

A photograph of an aquaponics system. In the foreground, a wooden channel contains several lettuce plants with their roots exposed. Below the channel, a dark water reservoir is visible, with the roots of fish hanging down into the water. The background shows more lettuce plants and a wooden post.

Aquaponics

- A Beginner's Guide to Sustainable Farming

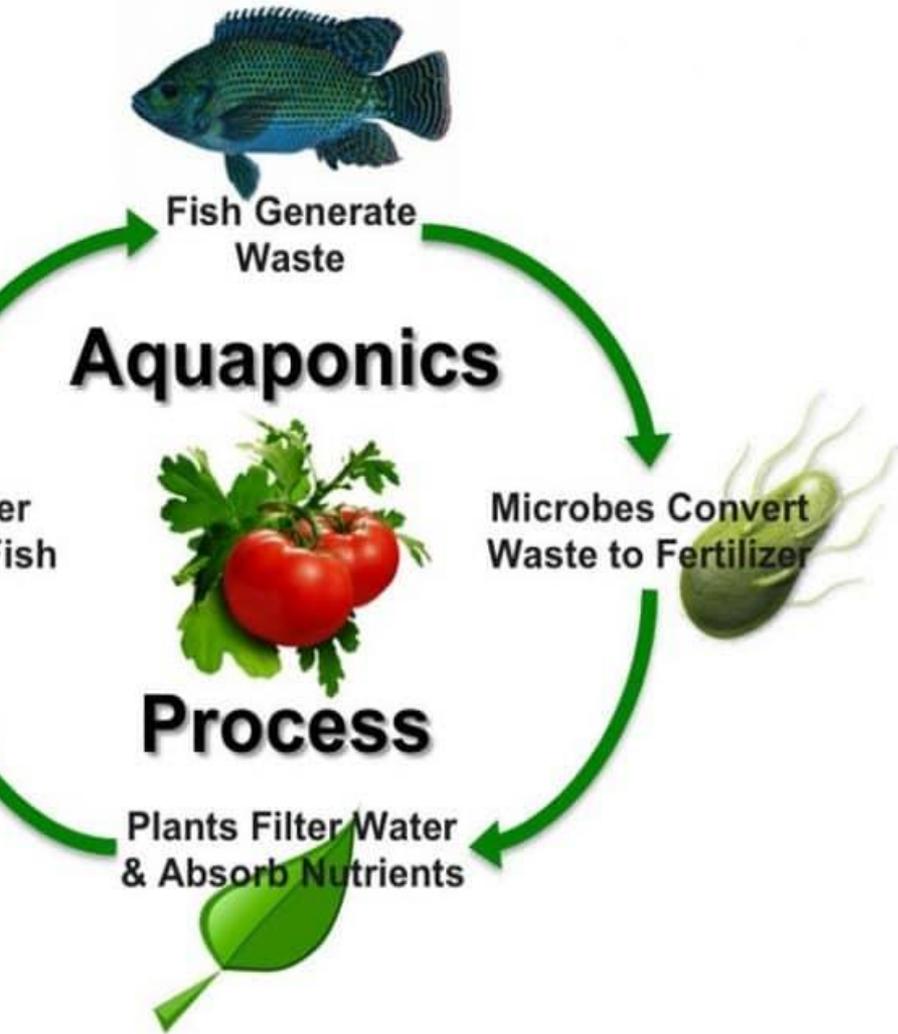
What is Aquaponics?



Combines
aquaculture
(fish) and
hydroponics
(plants).

Mimics natural
ecosystems in a
closed-loop
system.





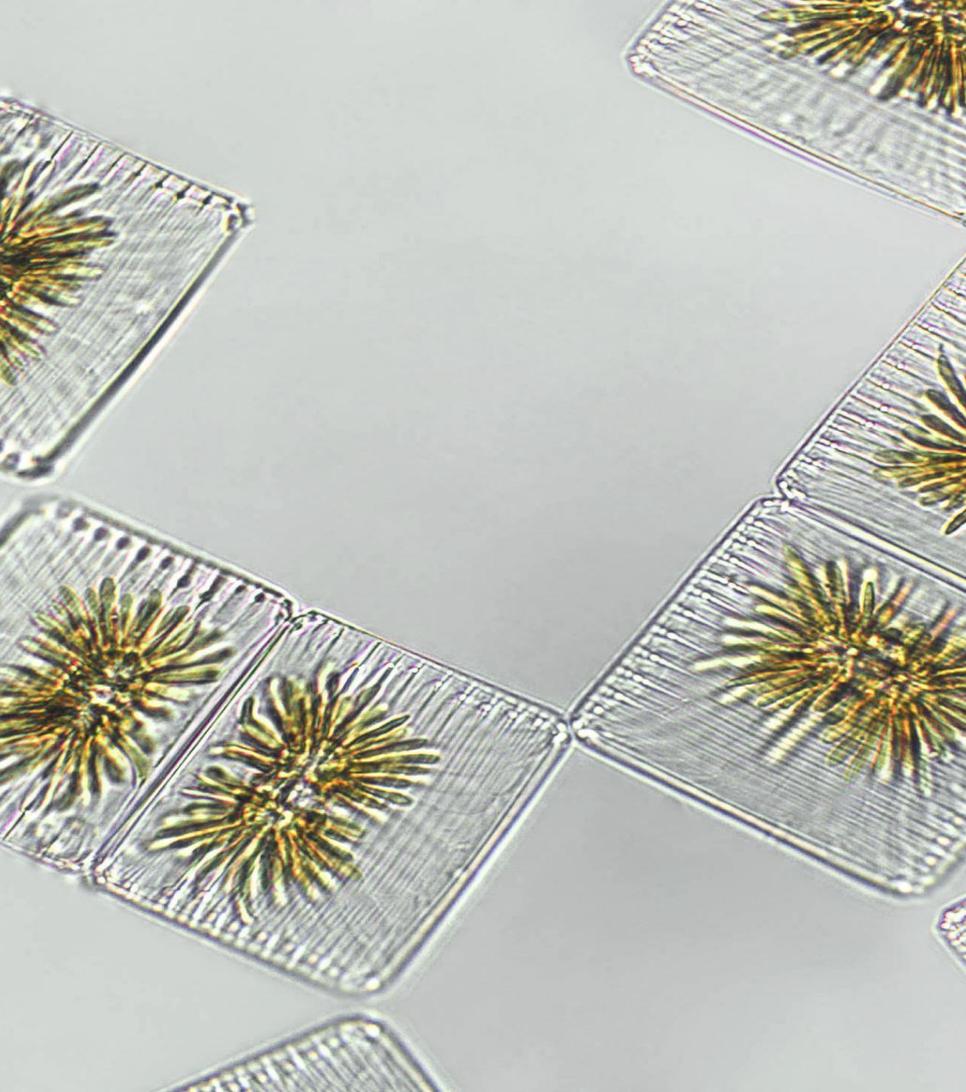
How It Works

- 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



A close-up photograph of an olive branch with several olives in various stages of ripeness, from green to dark purple. The background is a soft, out-of-focus yellow and green, suggesting a bright, sunny day. The text is overlaid on the left side of the image.

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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