



भा. कृ. अनु. प.-केन्द्रीय मात्स्यिकी शिक्षा संस्थान, मुंबई
ICAR-Central Institute of Fisheries Education, Mumbai

NAHEP sponsored International workshop on “DIAGNOSTICS FOR FUTURE : PRECISION DIAGNOSTICS IN AQUACULTURE” on 13th September, 2023

Report

ICAR-Central Institute of Fisheries Education, Mumbai conducted an international workshop on “DIAGNOSTICS FOR FUTURE: PRECISION DIAGNOSTICS IN AQUACULTURE” on 13th September, 2023 under the aegis of National Agricultural Higher Education Project (NAHEP). The objective of the workshop was to illustrate the importance and execution of precision diagnostics in aquatic animal health management to augment sustainability and security of the aquaculture sector to meet global demands of aquatic food production. Under the theme of precision diagnostic in aquaculture there were seven invited talks of focused on the theme delivered by eminent scientists. The workshop was divided in two lecture sessions that attracted intensive interactions. Session 1 on Pathogen discovery and precision diagnostics covered four talks and session 2 on Future diagnostic for field application covered three talks. The inaugural programme was started with welcome note by **Dr. Megha K Bedekar**, Principal Scientist & Head Aquatic Environment and Health Management and organizing Secretary welcomed who acknowledged all expert for their presence in the workshop and Director and Joint Director for providing guidance and support to formulate the program and also National Agricultural Higher education Project (NAHEP), CIFE for funding this workshop. She introduced the genesis of the workshop, highlighted the inevitability of precise diagnosis in aquaculture as it is the cornerstone of health management. **Dr. N.P. Sahu**, Joint Director and Principal Investigator, NAHEP highlighted the importance of the precision diagnostics and in-depth innovations in point of care applications and technologies for health management. **Dr. C.N. Ravishankar**, Director and Vice-Chancellor, in his presidential address underlined to meet the food security of growing population and securing quality fish produce depends on specific, sensitive and rapid disease diagnostic in aquaculture. **Dr. P. K. Sahoo**, Director, ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar and Chairman of the Workshop emphasised on the prerequisite for developing need based precise diagnostics for suitable therapeutic development and enhancing the fish production.

Dr. P.K. Sahoo commenced the first Session by delivering a talk on “**Overview on freshwater fish diseases with emphasis on emerging pathogens**” followed by Fulbright Fellow **Dr. Arun K. Dhar**, Professor and Director, Aquaculture Pathology Laboratory, School of Animal and Comparative Biomedical Sciences, The University of Arizona who delivered a talk on “**Expediting pathogen discovery pipeline to prevent disease pandemics in shrimp aquaculture**”. The first session ended by a talk on “**Precision diagnostics in context of pathogen discovery**” delivered by **Dr. Shyam Sunder Nandi**, Scientist E/Deputy Director ICMR-National Institute of Virology, Mumbai Unit, Haffkine Institute Compound, Parel, Mumbai.

The second session began with the “**Challenges in disease diagnosis in aquatic systems**” presented by **Dr. K.V. Rajendran**, Professor Dept. of Zoology, School of Biological Sciences, Central University of Kerala, Kasaragod followed by a talk on “**Versatility of CRISPR-Cas technology for diagnosis and management of the virus: A plant virus perspective**” by **Dr. Anirban Roy**, Principal Scientist Division of Plant Pathology, ICAR-Indian Agricultural Research Institute, New Delhi. Further **Dr. M. Makesh**, Principal Scientist ICAR-Central Institute of Brackishwater Aquaculture, Chennai spoke on “**Field level diagnosis for aquaculture**” The session ended with the talk by **Dr. Megha Bedekar** HoD and Principal Scientist AEHM Division, ICAR- Central Institute of Fisheries Education, Mumbai who delivered her talk on “**Revolution of aquaculture health: Future machine learning and IoT for disease diagnosis**”.

A total 154 participants including **90 males and 64 females** actively participated in the workshop including faculty and students of ICAR-CIFE attended in person and faculty from sister ICAR institutes through online mode. The workshop generated lot of intensive discussion among the faculty and the students and many key points emerged from the questions raised during the workshop. **Chairman of the workshop, Dr. P. K. Sahoo, Director ICAR-Central Institute of Freshwater Aquaculture summarised the discussion** by emphasising on the need of the tools for disease prediction and also for field level diagnostics, with application of precision tools and robust database creation. He also agreed with the points raised by experts that histopathology and other conventional tools are non-replaceable and should be use to comprehend the diagnostic tests. He suggested that diagnosis should be comprehensive, holistic and system specific.

Overall, the workshop motivated, inspired, and enriched the students and participants through various interactions. The workshop was ended with the vote of thanks by **Dr. Megha K. Bedekar** to all experts, participants, Director and Joint Director, NAHEP, Fulbright and guest speakers. The International workshop was organized by **Faculty of Aquatic Environment and Health Management Division Dr. Megha K. Badekar**, Principal Scientist & Head, **Dr. K Pani Prasad**, Principal Scientist; **Dr. Gayatri Tripathi**, Principal Scientist; **Dr. S.P. Shukla**, Principal Scientist; **Dr. Vidya Shree Bharti**, Senior Scientist; **Dr. Kundan Kumar**, Senior Scientist; **Dr. Arun Sharma** Scientist, **Dr. Jeena K.**, Scientist; **Dr. Saurav Kumar**, Scientist and **Dr. Nalini Poojary**, CTO, ICAR-CIFE.



Group photographs of Dr. C.N. Ravishankar, Director & VC, ICAR-CIFE; Dr. N.P. Shau, Joint Director, ICAR-CIFE, Mumbai along with experts and resource persons of international workshop on “DIAGNOSTICS FOR FUTURE: PRECISION DIAGNOSTICS IN AQUACULTURE”



Dr. Rupam Sharma, Nodal Officer NAHEP, ICAR-CIFE, Mumbai is facilitating to Dr. Arun K Dhar, Professor and Director, Aquaculture Pathology Laboratory, School of Animal and Comparative Biomedical Sciences, The University of Arizona.



Participants of International workshop on “DIAGNOSTICS FOR FUTURE: PRECISION DIAGNOSTICS IN AQUACULTURE”



Chairman of the workshop, Dr. P. K. Sahoo, Director ICAR-Central Institute of Freshwater Aquaculture is addressing the gathering.