Eligibility

Researchers, Graduates and Post-graduate students, Technicians employed in private laboratories/hatcheries/farms, entrepreneurs etc.

Venue

Aquatic Environment and Health Management Division, ICAR-Central Institute of Fisheries Education, Panch Marg, Off Yari road, Versova, Mumbai 400061.

Intake capacity

A maximum of 6 participants (in one batch) will be selected after screening

Course Fee

Rs. 5000- (Rupees five thousand only) payable at the time of registration or as DD drawn in favour of "ICAR Unit, CIFE" payable at Mumbai.

Accommodation

No accommodation will be provided at institute.

How to apply

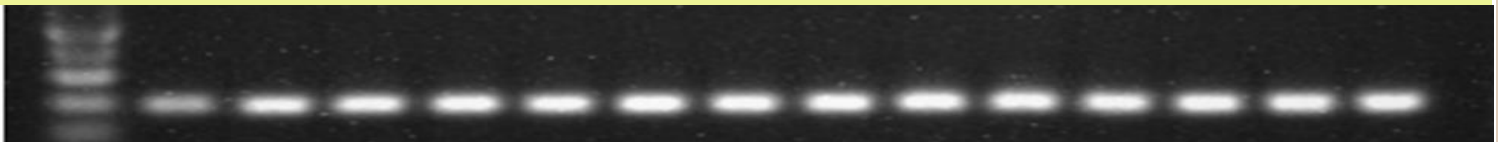
The applications in the attached format may be emailed to megha@cife.edu.in or jeena@cife.edu.in

Duration

Six days

Time period

16-21 Jan 2023



PROGRAMME DIRECTOR

Dr. Ravishankar C. N.
Director / Vice-Chancellor,
ICAR-CIFE, Mumbai

COURSE DIRECTOR

Dr. K.V. Rajendran
Principal Scientist
AEHM Division

COURSE COORDINATORS

Dr. Megha K. Bedekar
Principal Scientist
AEHM Division

Dr. Jeena K.
Scientist
AEHM Division

Filled in applications should be sent to:

ICAR - Central Institute of Fisheries Education
Versova, Mumbai-61
Phone: 9594731527/ 9967648195

Skill Development Program on

"PCR-BASED DISEASE DIAGNOSIS"

16-21 Jan 2023

ICAR-Central Institute of Fisheries Education
(Deemed University)
Mumbai
www.cife.edu.in

Skill Development Program on "PCR-BASED DISEASE DIAGNOSIS"
16-21 January 2023

Preamble of the training

Molecular diagnostics are revolutionising the clinical practice of infectious diseases. Methods associated to molecular biology have made excellent progress, with clear usefulness in diverse fields of medical, veterinary, agricultural and fisheries sciences. Timely and accurate detection of causative agent in a diseased sample is critical in managing the health of a population. Of the molecular diagnostic techniques, Polymerase Chain reaction (PCR) is a highly sensitive and specific, enzyme-driven technique for replicating DNA in vitro. PCR is one of the most widely used molecular techniques, and has a wide range of applications, including specific or broad-spectrum pathogen detection, evaluation of emerging novel infections, surveillance, early detection of bio threat agents, and antimicrobial resistance profiling, by virtue of its modifications. PCR-based diagnosis is considered as the Gold Standard in diagnosing aquatic animal diseases. It is being widely used in the mandatory screening of broodstock during the quarantine and post larvae before stocking. Along with conventional PCR techniques, quantitative Real-time PCR (qPCR) has emerged as a technological innovation and is playing an ever-increasing role in clinical diagnostics and research laboratories. As it is amenable to high throughput and generates both qualitative and quantitative results, Real-time PCR is considered as a highly reliable, fast and accurate platform. Against this background, the short term training aims at imparting hands-on training to the students and researchers to develop/improve the skill in the area of molecular diagnostics especially PCR and Real time PCR.

Training objective

To provide hands-on experience/training in the whole range of procedures involved in PCR-based diagnosis including primer designing, nucleic acid extraction, PCR, reverse-transcriptase PCR and Real-time qPCR. The training would also involve analysis and interpretation of results and troubleshooting.

Course content

- Introduction to safety procedures and equipment handling in Molecular diagnostic laboratory
- PCR-based diagnostics in Aquatic Animal Health - an overview (Lecture)
- Introduction to nucleic acids: DNA Extraction from fish/shellfish tissues (Theory and Practical)
- Quantification and quality evaluation of isolated DNA (Theory and Practical)
- Introduction to PCR techniques (Theory)
- PCR Primer Designing (Practical)
- PCR based detection of DNA virus (white spot syndrome virus) (Practical)
- Post-PCR analysis Agarose Gel Electrophoresis (Theory & Practical)
- PCR-based detection of bacterial pathogens : Practical
- Total RNA extraction from fish/shellfish tissues; Quantification and quality evaluation of isolated RNA
- Complementary DNA (cDNA) synthesis
- PCR based detection of RNA virus (Infectious myonecrosis virus)
- Nested PCR based detection of RNA virus (Infectious myonecrosis virus)
- Demonstration of PCR based detection of parasite (Enterocytozoon hepatopenaei)
- Introduction to real-time PCR (qPCR)
- Absolute quantification of pathogen (White spot syndrome virus) using qPCR
- Real-time PCR data analysis

ICAR-CIFE

ICAR-CENTRAL INSTITUTE OF FISHERIES EDUCATION

ICAR-Central Institute of Fisheries Education (CIFE), in over 60 years of existence, has emerged as a Centre of Excellence in Higher Education in Fisheries and allied disciplines. The Institute was established on 6th June 1961, under the Ministry of Agriculture, Govt. of India with assistance from FAO/UNDP. It came under the administrative control of Indian Council of Agricultural Research (ICAR) in 1979. Considering the wide mandate involving education, research and extension and recognizing the pivotal role played by CIFE in human resources development in fisheries, the institute was conferred the status of Deemed-to- be-University in 1989. ICAR-CIFE is now placed in a new campus with state-of-the-art facilities and located about 8 km from the domestic and international airports and 20 km from Dadar railway station, a major rail terminus in Mumbai. The training will be conducted in the Seven Bungalows campus of CIFE.