

## Planting Science Journal

2/22/24

We decided that our research question is How much salt can plants tolerate before they can no longer tolerate it? We wanted a way to save freshwater for other necessary things like drinking. If the plants can grow with salt water then we don't need to use fresh water to water the plants. On our predictions we decided We think that the plants will be able to tolerate small amounts of salt in the water for a certain amount of time before they are not able to survive and grow. The salt may affect the plants but they will continue to grow. It may immediately mess with the growth and the survival of the plant. This will happen because plants don't typically grow with salt water. If the plants can survive any salt while they're sprouts, then we will increase the salt even more drastically to find the level of salt they cannot tolerate. We think this will happen because plants are not designed to use salts in their life functions. Lastly on our experimental design we put. Materials -Eight containers of buckwheat - about ten seeds per pot -Eight containers of radish - about ten seeds per pot -Grow lights to mimic sunlight -Salt -Water -Soil -Teaspoon -Pots -Liter bottle How It Will Work -Buckwheat will be spaced a few inches apart with a thin layer of dirt on top. -Radishes will be spaced a few inches apart with an extremely thin layer of dirt on top. -Buckwheat, and radishes will get about seven to eight hours of sunlight per day. We will dilute salt in a lot of water, then we will increase the amount of salt after a few days. -We will be measuring the salt in teaspoons. -We will be measuring the water in liters. -The control will have 0 teaspoons of salt per 1 liter of water. -The low amount of salt water will have 1 teaspoon of salt per 1 liter of water. -The medium amount of salt water will have 3 teaspoons of salt per 1 liter of water. -The high amount of salt water will have 6 teaspoons of salt per 1 liter of water. -The soil will be soaked in water completely before we put the seeds in the pots.



3/4/24

Today we started the process of making our plants. First we gathered all of our supplies and those were flower cups, soil, and seeds. Then we labeled all of the cups with what seeds went into the cup. Third we put one cup of soil into each flower cup and then we would go over to the sink and soak it into water and lastly we put all the seeds into the cups with water. Now for the final step we finally cleaned up all of our supplies and put all the cups on a couple trays.

3/7/24

When we went to our plants and measured them to see if they needed any water it said all of them did not need any water. But only the radishes have a clear sprout. We measured the height of both of the types of plants. Basically every radish has a centimeter in height. The buckwheat does not have a clear sprout that we can see. Now we are going to put 1 tsp of salt per one liter of water. Next we got the triple beam balancer and measured out how much salt we need to put into the plant. But today we did not get to putting anything in the plants so we just mixed the water with the salt.

Date	Radish Control	Radish Low	Radish Medium	Radish High	Buckwheat control	Buckwheat Low	Buckwheat medium	Buckwheat High
3/8/24	1.1cent average Green with little brown tops some of them have little leaves on them	1.1 cent average Green with little brown tops some of them have little leaves on them	1.1cent average Green with little brown tops some of them have little leaves on them	1.1 cent average Green with little brown tops some of them have little leaves on them	No sprout	No sprout	No sprout	No sprout
3/11/24	4.9 cent average d they all have green on them only a couple have a leaves but all of them have sprouted	5.4 cent average d They have all sprouted and they are around the same height and they all have green on them	5.4 cent araverage d really tall plants and have leaves coming of of them	6.9 cent average d they are green they are mostly the same height and some have leaves and some do not	3 cent average d only a couple of them have sprouted but the ones that have sprouted are green	2 cent average d they have all sprouted but a lot of them are small and still have brown on them	4 cent average d there is only one plant that has sprouted and it doesn't have little leaves coming off of it and it is green and brown	3.3 cent average d they pretty much have all sprouted and they are green and two of them are really tall
3/13/24	9.6 cent average d they are all green and mostly sticking out of the pot but they	9.8 cent average d all of the plants are sticking out of the pot and they are	8.4 cent average d they are all green but they are bending down and are real	5.8 cent average d none of them are sticking out of the pot they are fully laying	8.2 cent average d they are all standing straight up and they are not floppy	7.5 cent average d they are allgreen and only one is floppy and overlap	7 cent average d there is only one that has sprouted and all the other are	4.5 cent average d they are really short and floppy and have the

	cannot stand up straight	all green but very floppy	floppy and cannot stand up	down and not standing up at all	and they are green	ping the pot but the others are straight up	seem dead	lowest out of any of the plants

3/8/24 When we got our plants today and brought them to our station all of the radishes had sprouted but the buckwheat did not. The radishes were on average about 1.25 centimeters tall. But the buckwheat did not sprout at all. Today we measured to see if the water was moist with a tool. It said that they were all moist and did not need to be watered again for the second day. After that we did some more mixing with the water and the salt into milk jugs. When we did that we started to clean up. We also did not water the plants with salt. That is what we did today.

3/11/24 So today we got our plants and there was a dramatic change in all of them. The radish control was averaged out to 4.9 centimeters. The radish low went up a dramatic amount with an averaged height of 5.4 centimeter tall. The radish medium also changed dramatically with the same amount as the radish low. The radish was the highest out of all the plants and they turned out to be 6.4 centimeters averaged. Now the buckwheat control was only 3 centimeters, and the buckwheat low was the lowest out of any of the plants with 2 centimeters averaged. Now the buckwheat medium was 4 centimeters high and the buckwheat high was one of the lower ones with 3.3 centimeters high. So all of the plants had a pretty big change in all of them since they





have been in the sun over the weekend. After we were done averaging the heights of the plants

we put  $\frac{1}{4}$  of a cup into each plant because they were all pretty dry. So that us what we did for today. I will give you an update tomorrow.

3/13/24