

Aquaponics

By: Hailey, Melanie, Aryanna, Ilana, and Lily

What is Aquaponics?

Aquaponics is another way of growing plants by using fish waste mixed with water as fertilizer instead of dirt . It is just as good and useful as growing plants regularly.

How does Aquaponics Work?

The fish waste provides an organic food source and fertilizer for the growing plants. The plants provide a natural filter for the water, which keeps the water clean. The result of this is that the fish are able to live in a healthy habitat.

Where is Aquaponics Used?

Aquaponics was originated from South China, Thailand, and Indonesia. Currently aquaponics is being used in farms, homes, and greenhouses all across the world.

Why is Aquaponics Used?

Aquaponics is used because it is another excellent strategy of growing plants. In addition, it is eco-friendly because everything used in the process is natural. It is also used to cultivate or raise fish.

Who Would Use Aquaponics?

The people that would use aquaponics are Farmers, who are looking for another way to grow their crops. Also, science teachers use this method to teach their students about growing plants in different ways.

What does Aquaponics look like in the — WMS greenhouse?

In the WMS greenhouse, there is an aquaponics system that includes a rearing tank, (the tanks that are used for raising and feeding the fish.) It also has a settling basin, (a system for obtaining uneaten food and loose biofilms). The biofilms are used for separating out tiny pieces of anything that is not supposed to be in the water.)

Continuation...

Next, there was a biofilter. (A place where the nitrification bacteria is able to grow and change ammonia into nitrates, which are used by the plants, as protein.) After that, there was a hydroponics system. (A fragment of the aquaponics system where the plants are grown.)

What Did Each Person Do In The Greenhouse?

In the greenhouse we took measurements of the different plants. We also took the measurements of the amount of chemicals in the water. Finally, we watered the plants and fed the fish. On day four, we were able to harvest the lettuce plants. Each one of us took turns doing these jobs.

Measurements of Chemicals

Day One	Day Two	Day Three	Day Four	Day Five
Ph = 6.8	Ph = 6.4	Ph = 6.5	Ph = 6.3	Ph = 6.2
Amonia = 0.30	Amonia = 0.15	Amonia = 0.30	Amonia = 0.25	Amonia = 0.30
Nitrite = 0 ppm	Nitrite = 0 ppm	Nitrite = 0 ppm	Nitrite = 0 ppm	Nitrite = 0 ppm
Nitrate = 60	Nitrate = 100	Nitrate = 100	Nitrate = 100	Nitrate = 120

Our Measurement Results of Chemicals

The PH, ammonia, nitrite, and nitrate were all normal and acceptable besides the first and last day. When we measured the nitrate on the first day, it was too low and on the last day of measuring the nitrate, it was above the common level.

Measurements of Plants

	Croten	Colious	White Coleus
Day 1	Didn't measure	Didn't measure	Didn't measure
Day 2	25.5 cm.	20 cm.	16.6 cm.
Day 3	7 cm.	13 cm.	17 cm.
Day 4	24 cm.	11 cm.	21 cm.
Day 5	26 cm	36 cm	29 cm

Summary

Hailey: I thought that working in the greenhouse was a great experience. I learned so many new, helpful, and exciting things about aquaponics. Who knew aquaponics would be so fun?

Aryanna: I thought working in the greenhouse was a very good experience it was also a very fun experience

Melanie: I thought that working in the greenhouse was a great experience. It was very fun to learn how other resources can grow plants just as well as soil can.

Ilana: I thought that working in the greenhouse was a very fun experience because we got to learn a new way to garden that is eco-friendly.

Lily: I really liked working in the greenhouse. I think aquaponics is a really cool way to grow plants.

Greenhouse Pictures



Someone is looking at what the PH level matches up to.



Hailey is testing the ammonia level in the water.

Greenhouse Pictures



Ilana is pouring some nitrate drops in the water to see what the level of the nitrate is



Hailey is waiting for the drops of Ammonia to settle in the water. Then, she will be able to see the final level.

Greenhouse Pictures



Everyone is helping to feed the fish.

THE END!