



NIVEDI PULSE

NIVEDI PULSE - May 2026

Strengthening One Health AMR- AMR Surveillance Workshop

Dr. N. Shivasharannappa participated in the Gujarat State-Level Workshop on Integrated Antimicrobial Resistance (AMR) and Antimicrobial Use (AMU) Surveillance held on 5–6 May 2026 at Gandhinagar. The workshop brought together experts and stakeholders from the human, animal, and environmental health sectors to strengthen surveillance under the One Health frame-

work. Discussions focused on integrated surveillance, antimicrobial stewardship, laboratory networking, data sharing, and policy interventions to address AMR. The event highlighted the importance of intersectoral collaboration and evidence-based strategies for effective monitoring and control of antimicrobial resistance at state and national levels.



Patent Granted for Recombinant Leptospiral Surface Antigen-Based Diagnostics



ICAR-NIVEDI, in collaboration with Indian Council of Medical Research (ICMR), has been granted an Indian patent (Patent No. 589492) on 15 May 2026 for the invention titled “*Recombinant Leptospiral Surface Antigen-Based Immuno Diagnostic Test for Leptospirosis.*” The patented technology, developed by Dr. V. Balamurugan and his research team under an ICMR-funded project, provides a recombinant antigen-based diagnostic platform for leptospirosis. The innovation is expected to strengthen early disease detection, surveillance, and control efforts, supporting One Health initiatives for improved public and animal health management.



ICAR NIVEDI
Transforming Animal Health

Strengthening Epidemiological Research Through International Scientific Exchange Program at Penn State University, USA



Dr. K. P. Suresh, Principal Scientist, visited Penn State University, USA, from 27 April to 2 May 2026, upon invitation to participate in the INLEAD Project Review and Scientific Exchange Program. During the visit, he interacted with international experts and researchers, gaining insights into advanced sampling design, epidemiological modeling, disease surveillance systems, and data-driven research approaches. The program facilitated scientific exchange and discussion on innovative methods to strengthen epidemiological research and disease monitoring. The experience is expected to enhance ICAR-NIVEDI's analytical capabilities, epidemiological investigations, and evidence-based decision-making, thereby supporting improved animal disease surveillance and control strategies in India.

ISO 9001:2015 Renewal Audit Recommends ICAR-NIVEDI for Certification

The ISO 9001:2015 Quality Management System (QMS) renewal audit of ICAR-NIVEDI was conducted on 11–12 May 2026 by the IRCLASS audit team from Chennai comprising Mr. Vivek R. Gurjar (Team Leader) and Mr. Akshay Ramanath Hegde (Auditor). Following a comprehensive assessment of the institute's quality management processes, re-

search, administration, human resources, customer-related activities, and project management systems, the auditors commended the institute's commitment to quality and suggested opportunities for continual improvement. Based on the audit findings, ICAR-NIVEDI was recommended for renewal of its ISO 9001:2015 certification for the 2026–2029 cycle.

NaaViC Highlights Strong Momentum in Agripreneurship Activities

The NaaViC (NIVEDI Agribusiness Incubation Centre) under ICAR-NIVEDI continued its strong engagement in fostering agripreneurship and innovation through a series of impactful activities conducted during May 2026, reinforcing its role in strengthening India's agri-startup ecosystem.

It co-organized the AgriUday Pre-Incubation Program with ICAR-Indian Institute of Millets Research (04 May–03 June 2026), which trained around 110 participants in business planning, funding, marketing, and startup development, with expert sessions from ICAR-NIVEDI scientists and incubatee entrepreneurs.

NaaViC also showcased its incubation ecosystem at AgriStartup Conclave 2.0 held at University of Agricultural Sciences, Bengaluru on 26 May 2026, highlighting its 75+ incubated startups and funding support programmes (NUZEN, NEO, NEST). The stall received significant attention, including a visit from the Hon'ble Shri Chaluvayaswamy, Minister of Agriculture, reinforcing NaaViC's role in strengthening India's agri-startup ecosystem.

Through its continued outreach, incubation programs, and institutional collaborations, NaaViC is playing a pivotal role in nurturing the next generation of agripreneurs and advancing technology-driven solutions for the agricultural sector.

Agri-Input Dealers as Soil Health Ambassadors: ICAR-NIVEDI Promotes Balanced Fertilizer Use in Bengaluru Rural

As part of the National Fertilizer Campaign, ICAR-NIVEDI constituted five teams during May 2026 to conduct awareness programmes on the balanced and judicious use of fertilizers across Bengaluru Rural and Bengaluru Urban districts. One such awareness programme was conducted on 22.05.2026 at KVK Bengaluru Rural District at Doddaballpura taluk, in collaboration with the KVK, for agri-input dealers. The programme aimed to sensitize input dealers on their vital role in promoting soil health, responsible fertilizer recommendation, and sustainable farming practices among farmers.



Dr. Narayanan G., along with team members Dr. G. Govindaraj, Dr. C. S. Satish Gowda, and Dr. N.

Shiva Sharanappa, participated in the one-day campaign. Addressing the participants, Dr. Narayanan highlighted the importance of understanding different categories of farmers, including innovators, early adopters, late adopters, and laggards, while promoting behavioural change in fertilizer application practices. He emphasized that attitude change among farmers is a major challenge, particularly in encouraging fertilizer application based on Soil Health Card recommendations. He also pointed out the resistance often observed among farmers in reducing chemical fertilizer use due to fear of yield loss.

Dr. C. S. Satish Gowda stressed that agri-input dealers are key change agents in the farming ecosystem, as they directly influence farmers' input choices. He urged them to promote balanced fertilizer use, safeguard soil health, and support responsible farming practices in collaboration with farmers, scientists, and extension agencies.

The programme concluded with an interactive discussion on practical challenges in reducing excessive fertilizer use and strategies to encourage soil test-based nutrient management among farmers.

Disease Radar

India & Global Animal and Zoonotic Disease Landscape – May 2026

In May 2026, several significant animal and zoonotic disease events were reported globally, highlighting the continuing threat of transboundary pathogens at the animal-human interface. In India, the ongoing H5N1 avian influenza outbreak in Navapur, Maharashtra, expanded further, with additional poultry farms testing positive and large-scale control measures resulting in extensive culling of birds and destruction of eggs, reflecting the substantial economic impact on one of the country's major poultry-producing regions (Times of India, 2026). In Karnataka, H5N1 infection was confirmed in wild peacocks in Tumakuru district, prompting intensified surveillance in surrounding villages and monitoring of domestic poultry populations (Times of India, 2026). Follow-up investigations in the

earlier H5N1 outbreak at the poultry training centre in Hesaraghatta, Bengaluru confirmed that no human infections were detected despite extensive surveillance of exposed individuals (Times of India, 2026). At the same time, the ongoing H5N1 avian influenza panzootic continued to affect poultry, wild birds and several mammalian species across multiple continents, reinforcing concerns regarding viral adaptation and cross-species transmission (FAO, 2026; WOA, 2026; WHO, 2026).

Meanwhile, African Swine Fever (ASF) outbreaks were reported from multiple districts of Nagaland, leading to movement restrictions, enhanced surveillance and containment measures to prevent further spread among pig populations (Nagaland Post, 2026; Nagaland Tribune, 2026).

Globally, a major public health concern emerged with the outbreak of Bundibugyo ebolavirus disease in the Democratic Republic of the Congo and Uganda, resulting in more than 321 confirmed cases and 48 deaths by early June 2026. The outbreak was characterized by healthcare-associated transmission and cross-border spread, prompting intensified international response efforts. Although India remained Ebola-free, enhanced surveillance, airport screening, travel advisories and hospital preparedness measures were implemented nationwide following a suspected case in Bengaluru that subsequently tested negative at the National Institute of Virology, Pune (WHO,

2026; CDC, 2026). In a major development, the Coalition for Epidemic Preparedness Innovations (CEPI) has announced US\$62 million to accelerate the development of three vaccine candidates against Bundibugyo ebolavirus, offering hope for improved outbreak control and global preparedness (CEPI, 2026).

Together, these events demonstrate how rapidly animal and zoonotic diseases can transcend geographical and species barriers, emphasizing the need for robust surveillance systems, timely information sharing and coordinated One Health approaches to detect, prevent and respond to emerging health threats.

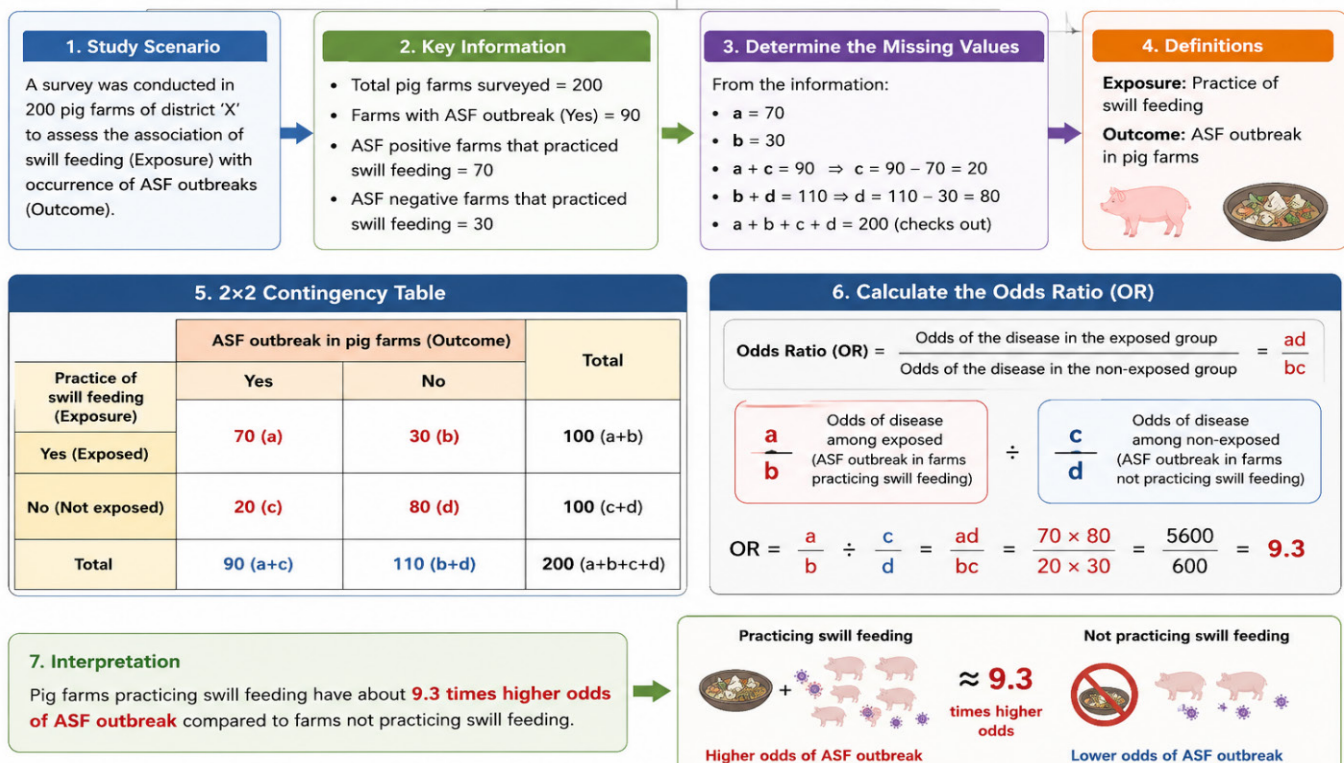
Epi Insights

Contingency 2×2 Table: A Fundamental Tool in Epidemiological Analysis

The 2×2 contingency table is one of the most widely used tools in epidemiology for investigating associations between a potential risk factor and a disease outcome. It cross-tabulates two variables—typically exposure status (exposed/unexposed) and disease status (diseased/non-diseased)—into four cells (a, b, c, and d), providing a simple framework

for summarizing epidemiological data. For example, the table can be used to assess whether swill feeding is associated with African Swine Fever outbreaks in pigs. By comparing disease occurrence among exposed and unexposed groups, epidemiologists can quantify the strength of association between exposure and disease.

Example: Identification of a Risk Factor Using a 2×2 Contingency Table



Note: OR > 1 indicates higher odds of disease with exposure (risk factor). OR < 1 indicates lower odds (protective factor). OR = 1 indicates no association.

The two most common measures derived from a 2×2 table are the **Relative Risk (Risk Ratio, RR)** and the **Odds Ratio (OR)**. Relative Risk is primarily used in cohort studies, whereas Odds Ratio is commonly employed in case–control studies. These measures play a crucial role in identifying risk fac-

tors, guiding disease investigations, and supporting evidence-based disease control strategies. movement control and biosecurity

Policy Decision-Making like lockdown of animal markets, restriction of animal movement and targeted vs mass vaccination

Research Spectrum

ICAR-NIVEDI scientists have demonstrated the success of India's National Peste des Petits Ruminants (PPR) Eradication Programme (EP) through a large-scale epidemiological study assessing population immunity in sheep and goats following two annual rounds of mass vaccination implemented by the State Animal Husbandry Departments under the National PPR EP of the Department of Animal Husbandry and Dairying (DAHD), GoI. The study analyzed >50000 serum samples from 1500 epidemiological units (villages) across 19 States and Union Territories and revealed a significant increase in PPR population immunity from a base-

line seroprevalence of 41% before the initiation of mass vaccination in 2023 to 72% herd immunity by 2025-2026. The enhanced herd immunity was accompanied by a substantial reduction in laboratory-confirmed PPR outbreaks to approximately 20 in 2025, highlighting the effectiveness of sustained mass vaccination campaigns and supporting India's goal of achieving PPR eradication by 2030. The study was jointly conducted by scientists from ICAR-NIVEDI, ICAR-IVRI, and the DAHD, GoI in collaboration with State Animal Husbandry Departments, following the guidelines of WOAH and FAO's GCES guidelines of PPR-GEP.

Scientists at ICAR-NIVEDI achieved a significant milestone in leptospirosis research by successfully isolating a virulent *Leptospira interrogans* strain from greater bandicoot rat (*Bandicota indica*) in endemic region and adapting the isolate in the Golden Syrian hamster (*Mesocricetus auratus*). Whole-genome sequencing of the isolate has generated valuable genomic resources for investigating host adaptation, virulence mechanisms, molecular epidemiology, evolutionary dynamics, and the

identification of novel virulence markers. In another major advancement, the team established a reproducible virulent *Leptospira* hamster challenge model for quality control, potency testing, and efficacy evaluation of leptospiral vaccines. This standardized in vivo platform will strengthen vaccine validation, support regulatory studies, and facilitate the development of improved strategies for the prevention, control and managements of leptospirosis.

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