

Aquaponics

MASTER FARMER SERIES

Oahu Resource Conservation & Development Council

Aquaponics is the combination of growing plants hydroponically and growing fish through aquaculture.
– marisgardens.com



Aquaponics operation at Mari's Gardens
(all photos courtesy of Fred Lau)

Aquaponics is an intensive, sustainable agriculture technique, which relies on the waste from fish rearing to provide the nutrients for growing plants hydroponically (without the use of soil). The fish and the vegetables can both be agricultural products.

In many places Aquaponics has not been profitable; yet in Hawai'i it may be more economically feasible since it is not necessary to house the fish tanks in a greenhouse. However there is still a considerable upfront cost in establishing a commercial Aquaponics facility.

Many aspects of Aquaponics are still being developed such as food safety protocols, market development for fish, and an affordable and sustainable solution for running the pumps.

Farmer Profile

Fred Lau, Mari's Gardens

Fred Lau opened Mari's Gardens in 2007 as a landscape nursery and in 2010 he converted one acre to an aquaponics farm that produces several varieties of vegetable crops including Manoa lettuce, beets, tomatoes, herbs, spinach, taro and cucumbers. On the aquaculture side, they raise tilapia and Chinese catfish. The farm is part of Fred's mission to foster clean, sustainable agriculture and help reduce the energy footprint of importing food products from across the Pacific.

Mari's Gardens is a pioneer in the large-scale commercial use of aquaponics and is a leader in establishing food safety protocols for aquaponics to ensure that consumers receive the best quality products. They are also organically certified, overcoming challenges for stringent record keeping and finding organically certified seeds.



Fred Lau of Mari's Gardens is committed to sustainable farming through aquaponics.



Tilapia generate nutrients for the hydroponically grown vegetables.

Mari's Gardens constantly seeks to improve the operation and increase its sustainability. Fred installed a photovoltaic system to run the pumps in the tanks, greatly reducing their electricity costs, and has incorporated bees, beneficial insects and value-added products.

According to Fred "if sustainable farming is the goal, then aquaponics is the way to go." But Fred cautions that it can be a long hard road, so he advises farmers to start slow and learn as much as possible before beginning any aquaponics operation.

Website: www.marisgardens.com; Telephone: (808) 625-2800

RELATED PUBLICATIONS:

"Construction of Automatic Bell Siphons for Backyard Aquaponic Systems"

www.ctahr.hawaii.edu/oc/freepubs/pdf/BIO-10.pdf

"Small-Scale Lettuce Production with Hydroponics or Aquaponics"

www.ctahr.hawaii.edu/oc/freepubs/pdf/SA-2.pdf

"On-Farm Food Safety: Aquaponics"

www.ctahr.hawaii.edu/oc/freepubs/pdf/FST-38.pdf

"Testing Your Aquaponic System Water: A Comparison of Commercial Water Chemistry Methods":

<http://www.ctsa.org/files/publications/TestingAquaponicWater.pdf>

"Aquaponics — Integration of Hydroponics with Aquaculture" (available for purchase from the National Sustainable Agriculture Information Service)

<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=56>

RESOURCES:

Hawaii Aquaculture and Aquaponics Association:

www.hawaiiacquacultureassociation.org/

www.aquaculturehub.org/group/hawaiiacquacultureassociation

Aquaponics Journal: <http://aquaponicsjournal.com/>



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