

ICAR CENTRE OF ADVANCED FACULTY TRAINING

(Established in the year 1995 AD vide
O.O.No.1-2/93 (CAS)/UNDP dated
11.11.1994)

IN VETERINARY MICROBIOLOGY



ICAR 37th CAFT Course

ON

“Emerging Trends in Serological, Molecular and Cell Based Diagnostics in Veterinary Sciences”

22nd January – 11th February, 2025

Organized by

**Dept. of Veterinary Microbiology
Lala Lajpat Rai University of
Veterinary and Animal Sciences
Hisar-125004, Haryana**

About the Department and University

Established as Department of Bacteriology & Hygiene in 1965, the department has taken a lead role for teaching and research in Veterinary Microbiology and Immunology. The pioneering and first-time lead studies have been made in the fields of poxviruses, salmonellae, foot-and-mouth disease virus, bluetongue virus, equine herpesvirus, bovine rotaviruses, buffalo immunology, phage display technology for nanobody production, monoclonal antibody-based assays, molecular diagnostic tests, etc. The faculty and students have won several awards, honours and recognition, including Rafi Ahmad Kidwai Memorial Prize, Hari Om Trust Award, ICAR Team Award, National Professor and National Fellows, ICAR –Emeritus Scientist besides Commonwealth Doctoral Scholarships and Post-Doctoral Fellowships.

The ICAR had established Regional Research Centre on FMD at this department in 1969 which has been adjudged as the best AICRP Centre of ICAR-Directorate of FMD during 2010-11 to 2013-14 and 2020. Since 1995, as ICAR Centre for Advanced Studies/ Faculty Training, the department has successfully organized 36 Trainings/ Refresher courses on various aspects of Veterinary Microbiology to train the faculty from various SAUs, SVUs and ICAR institutions across India.

College of Veterinary Sciences is one of the oldest Veterinary Colleges in Northern India. From Lyallpur (currently in Pakistan), the Campus at Hisar was shifted consequent to partition of India. Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar was established by the state government of Haryana in December, 2010 in pursuance of the Haryana Act No. 7 of 2010 notified on 7th April, 2010.

About the Course

The livestock sector is a cornerstone of India's economy, making vital contributions to agricultural productivity, rural livelihoods and national food security. Maintaining the health and welfare of livestock is crucial for achieving sustainable production. Infectious diseases significantly jeopardize the health and productivity of livestock. Precise and prompt diagnosis, combined with suitable

control measures, forms the foundation of effective disease management. Modern diagnostic tools allow early detection, surveillance, prediction, and monitoring of diseases, enabling timely control through vaccination, biosecurity, and other preventive strategies. Rapid and accurate diagnosis enhances management and treatment outcomes for animal patients, particularly during disease outbreaks.

The 37th ICAR CAFT course entitled **“Emerging Trends in Serological, Molecular and Cell Based Diagnostics in Veterinary Sciences”** aims to address the urgent need for advanced training in diagnostic and control methods. It will familiarize the researchers and teachers with state-of-the-art technologies, such as phage display, hybridoma technology, next-generation sequencing, nanotechnology, latest molecular and advanced cell based diagnostic techniques. Additionally, this training programme will facilitate researchers and teachers in the discovery of new pathogens, biomarkers and disease prevention strategies in animal health. Further, the proposed training will strengthen the capacities of researchers, contributing to global health preparedness and resilience in the face of emerging infectious threats and biological hazards.

This way, the combined efforts of the faculty and trainees in this Course shall be an attempt to train the participant-scientists/teachers of State Agricultural/ Veterinary Universities and ICAR institutes, who may help-build the capacity of their respective state institutions, so that possibility of enhancement of farm-incomes through specialized focus on livestock sector could be turned into reality.

Course Contents

1. Trends in diagnosis of major emerging and reemerging diseases of livestock in India
2. Collection of oropharyngeal fluid by probang sampling for screening of foot-and-mouth disease virus carrier bovines
3. Bacteriophage isolation from natural resources against antibacterial resistant pathogens affecting livestock industry

4. Recombinant antibody production approaches with special reference to phage display and hybridoma technology
5. Approaches for diagnosis and control of Q fever in animals
6. Role of biosafety and biosecurity in control and prevention of animal diseases
7. Detection of abortogenic pathogens using Taqman probe based multiplex real time PCR assay
8. Basic concepts of cell culture: Good laboratory practices
9. Lymphocyte proliferation assay for evaluation of cell mediated immune response
10. ELISA: An important tool for FMDV and hemorrhagic septicemia diagnosis
11. Nanotechnology based approaches for advancement of veterinary diagnostics and therapeutics
12. FMD+HS combined vaccine: A success story in Haryana
13. Navigating the frontiers of veterinary diagnostics: Insights into state-of-the-art technologies
14. Chicken embryo cell culture for poultry viral disease diagnosis
15. Anthrax: diagnostic and control strategies
16. Revolutionizing the use of live attenuated vaccines against RNA viruses affecting livestock
17. Development of recombinase polymerase assay for detection of different pathogens of veterinary importance
18. Role of next generation sequencing in diagnosis of important pathogens
19. Development of Real-time PCR assay for detection of rotavirus
20. *In-silico* detection of recombination among RNA viruses
21. *In-silico* antimicrobial peptide designing and structural analysis
22. Rapid diagnosis of fungal toxins in feed, fodders and foods of animal origin
23. Flow cytometry in animal disease diagnosis
24. Methods for diagnosis of brucellosis in animals
25. Latex agglutination test: A point of care test for detection of trypanosomiasis

26. Immunohistochemistry based assay for detection of poultry and large animal pathogens
27. Serological, molecular and novel techniques of glanders diagnosis
28. One Health Governance: An Indian Perspective

Eligibility of the candidates

- Should be from ICAR-AU system including from private ICAR-accredited Colleges/Universities
- Should have Master's degree in Veterinary Sciences and allied disciplines including Basic Sciences under ICAR-AU system.
- Should not be working below the rank of Asstt. Prof./ Scientist or equivalent in the concerned subject and should have completed the prescribed probation period as per rules

How to Apply

Steps for submission of online application form

- A. **Visit website:** <https://cbp.icar.gov.in/>
Login as candidate using your User Id & Password. To create User Id use <https://cbp.icar.gov.in/signup.aspx> link on home page.
- B. **For Participation in Training:** After login, click on "Participate in Training" link and fill the Performa. Take a printout of filled application form, duly sign it and get it forwarded by the competent authority of your institution. **Then scan and upload the approved copy at the above mentioned portal.**
- C. **An Advance copy** (printout of online filled application form duly signed by you) **may be sent immediately to Course Director** for booking a provisional place in the training however, which shall not confer any right. For a confirmed place, the printout of online application forwarded by the competent authority of your institution **must reach Hisar by 1st January 2025.**
- D. Selected candidates will be informed up to 15th January 2025.

T.A., Boarding and Lodging

The participants will be paid train or bus fare (or by any other means of transport in vogue), restricted to AC-II tier train fare, for the journey from the place of duty to the LUVAS and back by the shortest

route on production of valid travel documents. The boarding and lodging shall also be arranged by the host institute.

Weather

The Weather during January/ February at Hisar will be cold (winter season). The participants are advised to carry woollen clothes.

Registration Fee

Registration fee (non-refundable) of Rs. 1000/- per participant (Rs. 5000/- in case of candidates from private ICAR-accredited Colleges/Universities) is to be deposited in cash at the time of registration.

How to reach Hisar

Hisar is well connected through buses 24x7 from neighbouring states as well as Delhi [Inter State Bus Terminus (ISBT) at Kashmiri Gate]. Trains for Hisar could be taken from Delhi: 12555/Gorakhdham SF Express (Departure from New Delhi at 05:30 Hours); 14731/Kisan Express (Departure from Old Delhi Station at 14:00 Hours); 14085/Sirsa Express (Departure from New Delhi at 17:55 Hours).

Course Director

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Course Coordinators

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