

Centre for Advanced Faculty Training On
**Development and application of
vaccines for fish aquaculture**

04-13 February, 2019

at

ICAR-Central Institute of Fisheries Education

Off Yari Road, Panch Marg, Versova,

Mumbai - 400 061

Application form

Name: _____

Designation: _____

Address : _____

Research experience: _____

Telephone no: _____

Fax no.: _____

E. mail: _____

Reasons for attending the programme:

Signature of the Candidate:

Comments & Signature of the Forwarding

Authority

Programme Director

Dr. Gopal Krishna

Director, CIFE

Course Director

Dr. K V Rajendran

Principal Scientist & Head, AEHMD

Course coordinators

Dr. Megha Bedekar, Senior Scientist

Dr. Kundan Kumar, Scientist

Ms. Jeena K, Scientist

Dates to remember

Last date of submission of application

30 December, 2018

Communication to Selected Participant

05 January, 2019

Confirmation by the Selected Participant

10 January, 2019

Future correspondence

Dr. K. V. Rajendran

Principle Scientist and Head

Aquatic Environment and Health Management Division

ICAR-Central Institute of Fisheries Education

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ICAR-CIFE India's first Fisheries University

Central Institute of Fisheries Education
Mumbai, India



Centre for Advanced Faculty Training on

**Development and Application
of Vaccines for Fish Aquaculture**



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Aquatic Environment and Health Management Division

Preamble of the training

Aquaculture is a promising sector for mitigating protein deficiency crisis worldwide. The rapid growth of aquaculture has resulted in displacement of aquatic animals from their natural environment, culture in high density, exposure to environmental stress etc. Also, over-exploitation of fisheries and anthropogenic stress on aquatic ecosystems have placed pressure on wild fish populations. Not surprisingly, the consequence has been the emergence and spread of an increasing array of diseases. Infectious diseases continue to be a major limiting factor in the development and profitability of fish farming and are most important among the problems that fish and shellfish industries address regularly. Unlike human and veterinary sectors, aquaculture sector has no well-established standard preventive or therapeutic measures available and the sector mainly relies on chemicals and antibiotics to control the diseases. The indiscriminate use of these products has proven to cause adverse effects such as bioaccumulation in farmed animals, development of drug resistant strains, and pollution of the aquatic environment. Therefore, it is imperative that research approaches should focus on strategies for prevention rather than treatment of diseases. Although introduction of vaccines has greatly reduced the traditional antibiotic mode of control of bacterial diseases, the limited knowledge on immune system of fish and practical difficulty in the field-level application of vaccines are major bottlenecks in the development and application of vaccines in aquaculture. Further, to develop efficient vaccines and to successfully commercialize them, several hurdles have to be overcome regarding selection of effective antigens and adjuvants, vaccine delivery methods and their effect on immune system while bearing in mind, the environmental and associated regulatory concerns. Integration of knowledge about microbiology and immunology, establishment of efficient vaccine development strategies, and streamlining of regulatory processes may facilitate the development of an efficient vaccines. Against this background, the training programme is being proposed to provide comprehensive hands-on training to researchers on development of inactivated and DNA vaccines for bacterial pathogens using an application *in silico* – *in vitro* – *in vivo* strategies.

ICAR-Central Institute of Fisheries Education

ICAR-Central Institute of Fisheries Education (CIFE), in over 50 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. The institute with its core strength in quality teaching, research and training has become a brand name in fisheries higher education. 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.

Aquatic Environment and Health Management Division

The division has dedicated working hands on development of vaccines against important bacterial pathogens of fish with an aim to develop a commercially viable vaccination strategy for aquatic animals. The division has made significant progress in the development of a novel DNA vaccine and an inactivated vaccine against potential fish pathogens.

Focus of the training

- ◆ Overview of specific immunity in aquatic animals
- ◆ Development of inactivated bacterial vaccine and its immune protection studies in fishes
- ◆ *In silico* analysis of vaccine candidates for development of DNA vaccine
- ◆ Development of DNA vaccine construct
- ◆ Vaccine delivery methods
- ◆ Overview of environmental and regulatory concerns in DNA vaccines

Travel and Logistics

To and fro II tier train fare by the shortest route from the respective institute to ICAR-CIFE, Mumbai will be paid as per the ICAR norms. Travel Allowance (TA) will be paid on submission of the tickets as well as certificate from the parent organization that the participant is not being paid TA. For participants who choose to travel by air, the reimbursement will be limited to AC 2 Tier train fare only if they travel by Air India. Travel by private carriers will not be reimbursed at all. In case of road travel, only State Transport Bus fare will be reimbursed. Free boarding and lodging will be provided to the participants in CIFE guest house as per ICAR approved norms.

Intake Capacity

A total of 25 participants will be selected based on their research relevance and experience pertaining to the training programme.

Eligibility

Assistant Professor and above / Scientist/ Researchers who are employed in SAU / CAU /ICAR institutes are eligible for the training programme.

How to apply

- ⇒ Applicants need to apply online using the CBP portal ICAR as per the following steps
- ⇒ Log on to <http://cbp.icar.gov.in/applyDetails.aspx>
- ⇒ Fill up the online application following the on screen guidelines.
- ⇒ Take a printout of the filled-in-application and get it approved by the competent authority of your organization.
- ⇒ Upload the scanned copy of approved application at the CBP portal.

However, in case applicants are not able to submit online application, application in the prescribed format through proper channel, may directly be sent to Dr. K. V. Rajendran, Course Director & Head, Aquatic Environment and Health Management Division, ICAR-Central Institute of Fisheries Education, Off Yari Road, Panch Marg, Versova, Mumbai-400061, E-mail: kvrajendran@cife.edu.in or megha.bedekar@cife.edu.in (Dr. Megha Kadam Bedekar, Coordinator & Senior Scientist, ICAR-Central Institute of Fisheries Education, Off Yari Road, Panch Marg, Versova, Mumbai-400061).