



NIVEDI PULSE

NIVEDI PULSE - June 2026

ICAR Secretary Visits ICAR–NIVEDI, Calls for Advanced Disease Intelligence to Strengthen Animal Health Security

Shri Gyanendra Dev Tripathi, Additional Secretary, DARE and Secretary, ICAR, paid his maiden visit to ICAR–NIVEDI during the CSR and Technology Conclave–2026, on 23rd June, 2026. The visit was coordinated by Dr. S. B. Shivachandra, Principal Scientist, ICAR–NIVEDI. The visit began with the planting of a sapling in the presence of Dr. Baldev R. Gulati, Director, ICAR–NIVEDI, and Dr. A. Sahoo, Director, ICAR–NIANP. Shri Tripathi visited the institute's key facilities, including the WOAH Reference Laboratories for PPR and Leptospirosis, the National Animal Disease Referral Expert System (NADRES), and the NIVEDI Agri-Business Incubation Centre (NaaViC).

Dr. Gulati briefed him on ICAR–NIVEDI's mandate, achievements, and contributions to animal disease surveillance, epidemiological intelligence, diagnostics, forecasting, and support to national disease control programmes. Shri Tripathi appreciated the institute's leadership in disease analytics, digital epidemiology, diagnostics, and innovation. He emphasized the need to quantify disease burden and economic losses, assess the

impact of disease control programmes, and strengthen predictive disease intelligence by advancing forecasting from district to block and village levels through the integration of mathematical modelling with Artificial Intelligence (AI) and Machine Learning (ML)-based systems.



The visit concluded with an interactive discussion with the institute's scientists on emerging technologies, innovation, and future strategies for reinforcing India's animal disease surveillance and preparedness systems.



ICAR NIVEDI
Transforming Animal Health

Institute Demonstrates International Laboratory Standards to DAHD Workshop Participants

As part of the Department of Animal Husbandry and Dairying (DAHD), Government of India's Sensitization Workshop on strengthening Regional and Central Disease Diagnostic Laboratories, a delegation of 30 participants visited ICAR-NIVEDI, Bengaluru, on 5 June 2026, under the pandemic funds. The delegation was welcomed by Dr. K. P. Suresh, In-Charge Director, and Dr. V. Balamurugan, Principal Scientist, who highlighted NIVEDI's contributions to animal disease surveillance, epidemiology, diagnostics, research, and capacity

building. The participants were provided an overview of NIVEDI's activities and visited the institute's advanced diagnostic laboratories, where they were briefed on laboratory quality management systems, biosafety practices, and standard operating procedures. Dr. V. Balamurugan delivered a presentation on the implementation of ISO/IEC 17025:2017 standards in veterinary diagnostic laboratories, emphasizing quality assurance, method validation, proficiency testing, documentation, and accreditation requirements.



The delegates appreciated NIVEDI's efforts in promoting internationally recognized laboratory quality standards and conducting training programmes on ISO 17025 implementation. They also learned about the institute's contributions to transboundary animal disease surveillance and its association with WOA Reference

Laboratory systems for Peste des Petits Ruminants (PPR) and Leptospirosis. The visit provided valuable insights into strengthening veterinary diagnostic laboratories and advancing animal health systems in line with global standards.

Training Program for Institutional One Health Ethics Committee Members

ICAR-NIVEDI organized a training program for the members of its newly constituted Institutional One Health Ethics Committee (IOHEC) on 16 June 2026 to strengthen ethical oversight of research involving human participants, human biological materials, and human data. The training was organized to equip the newly inducted Ethics Committee members with the knowledge and regulatory framework required for the ethical review of research proposals. In his inaugural address, Dr. B.R. Gulati, Director, ICAR-NIVEDI, emphasized that the establishment of the IOHEC reflects the Institute's commitment to safeguarding the dignity, rights, safety, and well-being of research participants while promoting responsible and ethically

compliant research. The programme covered key aspects of research ethics, including the ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, fundamentals of clinical research, roles and responsibilities of Ethics Committees, informed consent process, reporting of adverse events and serious adverse events (SAEs), SAE rules and compensation, evolution of ICH-GCP guidelines, ICH-GCP E6(R3): Good Clinical Practice, ICH E7–E11 Clinical Trial Guidelines, and the New Drugs and Clinical Trials (NDCT) Rules, 2019. In addition to the Ethics Committee members, scientists of ICAR-NIVEDI also participated in the programme and were sensitized to the roles and responsibilities of

investigators conducting research involving human participants. The sessions highlighted the importance of obtaining informed consent, ensuring participant safety, and adhering to national ethical guidelines throughout

the research process. The training marks an important step in strengthening ethical governance and fostering a culture of responsible, transparent, and high-quality One Health research at ICAR-NIVEDI.



Institute Promotes Soil Health and Sustainable Agriculture through Khet Bachao Abhiyan

ICAR–NIVEDI actively organized the National Fertilizer Campaign and Khet Bachao Awareness Programmes during June 2026, coordinated by Dr. Narayanan, Nodal Officer, reaffirming its commitment to soil health, sustainable agriculture, and livestock-based livelihood security in MGMG villages. The programmes were conducted at Bevinahalli and Gowdagere villages, Sira Taluk, Tumakuru district on 09 and 10 June 2026, under the leadership of Dr. K. P.

Suresh and his team. Farmers, students, and teachers were sensitized on balanced fertilizer use, soil test-based nutrient management, integrated nutrient management, and sustainable agricultural practices. Emphasis was placed on judicious use of NPK fertilizers along with organic manures, vermicompost, green manures, and biofertilizers to enhance productivity while maintaining long-term soil fertility.



As part of the livestock health outreach under Khet Bachao Abhiyan, scientists addressed key diseases such as Foot and Mouth Disease, mastitis, mycoplasma infection, brucellosis, and reduced milk yield, highlighting vaccination, timely veterinary intervention, and early disease warning through NADRES v2 alerts. Around 200 students and 26 teachers participated, strengthening awareness on soil conservation, sustainable farming, and livestock health. Further awareness programmes were conducted by Dr. M. M.

Chanda and his team at Ivarkandapura village (16 June 2026) and Manne village, Nelamangala Taluk (17 June 2026), emphasizing the importance of green manuring for improving soil health and sustainability. Throughout the month, multiple ICAR–NIVEDI teams conducted Khet Bachao activities across MGMG villages, reinforcing the message of land conservation, soil fertility improvement, and sustainable crop–livestock systems.

Institute Observes International Yoga Day 2026

ICAR-NIVEDI celebrated the International Day of Yoga at its Bengaluru campus with enthusiastic participation from scientists, officers, staff, students, and contractual personnel. Organized in line with the Ministry of AYUSH theme, "Yoga for Healthy Ageing," the programme featured a guided yoga session led by Mrs. Sushma S., Yoga Trainer and Specialist in Spinal

Health, Mobility & Prenatal Wellness. Participants practiced yoga asanas, pranayama, meditation, and breathing exercises to promote physical fitness, mental well-being, stress management, and a healthy lifestyle. The Director appreciated the enthusiastic participation and encouraged regular yoga practice to foster workplace wellness and holistic well-being.



Vice Chancellor of NDVSU Visits ICAR-NIVEDI

Hon'ble Prof. Mandeep Sharma, Vice Chancellor of Nanaji Deshmukh Veterinary Science University (NDVSU), visited ICAR-NIVEDI on 25 June 2026 and interacted with the Director and the NADEN team on strengthening livestock disease surveillance and epidemiology in India. Dr. B. R. Gulati, Director, ICAR-NIVEDI, highlighted the institute's contributions to the Livestock Health and Disease Control Programme through disease surveillance, epidemiological

investigations, forecasting and forewarning systems, diagnostic support, and capacity-building initiatives. Prof. Sharma appreciated ICAR-NIVEDI's pioneering work and expressed keen interest in developing collaborative research and academic partnerships between NDVSU and ICAR-NIVEDI to advance disease surveillance, epidemiology, and livestock health management in the country.



NaaViC Highlights Strong Momentum in Agripreneurship Activities

During June 2026, NaaViC, the Agri-Business Incubation Centre of ICAR-NIVEDI, actively strengthened its innovation and entrepreneurship ecosystem through a series of outreach, networking, and collaboration activities. On 3 June 2026, Team NaaViC visited C-CAMP and AIC-UASB, GKVK, as part of the promotional activities for its 11th Cohort, engaging with incubation leaders to explore collaborative opportunities and expand the reach of NUZEN, NaaViC's student entrepreneurship programme. Subsequently, on 13–14 June 2026, the team participated in the RISE Conclave 2026,

where it showcased NaaViC's incubation initiatives, interacted with researchers, entrepreneurs, investors, and policymakers, and explored avenues for technology commercialization and start-up development. A significant milestone during the conclave was the signing of a Memorandum of Understanding (MoU) between NaaViC (ICAR-NIVEDI) and CSIR-CFTRI in the presence of Shri Pralhad Joshi, Minister of Consumer Affairs and Minister of New and Renewable Energy, to strengthen cooperation in innovation, technology transfer, and entrepreneurship promotion.



Furthering its collaborative engagements, Dr. Ashwathnarayana, Professor, KIMS Bengaluru, visited NaaViC during June 2026 to learn about its incubation ecosystem and discuss opportunities for innovation-driven partnerships. On 19 June 2026, Dr. Nagaraja D., CEO, TBI-CIEHB, University of Horticultural Sciences, Bagalkot, along with Dr. K.S. Shankarappa, visited NaaViC and held discussions on knowledge



exchange, joint programmes, and strengthening the agripreneurship ecosystem. On 23 June 2026, Team NaaViC participated in the ICAR–CSR Roadshow 2026 at ICAR-NIANP, showcasing NIVEDI's diagnostic technologies and incubation initiatives while engaging with CSR organizations, industry representatives, and potential collaborators.

Team NaaViC Participates in ICAR–CSR Roadshow 2026 at ICAR-NIANP

Team NaaViC from ICAR-NIVEDI participated in the ICAR–CSR Roadshow 2026, organized jointly by ICAR-NIANP and Agri Innovate India Limited at Bengaluru. The roadshow served as a unique platform bringing together innovative start-ups, ICAR-developed technologies, and Corporate Social Responsibility (CSR) partners to foster collaborations for sustainable agricultural development. The event was graced by Shri Shri Gyanendra Dev Tripathi, Additional Secretary, DARE and Secretary, Dr. Praveen Malik, CEO, Agriinnovate and Dr. Artabandhu

Sahoo, Director, NIANP. The roadshow showcased a range of innovative technologies developed by ICAR institutes across Bengaluru, providing CSR partners with opportunities to identify impactful collaboration avenues. Representatives from leading organizations, including ICICI Bank, BioVet, State Bank of India, and YES BANK, participated in the event. Several start-ups incubated across different ICAR institutes also presented their innovations and entrepreneurial journeys, reflecting the growing strength of India's agricultural innovation ecosystem.



Dr. Narayanan G., Senior Scientist, ICAR-NIVEDI, along with Team NaaViC, attended the roadshow and showcased diagnostic technologies developed through the Institute Technology Management Unit (ITMU) and incubation initiatives. The team actively interacted with CSR representatives, industry leaders, and potential collaborators to explore opportunities for promoting innovation and technology adoption in animal health and agribusiness sectors. The event facilitated fruitful discussions, partnership explorations, and strategic collaborations aimed at accelerating the translation of research into practical solutions. Strengthening partnerships among research institutions, industry, start-ups, and CSR organizations is increasingly important for bridging the gap between innovation and field-level implementation. Such collaborative efforts can

help ensure that scientific advancements reach farmers and livestock stakeholders, thereby contributing to sustainable agricultural growth and meaningful grassroots impact.



Disease Radar

India & Global Animal and Zoonotic Disease Landscape — June 2026

In June 2026, several significant animal and zoonotic disease events underscored the continuing importance of 'One Health surveillance'. In Kerala, a confirmed case of 'Nipah virus infection' in a 43-year-old man from Ramanattukara, Kozhikode, prompted intensified surveillance, contact tracing, and public health response measures. A total of 77 contacts, including healthcare workers and family members, were identified and placed under risk-based surveillance. Health authorities reported no evidence of sustained human-to-human transmission and did not recommend the establishment of containment zones (The Hindu, 12 June 2026; The Times of India, 2026).

During the same period, Kerala also experienced a surge in 'shigellosis (bacillary dysentery)', with outbreaks reported from Wayanad and several other districts. More than 500 schoolchildren were affected in a school-associated outbreak, with contaminated water identified as the probable source of infection. Statewide, the number of reported Shigella cases and associated deaths increased substantially, highlighting ongoing concerns regarding water quality, sanitation, and public health preparedness (The Hindu, 13 June 2026; The Times of India, 2026).

Meanwhile, follow-up surveillance and containment activities continued in northeastern India following earlier outbreaks of 'African swine fever (ASF)' in Nagaland. Veterinary authorities maintained movement restrictions, strengthened surveillance, and enhanced monitoring of pig populations to prevent further spread of the disease (Nagaland Post, 2026).

Globally, the outbreak of 'Bundibugyo Ebola virus disease'* in the 'Democratic Republic of the Congo' and 'Uganda' remained a major public health concern, with continued human-to-human transmission and international efforts focused on strengthening outbreak response and accelerating vaccine development (WHO,

2026; CDC, 2026). The ongoing 'highly pathogenic avian influenza (HPAI) H5N1' panzootic also continued to affect poultry, wild birds, and several mammalian species across multiple continents, reinforcing concerns regarding viral adaptation, cross-species transmission, and pandemic preparedness (FAO, 2026; WOA, 2026).

Collectively, these events highlight the dynamic nature of emerging and re-emerging infectious diseases and reinforce the need for robust surveillance systems, timely information sharing, and coordinated One Health approaches to detect, prevent, and respond effectively to threats at the human–animal–environment interface.

Epi Insights

Spatial Autocorrelation in Infectious Disease Epidemiology

Spatial analysis is an important tool in infectious disease epidemiology for investigating the geographic distribution of diseases, which often exhibit non-random spatial patterns and form disease clusters.

This concept is based on **Tobler's First Law of Geography**, which states that *"everything is related to everything else, but near things are more related than distant things."* Accordingly, disease occurrence and health outcomes are frequently influenced by location-specific environmental, ecological, demographic, socioeconomic, and management-related factors.

A key approach for evaluating spatial clustering is the assessment of **spatial autocorrelation**, which quantifies the degree to which neighbouring observations are similar or dissimilar in their attribute values.

Among the available measures, **Moran's I** and **Geary's C** are the most widely used global statistics for assessing spatial autocorrelation in areal data. Moran's I typically ranges from **-1 to +1**.

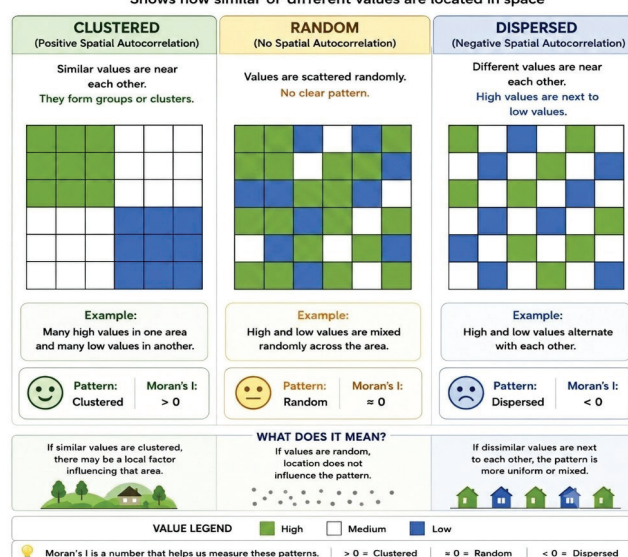
Positive values indicate **positive spatial autocorrelation**, where neighbouring locations tend to have similar values, resulting in spatial clustering. Negative values indicate **negative spatial autocorrelation**, where neighbouring

locations have dissimilar values, producing a dispersed or checkerboard-like spatial pattern in which high values tend to be adjacent to low values and vice versa.

Values close to zero indicate little or no spatial autocorrelation and are consistent with a random spatial distribution. The statistical significance of Moran's I is commonly evaluated using permutation (randomization) tests, which compare the observed statistic with the distribution expected under the null hypothesis of complete spatial randomness. A statistically significant result indicates that the observed spatial pattern is unlikely to have arisen by chance alone.

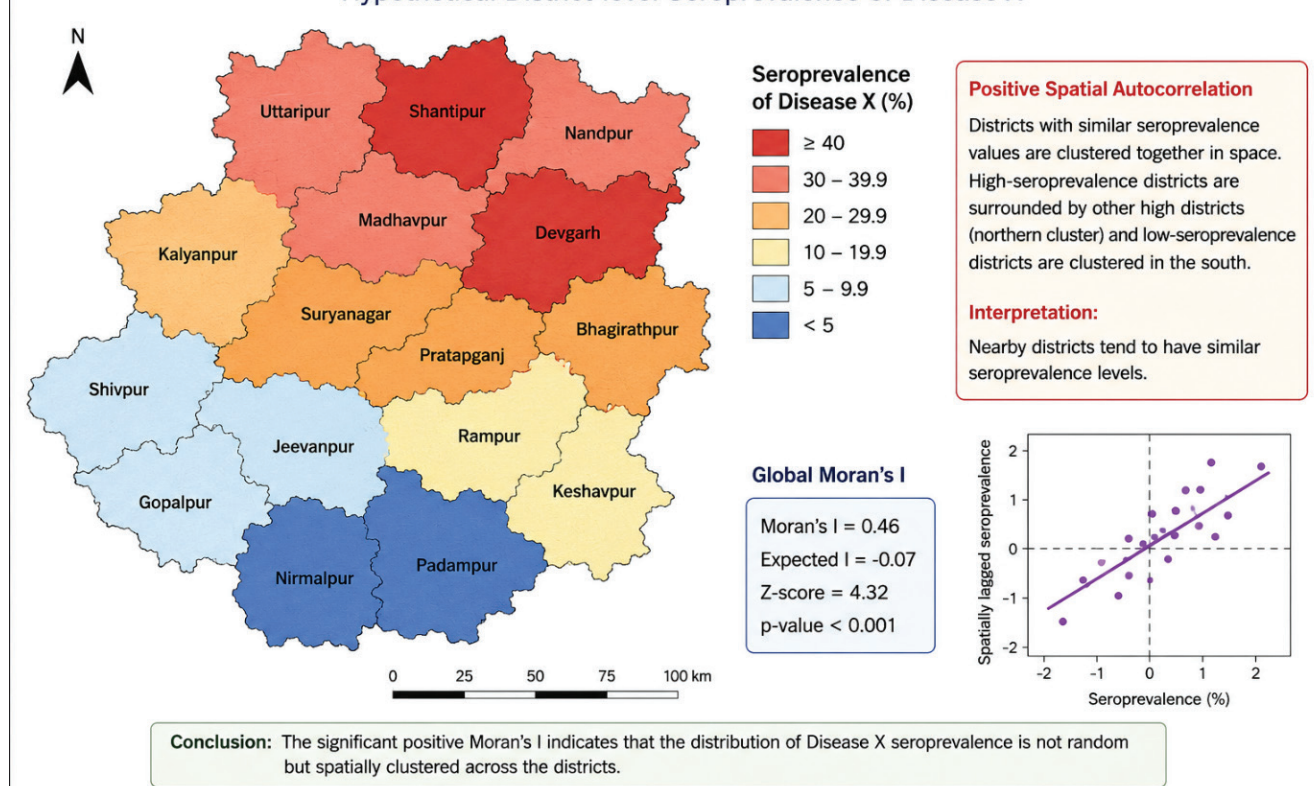
SPATIAL AUTOCORRELATION – MADE EASY

Shows how similar or different values are located in space



Example of Positive Spatial Autocorrelation

Hypothetical District-level Seroprevalence of Disease X



Research Spectrum

Deciphering Novel Adhesins Specific to *Pasteurella multocida* Serogroup B Strains

Dr. Sathish B. Shivachandra and his team at ICAR-NIVEDI identified novel adhesins associated with bovine host specificity in *Pasteurella multocida* serogroup B, the causative agent of Haemorrhagic Septicaemia (HS), a highly fatal bacterial disease affecting bovines across Asia and Africa. Using comparative pan-genomics, structural analyses, and molecular dynamics simulations, the team identified five lineage-specific adhesins enriched in serogroup B strains. Among these, three

adhesins (PACFBAAN_02021, PACFBAAN_00422, and PACFBAAN_00429) exhibited strong and stable binding to bovine fibronectin FnIII 9–10 domains, suggesting a key role in bovine host tropism. The findings provide valuable insights into host–pathogen interactions and identify promising targets for the development of improved diagnostics, anti-adhesion therapeutics, and next-generation subunit vaccines against HS.

Editorial Team : V. Balamurugan, G. Narayanan, H. B. Chethan Kumar, Siju Susan Jacob
Published by : Director, ICAR-NIVEDI, Bengaluru

Contact Details

ICAR-National Institute of Veterinary Epidemiology and Disease Informatics

Ramagondanahalli, Yelahanka, Bengaluru - 560 119, Karnataka.

Phone: 080-23093110, 23093111, 23093100

Email:director.nivedi@icar.org.in Website:www.nivedi.res.in

Follow us on https://x.com/icar_nivedi <https://www.facebook.com/icarnivediofficial/>

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