

Does water change when the water cycle occurs?

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Introduction/Rationale

The purpose of this project is to see if the water in a terrarium changes when the water cycle occurs. When the water cycle occurs, the water filters itself.

Research Problem

How does the ions in the water change when it cycles in the water cycle?

Hypothesis

We thought the ions in the tap were going to change in the water when its cycles in the terrarium.



Materials and Methods

This experiment used some specialized equipment including the following:

1. 3 Terrariums
2. 6 Plants (each terrarium was planted with the same plants)
3. Soil and rocks – terrarium kit
4. Conductivity meter

We used 3 terrariums, rocks, moss, soil, charcoal. We collect three water types including : distilled, rain and tap.

Procedure:

- ❖ We filled a terrarium with soil and rocks and put our plants in there and we covered the top with plastic wrap and a rubber band around it to hold it up there. We created a collection set-up on each terrarium to capture the water that was condensing inside each terrarium. We used three types of water: rain, tap and distilled.
- ❖ All terrariums were placed in a sunny window.
- ❖ We collected the data from the ions in the water using a conductivity meter
- ❖ We collect our data twice a week if we can.

Results

We had some problems collecting the water that condensed inside to measure the conductivity of it. One of the terrariums had a different plant growing in it that may have started from a seed. We observed a lot of other differences between the terrariums that we watered with our different waters.



Date	Conductivity of Distilled Water (µS)	Conductivity of Rain Water (µS)	Conductivity of Tap Water (µS)
3/13/2018 Reading on conductivity meter of solutions used to water terrarium	.003	5	192
4/23/2018 Conductivity of liquid that condensed in the terrarium	No condensed liquid	17	No condensed liquid
5/15/2018 Conductivity of liquid that condensed in the terrarium	No condensed liquid	24	No condensed liquid

Discussion of Results

The distilled terrarium stayed condensed and the plants were dying. The tap terrarium had a snail in it and it was dry alot but plants are healthy. From the three different water solutions, the only water that condensed was the rain water. I was able to test conductivity of this liquid and found a small increase in the conductivity over time. The other two solutions (Tap water and Distilled water) did not form any condensation so I was not able to test those. Something I would do to improve this project is to find a better way to collect the condensation from inside the terrariums.

Conclusion

Our hypothesis was correct because the experiment showed that the ions really do change when the water cycle occurs.

References

- <https://www.mygardenlife.com/how-to/diy-terrarium-1>
- <https://www.bayeradvanced.com/articles/stunning-terrariums-two-ways-how-to>

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