# Aquaponics

## Advantages and Disadvantages

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Aquaponics is a portmanteau of aquaculture (the cultivation of fish) and hydroponics (the growing of soil-less plants). As the name suggests, it is the combination of the two stated techniques performed. The fish that are cultivated eventually produce a waste product, which acts as a fertilizer for the plants growing in the water. This is only possible because of microbes and worms in the water, who convert the ammonia in the fish waste to nitrates which are used as nutrients for the plants. The plants act as a natural filter for the water so the fish do not harmed by foul water. There are many advantages to Aquaponics, such as:

1. It is a fully organic system. Pesticides would be a threat to the fish, and would cause harm to the ecosystem at play.

2. There is less water used in the system; despite it being a water-based system, the filtration carried out means the water can be reused, instead of having to water plants repeatedly.

3. It is a simple form of agriculture, as one can rely on the fish to provide nutrients. Fish require feeding, but an automated feeder can be implemented, meaning no crop rotation required.

4. Aquaponics is much more efficient; plants gain more oxygen in aquaponic conditions, meaning more nutrients absorbed. This means that aquaponic plants can grow roughly 3-4 times quicker than soil plants.

Despite the points mentioned, there are some disadvantages to Aquaponics, for example the expenses required to set up an aquaponic system. Although it is not an attractive price, the end product ends up with more profit. Nevertheless, cultivating the fish can also be a problem too. Fish require the right temperatures, and the system must have enough room in order to house the fishes.