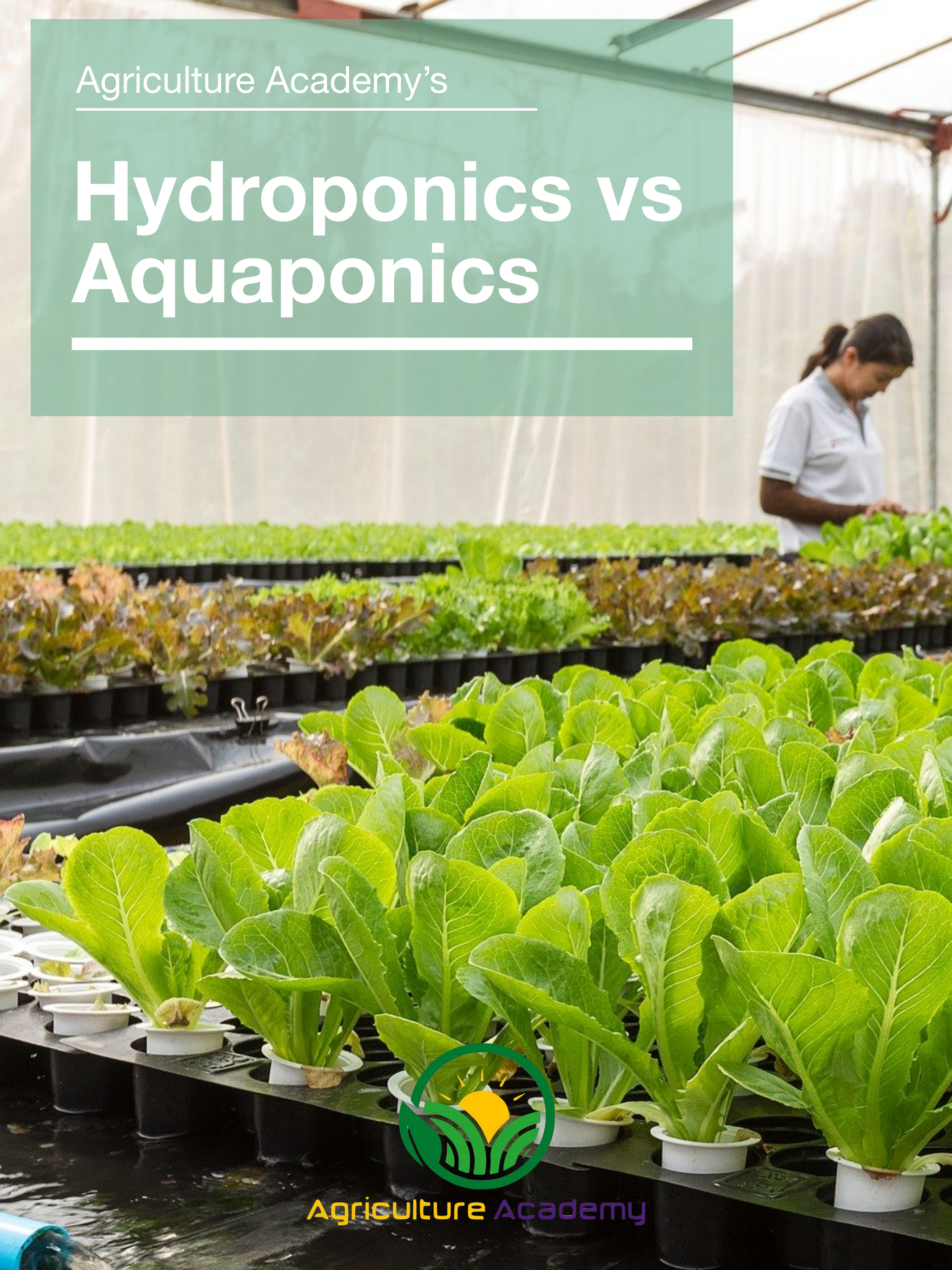


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Hydroponics vs Aquaponics

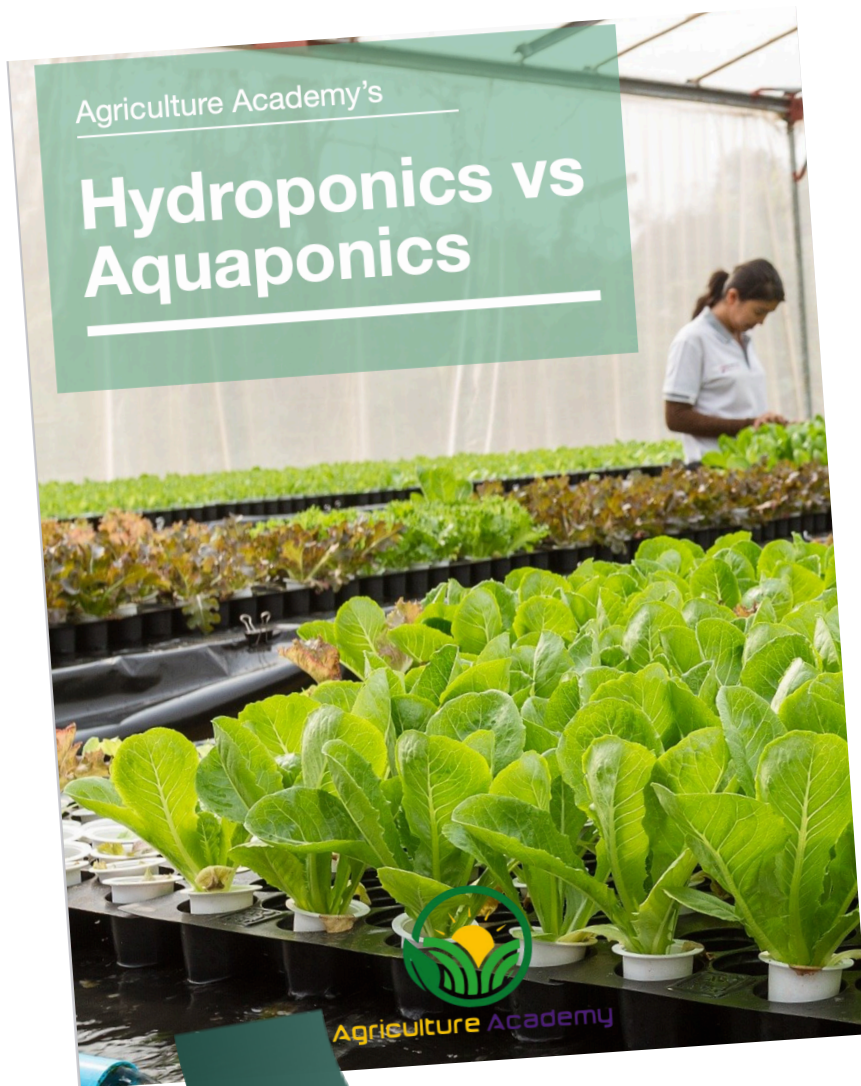


Agriculture Academy

Hydroponics vs Aquaponics

Thank you for downloading this guide!

Although they may appear to mean the same thing, there are many important differences between hydroponics and aquaponics. In this eBook, we are going to delve deeper into those differences so if you wish to start your own operation, you will know which option is best for you.



What is the Difference?

Simply put, hydroponics is a method of growing plants with water as a substrate. Aquaponics is an expansion of hydroponics and combines with it elements of aquaculture, or fish farming. We are not going to delve deeper into these definitions because we already have 2 videos on our [YouTube channel](https://www.youtube.com/channel/UCD_Gi7rzexJmIVZfnSRzHEw) discussing hydroponics and aquaponics in deeper detail, so check them out if you would like some more information. You can find our channel at https://www.youtube.com/channel/UCD_Gi7rzexJmIVZfnSRzHEw.

To get a fair comparison, we are going to focus on the following points:

Inputs such as water, nutrients, pest and disease control measures, capital and time. We are also going to take a look at the **outputs** of the 2 systems, including harvest and income.



Water

Let's start by discussing one of the main factors that differs between hydroponics and aquaponics: water. In hydroponics, depending on the design water can either be flushed through the system once or be recirculated. However, even circulatory systems will commonly replace the water supply at the end of the harvest period. Due to the nature of aquaponics where the plants and fish interact in a delicate balance, it is important that the water be continuously circulated from fish to plant tank. If nutrient concentrations do become high, some water may be removed from the system. In spite of this, the water wastage is usually far higher in hydroponic designs.



Nutrients

Closely related to water requirements is the nutrient inputs required by each system. Due to the lack of soil, hydroponically grown plants must be supplemented with nutrients. These nutrients are commonly synthetic, but

there are some organic options available. In aquaponics, fish waste is converted into plant usable forms and therefore lowers the number of synthetic supplements required. However, even aquaponic systems require small amounts of supplemental nutrients which aren't found in fish waste, but these need to be applied in an environmentally safe form so as to not cause toxicity to the fish.

Capital & Time

One of the most important distinctions between hydroponics and aquaponics is the capital requirements needed to get started, especially for commercial growers. Aquaponics will generally require a larger investment, because you're not only constructing a hydroponic system but including elements of aquaculture too. Because of the inclusion of fish into an aquaponic system, you will need to spend some time circling the water and testing pH and nutrient levels, you cannot start planting or including fish immediately. Hydroponics is not limited by this as plants can be placed into the system as soon as the setup is complete, shortening the time to harvest considerably.

Harvest & Income

Now that we have considered the different input requirements of the two systems, we can take a look at two major outputs: harvest and income. Many people believe that aquaponics is better than hydroponics from a harvest point of view because the grower can harvest both plants and fish, and therefore receive a larger income. However, this is somewhat of a misconception. Yes, fish farmed in aquaponics can be consumed by humans, however, compared to commercial fish farmers an aquaponic grower will struggle to compete scale- and pricewise. Therefore, aquaponic growers may not have two equally great revenue sources but they can use the fish to diversify theirs and their family's diets.

On another note, as we mentioned before, aquaponic growers may find it easier

to receive organic certification for their produce, which means they can ask a higher price for their harvest. An interesting aspect that both hydroponic and aquaponic growers may look into is turning their operation into an attraction. This can include offering tours, workshops and restaurants on their premises. Consumers are ever more aware of ethical consumption, and if you can show them how their food is grown you may be able to fill a niche market demand in your community.



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