Back Yard Aquaponics

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Topics Covered

• What is aquaponics?
• Benefits of aquaponics
• Hydroponics
• Different types of hydroponic systems
• DIY cheap and easy backyard aquaponics
• $0.05 Bell Syphon
What is Aquaponics??

Aquaponics
The cultivation of fish and plants symbiotically, in a constructed recirculating ecosystem that utilizes hydroponics as a means for growing plants and fish effluents as a sustainable source of plant nutrients.

Fish effluents are converted from ammonia to nitrites then to nitrates which can then be accessed by plants.

Nitrosomonas- bacteria converts ammonia to nitrites
Nitrobacter- bacteria converts nitrites to nitrates
Benefits of aquaponics

• More plants per sq. foot
• Faster rates of vegetative growth
• No need synthetic fertilizers
• No weeding
• Uses 70% less water
• Aesthetically pleasing
• Raised system eliminates the need to bend down
• Less prone to insects
Hydroponics

Plants cultivated in the absence of soil, where roots are submerged in nutrient rich water.

• Wick
• NFT
• Top feed
• Deep water culture
• Aeroponics
• Ebb and Flow
Wick

• Plants grown in medium such as peat moss or coir that has the ability to wick water through capillary action.

• Reservoir sits beneath growing medium and must be aerated or refilled periodically

Check out Globalbuckets.org
Hydroponics

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Nutrient Film Technique

- Once plants develop strong root systems, they’re grown in channels.
- A nutrient rich stream flows from one end to the other which roots have access to.
Hydroponics

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- Wick
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Top feed

• Drip irrigation is used to deliver water from the reservoir to the plants
Hydroponics

Plants cultivated in the absence of soil, where roots are submerged in nutrient rich water.

- Wick
- NFT
- Top feed
- **Deep water culture**
- Aeroponics
- Ebb and Flow
Deep water culture

- Plants are grown just above water level and plant roots dangle in aerated nutrient solution.
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- Wick
- NFT
- Top feed
- Deep water culture
- **Aeroponics**
- Ebb and Flow
Aeroponics

• Roots are suspended in a dark growing chamber and misted in intervals with a oxygen rich nutrient solution.
Hydroponics

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• Wick
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Ebb and Flow

- Best suited for aquaponics
- Grow bed
- Reservoir
- Pump
- Bell syphon
5 cent bell syphon
5 cent Bell Syphon
DYI Aquaponics