Frontiers in Animal Biotechnology (FiAB) 2026
Pre-Conference Workshop

Theme: Mastitis, Antimicrobial Resistance, and Translational Solutions for Dairy Health

Workshop Overview

Mastitis remains one of the most significant challenges affecting dairy productivity worldwide and is a major driver of antimicrobial use in livestock. The emergence of antimicrobial resistance (AMR) necessitates innovative approaches for rapid diagnosis, antimicrobial stewardship, biosensor development, artificial intelligence-assisted surveillance, and the discovery of alternative therapeutics. This pre-conference workshop aims to provide participants with exposure to cutting-edge technologies and translational research platforms addressing mastitis and AMR in dairy animals.

2nd Nov 2026
Introductions and Networking
Venue: NIAB conference room

Time	Activity
15:00 – 15:30	Welcome and introduction by **Dr. Nagendra R Hegde**, Scientist-H, NIAB
15:30 – 17:30	Icebreaking and Networking over Tea (FiAB 2026 Workshop organizing Committee), followed by an Institutional Tour of the Research Facilities (**Dr. Pankaj Suman**), Farm (**Dr. HR Patil**), and Animal House (**Dr. Jayant Hole**).

3rd Nov 2026

Advances in Mastitis Diagnostics: POC Devices, Biosensors and AI-Based Antimicrobial Resistance (AMR) Detection *(Venue: NIAB Smart Classroom)*

09.00-09.30 Registration of participants

Session I

Mastitis and AMR – Challenges and Emerging Opportunities

Time	Activity
09:30 – 10:30	**Lecture - Hands-on:** Mastitis and Antimicrobial Resistance in Dairy Animals: Current Challenges and Future Perspectives: followed by Interactive Lab Workshop on Pathogen Identification and Antimicrobial Sensitivity Testing **-Dr. Paresh Sharma**
10:30 – 10:45	**Tea Break**

Session II

Ideation to commercialization, Point-of-Care Technologies -I

10:45 – 13:00	**Lecture - Demo:** Technologies and Devices for Early Mastitis Detection and Rapid Antimicrobial Susceptibility Testing (AST) at the Farm Level -**Dr. Pankaj Suman**
13:00 – 14:00	**Lunch** *(Dinning area next to conference room)*

Session III

Ideation to Commercialization, Point-of-Care Technologies -II

14:00 – 14:30	**Lecture :** From Antigen Discovery to Diagnostic Immunoassays – **Dr. Girish K. Radhakrishnan**
14:30 – 16:00	**Lecture - Demo:** Point-of-Care Devices and Future Technologies **-Dr. Abhijit Deshmukh**
16:00 – 16:30	**Tea Break**

Session IV

Hands-on Training

16:30– 18:30	**Hands-on Training:** Artificial Intelligence and Computer Vision Algorithms for Bacterial Species Detection, Colony Counting and Antimicrobial Resistance Prediction -**Dr. Sandeep Kushwaha**
19:00 onwards	**Dinner** *(Dinning area next to conference room)*

4th Nov 2026

Drug Discovery and Therapeutic Strategies for Mastitis
(Venue: NIAB Smart Classroom)

Session V
Computational Drug Discovery and Target Identification

Time	Activity
09:00 – 10:30	**Lecture - Hands-on:** Advanced Bioinformatics and Machine Learning Approaches for Drug Target Identification and Prioritisation against Bovine Mastitis Causing Pathogens -**Dr. Sandeep Kushwaha**
10:30 – 10:45	**Tea break**
10:45 – 13:00	**Lecture - Hands-on:** *In silico* Screening of Natural Compounds Against Identified Drug Targets and Selection of Candidate Molecules for *In vitro* Validation **- Dr. Shailesh Sharma**
13:00-14:00	**Lunch** *(Dinning area next to conference room)*

Session VI
Drug Discovery Platforms and Bioactive Molecule Identification

14:00-15:30	**Lecture - Hands-on:** Drug Discovery Platforms for Antimicrobial Resistance – From Natural Products to Lead Molecules - **Dr. Anand Srivastava**
15:30-16:00	**Tea Break**

Session VII
Preclinical Validation Platforms

16:00 – 17:00	**Lecture:** Mastitis: Immunological aspects and Animal Models - **Dr. Sreedhar Chinnaswamy**

Session VIII
Future Directions

17:00 – 20:00	Next-Generation Vaccine Design: In Silico Frameworks for Engineering Multi-Epitope Vaccines Against Pathogens - **Dr. Sarwar Azam**
20:00 -	**Valedictory:** Workshop conclusion remarks by **Dr. Ravi Kumar Gandham**, Director, BRIC-NIAB
20:15 onwards	**Dinner** *(Dinning area next to conference room)*