Sampritha, Ph. D. student of Dr. S. Subash, SRS-NDRI, received Best Poster Award in the Social Science category at National Milk Day Symposium on "Viksit Bharat: Challenges, Opportunities, and Way Forward for the Indian Dairy Sector" jointly organized by IDA and SRS-NDRI, Bengaluru on November 28, 2025.
- 3) Dr Vedamurthy G.V. received Best Poster Award-Second Prize in the National Milk Day Symposium on "Viksit Bharat: Challenges, Opportunities, and Way Forward for the Indian Dairy Sector" jointly organized by IDA and SRS-NDRI, Bengaluru on November 28, 2025.
- 4) Received the First Best Poster Presentation Award for the research work titled "Purification of GOS Produced from Paneer Whey Using Activated Charcoal and Selective Microbial Fermentation," authored by Neha R. Petare, Manoj Kumar C. T., Sathish Kumar M. H., Basavaprabhu H. N., and Priyanka Singh Rao, at the National Symposium jointly organized by SRS, ICAR-NDRI, Bengaluru; Indian Dairy Association (South Zone); and the Alumni Association, SRS, ICAR-NDRI, Bengaluru, on November 28, 2025, at SRS, ICAR-NDRI, Bengaluru.
- 5) Dr. A. Kumaresan, ICAR National Fellow & Principal Scientist received Dr. A.S. Kaikini Award - 2025 during the International Symposium on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities" held from December 10-12, 2025 at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry. This award is given once in three years by the Indian Society for Study of Animal Reproduction for Lifetime achievement in Andrology.
- 6) Dr. Aparna Raj, Ph. D. student of Dr. A. Kumaresan received Best Poster Presentation Award (2<sup>nd</sup> Prize) during the International Symposium on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities" held from December 10-12, 2025 at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry.
- 7) Dr. Sakshi Payasi, M. V. Sc., Student of Dr S Jeyakumar received Best Oral presentation Award (3<sup>rd</sup> Prize) during the International Symposium on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities" held from December 10-12, 2025 at Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry.
- 8) Dr Vedamurthy, G.V. recieved Second prize for the abstract presentation on "GAPDHS: potential biomarker of sperm progressive motility" Vedamurthy G. V., Naresh Kumar K., Kumaresan A., Sulochana M., Lavanya M. and S. Jeyakumar, at 40<sup>th</sup> Annual Convention of the Indian Society for the Study of Animal Reproduction (ISSAR) and the International Symposium on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities", held from December 10-12, 2025 to be held at Department of Veterinary Gynaecology and Obstetrics Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry.
- 9) Dr. Rashmi H. M. received "Young Scientist Award-2025" in the Faculty (Young Scientist) category, sponsored by the Swedish South Asian Network on Fermented Foods (SASNET-FF), during the 12<sup>th</sup> International Conference (WBUAFSASNETCON-2025) held at West Bengal University of Animal and Fishery Sciences, Mohanpur, on December 19-20, 2025.

- 10) Dr Arindam Dhali, Head of the Station, ICAR-NDRI SRS, received Fellowship of the 'National Academy of Veterinary Sciences (India)' during the XXIII Convocation of the Academy on December 22, 2025.



*Dr. Arindam Dhali, Head, SRS of ICAR-NDRI receiving Fellow of the 'National Academy of Veterinary Sciences (India)' during the XXIII Convocation of the Academy on December 22, 2025*



*Dr. A. Kumaresan, ICAR-National Fellow & Principal Scientist received Dr. A.S. Kaikini Award, during ISSARCON-2025*

## Personalia

### Training/ Workshops/ Seminars/ Symposia/ Conferences attended

Scientist's Name and Designation	Title of the programme	Period of the Programme
Dr. S. Jeyakumar, PS	Delivered a lead talk on "Next-Generation Tools for Animal Welfare Monitoring: The Synergy of Infrared Thermography and Artificial Intelligence" during the VII Annual Convention & National Conference of the National Academy of Veterinary Nutrition and Animal Welfare (NAVNAW), at ICAR-NIANP, Bengaluru	October 16-17, 2025
Dr. Vedamurthy, G V, Sr. Sci. Dr. Manoj Kumar C.T., Sr. Sci. Dr. Basavaprabhu H. N., Sci.	Attended National Symposium jointly organized by SRS, ICAR-NDRI, Bengaluru, Indian Dairy Association-South Zone & Alumni Association, SRS, ICAR-NDRI, Bengaluru at SRS, ICAR-NDRI, Adugod, Bengaluru-560030.	November 28, 2025
Dr. Rashmi H. M., Sr. Sci.	Delivered invited lecture on Biotics in Indian Fermented Foods: Probiotics, Postbiotics, metabiotics for Health and Wellness during the 12th International Conference (WBUAFSASNETCON-2025) held at West Bengal University of Animal and Fishery Sciences, Mohanpur.	December 19-20, 2025
Dr. Vedamurthy G. V., Sr. Sci.	40 <sup>th</sup> Annual Convention of the Indian Society for the Study of Animal Reproduction (ISSAR) and the International Symposium on "Animal Reproduction in a Changing World: Addressing Challenges and Embracing Opportunities", held at Department of Veterinary Gynaecology and Obstetrics Rajiv Gandhi Institute of Veterinary Education & Research, Puducherry -605 009, India.	December 10-12, 2025

## Joining

- ♦ Shri. Vinod Kumar, Asst. Joined at SRS w.e.f. December 31, 2025.

## EASTERN CAMPUS, KALYANI

### RESEARCH

#### Mitigating Methane Emission and Augmenting Nutritional Potential in Cattle through Pre-Treatment of Paddy Straw: A Sustainable Alternative to Field Burning in India

Wakchaure Sanket Vinayak, Tapas Kumar Dutta, Anupam Chatterjee and Asif Mohammad

Field burning of paddy straw in India is a significant contributor to air pollution. Utilization of value-added paddy straw can maximize its potential in ruminant diets. The experiments tested total mixed rations (TMRs) composed of urea-molasses treated paddy straw (UMPS), concentrate mixture (CM), and green fodder combined with yeast (*Saccharomyces cerevisiae*) or a combination of yeast and azolla. These TMRs (with yeast, T1; or yeast + azolla, T2) reduced ( $p < 0.014$ ) methane energy loss/kg of digestible dry matter under in-vitro system, and significantly increased ( $p < 0.001$ ) the ME value in TMRs over untreated paddy straw (T0). Feeding calves with UMPS-based TMRs, specifically those that included azolla and yeast, yielded higher daily body weight gain ( $p < 0.001$ ), and increased feed conversion efficiency ( $p < 0.015$ ) compared to control. These treated TMR diets also led to increased intake of ME compared to control. Digestible crude protein values of treated TMRs (T1 and T2) increased by 21.61 and 28.21 percent, respectively than T0; thereby, improving livestock nutrition while potentially reducing environmental pollution associated with straw burning. Therefore, treating paddy straw with urea-molasses alone or combining with azolla and yeast emerges as a promising method to enhance livestock productivity, and mitigate environmental impacts from straw burning.

### Events

#### Health Camp and Interaction Meet

A livestock health camp was organized at Bir Sidhu Nagar, A5, Kalyani, Nadia, West Bengal, for the vaccination of goats and poultry birds on November 7, 2025. A total of 329 goats and poultry birds were vaccinated and treated during the camp. The team from ERS-NDRI, Kalyani also provided treatment to ailing animals and poultry birds. Dr. Dheer Singh, Director, ICAR-NDRI, Karnal along with the Joint Director (Research) interacted with the beneficiary tribal farmers of Bir Sidhu Nagar. The farmers briefed the officials about the developmental activities undertaken by ERS-NDRI through the TSP project and reported that goat rearing has provided them with significant economic benefits. In his address, the Director expressed his satisfaction with the progress of the project and assured the farmers that the institute would continue its efforts in the tribal cluster under the ongoing TSP initiative.



Dr. Dheer Singh, Director, ICAR-NDRI, Karnal interacting with the farmers during the livestock health camp at Bir Sidhu Nagar, West Bengal

## Laying Foundation Stone for Goat Houses and Interaction Meet As a part of “Janajatiya Gourav Varsha Pakwada” celebration

Under Janajatiya Gourav Varsha Pakwada, developmental activities were conducted on November 8, 2025, at Banamalipara village, Chakdah block, Nadia district, West Bengal, under the NDRI-TSP Project. The programme was chaired by Dr. Dheer Singh, Director, ICAR-NDRI, Karnal with participation of institute officials and scientists, and attended by 277 tribal farmers from Chakdah and Bangaon blocks. Mineral mixtures, dewormers, livestock kits, school bags, and study materials were distributed, and the Director laid the foundation stone for three goat houses, released three ERS publications, and visited beneficiary farms. Foundation stone for three goat houses, released three ERS publications, visited beneficiary farms, and emphasized holistic tribal development.



*Dr. Dheer Singh, Director, ICAR-NDRI, Karnal Laying Foundation Stone for Goat Houses at Banamalipara village, Chakdah block, Nadia district, West Bengal, under the NDRI-TSP Project*

## Janajatiya Gaurav Varsh Pakhwada

The Eastern Regional Station of the ICAR-NDRI, Kalyani, organized an awareness programme on November 14, 2025, at Rawtara and Bhaluka villages, Krishnanagar-I block, Nadia district, under Janajatiya Gaurav Varsh Pakhwada. A total of 25 tribal farmers (12 male and 13 female) participated in discussions on direct market access for clean milk, poultry, and agricultural produce to enhance farm income and livelihood security.



## National Milk Day Celebrated

National Milk Day was observed on November 26, 2025, at the ERS, ICAR-NDRI, Kalyani. The programme featured extension activities highlighting the contributions of Verghese Kurien and emphasizing the role of dairying in improving nutrition and strengthening rural livelihoods. Farmer-scientist interaction programmes were organized in the villages of Belia and Shimulia. This was followed by a campus programme on November 27, 2025, which was attended by around 100 farmers.



*A glimpse of National Milk Day celebration*

## Extension Activities:

### Various on-campus input distribution and scientists-farmers interaction programmes organized by Extension Division as follows:

- On October 8, 2025, at Bagma, Gomati district, Tripura, 1,000 ducklings, 1,000 day-old layer chicks, 1,700 kg poultry feed, 2,500 kg duck feed, mineral mixture, waterers, feeders, and dewormers were distributed to farmers.



- On October 13, 2025, maize seeds, sorghum seeds, and goat feed were distributed to 74 tribal farmers from Nadia and North 24 Parganas districts



- On October 24, 2025, paddy seeds, pointed gourd planting material, sprayers, and fertilizers were distributed to 559 tribal farmers.



- On December 10, 2025, certified seeds of Shatabdi (7 q) and Bidhan Suruchi (3.5 q), and TL seeds of Banshkati (3.5 q) and G 100 (40 q) were distributed to 551 tribal farmers across 22 villages in Nadia and North 24 Parganas districts, West Bengal.



- On December 26, 2025, a Scientist–Farmers Interaction Programme was held at Shimulia village, North 24 Parganas district, West Bengal, with participation of about 200 tribal farmers from Nadia and North 24 Parganas districts.



- From December 17-18, 2025, a Farmers’ Awareness-cum-Input Distribution Programme was organized at KVK, Dhubri district, Assam, benefiting about 250 farmers, during which 6,250 day-old Rainbow Rooster chicks, 500 Khaki Campbell ducklings, poultry, goat and pig feed, feeders, waterers, mineral mixture, and calcium supplements were distributed.



- On October 29, 2025, a Scientists–Farmers Interaction-cum-Input Distribution Programme was organized at Bagma village, Gomati district, Tripura, benefiting 80 duck farmers and 20 cattle farmers with livestock-related inputs and technical guidance.



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**Photographs:** I/C, Communication Centre

**Published by:** Director, ICAR-NDRI, Karnal

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