

# DOCTOR BY DAY, FARMER BY NIGHT

Text and photos by Dr Lim Jia Yang



Dr Lim is a family physician who runs his own clinics under Island Family Clinics. He also practises at the Singapore National Eye Centre as a primary eye care physician. Apart from his medical pursuits, he runs the Owl Bar and Zoey's Diner, and is now becoming a farmer.



I did not expect to gain any interest in farming or growing any sort of plants, given that I do not have green fingers. However, during my days as a mentor to medical students at the Medical Alumni Association, I was introduced to the concept of aquaponics and I was absolutely blown away by it!

## Aquaponics?

A relatively new field of agriculture, aquaponics is the combination of aquaculture and hydroponics. In essence, it is the usage of fish waste for agriculture, by converting them into a usable form of nutrients for growing

hydroponic plants. Many universities are still in the midst of researching and perfecting this technology.

As compared to traditional farming, aquaponics uses 90% less water, enables vertical farming using well-studied hydroponics techniques, and also allows the harvesting of the fish. It is a completely circular system where minimal addition of chemicals are required apart from feeding the fishes.

It is similar to hydroponics in terms of the systems in which the plants are grown; for example, the nutrient film technique (NFT), flood and drain, deep water culture, and others. The difference is that you will constantly need to add in nutrient solutions for the plants to grow in hydroponics, while in aquaponics, the fishes' waste provides most of the necessary nutrients.

## Embarking on the project

Four years ago, after my student introduced me to aquaponics, I immediately headed out to get a fish tank, some goldfish, a 36-net pot NFT system, and the other necessary equipment to start a home aquaponics

system. Honestly, it took quite some time to learn the ropes! I spent hours watching YouTube videos on setting up and maintaining the system, reading books after books, and learning from mistakes I made with my home system. However, when things finally stabilised after two to three months, my home system began providing around 20% to 30% of my household vegetable needs!

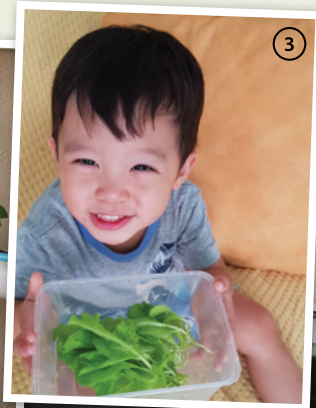
An unintentional outcome is that home-farming has now become one of my family's regular bonding activities. The kids help with tasks such as the germination of seeds, harvesting the vegetables, and feeding the fishes, and of course, we eat all the vegetables together. It was a good learning experience for them to see how a small seed can turn into a full grown vegetable.

## Taking the project further

Given the need for more local grown vegetables and the small success I gained with my home system, I considered the feasibility of a bigger system that could produce more edibles. In 2019, I applied for the #OCBCCares Environment Fund which supports projects that engage the







community to protect our environment, and I am very thankful to them for supporting me to bring this aquaponics system to a larger scale at the Medical Alumni Association complex!

The system was originally planned to be up and running by October 2020, but was delayed due to the COVID-19 pandemic. I am, however, happy to share that the project is about 80% complete as at time of writing. By embarking on a larger scale project, I definitely had to pick up more skills, such as plumbing, the most efficient way to dig up a hole in the ground, and how to automate the system. Once the system is stabilised, it is projected to produce about 150 heads of lettuce and/or other kinds of vegetables per week. The 100% organic produce will be used by the eateries located within the complex (Owl Bar and Ka-Soh) and will also be made available for members of the Medical Alumni Association.

Aside from the above project, there is also another set-up at Little Forest, an enrichment school for children located at Joo Chiat. There, I built a small vertical system where the kids

will get to experience the entire growth journey of the plants, from germination to harvesting to cooking the vegetables in their Little Chef project.

I hope that with an increase in interest for local and urban farming, be it a small home-based system or a large-scale system, we will be able to move one step closer to Singapore's "30 by 30" plan (a goal to meet 30% of Singapore's nutritional needs via locally grown produce by 2030)! ♦

*Those interested in starting your own system can reach out to me via Facebook. There are plenty of ways to build an aquaponics system while ensuring that it will be aesthetically pleasing in your own house.*

#### Legend

1. One-month old Golden Basils
2. My 36-net pot NFT system at home
3. Vegetables harvested by my son
4. Vertical towers with 1,500 l fish tank set-up (no plants yet)
5. Vertical wall at Little Forest
6. The tomato plant bearing fruits
7. My son with 2 small cherry tomatoes

