



**B V RAJU COLLEGE**

**VISHNUPUR BHIMAVARAM**

**DEPARTMENT OF LIFESCIENCES**

**2023-2024**



**A COMPREHENSIVE REPORT ON VISIT  
TO  
ICAR- Central Institute for Fisheries  
Technology (ICAR-CIFT)  
Willingdon Island, Kochi, Kerala.**

## **A Report on Visit to ICAR-CIFT, Kochi**

We Visited ICAR- Central Institute for Fisheries Technology (CIFT), Kochi, Kerala as Part of a Training Programme conducted by the Institute under the SCSP Scheme by the Quality Assurance and Management Division. A Total of 05 Members attended this Training programme from Department of Life Sciences, B V Raju College, Bhimavaram. **G. Sunanda, The Faculty** member From the Life sciences Department along with 04 Students from 2nd Year Namely **M.S. Benedict, M. Sushma Siri, G. Sushma, and U. Navya Sri** were attended the Training Programme which was Conducted From **18<sup>th</sup> March,2024** to **22<sup>nd</sup> March,2024** for A Period of 5 days at The Institute on “**MICROBIOLOGICAL TESTING AS PER ISO METHODS FOR FOOD LABORATORIES**”. For A Total of 05 Days,we attended Classes and Attended Labs where we Came across A Vast Amount of Knowledge where our **Guides Dr. PankajKishore (Senior Scientist, ICAR-CIFT)&Dr. Ranjit Kumar Nadella (Senior Scientist ICAR-CIFT)** explained everything about the ISO standards and Importance of Microbiology.

We Attended the Practical Sessions For the 04 days in the State-of-the-art Microbiology Lab where We conducted Practical on various Topics which were under the guidance of **Mr. Babu P.S&Mr. Ajith Chellappan, Senior Technical Officers** helped us in performing many practicals which helped us to gain practical knowledge. For the 05 days we gained a lot of Practical and Technical knowledge on how to operate the instruments and on how to conduct the experiments, etc... **We had guest Lectures from Three eminent scientists from Export Inspection Agency (EIA), Government of India, Kochi Port.**

We also visited the **FSSAI Lab** present in the Institute which is the **19<sup>th</sup> of its Kind in India.**

**CIFT- Kochi is the National Referral Laboratory and National Reference Laboratory which is ISO/IEC 17 025: 2017Accredited and ISO 9001:2015 Certified.**

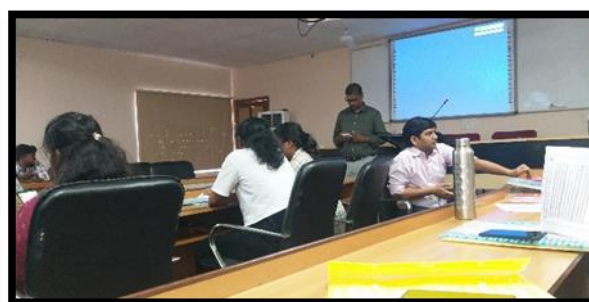
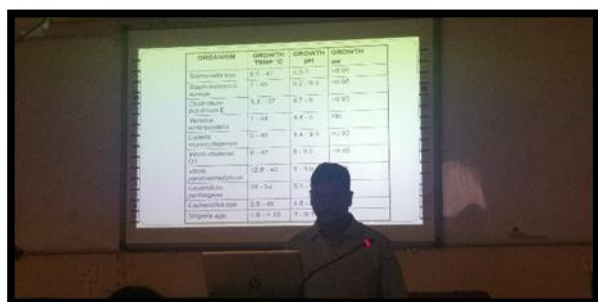
**Day- 01 (18-03-2024)**

On Monday (18-03-2024), our training programme was inaugurated by **Dr.Zynudheen A.A , Head of Quality assurance and Management Division** where he gave us an overview about the whole Training Programme and We were asked to Self-Introduce and after a Tea break we were taken To the Class room where **Dr. Pankaj Kishore, Senior Scientist, Quality assurance and Management Division** gave us an

**overview about ISO and what are the ISO methods and why are they essential in food laboratories and** He gave a brief introduction about the **Preparation of Initial Suspension and Decimal Dilutions Test Samples for Microbiological Examination ISO (6887-1)**



After Lunch, **Dr. Ranjit Kumar Nadella, Senior Scientist, Quality assurance and Management Division** gave us **a lecture about Good Food Lab Practices in Microbiology Testing** where he explained about the Practices that should be followed in a microbiology lab and gave a pictorial explanation about How a Microbiology lab should be Established, the Structure of the Lab, the Different parts in the lab like Media Preparation Room, Sterilization Room, Inoculation Room & Decontamination Room. He explained about the importance of safety measures that should followed and gave us a brief pictorial explanation about the Pathogens that we are going to be handling in the next 4 days.

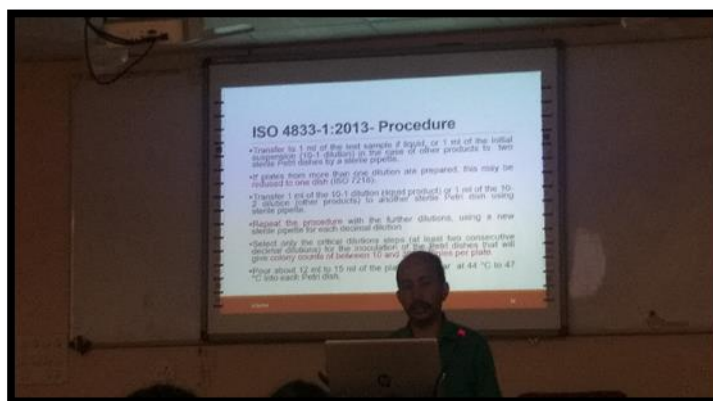


After that **Dr. Pankaj Kishore** gave a Lecture about The Preparation of Initial Suspension and Decimal Dilutions Test Samples for Microbiological Examination ISO (6887-1) where he explained about **General rules for Initial dilution, Special dilution techniques for Particular foods and Preparation of Samples**. After that he gave Explanation about the ISO Methods for different pathogens like Salmonella, E. coli, Campylobacter, coliforms, Bacillus and Yeasts & Moulds.

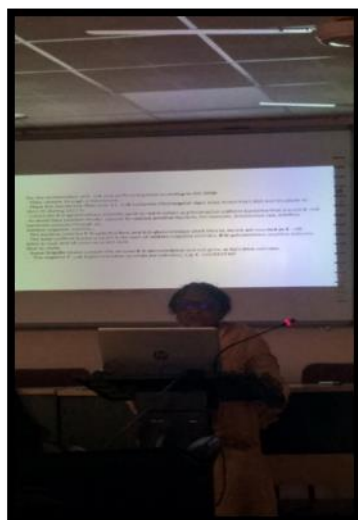
Day- 02(19-03-2024)

On Tuesday (19-03-2024), We had A Guest Lecture by **Dr. Sabbir Ali A.M, Export Officer, Export Inspection Agency (EIA), Kochi** on **Colony Count at 30 Degrees Celsius by the Pour Plate technique and Surface plating technique (ISO 4833-1 and ISO 4833-2)**

where he explained about the Standard that needs to be maintained during inoculation, Culturing, and Isolation. He explained that inoculation should be done at 30 degrees Celsius for 72 hours and explained about Isolation techniques.



After a tea break, we had Lecture by **Dr. Femeena Hassan, Senior scientist, ICAR-CIFT** on **Enumeration of Escherichia Coli and Coliform Bacteria in Water (ISO 9308 1&2)** where she explained about Importance of Water and Gave an Inside out explanation about Indicator organisms and Standard Indicator Organisms. She Explained about how to test our Drinking water using ISO standard methods and Importance of Clean Drinking Water for the Health of a Human Being.



After That **Dr. Ranjit Kumar Nadella**, gave a Lecture about **Enumeration of E. coli by solid plate method (ISO 16679-2) & MPN method (ISO 16649-3)** where he explained about the Plating techniques and MPN method and gave us an Overview about the Practical Session that will be conducted in the afternoon session.

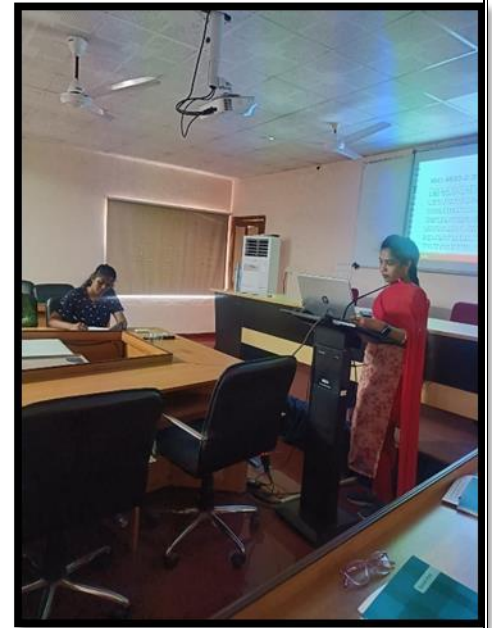
After the Lunch Break, we were taken to The Microbiology Lab where **Mr. AjithChellappan, Technical officer** gave us A Brief Explanation about the Protocols that need to be followed in the Lab and gave us an introduction about the Different kinds of Pathogens we will be handling and their characteristics and **Mrs. Bindu Joseph, Head for Media preparation** explained about importance of culture media and Made us Prepare **TCBS (Thiosulfate–citrate–bile salts–sucrose agar)** and Made us to plate them in sterile petri dishes and She explained the composition of Different culture medias and the importance of Autoclaving and creation of a sterile medium for bacterial growth.





On Wednesday (20-03-2024), **Dr. Ranjit Kumar Nadella** held a Group Discussion with all the Participants where he divided all the participants into 05 individual groups and each group was assigned a Topic to discuss and to give a Seminar. All 05 of us were split into 3 different groups where we gave seminars on our assigned topics and Ranjit sir gave Corrections and Suggestions If needed and helped us to understand the topic in an in-depth way.

After that **Dr. Ranjit Kumar Nadella**, gave a lecture on **Isolation and Identification detection of Salmonella Species (ISO 6579-1)** where he explained about the Procedure and the four steps involved in this Process and He explained about the biochemical tests and Serological tests where he explained about use of different agars like Xylose Lysine Deoxycholate agar (XLD), Bismuth Sulfite Agar (BS), Hekaton Enteric Agar (HE) and CHROMagar Salmonella Plus. He further held a brainstorming session about salmonella where he explained in-depth about it. After that He gave us a heads-up about the Practical session that will be conducted after Lunch.



After Lunch, We were taken to the lab where **Dr. Babu P.S , Senior technical Officer** gave us an overview about the Pathogens and We extracted the Bacteria from frozen shrimp which we inoculated in Petri dishes and Petri films and we Incubated them for 24hours. Then we conducted streaking in the TCBS agar plates and They were too kept for Incubation.

After that **Mr. Ajith Chellappan** explained how to count the colonies in serial dilutions and explained about the Formulae to be used in it.

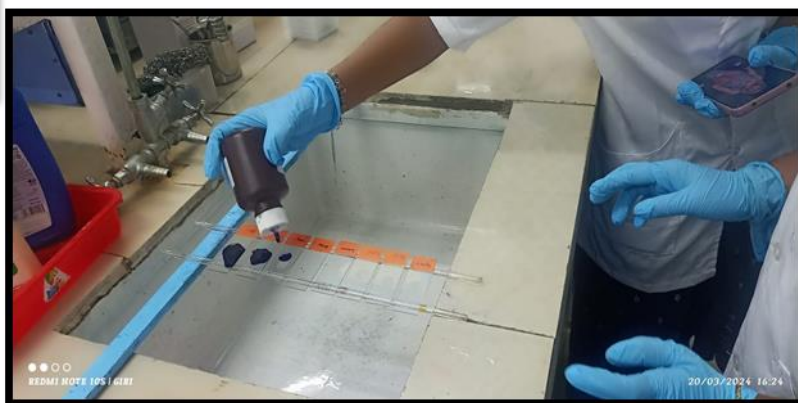
After That **Dr. Babu.P. S** explained about the Growth of Salmonella and Showed us few samples of Salmonella growth



Day-04 (21-03-2024)



On Thursday (21-03-2024), we had a guest lecture by **Dr. Abhilash, MPEDA, Kochi** on **Isolation and Detection of *Vibrio cholerae*, *Vibrio parahaemolyticus* and *V. Vulnificus* (ISO 21872-1)** where he explained about the growth of vibrios and How to isolate and Detect them and He gave an

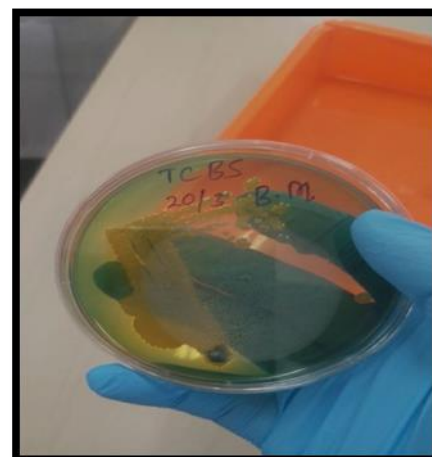
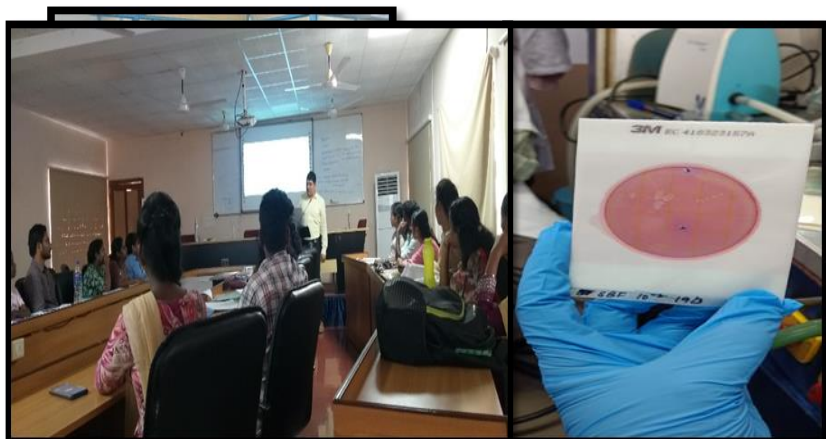


in-depth view about how PCR is used in different fields and explained about the components and the process of the Polymerase chain reaction.

After that **Dr. Pankaj Kishore** gave a Lecture on **Isolation and Detection of *Listeria Monocytogenes* (ISO 11290-1)** where he explained about the *Listeria monocytogenes* and He gave an in-depth view about this pathogen growth and He explained further the standards that are involved in this testing and gave us a heads-up about the Practical session.

After the Lunch, We conducted Gram staining where **Mr. Padmaraj.P.S, Technical officer** explained about the Gram staining and he gave us an in-depth about why gram staining is important and The differentiation between gram positive bacteria and Gram Negative bacteria.

After that we observed the TCBS agar plates that we conducted Streaking on Wednesday (20-03-24) and we observed the bacterial growth and We also checked the Petri films that we introduced the pathogen into and checked for its growth.



Day-05(22-03-2024)

On Friday (22-03-2024), we had a Guest lecture by **Dr.Vinay Kumar, Assistant Director, Export Inspection Agency (EIA), Kochi** on **Orientation to Molecular Detection of Bacterial Pathogens in food.** Where he explained about the usage of standards by ISO and explained about the Usage of PCR and History of PCR and Explained about the types in PCR and He further Explained in depth about the Usage of ISO standards in Export and Gave Further information about Developments in PCR and the Modern Techniques .

After that **Dr.Devananda Unchoi, QAM division, ICAR-CIFT** gave a Lecture on **Enumeration Of Yeast and Moulds as per ISO 21527-1&2-2008** where he explained about Yeast and Usage of it in different industries and The Suitable conditions for Mould Growth.



After Lunch, **Dr.Babu P.S** made us to perform a practical where he directed us to inoculate a Pathogen in to the Antibiotic media and observe the changes and Further explained about the Biosafety measures that should be followed while handling these pathogens

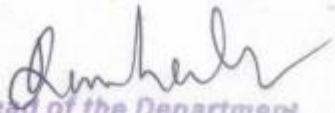
After **Dr.Ranjit Kumar Nadella**, Showed us **The FSSAI lab** and Explained about the Impotance of this Lab and explained about the Fields that CIFT-Kochi tests the Food and regulates the standards and He further Mentioned that **this is 19<sup>th</sup> Laboratory of its Kind and the Major Laboratory for Seafood Testing in India**


## **CONCLUSION:**

We gained Knowledge about the ISO Standards and got to understand in-depth about different pathogens and How Microbiology is crucial in food laboratories and Importance of following the ISO methods.





  
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