Aquaponics & WWOOFers

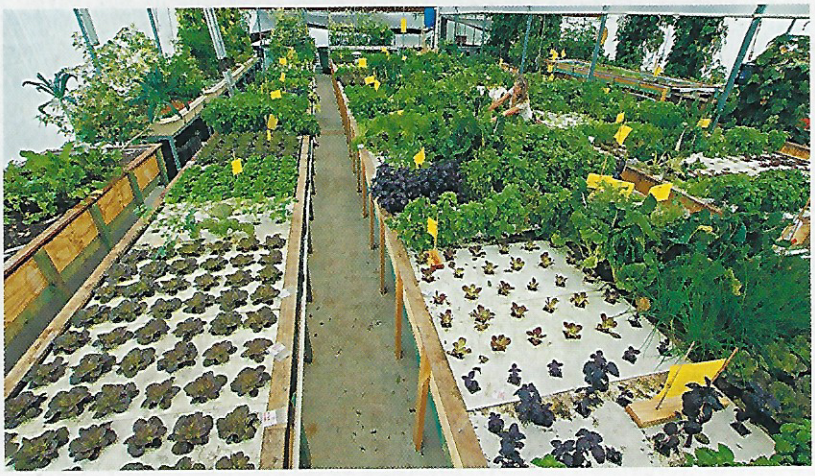
By the WWOOF Office, Buchan, Vic.

Meet a couple who has a unique aquaponics setup incorporating worm farms.

John and Natalie live in Forest Grove, WA. Their property has an interesting history, it started as a group settlement location after World War I, then became a dairy farm, followed by an organic winery, then the home of a rich doomsday prepper. In 2017, four related families got together and purchased the property with the intention of it being a lifelong investment to be handed down to all descendants.

John became a certified aquaponic farm designer and has now built a large system in the greenhouse for the purpose of selling products at the Margaret River market and so the families can live sustainably.

The aquaponics project has been a huge success. A large part of this has been due to the efforts of all the volunteer WWOOFers who have helped with building grow beds, tanks and even monitoring systems. The 400m^2 greenhouse is now full of grow beds and fish tanks, making it already the biggest aquaponic farm in WA.



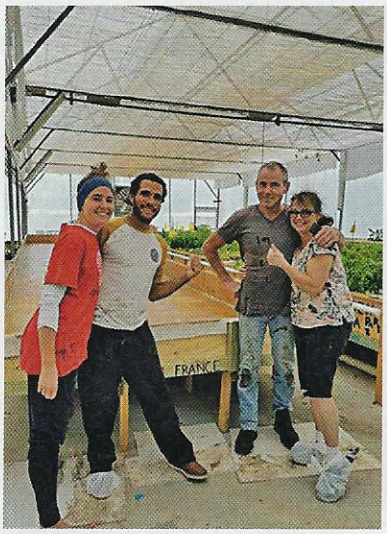
THE SETUP

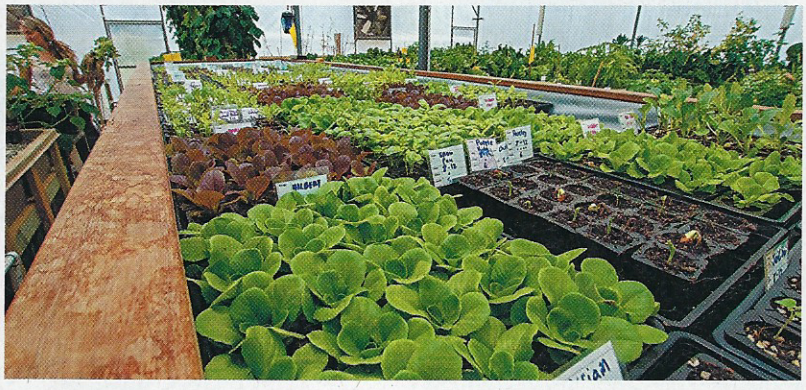
Aquaponics is a rapidly evolving and growing method of organically growing food. It is a combination of aquaculture and hydroponics. There is no discharge from the system, nothing goes to waste and the water is fully recycled. The only input is fish food. Bacteria and worms in the media beds convert fish waste into a form of nitrogen that can be used by the vegetables, they remove the nutrients and return clear filtered water back to the fish.

Ladybirds are used as a form of biological control over pests like aphids, and natural sprays such as neem oil are used. The wicking beds are used to grow root crops, and worm farms are being built to recycle all green waste from the greenhouse.

The greenhouse is known as the dreamhouse because it is not just an amazing garden. It is a gallery of words and images painted onto the grow beds and tanks by each volunteer as a mark of their contribution and time shared with the hosts. These are all precious to John and Natalie. They are beautiful and they inspire visitors who come to see a different way of growing food and a different way of communally building the aquaponics project.

Anyone can use aquaponics to grow food, even in a small space. A family of two adults and two children could grow all the food they need throughout the year with an aquaponic system with as little as 23sqm of grow bed area.





It works best with fish that are fed with commercial pellets, but it can also be done with fish like Jade perch that will eat pretty much anything that a chicken would eat including food scraps. Costs can be minimised by using cheap IBC containers as fish tanks and blue barrels for filters. A simple home system would at a minimum have one fish tank, one filter tank, one gravel bed and one deep water culture bed. The gravel bed is where the worms and bacteria build up that perform natural biological filtration.

The only crops that don't grow well in aquaponics are root crops. For carrots, beetroot, radish, and potatoes it works well to combine one wicking bed with an aquaponic system, but to use the fish water to irrigate it.

John and Natalie have incorporated worm farms into their system so all the nutrients in green waste are not lost. The worm tea is poured straight back into the grow beds.

Aquaponics has many environmental advantages over traditional farming. Low water consumption, zero synthetic chemical and pesticide use, low land area requirement and (if using solar) low CO^2 footprint. Their system runs entirely on the rainwater that falls on the greenhouse roof and is so productive that they can let other parts of the farm return to nature to regenerate.

They have not yet become certified organic because of the difficulty finding organic fish food to feed the rainbow trout, but in many respects they reckon they are better than organic. In future they plan to experiment with a black soldier fly project to use maggots as fish food.

For a family looking to secure their own supply of pure healthy chemical-free food, an aquaponic system combined with a wicking bed is a perfect consideration. You can grow all the protein, vegetables and staples you could ever need.

John and Natalie love having WWOOFers around to share their knowledge, so if you would like to learn about aquaponics reach out to them today. Discover the real Australia: wwoof.com.au.