

DR. BINESH CHEMMANCHERRY PUTHIYAVEETIL

Ph.D. Marine Biology · Fish Virologist & Aquatic Disease Specialist · Diagnostic Kit Inventor

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PROFESSIONAL PROFILE

Marine biologist and virologist with a Ph.D. and 15+ years of experience in aquatic disease surveillance, molecular fish diagnostics, and laboratory management. Inventor of a patented PCR diagnostic kit for betanodavirus that reduces testing costs by 30% and protects an estimated USD 2 million/year in aquaculture production. Author of 19 peer-reviewed papers (citations: 204; h-index: 7) in fish virology, parasitology, and diagnostic assay development; experienced in establishing multi-disciplinary laboratories from scratch and supervising teams up to 90 staff.

CORE COMPETENCIES

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| ▶ Fish Disease Diagnosis & Surveillance | ▶ PCR / RT-PCR / Nested PCR / LAMP / eDNA |
| ▶ Diagnostic Assay & Commercial Kit Development | ▶ Laboratory Establishment & Management |
| ▶ Histopathology, FISH & Electron Microscopy | ▶ Team Supervision & QA/QC Compliance |
| ▶ Aquaculture Health Management (BMP) | ▶ Bioinformatics & Phylogenetic Analysis |
| ▶ Cloning, Protein Expression & Purification | ▶ Field Sampling & Biosafety Protocols |

PROFESSIONAL EXPERIENCE

Assistant Professor – Zoology | **Gurudev Arts and Science College, Payyanur** | Jun 2025 – Present

- Teaching undergraduate Zoology (marine biology, animal physiology, environmental biology); continuing applied fish health research alongside teaching duties.

Senior Scientific Officer | **Spice Healthcare** | Apr 2021 – Mar 2022

- Supervised 90 laboratory and field staff during COVID-19 high-volume diagnostic operations; sustained 250,000+ tests/year at 98% accuracy with 20% TAT reduction via LIMS workflow optimisation.
- Implemented QA/QC, infection control, and biomedical waste management protocols to regulatory standards.

Research Associate | **Kerala University of Fisheries & Ocean Studies (KUFOS)** | Nov 2018 – Nov 2020

- Established three laboratories from scratch: PCR (fish pathology), wet lab (fish biology), and hydrobiology lab (water quality, pollution, climate monitoring).
- Identified 40 fish and crustacean species in Kavvayi backwaters; conducted BMP training programmes for aquaculture stakeholders.

Senior Research Fellow | **Central Marine Fisheries Research Institute (CMFRI)** | Nov 2013 – Oct 2018

- Executed National Surveillance Programme for Aquatic Animal Diseases across marine ecosystems using systematic field sampling and advanced molecular diagnostics.
- Built a fully equipped multi-disciplinary disease research laboratory (wet lab, histopathology, FISH, PCR, ultracentrifuge, SEM) from the ground up.
- Identified two new *Ceratomyxa* n.sp. and *Tenuiproboscis keralensis* n.sp.; conducted eDNA-based Perkinsus distribution surveys; assessed mussel-farm over-productivity and recommended evidence-based mitigation.

Senior Research Fellow | **Central Institute of Brackishwater Aquaculture (CIBA)** | Oct 2007 – Mar 2011

- Developed and patented the β -Nova Kit — a nested RT-PCR betanodavirus diagnostic assay (Patent 347/DEL/2011) reducing testing cost by 30%, protecting >USD 2 million/year in aquaculture production.
- Characterized 19 RGNNV isolates from 19 fish species including 3 new susceptible hosts; demonstrated that subclinical infection escalates to fatal VNN (97% mortality) under thermal and crowding stress.

Earlier Roles (2007–2013): Research Fellow – CUSAT (2007); Research Assistant – Rajiv Gandhi Centre for Aquaculture (2007); Lecturer – Sacred Heart College, Thevara (2011–2013; postgraduate Aquaculture & Fish Processing); Guest Faculty – Govt. Arts & Science College, Karindalam (2024–2025).

EDUCATION

Ph.D. Marine Biology — *University of Madras, India, 2015–2021*

Thesis: Betanodavirus in fishes — molecular surveillance, phylogenetics and diagnostic assay development. Delineated 6 phylogenetic clades; identified new host species; demonstrated temperature as a mortality trigger.

M.Sc. Marine Biology — *Cochin University of Science & Technology, 2004–2006*

B.Sc. Zoology — *Kannur University, 2001–2004*

PATENT · PUBLICATIONS · AWARDS

Patent 347/DEL/2011 (Govt. of India) — Nested RT-PCR diagnostic assay for betanodavirus; commercialized as the β -Nova Kit (30% cost reduction; >USD 2M/year in protected aquaculture value).

Publications 19 peer-reviewed papers · 204 citations · h-index 8 · Highest IF: 13.5 · 3 technical booklets · 21 conference presentations

2020 Molecular surveillance of VNN in farmed fish. jabf.in/articles/Vol8/1-2/20-Binesh_etal.pdf

2024 Molecular taxonomy of *Tremoctopus gracilis*. doi.org/10.1007/s00227-023-04376-0

2023 Description of *Auerbachia ignobili* n. sp. doi.org/10.1016/j.parint.2023.102768

2020 VNN disease outbreak <https://epubs.icar.org.in/index.php/IJVASR/article/view/130724>

2020 Molecular surveillance VNN http://www.jabf.in/articles/Vol8/1-2/20-Binesh_etal.pdf

2020 Nested rt-PCR assay VNN <http://www.jabf.in/articles/Vol8/1-2/14-Binesh&Jithendra.pdf>.

2020 Genotyping of Mimic Octopus *Thaumoctopus mimicus* [doi:10.4002/040.063.0111](https://doi.org/10.4002/040.063.0111)

2018 Perkinsus olseni in *Paphia malabarica* first report <https://doi.org/10.1016/j.jip.2018.10.001>

2018 Description of *Chloromyxum argusi* n. sp. [doi:10.1007/s00436-018-6013-5](https://doi.org/10.1007/s00436-018-6013-5)

2018 Distribution of *Histioteuthis miranda* doi.org/10.1007/s41208-018-0076-z

2017 Description of *Tenuiproboscis keralensis* n. sp. doi.org/10.1007/s00436-017-5628-2

2017 Range extension of *Bathyteuthis bacidifera* doi.org/10.1007/s12526-017-0655-x

2017 *Ceratomyxa collarae* & *leucostemoni* n. sp. doi.org/10.1007/s00436-016-5317-6

2014 VNN escalation with thermal stress — experimental model in zebrafish. doi.org/10.1111/jfd.12080

2013 VNN in zebrafish and goldfish — first report; VNN in clownfish — first report. doi.org/10.3354/dao02605

2013 Classification & genetic characterization of betanodavirus (Indian isolates). doi.org/10.1007/s00705-012-1549-7

2013 VNN in clownfish - first report doi.org/10.1111/jfd.12001

2013 Genetic characterization of betanodavirus doi.org/10.1007/s00705-012-1554-x

Awards Best Presentation — DALAF-2010 (ICAR-CIFE, Kolkata) · Best Presentation ×2 themes — BRAQCON 2019 · Session Co-Chair — ETIA-2013 · Invited peer reviewer, international journals

English PTE Academic: Overall 73 (Reading 78, Writing 77, Speaking 67, Listening 65) | Malayalam (Native) |

Full publications: orcid.org/0000-0002-0974-8432 | [Open to relocation](#)