

Report
Webinar on National Campaign on AMR
Antimicrobial Resistance in Fish- 23 November 2021, 12.15-3.30PM

Indian Council of Agricultural Research- Central Institute of Fisheries Technology (ICAR-CIFT), Cochin organized a webinar on one of the most relevant topic- Antimicrobial Resistance in Fish as part of National Campaign on AMR coinciding with World Antimicrobial Awareness Week (18-24 November).

The webinar started with a welcome address by Dr. Sankar T.V., Principal Scientist & In-Charge, PME Cell, ICAR-CIFT. He welcomed the Chief Guest of the programme, Dr. Joy Krushna Jena, Deputy Director General (Fisheries Science), ICAR, New Delhi and Dr. C.N. Ravishankar, Director, ICAR-CIFT. He also welcomed three invited speakers, Prof. Stephen Rimmer from University of Bradford, Prof. Xunli Zhang, University of Southampton and Prof. Till Bachmann, University of Edinburgh. Participants from various research institutes and students from Universities were also welcomed to the event.

The Chief Guest Dr. J.K Jena, Deputy Director General (Fisheries Science), ICAR deliberated on the initiatives taken by ICAR in addressing AMR. He briefed on the National Action Plan to combat Antimicrobial Resistance (AMR). He elaborated on the network which has been named as the Indian Network for Fisheries and Animal Antimicrobial Resistance (INFAAR). The role of ICAR in creating INFAAR with technical and financial support from FAO in forging a network of laboratories from different parts of India to undertake surveillance of AMR in animal health and fisheries sectors was emphasized.

Dr. Toms C. Joseph briefed the audience about the research activities related to AMR in Division of Microbiology, Fermentation and Biotechnology. The division has two Indo-UK projects with titles: 1. Diagnostics for One Health and User Driven Solutions for AMR (DOSA) and 2. Does antimicrobial resistance (AMR) in livestock contribute to AMR in people in NE India? An interdisciplinary study investigating antibiotic use, drivers of AMR, and transmission dynamics is underway. Another DBT funded project titled screening lytic phages from diverse marine and aquatic niche for controlling bacterial pathogens associated with aquaculture and post-harvest fish quality and an INFAAR project on assessment of

antimicrobial resistance in microorganisms associated with fisheries and aquaculture in India are also under progress.

Dr. C.N. Ravishankar, Director, ICAR-CIFT also spoke on the occasion about the contribution of CIFT in tackling AMR and its contribution towards research in AMR. He also thanked the invited speakers for agreeing to be part of such an event.

Three lectures from internationally reputed experts were scheduled for the webinar. The first speaker, Prof. Stephen Rimmer from University of Bradford gave an elaborate presentation on the use of acrylic and polyurethane hydrogels for combating antimicrobial resistance specifically on pathogens like *Staphylococcus aureus* and *P. aeruginosa*. The second speaker Prof. Xunli Zhang is an expert in the field of Bioengineering and Microsystems and the Director of Chemical Engineering Division of University of Southampton. He spoke on microfluidics technology, a cost effective platform in tackling AMR. The last presentation was from Prof. Till Bachmann, University of Edinburgh. He is an expert in point of care detection of infectious diseases and antimicrobial resistance, conducting research at the interface of biomarkers and rapid diagnostics including for COVID-19. Till is the coordinator of the UK-India project 'DOSA - Diagnostics for One Health and User Driven Solutions for AMR', and presented on the topic: AMR diagnostics in aquaculture.

Participants (170) from all over the country and abroad representing various Universities and Research institutes participated in the webinar. Queries pertaining to the topics presented were addressed and the webinar was concluded with vote of thanks by Dr. G.K. Sivaraman, Principal Scientist, MFB Division, ICAR-CIFT. Provision for e-certificates to the students and researcher scholars were made.





Webinar
"Antimicrobial resistance in fish"

An international webinar on
World Antimicrobial Awareness Week
2:00 - 5:00 PM, IST, 9th November 2021
Meeting platform: Zoom


AMR Diagnostics in Aquaculture
 Time: 02:00PM – 02:45PM (IST)
 08.30- 09.15 UK Time, Tuesday 09th Nov 2021
Dr. Till Bachmann
 Professor, The University of Edinburgh


Microfluidics as an Emerging Platform for Tackling AMR
 Time: 03:00PM- 03.45PM (IST)
 09.30-10.15 UK Time, Tuesday 09th Nov 2021
Dr (Prof) Zhang Xunli
 Professor, The University of Southampton. UK


Acrylic and Polyurethane hydrogels for combating Anti-microbial resistance
 Time: 04:00PM- 04.45PM (IST)
 10.30-11.15 UK Time, Tuesday 09th Nov 2021
Dr (Prof). Stephen Rimmer
 Professor, University of Bradford, UK

Patron: Dr. C.N. Ravishankar, Director, ICAR-CIFT, Cochin
Co-ordinators: Dr. Toms C Joseph, Principal Scientist, HOD, MFB Division, ICAR-CIFT
Dr. G.K.Sivaraman, Principal Scientist, MFB Division, ICAR-CIFT
www.cift.res.in

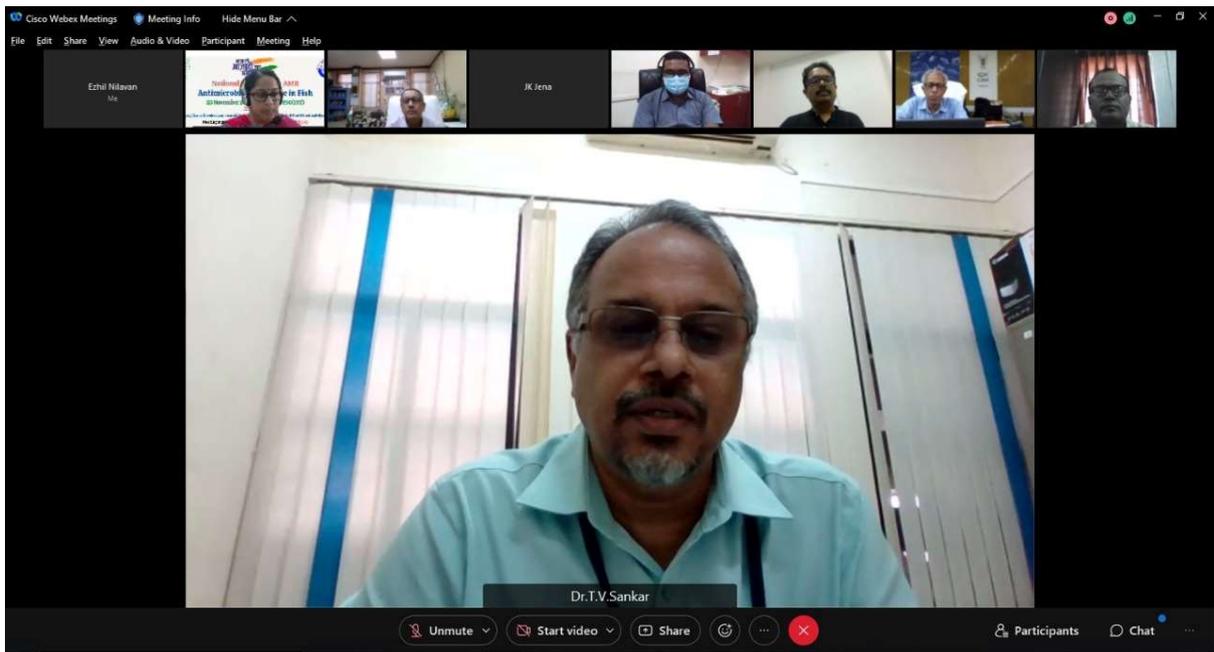

Flyer of the Webinar



Dr. C. N Ravishankar, Director, ICAR-CIFT delivering the presidential address



Dr. J. K Jena, DDG (Fishery Science) addressing the delegates



Dr. T. V Sankar, Principal Scientist and In charge PME cell welcoming the participants

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Toms Joseph Me SIVARAMAN Director CIFT Stephen Rimmer ciftcochinvc@gmail.com Host

UNIVERSITY of BRADFORD

Polymers In the Fight Against Antimicrobial Resistance

Stephen Rimmer
School of Chemistry and Biosciences
University of Bradford, UK

Participants (157)

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Prof. Stephen Rimmer, University of Bradford delivering the lecture

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Xunli Zhang Dr.T.V.Sankar

UNIVERSITY OF Southampton

Lab-on-a-Chip & Microfluidics

Laboratory

Chip

GC-on-a-Chip (Stanford)

Capillary: 1.5m, 200 × 30 μm
Stationary phase: OV-101
Detector: Thermal conductivity

Terry, et al, IEEE Trans. Electron. Devices, ED-26: 1880, 1979

Participants (99)

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Prof. Xunli Zhang, University of Southampton delivering the lecture

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Toms Joseph Me nagarjuna Till Bachmann Sudha Xunli Zhang

DOSA Human setting: UI Background Mapping Microbiology Assessment Needs to ITP Biosensor Test

AMR gene Point of Care Test

- Direct electrochemical detection of AMR genes from bacteria from urine. Current focus on Carbapenem resistance
- No PCR needed
- Suitable for use at PHC level

POC- nCD64 assay

Neutrophils → AMR untagged anti-CD64 antibody → MIP labeled CD64 antibody → Increase in Fluorescence due to AMR labeled antibodies when exposed with fluorescently labeled anti-CD64 antibodies

Before capture
After capture

- CD64 expression in Neutrophils are strongly correlated with onset of infection
- Could be used identify bacterial infection at PHC level
- Simple proof of concept is done with Milk Neutrophils

DOSA is funded by UK Research and Innovation / Economic Social Science Research Council, Newton Fund, and the Government of India's Department of Biotechnology

dosa-diagnostics.org

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Participants Chat

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Prof. Till Bachmann, University of Edinburgh delivering the lecture

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Participants (114)

T Raja Swaminathan ICAR... tapan sarkar Tejpal CS TRIVENI Tushar Jeet Vineeth Rajan Visnuvinayagam VRC CIFT Xunli Zhang

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A snap of the participants