

Planting Science Journal

Data Table

02-22-24

Research question: Does the amount of soil affect how quickly a plant, starting at a seed, can grow? We came up with this question because we know soil is necessary for plants to grow, so we wanted to see how much soil affects how quickly a plant can grow.

Experimental Design:

We would like to experiment what would happen when we decreased the regulated amount of soil by half and then that by half. We would like to perform this with three of each soil amount. So, we will be putting six seeds in each pot. This will help to support our claim more strongly with more evidence. We are conducting our experiment on radishes. We think that this will be the best possible plant because radishes have to grow in the ground and we are excited to see what will happen with less soil. We would give our plants 20 ml of water measured from a graduated cylinder every other day of the week and give it the same amount of sunlight just with less soil. We are planning to conduct our experiment over 5-6 weeks. We are hoping that doing this will help us see if the growing process can be sped up and if plants can truly sprout and grow with less soil. We are planning on using six seeds per pot.

Predictions: We think when the radishes are exposed to less soil it will take longer for it to sprout and it would look different and be a different size than the typical radish would.

Conclusion:

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The control plants (the plants that had the correct amount of soil) grew the strongest, fastest, and healthiest. The first possible explanation of our results is that the more soil a plant has, the more water it can hold. Therefore, the plants don't get dried up as easily. The second possible explanation is that due to being out of school for multiple periods of time, we were unable to water and care for our plants. So, the plants started to shrink and dry out. Sadly, because of this, none of the plants survived. However, our data still supports our claim. Our original prediction was that the pots with less soil would take longer to grow, be smaller, and be weaker than the pots with more soil. The data collected, supports our original prediction by showing that the plants with more soil grew faster, taller, and stronger than the plants with less soil. Some future experiments that could be done to expand on the results of this experiment consist of seeing if doing this experiment long term would affect the outcome and what would happen if we had a better routine for caring for the plants. The fastest, strongest, and healthiest plants were the plants with the largest amount of soil (or the control plants).

03-04-24

What We Did Today: Today, we planted radishes, and we are going to water them every five days or every friday. We planted six seeds in each pot. When we were planting we made sure to evenly water our soil before putting the plants in the pots. On top of that we carefully measured the soil to make sure we had the right amounts of soil in each control group. Hopefully, at the end of this experiment we will find a way to use less soil when planting crops, and the crops will be more healthy and have many nutrients.

03-07-24

What We Did Today: Today, we checked on our plants. Originally we were going to water them every Monday but we decided that we should water them every day because they are really dry. Our plants did not start sprouting yet but since they were really dry we added 16 ml of water. Our plants showed no signs of growth.

03 -08-24

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What We Did Today: Today, we checked on our plants and one started to grow in $\frac{1}{2}$ cup of soil. We also made a data table and filled it in. We also made a decision on watering the plants every other day to avoid drawing our radishes. We also are going to put them in the sun so they can get more light nutrients. We are not able to put them in the sun all day because other plants have to go in the sun but we are going to try to give them 2 hours a day in the sun. Hopefully they will be okay with 2 hours a day. The plants grew before they even had sun and one grew about 1.25 inches. It was really cool to see how they grew without sun and just water and soil.

03-11-24

What We Did Today: Today, we checked on our plants and we watered them with 16ml. They have grown a lot, the plants that were found to grow the most were the ones with $\frac{1}{2}$ cup of soil in them. There is one sprout that is very tall and is 12 centimeters. We also are going to put them in the sun for a whole day. With the plants that have less than $\frac{1}{2}$ cup of soil they are not growing as much as the other plants, they are just starting to crack their seeds open.

03-13-24

What We Did Today: Today, we watered our plants 16 ml. The plants that have $\frac{1}{2}$ cup of soil are growing the most and in control 3 it has 5.4 cm as an average height. The pots that have $\frac{1}{8}$ cups of soil are showing little growth. The pots that have $\frac{1}{4}$ cup of soil are showing very little growth but their seeds are opening up. They also had lighter green stems. Overall, all of the plants are showing progress.

03-15-24

What We Did Today:

Today, when we came into class we water our plants 16 ml each. Then we measured them. Our $\frac{1}{2}$ cup control 2 grew from 6 cm to 10 cm in two days! Then we put them in the sun. Our $\frac{1}{2}$ cup control grew the most out of all of the plants. The $\frac{1}{8}$ cup controls are starting to sprout. The plants that have $\frac{1}{2}$ soil are light green with dark green leaves. The tops of the plants are now stronger.

03-18-24

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What We Did Today: Today, we watered the plants 16ml and then we measured them, the $\frac{1}{2}$ 2 control grew 17 cm! The plants are now looking light green on the stem, and the leaves are very dark green. The stem under the leaves now feels thick and sturdy, instead of thin and floppy. The $\frac{1}{4}$ cup of soil now has a full sprout growing up. Also, the $\frac{1}{8}$ cup soil has multiple small sprouts. We also staked them up.

03-19-24

What We Did Today: Today, we watered our plants 24ml because they were really dry. Some of the ones on the stakes were crispy because the tops were dead. The bottom of the dead tops were thin and dark green. We are hoping that they will revive with the extra 4 ml of water. The plants did not grow at all today, so they are the same height. We think that the plants got dried out mostly because of all of the extra sunlight, and not enough water. Also, we are not going to put them in the sun today.

03-22-24

What We Did Today: Today, we took the stakes out of the pots and a few of the plants are dead. Most of them are still crispy in the $\frac{1}{2}$ cup of soil. We watered them 5 ml to last the weekend, to keep them moist. When we took the stakes out some plants came with them, but they were all dead that came out with the stakes. Unfortunately, most of our plants are shrinking in $\frac{1}{2}$ cup of soil. Our plants in $\frac{1}{4}$ cup and $\frac{1}{8}$ cup of soil are growing healthy. We also put them in partial sun, because radishes grow better in partial sunlight, which we were not aware of. Thankfully, our mentor Cari told us that. Hopefully, when we come back Monday they will be stronger than today.

03-25-24

What We Did Today: Today, we watered our plants. Our plants are still dry and crispy and some are dead. Most of the plants in $\frac{1}{2}$ cup control are very dry. We watered our plants 20 ml so they don't get dry instead of 16 ml. Our plants that are dead or dry are yellowish-gray. The healthy one is light green at the stem, and the leaves are dark green.

04-01-24

What We Did Today: Today, we watered our plants 20 ml and measured the ones that are still alive. The ones that are still alive are 7 cm and 1 cm, which is in $\frac{1}{2}$ control three. All of our other plants are dead but we still watered them. Our plants that did not die, shrunk and the tops are crispy. We were out of school for a week so they did not get water or sunlight. The average for control 1.5 cup three is 2.76. The others are 0.