

AQUAFOCUS

Dedicated to

**Aquaculture
Research &
Development**

English Quarterly Magazine

December 2024

Volume 2 / Issue 4

TABLE OF CONTENTS

| | |
|---------------------------------|----|
| 1. Synergizing Rainwater | 07 |
| 2. Seaweed Fights Climate | 11 |
| 3. The Rise of Phage | 16 |
| 4. Why Prawns | 18 |
| 5. Unlocking the health | 23 |
| 6. Smart Aquaculture | 27 |
| 7. Use of Different Feed | 29 |
| 8. Promoting Sustainable | 35 |

EDITORIAL BOARD

Editor-in-Chief

Dr. Jesu Arockia Raj

Associate Editors

Dr. S. Seetharaman, Dr. M. Dhanaraj & Mr. V. Gopi

International Editorial Board

Dr. Ajith Kumar, Principal Scientist, ICAR-National Bureau of Fish Genetic Resources, India

Dr. Aziz Arshad, Professor, University Putra Malaysia, Malaysia

Dr. Caterina Faggio, Assoc. Professor, University of Messina, Italy

Dr. Dina Zilberg, Professor, Ben-Gurion University of the Negev, Israel

Dr. Fatimah Md Yusoff, Professor, University Putra Malaysia, Malaysia.

Dr. Harikrishnan Ramasamy, Asst. Professor, Pachaiyappa's College for Men, India

Dr. Ki Choon Choi, Scientist, National Institute of Animal Science, South Korea

Dr. Mariadhas Valan Arasu, Assoc. Professor, King Saud University, Saudi Arabia

Dr. Marina Paolucci, Professor, University of Sannio, Italy

Dr. Mohsen Abde-Tawwab Ibrahim, Professor, Zagazig University, Egypt

Dr. Preetham Elumalai, Asso. Professor, Cochin University of Science and Technology, India

Dr. Vinu Siva, General Manager, Amazing Biotech Pvt. Ltd., Tamil Nadu, India

Disclaimer

The magazine is devoted solely for disseminating and reflecting technical research based news and views for the benefit of all relevant readers and does not promote any special personal, cultural or social aspects has any kind of affiliations. All opinions, views and articles published in the magazine are those of the respective authors & contributors, and do not reflect those of the publisher/editors. The magazine is published as an educational service Best-Effort basis. The publisher & editors do not assume liability for any errors or omissions in any content or printing.



FOUNDATION FOR AQUACULTURE INNOVATIONS & TECHNOLOGY TRANSFER

It is with great enthusiasm that I welcome you to the latest issue of *Aquafocus*, which continues to reflect the dynamic evolution and progressive vision of the aquaculture sector. This edition showcases the remarkable strides being made toward sustainability, productivity, and ecological stewardship through interdisciplinary innovation.

We explore varied and revolutionary aquaculture approaches in this issue. A new era of precision farming begins with aquaculture systems that use AI and IoT. These devices improve feed efficiency, water quality monitoring, labor, and environmental impact. Global and regional case studies show that smart aquaculture is becoming essential to robust and scalable fish production.

The revival of bacteriophage therapy as an antibiotic option in aquatic disease management is equally intriguing. Phages are a natural, highly targeted, and ecologically friendly way to fight bacterial infections like *Vibrio* spp., which could improve shrimp and fish farmed biosecurity as antibiotic resistance rises. The edition also examines seaweed aquaculture, a climate change option often overlooked. Seaweeds are effective in blue carbon sequestration, water purification, and methane mitigation. National institutes like ICAR-CMFRI and CSIR-CSMCRI have strategically promoted seaweed farming in India, highlighting its potential to enhance coastal livelihoods, bioproduct development, and ecological resilience.

This feature demonstrates how rainwater collection ponds can be used for small-scale aquaculture in Madhya Pradesh's Agri-Aqua Food System. This grassroots idea combines fish farming and water conservation to boost rural incomes and food security. It targets socio-cultural, educational, and infrastructural constraints through community participation, capacity building, and policy suggestions. Experimental research on live feed production, such as *Moina* culture on different feed substrates, gives practical insights. The findings help optimize live food supplies during early aquaculture species development..

This *Aquafocus* issue affirms our research, innovation, and community cooperation commitment to sustainable aquaculture. Smart sensors, phage therapy, and seaweed farming demonstrate the industry's endurance and adaptation in an uncertain environmental and economic climate.

Together, we can build an aquaculture future that is inclusive, sustainable, and poised to meet the nutritional needs of generations to come.

Warm regards,
Dr. A Jesu Arockiaraj
Editor-in-Chief
AQUAFOCUS Magazine