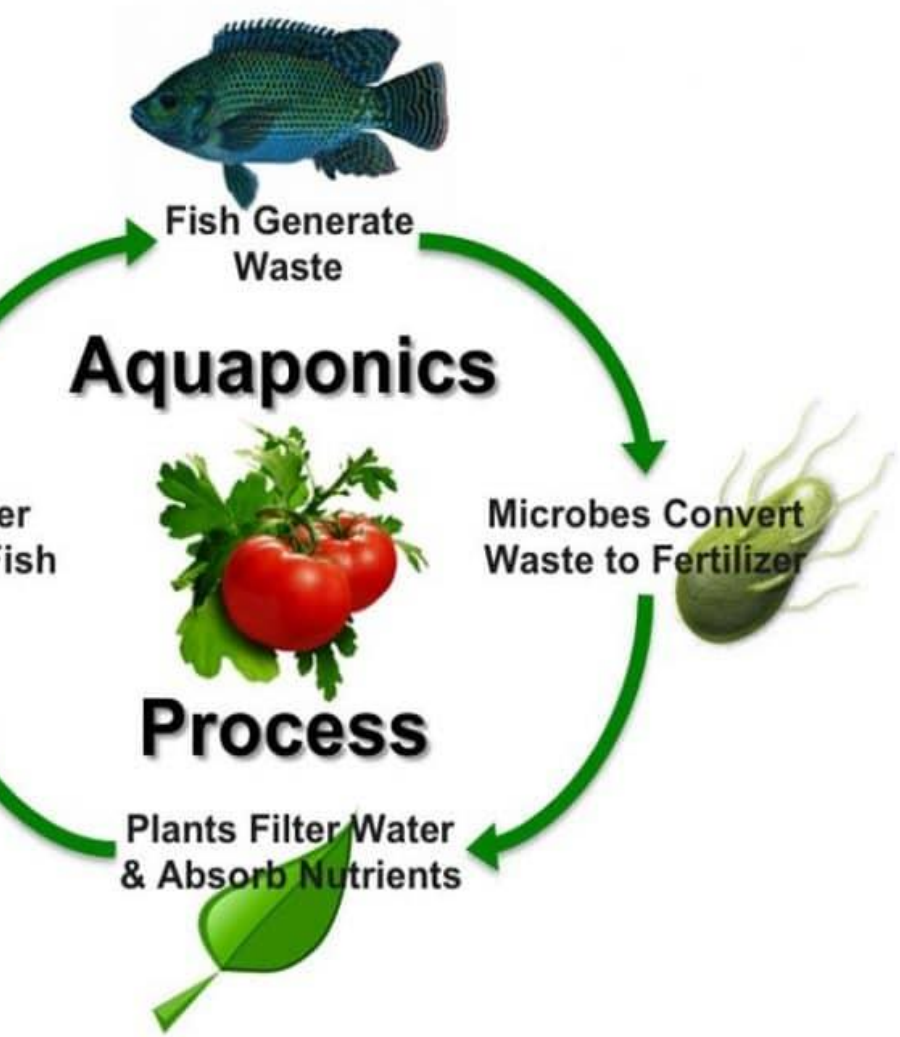
Aquaponics

- A Beginner's Guide to Sustainable Farming

What is Aquaponics?

Combines aquaculture (fish) and hydroponics (plants).

Mimics natural ecosystems in a closed-loop system.

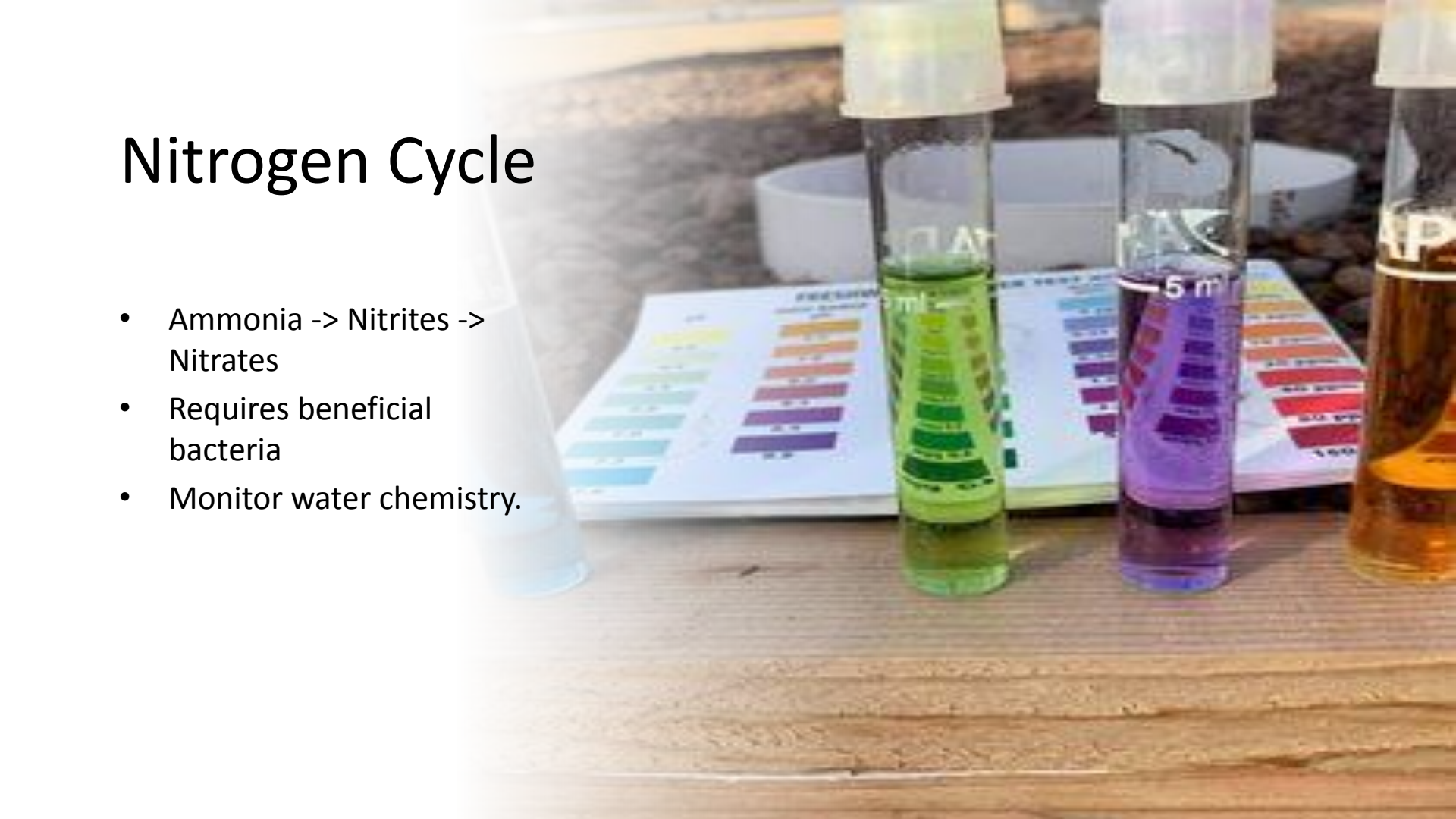


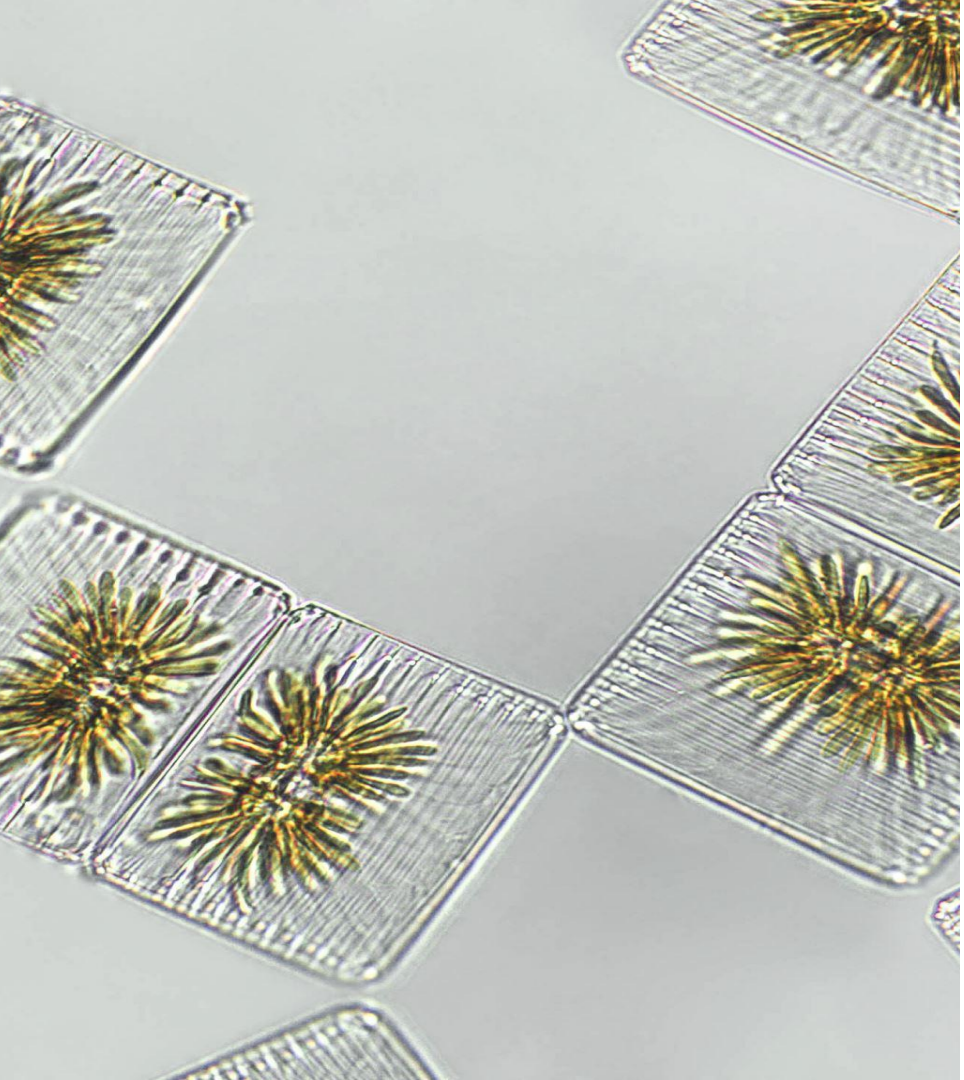
How It Works

- Fish produce waste -> Bacteria convert it to nutrients -> Plants absorb nutrients -> Clean water returns to fish.

Nitrogen Cycle

- Ammonia -> Nitrites -> Nitrates
- Requires beneficial bacteria
- Monitor water chemistry.





Three Core Elements

- 1. Fish
- 2. Plants
- 3. Bacteria
- All three must stay in balance.

Water Quality

- Ideal pH: 6.8–7.2
- Safe ammonia, nitrite, nitrate levels
- Temp & dissolved oxygen are critical.

System Components

- Fish tank
- Grow beds or rafts
- Pump & air stones
- Biofilter
- Grow media

Types of Systems

- 1. Media Bed
- 2. NFT (Nutrient Film Technique)
- 3. Deep Water Culture (Raft)
- Each has pros & cons.

Choosing Fish

- Options: Tilapia, Catfish, Trout, Goldfish, Koi
- Consider climate, temp, and feeding needs.

Choosing Plants

- Leafy greens, herbs, tomatoes, strawberries
- Match plants to system and environment.

Common Problems

- Fish deaths, yellowing leaves, algae, clogging
- Prevention and maintenance tips.
- Plant Pests

Maintenance Tasks

- Daily: Feed fish, check water
- Weekly: Test water
- Monthly: Clean filters, inspect system

My Aquaponics Journey

- Started with curiosity
- Learned through trial and error
- Now teaching and installing systems

Real-World Applications

- Urban farms, schools, food deserts, missions
- Empowering communities worldwide

Olive Branch Resources

- Join the Oklahoma Aquaponics Association
- Attend monthly classes
- Contact for support & events

Q&A Time

Thank You!

- **Thanks for attending!**
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