



WOAH Reference Laboratory for Infection with *Aphanomyces invadans*

ICAR-National Bureau of Fish Genetic Resources (ICAR-NBFR), India



Overview

A research institute under Indian Council of Agricultural Research (ICAR), Government of India

Coordinating

- National Surveillance Programme for Aquatic Animal Diseases
- Indian Network of Fisheries and Animal Antimicrobial Resistance



Expertise

- Disease investigation using conventional and molecular techniques
- Histopathology, Mycology, Bacteriology and Virology
- Understanding host-pathogen interaction

Services

- Fish disease investigation & scientific advice to the farmers
- Testing of samples for WOAHA/NACA-listed pathogens
- Provide technical inputs to the Competent Authority
- Training/capacity development of State Fisheries Officers

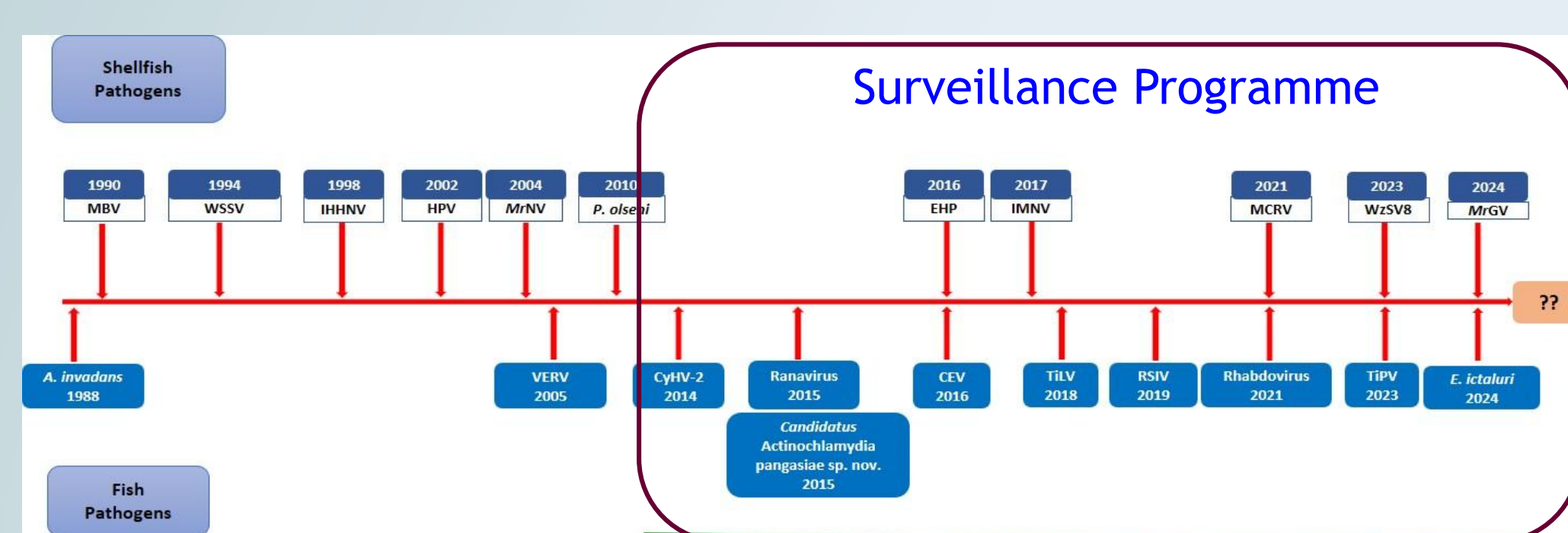
Facilities

- Molecular Diagnostics laboratory (an ISO/IEC 17025:2017 Accredited Testing Laboratory)
- Mycology laboratory
- Bacteriology laboratory
- Virus Isolation facility
- Antimicrobial Resistance facility
- Bioassay facility
- Histopathology laboratory

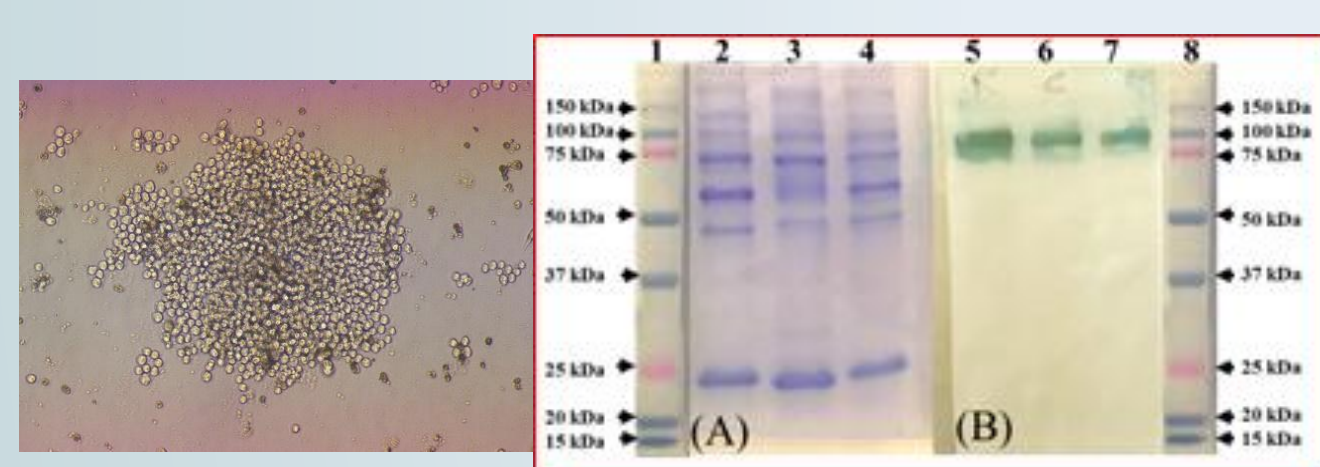


Recent Innovations, Research highlights, Technical developments

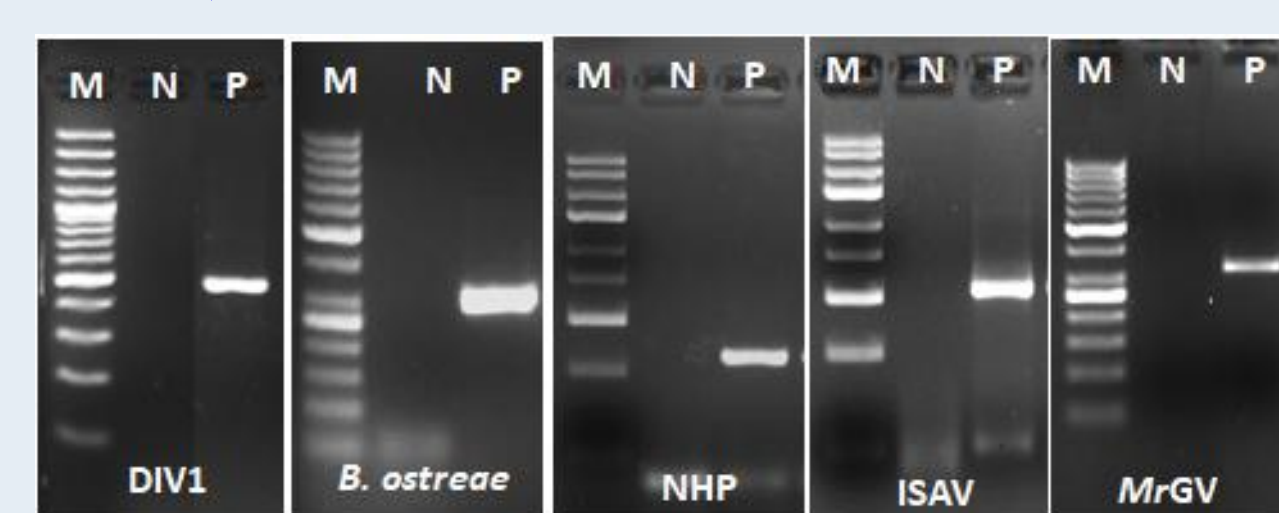
Reported 13 pathogens from the country for the first time under surveillance programme



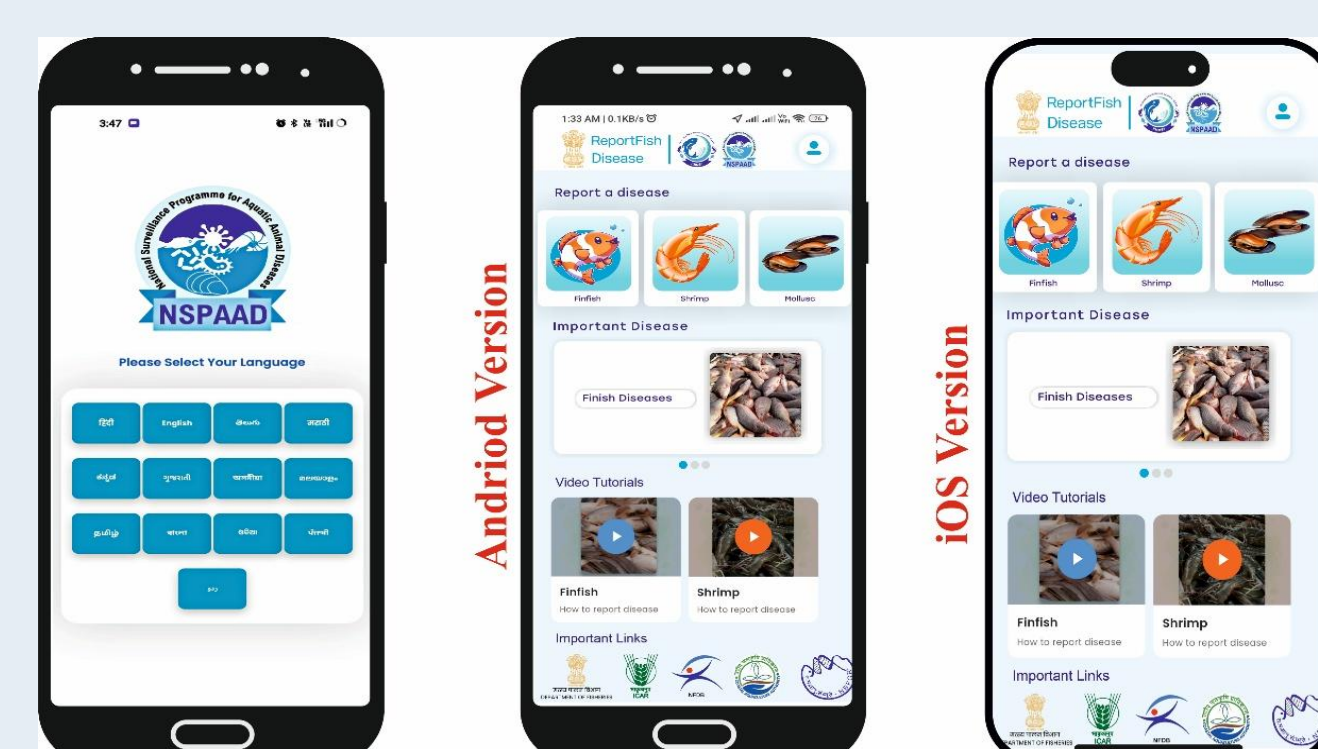
Developed monoclonal antibodies against fish immunoglobulins



Molecular diagnostic capability for 30 WOAHA/NACA-listed pathogens affecting finfish, crustaceans and molluscs



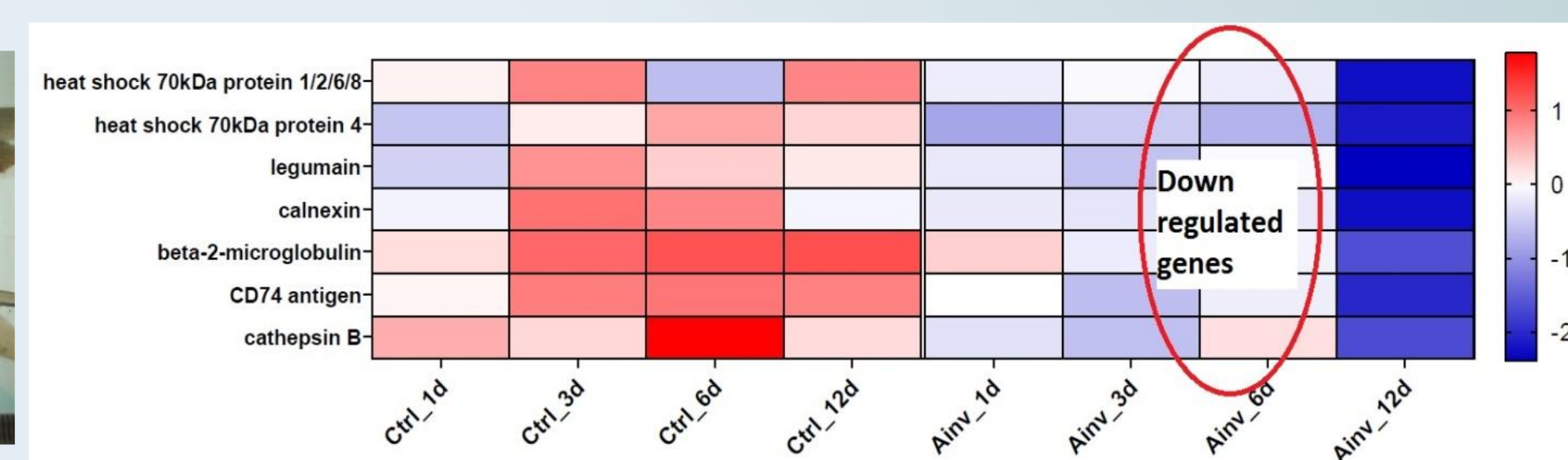
Developed the 'ReportFishDisease' App, a mobile application for real-time reporting of aquatic animal diseases



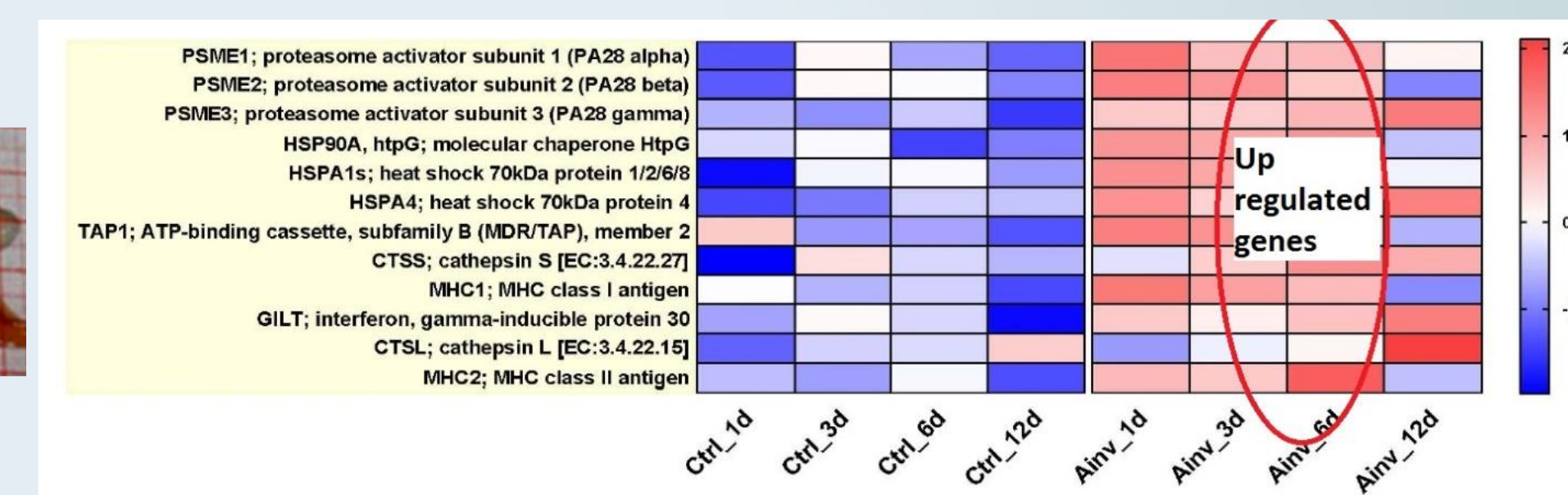
Deciphered molecular mechanisms underlying susceptibility/resistance to *A. invadans*



Susceptible rohu



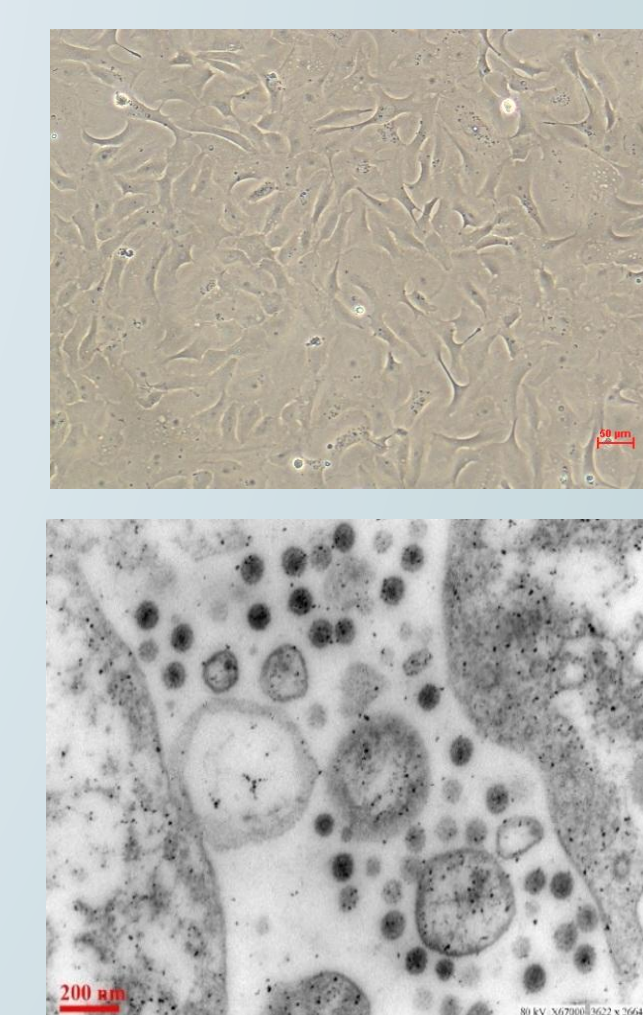
Resistant common carp



Developed OoNIL, an anti-oomycete formulation for treatment of fish oomycete pathogens



Established fish cell lines from commercially important species for virus isolation



How can we support Members?

Reference Materials & Diagnostic Services

- Positive controls and reference isolates
- Confirmatory diagnosis of *A. invadans* using WOAHA-recommended methods

Research Collaboration

- Development of diagnostics, vaccines and therapeutics
- Aquatic animal disease surveillance
- Host-pathogen interaction studies

Training/Internship

- Hands-on training in molecular detection of WOAHA/NACA listed pathogens
- Virus, bacteria and oomycete isolation and characterisation
- Diagnostic techniques

Twinning Programmes

- Joint research and staff exchange
- Regional capacity-building programmes under WOAHA, FAO and NACA

Members are encouraged to collaborate with the Reference Laboratory through:

- Submission of suspected samples for confirmatory diagnosis of EUS
- Sharing pathogen isolates and surveillance information
- Participation in inter-laboratory proficiency testing and validation of diagnostic assays
- Joint research on EUS epidemiology, diagnostics, pathogenesis and disease management
- Provide scientific support to national laboratories for improving EUS diagnosis, surveillance and outbreak response
- Participate actively in WOAHA, FAO and NACA regional aquatic animal health initiatives

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