

## Mobile aquaclinic

ARL-KUFOS operates a state of art mobile health laboratory equipped with Level III diagnostic capabilities to cater the needs of farming community and other stakeholders. The clinic is capable of field level testing of aquatic animal diseases, water quality analysis etc. The unit is operated to provide diagnostic support and providing awareness to farming communities all around Kerala. The unit can provide onsite services like water and soil quality testing, PCR diagnosis for viral diseases, post mortem examinations etc. The unit actively co-ordinates and conducts the onsite outbreak investigations and fish kill investigations happening in the state.

## State referral laboratory for aquatic animal disease diagnosis and quality testing

The Referral Laboratory for Aquatic Animal Disease Diagnosis and Quality Testing (ARL) was established at the Kerala University of Fisheries and Ocean Studies with funding from the Government of India through the Pradhan Mantri Matsya Sampada Yojana (PMMSY) and the Department of Fisheries, Government of Kerala. The unit is a cutting-edge research and full-service diagnostic laboratory with testing capabilities in bacteriology, parasitology, virology, molecular biology, immunology, toxicology, environmental chemistry, histopathology, etc. Furthermore, the ARL undertakes active surveillance of antimicrobial resistance (AMR) in aquaculture and fisheries as part of the Kerala Antimicrobial Resistance Strategic Action Plan. The unit also operates a surveillance program for aquatic animal diseases in the state of Kerala, aimed at identifying emerging diseases and providing training and education for stakeholders. ARL-KUFOS operates a state of art mobile health laboratory equipped with Level III diagnostic capabilities to cater the needs of farming community and other stakeholders.

The laboratory offers a broad range of certified tests within the disciplines of microbiology, bacteriology, virology, serology, toxicology, soil and water quality testing, chemical residue analysis, histopathology, and necropsy services and issues reports for tests performed within the scope of the laboratory to various stakeholders. Diagnostic and testing services are approved and registered as the state referral laboratory of the Department of Fisheries, Government of Kerala. Such approval is granted subject to maintaining and providing capabilities for the diagnosis of endemic and certain exotic diseases of aquatic animals and quality testing of aquaculture products.

## Laboratory Testing Information

### Scope of Diagnostic Examinations and Testing Services

ARL offers a wide range of tests and procedures for the diagnosis of diseases of commercial aquaculture systems and well as wild fish samples. Tests are also offered for export or health certification purposes. The Laboratory maintains reference capabilities and hold its position as a recognized centre in the National Surveillance Program for Aquatic Animal Disease.

### Molecular Disease diagnostics

The molecular diagnostic facility offers PCR based diagnosis for fish and shrimp diseases. The laboratory is capable of diagnosing WSSV, IHNV, AHPND, EHP, NHPB, TSV, YHV, IMNV, MBV, HPV, MoV, LSNV, SMV, PvNV, MrNV, TILV, TIPV, SHR, ISKNV, RSIV, NNV, CMNV, CyHV2, CyHV3, CCV, SDDV. The lab have the capacity to develop and optimize novel PCR assays for specific applications including

emerging pathogen identification, detection and screening, certification testing and hatchery operations.

#### Microbiology Testing

The Microbiology Laboratory provides a range of services for the isolation and identification of bacterial and fungal pathogens from aquatic animal and environmental samples. Bacterial identification and antimicrobial sensitivity testing is carried out, to CLSI standards, using the automated BD Phoenix M50 system.

#### Soil and Water Quality Analysis

The facility provides full spectrum analysis of soil and water quality parameters to evaluate the suitability of the aquaculture systems. Besides aquaculture applications, specific analysis for drinking water quality, sewage water analysis and construction water quality analysis service can be undertaken.

#### Mass spectrometry analysis

The mass spectrometry facility undertakes the sensitive analysis of antibiotic residue, mycotoxins, pesticide residue, toxicants using the LC-MS/MS technique and heavy metals and isotope analysis using an ICP-MS system. The unit is capable of testing feed samples, raw materials, fish products, industrial samples and environmental samples.

#### Academic and Research Services

The unit is a cutting-edge research facility offering advanced training programs in various aspects of aquatic animal health management and quality testing. All the facility can be accessed by external and internal users on a payment basis .

#### Bio secure Wet lab Complex

The Facility is a CPCSEA approved Aquatic Animal biocontainment facility, that allows ARL to conduct in vivo and in vitro studies with aquatic animal pathogens. Regulatory compliant studies can be carried out to the recognized standards of Good Clinical Practices (GCP) and Good Laboratory Practices (GLP) as needed. Our existing infrastructure can accommodate marine and freshwater species including shrimp, tilapia and zebrafish to name a few. Our services include; Feed evaluation for growth parameters, in vivo toxicology assays, Proof of concept studies and pilot trials for pre/pro/postbiotics and immunostimulants, Vaccine trials and in vivo challenge studies