



NIVEDI PULSE

NIVEDI PULSE - April 2026

ICAR–NIVEDI Showcases Livestock Disease Intelligence Initiatives as DDG (AS) Unveils Upgraded Campus Facilities

Dr. Raghavendra Bhatta, Deputy Director General (Animal Science), Indian Council of Agricultural Research, visited ICAR-NIVEDI, Bengaluru, on April 30th, 2026, and inaugurated several upgraded campus facilities aimed at strengthening research, training, and academic infrastructure.

The newly inaugurated facilities include a modernized Training Hall equipped with a state-of-the-art video wall, a refurbished Committee Room, an upgraded Reception area, and a Postgraduate Hostel for students of the Indian Veterinary Research Institute Academic Hub hosted at NIVEDI.

The visit featured key inaugurations followed by a comprehensive presentation by Dr. Baldev R. Gulati, who highlighted the institute's strategic initiatives in advancing livestock disease surveillance and preparedness. He emphasized NIVEDI's proactive efforts to address emerging threats, including the global spread of the Foot-and-Mouth Disease SAT-1 serotype. Innovations such as bulk milk-based surveillance, certified buffalo meat systems, and the establishment of sentinel surveillance sites across multiple states for

longitudinal disease monitoring were also showcased. Dr. Gulati further outlined priority initiatives for the year, including pilot implementation of disease-free compartmentalization in Kolar district, strengthening control strategies for Bovine Tuberculosis, and the development of digital tools such as a chatbot for field veterinarians. Integration of NIVEDI's NADRES platform and chatbot with national digital systems like Bharat Pashudhan and Bharat Vistaar was also highlighted as a key step toward enhancing data-driven disease intelligence.

Commending the institute's forward-looking approach, Dr. Bhatta appreciated ICAR-NIVEDI's impactful contributions, including securing over 50 externally funded projects from national and international agencies. He also lauded the institute's vital role in supporting national livestock disease control programmes and praised its green, clean, and vibrant campus environment that fosters scientific excellence. Dr. Rajeswari Shome delivered the vote of thanks, expressing gratitude to the DDG for his continued guidance and support.



ICAR NIVEDI
Transforming Animal Health

Towards 2031: ICAR-NIVEDI and TIGS Reinforce Their Research Collaboration

A Memorandum of Understanding (MoU) was signed between the ICAR-NIVEDI and the Tata Institute for Genetics and Society (TIGS) on April 2, 2026,

marking the continuation and strengthening of their long-term collaborative partnership.



The MoU, initially valid until April 23, 2026, has now been extended for a further period of five years, and will remain in effect until April 1, 2031. This extension reflects the mutual commitment of both institutions to advance scientific research and innovation in areas of shared interest. The agreement was formally signed by Dr. Baldev Raj Gulati, Director of ICAR-NIVEDI, and Dr. Rakesh Mishra, Director of TIGS. The renewed MoU aims to enhance opportunities for exchange of scientific knowledge and expertise, collaborative research and

development initiatives, joint projects in identified priority research areas and strengthening institutional cooperation. During the meeting, both institutions engaged in detailed discussions on ongoing collaborative research projects, including their progress, outcomes, and future directions. This continued collaboration is expected to significantly contribute to advancements in research, capacity building, and the development of impactful solutions in areas of mutual interest.

Milk-Based Surveillance: ICAR-NIVEDI and KMF Explore New Model for Livestock Disease Monitoring

A meeting was held on 15th April 2026 with K. S. Basavaraja, Director (AH), Karnataka Milk Federation, Bengaluru, and Dr. Baldev R Gulati, Director, ICAR-NIVEDI, to discuss the potential of milk surveillance as an effective model for disease monitoring. The discussion focused on leveraging the extensive dairy network and routine milk collection systems to establish a scalable, cost-effective surveillance framework for early detection of animal diseases. Emphasis was placed on integrating milk-based diagnostics with existing veterinary surveillance systems to enable real-time monitoring, improve outbreak preparedness, and

support evidence-based decision-making. Key aspects deliberated included development of standardized sampling protocols, strengthening laboratory linkages, data integration and analysis, and capacity building across field and laboratory personnel. The model was recognized as a promising approach for enhancing disease intelligence and could serve as a replicable framework for wider implementation. The meeting concluded with a consensus on exploring pilot initiatives and strengthening collaboration between research and field institutions to operationalize milk surveillance as a robust disease monitoring tool.



ICAR-NIVEDI's 20th IRC Reviews Progress and New Projects, Charts Future Research Strategy

The 20th Institute Research Committee (IRC) meeting of ICAR-NIVEDI was held on 16–17 April 2026 under the chairmanship of Baldev R. Gulati. The meeting commenced with a welcome address by G. Govindaraj, Nodal Officer, PME Cell and Member Secretary of the IRC. In his opening remarks, the Chairman emphasized the importance of presenting well-analysed research

outcomes and urged Principal Investigators (PIs) to define clear, outcome-oriented, and research-driven milestones for the coming year. During the meeting, PIs presented the progress of ongoing and completed institute-funded as well as externally funded projects for the period April 2025 to March 2026, highlighting key achievements and outlining future targets.



Scientists also presented new project proposals for consideration by the committee. The IRC provided strategic guidance on improving sampling frameworks, strengthening disease surveillance systems, ensuring timely processing of biological samples, validating

developed diagnostic assays, and promoting interdisciplinary collaboration across research domains. The meeting concluded with a vote of thanks delivered by Z. B. Dubal, Co-Nodal Officer, PME Cell.

NIVEDI Scientist Highlights India's PPR Eradication Roadmap

ICAR-NIVEDI contributed to global and regional discussions on PPR eradication and pandemic preparedness. At VIRO Global 2026, Dr. V. Balamurugan, Principal Scientist and WOAAH-designated expert, delivered an invited lecture on India's PPR control and eradication strategy, highlighting mass vaccination, surveillance, diagnostics, genomic capacities and real-time data sharing. He also served as an invited expert

at the Gangetic Cross-Border Harmonization Workshop for PPR Eradication, held from 21–23 April 2026 at NASC Complex, New Delhi. He presented India's PPR eradication roadmap, emphasizing risk-based vaccination, real-time surveillance, epidemiological and animal movement data, phylogenetic analysis and cross-border coordination, reinforcing ICAR-NIVEDI's role in regional and global PPR eradication efforts.



NIVEDI Celebrates World Veterinary Day

ICAR-NIVEDI commemorated World Veterinary Day on 24 April 2026 under the theme “Veterinarians: Guardians of Food and Health.” The programme included addresses by the Director, ICAR-NIVEDI, Dr. Srikrishna Isloor, WOAAH-designated expert for Rabies, and Dr. Titu Abraham, who shared insights on

veterinary public health, rabies control, One Health and avian diseases. The event featured an oath-taking ceremony, interactive sessions, research discussions and cultural activities, reaffirming NIVEDI's commitment to strengthening animal and public health systems.



Haryana Proposes Hisar Epidemiology Intelligence Unit with Technical Support from ICAR-NIVEDI

A meeting was held at ICAR-NIVEDI on 27 April 2026 to discuss Haryana's proposal to establish an Epidemiology Intelligence Unit in Hisar for strengthening animal disease surveillance and outbreak response. ICAR-NIVEDI extended technical guidance for the initiative, including support in digital

surveillance, predictive disease forecasting, data analytics and capacity building of field veterinarians and epidemiologists. The proposed Haryana-led unit is expected to enhance early disease detection, improve outbreak reporting and support faster response to emerging and re-emerging animal diseases in the region.



NaaViC Activities at ICAR-NIVEDI: Highlights

The Agri-Business Incubation Centre for Animal Husbandry and Veterinary Services (NaaViC) at ICAR-NIVEDI carried out a series of impactful activities during April 2026, reinforcing its commitment to fostering innovation, entrepreneurship, and startup growth in the agri and allied sectors.

The month began with physical verification visits to startups such as Kempmann Bioorganics LLP and multiple 10th cohort enterprises, including Agribiotics Pvt. Ltd., Narensnosh Pvt. Ltd., and SoCoffee Origins Pvt. Ltd. These visits focused on assessing milestone achievements, validating financial utilization, and evaluating technological and operational progress. The startups demonstrated promising advancements in areas such as drone-based agricultural solutions, nutraceutical product development, and coffee value-chain enhancement.

NaaViC also undertook promotional outreach for its 11th cohort at Krishi Vigyan Kendras (KVKs) in Hirehalli and Tiptur, engaging with institutional leaders to spread awareness about incubation opportunities. These efforts aimed to encourage agri-entrepreneurs to leverage structured mentoring, funding access, and business development support.

A key highlight was the Entrepreneurship Bootcamp organized for E-Club students of GITAM University under AICTE support. The session provided insights into startup ideation, incubation pathways, and market linkages, inspiring students to explore innovation-driven careers.

Strengthening institutional collaborations remained a priority, with NaaViC holding strategic meetings with incubation and innovation leaders, including representatives from BIRAC BioNEST, NIE Startup Cell, and SJCE-STEP. These discussions focused on enhancing incubation ecosystems, promoting translational research, and building partnerships to accelerate venture growth.

NaaViC further expanded its outreach through a series of Agripreneurship Awareness Programs conducted at the College of Horticulture, Mysore; College of Forestry, Ponnampet; and the College of Agriculture, Mandya. Engaging over 200 students collectively, these programs emphasized emerging opportunities in agri-tech, sustainable enterprises, and innovation-led agriculture, while encouraging students to pursue entrepreneurship.



The month concluded with the successful organization of an IPR Awareness Programme on April 29, 2026, marking World Intellectual Property Day. The event sensitized scientists, staff, and students to the importance of intellectual property in innovation, with expert sessions covering patent searches, prior art

analysis, and the role of IPR across sectors.

Overall, NaaViC's April activities reflect a dynamic blend of startup mentoring, capacity building, institutional networking, and awareness generation—contributing significantly to the development of a vibrant and resilient agri-innovation ecosystem.

Disease Radar

Global Animal and Zoonotic Disease Landscape

As of mid-April 2026, multiple animal and zoonotic disease events have been reported worldwide, highlighting the increasing risks of transboundary disease spread. A notable resurgence of Foot-and-Mouth Disease (FMD), particularly serotype SAT1, has been observed across several regions. In China, the first-ever detection of the SAT1 serotype was confirmed on April 2, 2026, involving cattle in Gansu and Xinjiang provinces. This marks a significant epidemiological shift from the previously dominant serotypes O and A and raises concerns regarding vaccine effectiveness (FAO, 2026; WOAAH, 2026). In Greece, an FMD (SAT1) outbreak was confirmed on the island of Lesbos in March 2026, with control measures continuing into April (WOAH, 2026). Across Zambia, outbreaks in the Western Province have been linked to livestock movement, while South Africa has continued large-scale vaccination campaigns covering more than 2 million animals, alongside reports of additional outbreaks (WOAH, 2026; FAO, 2026). In

India, alongside national-level reviews of FMD control programmes, a confirmed outbreak of highly pathogenic avian influenza (H5N1) was reported in April 2026 at a poultry training centre in Hesaraghatta. Thousands of birds were culled following laboratory confirmation, with no human infections reported (Indian Express, 18 April 2026; Times of India, 2026; NDTV, 2026).

Avian influenza continues to be a major global concern. In United Kingdom, prevention zones remained in place across Great Britain despite the relaxation of poultry housing measures in April (UK Government, 2026). In South Africa, there have been increasing calls to adopt poultry vaccination strategies due to ongoing transmission (FAO, 2026). A zoonotic event involving avian influenza A(H9N2) was reported in Italy in March 2026 in a traveller returning from Senegal, representing an imported human infection in the European region (WHO, 2026).



Additionally, a multi-country outbreak of *Salmonella Bovismorbificans* linked to contaminated sprouted seeds affected approximately 50 individuals across the United Kingdom, Ireland, and Finland between January and April 2026 (ECDC, 2026). These developments, along with growing

concerns over zoonotic spillover associated with wildlife trade and emerging influenza strains, underscore the evolving global landscape of animal and zoonotic diseases. They highlight the urgent need for strengthened international surveillance, early warning systems, and coordinated One Health responses.

Epi-Insight

Effective Reproduction Number (R_e)

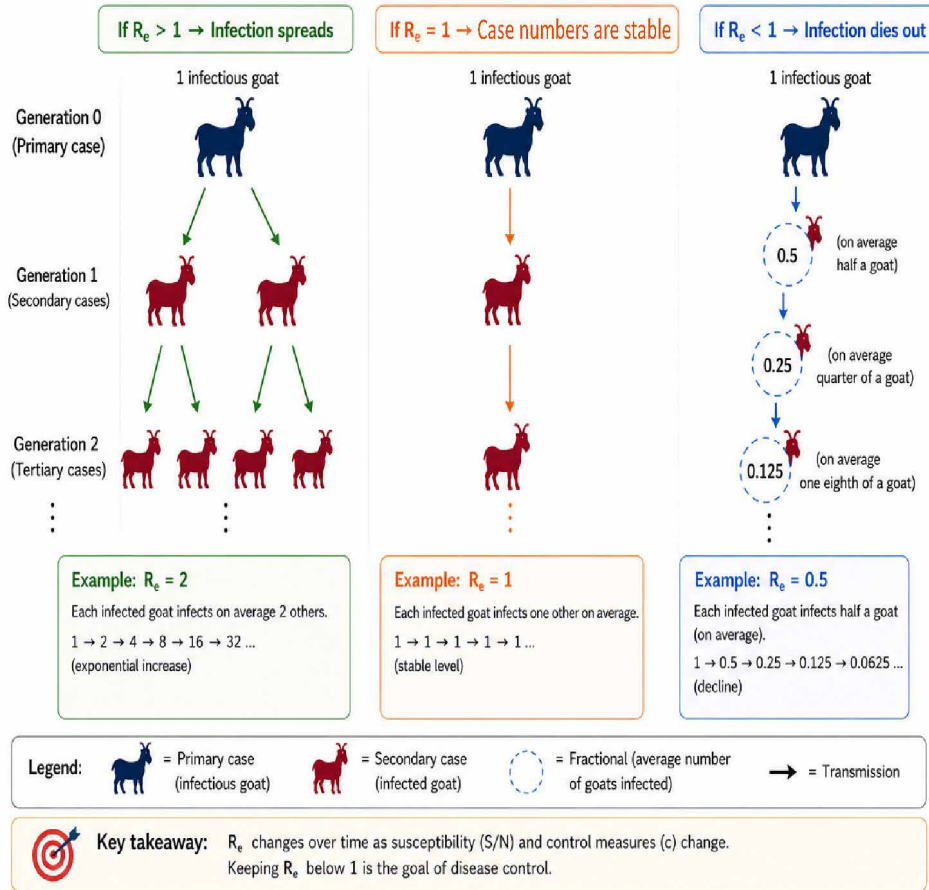
The Effective Reproduction Number (R_e) is the average number of secondary infections caused by a single infected individual at a given time in a population that is not fully susceptible. The Effective Reproduction Number (R_e or R_t) is one of the most practical epidemiological metrics for understanding and managing infectious diseases in real-world (field) conditions. R_e is dynamic and changes with interventions and immunity and it is more useful than basic reproduction number (R_0) in field conditions. The goal in disease control is to drive R_e below 1 and keep it there.

- If $R_e > 1$ → Outbreak grows
- If $R_e = 1$ → Case numbers are stable (neither growing nor declining)
- If $R_e < 1$ → outbreak is declining

Unlike R_0 , which assumes a fully susceptible population, R_e accounts for immunity, vaccination, and control measures.

Effective Reproduction Number (R_e) - Concept

R_e is the average number of secondary cases generated by one infectious individual in a population at a particular time, given the current level of susceptibility and control measures.



How R_e is determined

$$R_e = R_0 \times \frac{S}{N} \times c$$

R_e = effective reproduction number
 R_0 = basic reproduction number (no control, fully susceptible population)
 S = number of susceptible goats
 N = total goat population
 c = control (reduction) factor in transmission ($0 < c \leq 1$)

What is c (control factor)?

c shows how much transmission is reduced due to control measures.

- No control (0% reduction) → $c = 1.0$
- 50% reduction in transmission → $c = 0.5$
- 60% reduction in transmission → $c = 0.4$
- 80% reduction in transmission → $c = 0.2$

Control measures include: Vaccination, isolation, movement control, biosecurity, disinfection, etc.

Example: PPR in a goat population

Total goats (N) = 1000
 Susceptible goats (S) = 400
 Basic reproduction number (R_0) = 3.0
 Control measures: vaccination + management
 Reduce transmission by 60% → $c = 0.40$

$$R_e = R_0 \times \frac{S}{N} \times c = 3.0 \times \frac{400}{1000} \times 0.40 = 0.48$$

Since R_e (0.48) < 1, PPR transmission will gradually decline and the outbreak will die out.

Applications of R_e in Field Epidemiology

- Quickly tells whether an outbreak is expanding or declining
- Helps prioritize response intensity
- Used to estimate critical vaccination coverage
- Evaluate impact of vaccination, quarantine, movement control and biosecurity
- Policy Decision-Making like lockdown of animal markets, restriction of animal movement and targeted vs mass vaccination

Editorial Team : V. Balamurugan, G. Narayanan, Siju Susan Jacob, H. B. Chethan Kumar
 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/>
<https://www.linkedin.com/in/icar-nivedi/> <https://www.youtube.com/@icar-nivedi> https://www.instagram.com/icar_nivedi/