STEP BY STEP GUIDE

ROAD TO BIOFLOC

INNOVATIVE WAY OF FISH FARMING

Welcome

Greetings, and have a beautiful day. My name is Kallol, and I am based out of Bhubaneswar, Odisha, in the eastern part of India. I have an educational background in Information Technology and have been working in the field for 20 years, collaborating with various multinational companies across different parts of the world and it's been my livelihood for nearly two decades.

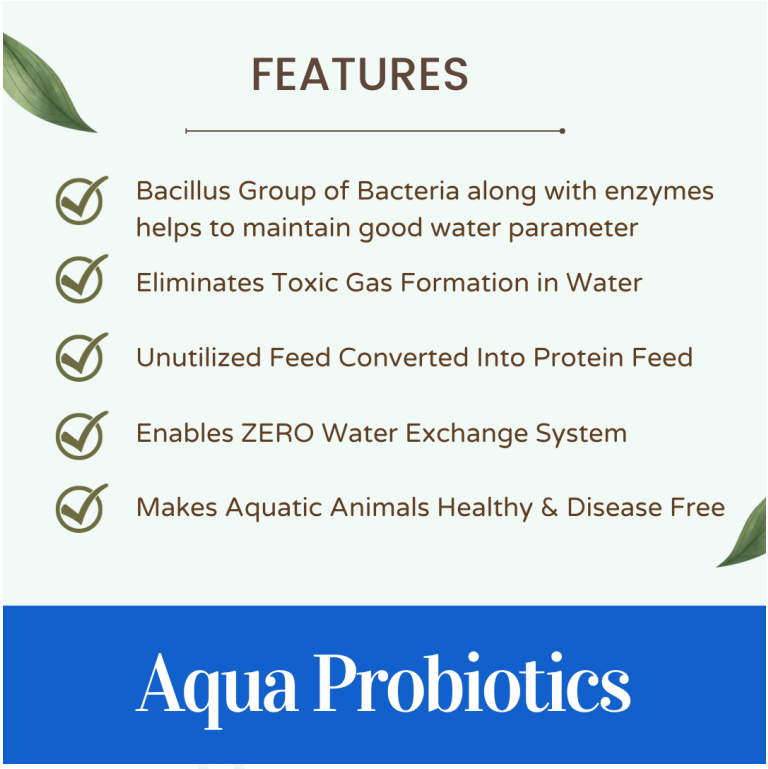
However, my true passion has always been aquaculture, which has driven me to establish an aqua research farm. My aim is to uncover hidden insights not widely known to the general public. I embarked on this journey from my rented apartment, where I set up a small aqua lab. The knowledge I gained through my experiments, started sharing on the YouTube channel, "**Road to Biofloc**." People started liking my content and today, I'm approaching a milestone of 70,000 subscribers on YouTube.

The content I share on my channel is entirely distinctive. I invite you to explore my channel and watch my content—I'm confident you'll find it interesting. If you do, please consider Like, Share, and Subscribing to my channel.

I also have a website called **www.roadtobiofloc.com**. Feel free to visit it and read my blogs. I'd love to hear your thoughts. During my aquaculture journey, I've developed a few products that I'd like to share with you:

DO & TAN Fixer: This product helps maintain the required level of Dissolved Oxygen (DO) in your fish tanks, day and night, especially in high-density fish farming. It helps to cut down electricity bills by minimal usage of external aeration pumps, which will save money on electricity bills. Additionally, it can neutralize harmful gases like Ammonia, Nitrite, and Hydrogen Sulphide

Aqua Probiotics: This product helps maintain the right water conditions by neutralizing harmful gas buildup. It also turns uneaten food into protein cells again eaten up by the fish and shrimp. Saves of lots of feed waste.



Aqua Nutrition: This product provides the essential minerals that your fish and shrimp need to thrive. If you're interested in these products for your projects, please don't hesitate to reach out to me. I can also provide guidance on how to use these products for the best results.

Even if you have any knowledge and want to hire an aqua consultant who can help you set your project and guide you step by step to achieve your goals, I am there to help you out.

I also provide **Aqua Consulting Services** to my customers. As part of the service, here are some of the activities we perform during the contract period.

- **Site Assessment:** Evaluating site for pre-checkups
- **System Design:** Designing aquaculture systems
- **Water Quality Management:** Water Quality Pre-Checks
- **Species Selection:** Qualifying Aquatic Animals

- **Feeding and Nutrition:** Feeding & Nutrition management
- **Health Management:** Health and Disease management
- **Sustainability Practices:** Best Aqua Practice
- **Training and Education:** Staff Skill Developments
- **Risk Assessment:** Identifying and mitigating potential Risks
- **Technology Integration:** Implementation of Automation

Customized Consultation: Tailoring services to meet the specific needs and goals of individual clients and their unique aquaculture projects.

Contact us If You Are Looking For

- **Aqua Products**
- **Consulting Services**
- **Fish or Shrimp Farming Training**

+91 - 9777 87 6057

roadtobiofloc@gmail.com

TABLE OF CONTENT

04

AERATION MANAGEMENT IN BIOFLOC

- What is Dissolved Oxygen (DO)
- How Dissolved Oxygen (DO) Created in Water
- Importance of DO in Biofloc System
- Dissolved Oxygen Requirement Analysis
- Selecting Right Aeration Pumps
- Different Types of Diffusers
- Aeration Pump Setup
- Maintenance

05

REQUIRED TESTING KITS, TOOLS, INGREDIENTS

- Importance of Water Testing Kits
- pH Meter
- Digital Salinity Meter & Refractometer
- Total Dissolved Solid (TDS) Meter
- Dissolved Oxygen (DO) Meter
- Temperature Meter
- Iron Test Kit
- Chlorine Test Kit
- Ammonia & Nitrite Test Kit
- Imhoff Cone
- Fish Net
- Potassium Permanganate
- Bleaching Powder (Ca(ClO)2)
- Zeolite Powder
- Dolomite (CaMg(CO3)2)
- Calcium Carbonate (CaCO3)
- Calcium Oxide (CaO)
- Benefits of Salt
- Use of Commercial Mineral
- Use of Vitamin C
- Storage Container
- Weighing Scale
- Pond Automation

06

IMPORTANCE OF CN RATIO

- What is C and N?
- What is CN Ratio?
- How to Calculate CN Ratio
- Importance of CN Ratio
- Types of Carbon Sources & Nutrients

07

IMPORTANCE OF PROBIOTICS

- What is Probiotics?
- How to get Probiotics?
- Different Method of Activating Bacteria
- How to prepare FCO
- How to secure FCO

08

BIOFLOC WATER PREPARATION GUIDELINES

- Water Preparation Process
- Importance of Water Prepration
- Know Your Water
- Water Treatement Phase1 - Sanitization
- Water Treatment Phase2 - Minieralization
- Water Treatment Phase3 - Natural Feed
- Verify Water

09

FISH SEED & FEED SELECTION GUIDELINES

- Suitable Species for Biofloc System
- Fish Seed Selection Guidelines
- Can IMC grown in Biofloc System
- Fish Seed Sanitization & Stocking Process
- Feed Selection Guidelines
- Nutrional Requirements

10

STOCKING DENSITY & FEEDING MANAGEMENT

- Right Stocking Density Guidelines
- Feeding Management
- Commercial Feeds
- Natural Feeds
- Auto Feeder

11

SLUDGE MANAGEMENT

- What is Sludge?
- How Sludge created?
- Importance of Sludge Management
- Various Sludge Removal Techniques
- Application of Sludges
- Schedule Sludge Removal

12

POWER BACKUP MANAGEMENT

- Power Backup Management
- Importance of Power Backup
- Power Backup Requirement Analysis
- Different Types of Power Backup Solutions
- Automation

13

OPERATIONAL MANAGEMENT

- Daily Water Paramter Check
- Weekly Stock Check
- Weekly Cleaning Activity
- Machinaries Schedule Maintance Check ups
- Main BioSecurity

14

TIPS AND TRICKS

- pH Fluctuations
- High Ammonia & Nitrite
- Rain Water & Evaporations Issues
- High Foam
- High Floc Density
- Unusual Behavior of Fishes

15

NOTES

Let's Start the Journey

01

TRADITIONAL FISH FARMING OVERVIEW

- Unstructured Vs Structure Fish Ponds
- Water Preparation Process
- Common Fish Types Cultured
- Stocking Density and Production
- Traditional Farming Biosecurity
- Pros & Cons

Unstructured Vs Structure Fish Ponds

In the old days, aqua farmers were not aware of the best aquaculture practices. They were doing it in their way. In those times fish ponds were looking like natural lakes. These ponds were tricky to manage, especially for feeding and harvesting. In those **Unstructured Ponds**, feeding the fish meant someone had to walk all around the pond, spreading feed. At the time of harvesting, more people were needed for harvesting the entire pond.

Later **Structured Ponds** were introduced, which changed the perspective of fish farming. These ponds are rectangular in shape, making it easier to feed and harvest. Farmers can feed the fish by walking along just one side of the pond and don't need as many people to harvest because the pond structure is narrower. Now a days aqua farmers are building structured ponds for easy day-to-day operations.

Water Preparation Process

Here's how traditional fish farmers were preparing their ponds for fish farming:

- **Fill the Pond:** First, they build a pond and fill it with water from a well, river, or canal. They make sure the water level is about 6 to 8 feet deep.
- **Clean the Water:** To make the water safe for fish, they use special chemicals like Bleaching, Potassium Permanganate (KMNO4), and many other types. It helps get rid of harmful things in the water.
- **Magic Mixture:** Before putting fish in the pond, they mix cow dung, urea, single phosphate, and oil cake. This mixture is like a magic potion! It makes tiny aqua plants and animals (phytoplankton and zooplankton) grow in the water. These tiny plants and creatures become natural fish food.
- **Fish Seed Stocking:** When these phytoplanktons and zooplanktons are created in the water, they stock fish seeds and grow them for about a year time to reach desired size.