

Michayla  
The Crazy Coconuts

3/27/2017

Today we planted our plants. We started by placing snow in a bag and put it in one bin and putting the cover on it. Then, we planted all of our radish seeds and placed four cups in each bin. One bin we put under two light bulbs so it would get sunlight, the other bin we just put the cups in with no cap, and the third one is the one with the snow, we also placed a cap on that one. Today we do not have many observations because the plants just went in the bins. We do have the starting temperatures from the soil. ( They may not be cold or warm or normal just yet because we just planted)

Soil Temperatures:

Cold soil- 21.2 degrees celsius  
Normal / Controlled soil- 21.9 degrees celsius  
Warm soil- 21.9 degrees celsius

3/28/17

The plants have not sprouted yet. Today we started by taking the temperatures of each plant. Then we had to replace the melted snow with new stuff. We will have ice packs that we can start using tomorrow. We also watered the plants. Overall today we did not have a lot to do.

Soil Temperatures:

Cold soil- 19.2 degrees celsius  
Normal/ Controlled soil- 21.4 degrees celsius  
Warm soil- 23.9 degrees celsius

3/29/17

Today we didn't have much to do. We switched the melted snow out with the fresh snow. We also took the temperature of the plants. We watered the plants. We switched the amount of water from 25 ml to 35ml.

Soil Temperatures:

Cold soil- 8.6 degrees celsius  
Normal/ Controlled- 21.3 degrees celsius  
Warm soil - 24.7 degrees celsius

3/30/17

Today was exciting! We have sprouts in the warm and controlled bins. We took the temperature of the plants. We also watered all the plants. Our mentor told us that we should rotate the plants so we are going to do that today.

Soil temperature:

Cold soil- 9.9 degrees celsius

Normal/ controlled- 21.3 degrees celsius

Warm soil- 33.6 degrees celsius

3/31/17

Today we did the usual stuff. Watered the plants took temperature and changed the ice packs. There is still no growth in the cold bin. At this point we are not sure if they are going to grow. The warm and normal bins are doing well. We have 15 sprouted plants.

Soil temperature:

Cold soil- 16.2

Normal/ Controlled- 22.2 degrees celsius

Warm soil- 30.6 degrees celsius

4/3/17

Today we replaced the ice packs. We also watered the plants with 25 ml of water. The plants are a light green color. There is one sprout in the cold bin.

Soil temperature:

Cold soil- 20.8 degrees celsius

Normal/ Controlled- 20.8 degrees celsius

Warm- 32.4 degrees celsius

4/4/17

Today we changed the ice pack. We got temperatures and Watered the plants with 25 ml.

Soil temperatures:

Cold soil-14.4 degrees celsius

Normal/ Controlled soil- 21.1 degrees celsius

Warm soil- 32.3 degrees celsius

4/5/17

Today we measured our plants. We had to poke holes in the bottom of the cups to drain the water. We also watered and got new snow for our plants.

Soil temperature:

Cold soil- 17.2 degrees celsius

Normal/Controlled soil- 21.4 degrees celsius

Warm soil- 33 degrees celsius

4/6/17

Today we didn't do much. The cold plants don't seem to be growing well at all. However, the warm and controlled bins have very healthy light green stems. The leaves are a darker green. We didn't water the plants because they seemed wet enough. We changed the ice packs and measured the plants.

Soil Temperatures:

Cold soil- 17.3 degrees celsius

Normal/ Controlled- 20.6 degrees celsius

Warm soil- 23.3 degrees celsius

4/7/17

Today we did the normal stuff, measured and changed the ice pack. We still don't need to water because they are still moist. The warm bin plants look healthy and they are a light green on the stem and dark green on the leaves. The controlled bin plants don't look very healthy, the stems are a really light green/ white color. The cold bin looks fine we still only have one plant in there.

Soil Temperatures:

Cold soil- 19.2 degrees celsius

Normal/Controlled soil- 22.2 degrees celsius

Warm soil- 30.1 degrees celsius

4/10/17

Today we measured and took temperatures. We also replaced the ice packs, the temperature is warmer in the cold bin due to the ice pack melting over weekend.

Soil temperatures:

Cold soil- 22.1 degrees celsius

Normal/ controlled- 22.5 degrees celsius

Warm soil- 29.2 degrees celsius

4/12/17

Yesterday we didn't do anything because we didn't have science class. Today we watered, measured, and changed the ice packs. The ice pack melted so we put it in the freezer and used snow. The plants do not look like they are the right color most if not all of them have white ish green stems and they look like they are dying.

Soil Temperatures:

Cold soil- 23.3 degrees celsius

Normal/ controlled soil- 26.1 degrees celsius

Warm soil- 30.9 degrees celsius

4/13/17

Today we watered, measured, and got temperatures. The color of the plants is a light green hint but they are mostly all white. I can tell that they are dying for the most part with the exception of a few plants. Most of the plants have two leaves on them but some only have one leave. The plants with one leave seem to be wilting more than the ones with two.

Soil temperatures:

Cold soil- 10.1 degrees celsius

Normal/ controlled soil- 23.1 degrees celsius

Warm soil- 29 degrees celsius

4/17/17

Today was the last day for measuring our plants. Overall the plants did a good job of growing the only thing is that some of the plants in the cold bin didn't sprout and some of the other plants didn't live. Our plants didn't have a very good color by the end it was a light green white color. I think if we planted closer to the window they would have grown better. Today we watered measured height and temperatures. The plants mostly have two leaves but a few have one leave.

Soil Temperatures:

Cold soil- 24.2 degrees celsius

Normal/ controlled soil- 26.7 degrees celsius

Warm soil- 32.9 degrees celsius

Data Table

Date	Temperature of plants - Cold	Temperature of plants -Warm	Temperature of plants - Controlled	Measurement of plants
3/27/17	21.1 degrees celsius	21.9 degrees celsius	21.9 degrees celsius	0 cm
3/28/17	19.2 degrees celsius	23.9 degrees celsius	21.4 degrees celsius	0 cm
3/29/17	8.6 degrees celsius	24.7 degrees celsius	21.3 degrees celsius	0 cm

3/30/17	9.9 degrees celsius	33.6 degrees celsius	21.3 degrees celsius	Controlled- average is 1.4 cm Warm- average is 3.8cm 14 plants sprouted
3/31/17	16.2 degrees celsius	30.6 degrees celsius	22.2 degrees celsius	Warm- average is 4.5cm Controlled / Normal- average is 44/ We have 15 plants sprouted
4/3/17	20.8 degrees celsius	32.4 degrees celsius	20.8 degrees celsius	Warm- average is 8.1 cm Controlled/ normal- average is 8 cm Cold- Average is 1.7 cm
4/4/17	14.4 degrees celsius	32.3 degrees celsius	21.2 degrees celsius	Warm- average is 8.7 cm Controlled/ Normal- average is 8.5 cm Cold- average is 2 cm
4/5/17	17.2 degrees celsius	33 degrees celsius	21.4 degrees celsius	Warm- average is 9.3 cm Cold- average is 4 cm Normal/ Controlled- average is 10 cm
4/6/17	17.3 degrees celsius	23.3 degrees celsius	20.6 degrees celsius	Warm- average is 10 cm Cold- average is 5 cm Normal/ controlled- average is 10.6 cm
4/7/17	19.2 degrees celsius	30.1 degrees celsius	22.2 degrees celsius	Warm- average is 10.1 cm Cold- average is 7 cm Normal/ controlled-

				average is 10.5 cm
4/10/17	22.1 degrees celsius	29.1 degrees celsius	22.5 degrees celsius	Warm- average is 11 cm Cold- average is 8.5 cm Normal/ controlled- average is 11.2 cm
4/12/17	23.3 degrees celsius	30.9 degrees celsius	26.1 degrees celsius	Warm- average is 13.9 cm Cold- average is 8.5 cm Normal/ controlled- average is 11.6 cm
4/14/17	10.1 degrees celsius	29 degrees celsius	23.1 degrees celsius	Warm- average is 12.3 cm Cold- average is 10 cm Normal/controlled- average is 11.7 cm
4/17/17	24.2 degrees celsius	32.9 degrees celsius	26.7 degrees celsius	Warm- average is 12.8cm Cold- average is 9 cm Controlled- average is 10 cm

**Conclusion:**

In the end of our experiment, we came to the conclusion that our warm bin plants grew healthier and taller than the controlled and cold bins. One possible outcome is that the moisture in the warm bin that was acting like a greenhouse was the best place for plants to grow. One explanation for the cold bin is that the ice packs didn't stay cold enough all the time and the temperature had a big range. This experiment could help farmers to realize that planting radishes in the summer when it is warm instead of in the spring when it is still cold will make them grow healthier. We have concluded that all temperatures do affect plant growth.