



Indian Council of Agricultural Research
Sponsored Short Course
on
**Advanced Disease Diagnostics
and Next-Generation Vaccines
Platforms in Livestock**

17 February - 26 February 2026



Sponsored by
Agricultural Education Division
Indian Council of Agricultural Research



Organized by
ICAR-Indian Veterinary Research Institute
Mukteshwar, Nainital-263138, Uttarakhand, INDIA

Background

Livestock disease management is being rapidly transformed by advances in molecular diagnostics and next-generation vaccine technologies, providing higher sensitivity, specificity, and real-time capability than traditional microscopy, culture, and serology. Modern diagnostic platforms-qPCR, multiplex PCR, LAMP, digital PCR, and CRISPR-based systems-enable rapid and precise detection of viral, bacterial, and protozoan pathogens, including low-level and carrier infections. High-throughput sequencing, metagenomics, and amplicon profiling now support genomic surveillance, strain-level differentiation, antimicrobial resistance monitoring, and outbreak tracing with unprecedented resolution. Additionally, biosensor- and microfluidic-based point-of-care tools are miniaturizing laboratory workflows, enhancing field diagnostics in resource-limited settings. Concurrently, vaccinology has progressed from whole-pathogen formulations to sophisticated platforms such as recombinant subunit vaccines, viral-vectored constructs, DNA and mRNA vaccines, virus-like particles, and nanoparticle-based delivery systems. These technologies allow rational antigen design, rapid modification against emerging variants, and induction of robust humoral and cellular immunity. Reverse vaccinology, structural vaccinology, and immunoinformatic further accelerate antigen discovery by predicting protective epitopes and optimizing immunogenicity profiles. Advances in adjuvant engineering and controlled-release systems strengthen vaccine efficacy and cross-protective responses. The integration of advanced diagnostics with modern vaccine platforms is establishing a systems-level approach to disease control, where genomic detection informs targeted immunization strategies and post-vaccination monitoring. This synergy enhances surveillance accuracy, reduces pathogen transmission, minimizes antimicrobial misuse, and reinforces national livestock health frameworks. In the context of rising transboundary diseases, vector expansion, and climate-driven epidemiological shifts, building capacity in these tools is essential. This short course aims to equip researchers and diagnosticians with practical skills in contemporary molecular detection platforms, genomic interpretation, antigen discovery pipelines, and next-generation vaccine technologies-empowering them to support a robust, future-ready livestock health ecosystem.

About the Institute

The Indian Veterinary Research Institute, Izatnagar is one of the premier institutions in veterinary and animal sciences in the world. Founded in 1889, the Institute is the oldest among the institutions governed by Indian Council of Agricultural Research. The institute has played a significant role in the eradication of several dreaded animal diseases, including Dourine, Rinderpest, CBPP, and African Horse Sickness. This ISO 9001:2015 certified Institute conducts basic and strategic research to enhance animal health and productivity, as well as improve farmers'

livelihoods through technology dissemination. The institute has a very rich IP portfolio with 35 patents granted & 47 technologies commercialized to various commercial houses. The institute is now advancing towards the development of combined and next-generation marker vaccines using modern technologies. IVRI has also been at the forefront of integrating Information and Communication Technologies (ICTs) into livestock development through its various digital extension initiatives. These include mobile apps, AI-based chatbots, expert and information systems, interactive tutorials, educational videos, and podcasts, along with other ICT tools to provide timely livestock advisories, capacity building, and digital knowledge dissemination to farmers and field functionaries.



About the Venue - ICAR-IVRI, Mukteswar

Established in 1893, IVRI, Mukteswar is a premier institution for veterinary research in India. Located in the Kumaon Himalayas at an altitude of 7,600 feet, the campus provides a serene and inspiring environment for scientific pursuits. IVRI, Mukteswar houses the Division of Virology and Temperate Animal Husbandry. The institute conducts basic, strategic and applied research on animal and zoonotic diseases with livestock production under temperate conditions. IVRI, Mukteswar has developed various vaccines for viral diseases like Rinderpest (RP), Peste-des-petits Ruminants (PPR), goat-pox, sheep-pox, orf, camelpox, PPR and goatpox/sheeppox combined and marker PPR vaccines. It has developed combined and marker RP vaccines. Campus has also developed diagnostic technologies for various diseases like RP, PPR, Pox and Bluetongue. IVRI extends extension activities and partnership development with other agencies to showcase the technology and fund dissemination.



About the Course

- Capacity building for researchers and academic professionals to implement next-generation diagnostics and vaccines for livestock health and disease preparedness.
- Advanced molecular diagnostic platforms for rapid detection and characterization of livestock pathogens.
- PCR, Real time PCR, and CRISPR-based assays for highly sensitive and specific on-farm and laboratory diagnosis.
- Comprehensive immunoassay workflows, including ELISA and rapid immune-based tests, for seromonitoring and herd-level screening.
- Recombinant, vector-based, DNA and RNA vaccine platforms tailored for major bacterial, viral, and parasitic diseases of livestock.
- Biosensors, microfluidics, and portable point-of-care devices for field-deployable disease surveillance in livestock populations.
- Next-generation sequencing and bioinformatics pipelines for genomic epidemiology, AMR profiling, and pathogen discovery.
- Integration of diagnostics with immunoprophylaxis strategies for evidence-based vaccination schedules and biosurveillance-driven control programs.

Eligibility

Candidates working in the capacity of Scientists, Assistant Professors or in equivalent positions and above in the National Agriculture Research System (NARS) including ICAR Institutes /SAUs / SVUs/ CAUs along with Agriculture faculty of AMU, BHU, Vishva Bharati and Nagaland University area of Agriculture, Veterinary, Animal Sciences, Fishery sciences and other relevant disciplines, actively engaged in research, teaching, or extension activities are eligible to participate in the short course training. The total number of participants will be limited to 25.

Duration of Short Course

Duration of Short Course Training is 10 days with effect from 17th February, 2026 to 26th February, 2026. The participants are expected to arrive at ICAR-IVRI, Mukteshwar, latest by the evening of 16th February and can leave after 17.00 hrs on 26th February, 2026.

Application and Registration

1. Download and Fill the Application Form
Download the official Short Course Application Form (available in the brochure). Fill in all the required details and get Approval from Competent Authority.
2. Make the Online Payment
Pay the training/registration fee of Rs 50/- through any online bank transfer method (NEFT / IMPS / UPI). Use the following

Bank details:

Beneficiary Name : I.C.A.R. Unit IVRI
Bank Name : State Bank of India (SBI), Mukteswar
Account Number : 11576142085
IFSC Code : SBIN0002582
Branch : SBI, Mukteswar Branch

Save the payment proof/receipt (screenshot or PDF format).

3. Fill Out the Google Form
Click the link given below. Fill in all the personal and professional details accurately. Upload the required documents:
 - i. Scanned copy of the approved Application Form (PDF)
 - ii. Payment proof/receipt (PDF or image)Review the information carefully, then submit the form.
Link for Google Form: <https://forms.gle/TC52kXYLCZvFJV8>
4. Email Submission
After submitting the Google Form, you may additionally email your duly approved and scanned application form to following email address : Email: iv risc1@gmail.com

Location and Climate

Mukteshwar, situated in the Nainital district of Uttarakhand, is a well-connected destination by air, rail, and road. Participants traveling by train or bus can conveniently arrive at Kathgodam Railway Station or the kathgodam/Hadwani Bus Stand. From these points, taxis, or cabs are readily available to reach the ICAR-Indian Veterinary Research Institute (IVRI) Campus, Mukteshwar which is located approximately 69 km from the Kathgodam railway station and 72 km from the Haldwani bus stand. For those traveling by air, the Pantnagar Airport is situated around 100 km and Bareilly airport nearly 174 Km from the IVRI Campus. Participants are advised to book their return tickets in advance to avoid last-minute inconvenience. The climate in Mukteshwar during February is cold with daytime temperatures typically range between 15°C and 17°C. However, the evenings and nights can be quite chilly, with temperatures dropping to 5°C–8°C. Participants are therefore encouraged to carry adequate warm clothing.

Important dates

Last Date for receipt of applicaon : 31st January, 2026
Intimation of selection : 5th February, 2026
Confirmation of paricipation by candidate : 7th February, 2026
Commencement of training programme : 17th February, 2026
Note: Once selected, the candidates will be intimated through email to which they should promptly reply with firm acceptance and travel plan.

Boarding, Lodging and TA

The selected participants will be provided free boarding and lodging in the institute guest house. Food expenses will be borne by the organizers as per ICAR norms. All participants will be reimbursed for the to and fro travel fare for the journey to Mukteshwar via the shortest route. The payment will be made as per the entitled class of travel, but restricted to the maximum of AC-II tier train fare/bus fare (as per actuals). Local participants are not eligible for boarding and lodging, however, they will be provided lunch and inter-session tea. Participants are requested not to bring family members with them, as the institute has limited hostel facilities. No DA will be paid to participants.

Course Director

Dr. Yashpal Singh Malik

Joint Director, ICAR-Indian Veterinary Research Institute
Mukteshwar-263138, Uttarakhand, INDIA
Email: jointdirectorivrim1@gmail.com,
Phone No.: 05942-286346

Course Co-Course Director

Dr Ashutosh Fular, Scientist, TAH Division
Dr Amit Kumar, Scientist, Senior Scientist, Virology Division
Dr Vishal Chander, Senior Scientist, Virology Division
Dr Amir Kumar Samal, Scientist, TAH Division

Communication Details

Email : iv risc1@gmail.com
Dr Ashutosh Fular, Co-Course Director; Mob. No.: 7579095419

Best Weekend Gateways



Kasar Devi (50 km)

Jageshwar Dham (78 km)



Dol Ashram (39 km)

Nainital (50 km)



Jim Corbett National Park (11km)

Kainchi Dham (44 km)

APPLICATION FORM

ICAR Sponsored Short Course Training (17 February - 26 February 2026)

Advanced Disease Diagnostics and Next-Generation Vaccines platforms in Livestock

(Fill in CAPITAL LETTERS)

1. Full Name:
2. Designation:
3. Discipline:
4. Present employer and address:
5. Address for correspondence (along with mobile/telephone No. and email)
.....
.....
6. Date of Birth: 7. Sex: (Male/Female):
8. Teaching/Research/Professional experience
.....
.....
9. Marital Status: (Married/Unmarried)
10. Online Payment transaction ID. for Rs. 50/-
Dated
11. Mention if you have participated in any Research Seminar/ Summer/winter school/ Short Course, etc. during the previous years under ICAR/ Other organization
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12. Academic Record

Degree	Discipline	Year	University
PhD			
Masters			
Graduation			

Date:

Place:

Signature of Applicant

Recommendation of the Forwarding Authority

It is certified that information furnished by the candidate has been verified and found correct.

Date

Signature of Sponsoring Authority with Seal