How will discrete and continuous phenotypic traits(Color, height, and Number of leaves) vary based on the differing fertilizer treatments?



Results: The values on the bar graphs are very close together, and the value of the error bars are quite high. As such, there is no significant difference between the two treatment groups for Height and Number of leaves. How does this compare with your predictions? predicted that there would be a significant difference between the highly and lowly fertilized groups, but the standard deviation/error tests showed otherwise. <u>Why?</u> I think that the main factor for there not being any significant differences was because the plants weren't given the optimal treatment. They often received less water than necessary, and some of them may have received more sunlight.

What did your mentor say?

The mentor said that plants followed the law of minimum, that their growth was dependent on the resource which was the most deficient, which explains why our plants didn't grow too well. She also said that the standard error could be higher because our difference in fertilizer treatment wasn't high enough to be significant. How will discrete and continuous traits (color, height, and number of leaves)vary based on different fertilizer amount?



<u>Results:</u> What does the data show? For the low fertilizer group the data was high then it went down then up then back down. For the high fertilizer the data went up then after day 13 it went down. <u>How does this compare with your predictions?</u> The data showed that the low fertilizer group was taller than the high fertilizer group and I thought that it would be the other way around, were the high fertilizer would be taller than the low fertilizer.(and #of leaves) <u>Why?</u> What is your explanation for these results? I think that the low fertilizer was higher because the plants didn't get enough water they needed so some of them died and had no data and since the error bars are big that means there is no significant difference

What did your mentor say?

The mentor said that some plants did not get enough water along with nutrients levels which could of affected the growth of the plants. How will discrete and continuous traits (color, height, and number of leaves)vary based on different fertilizer amount?



Results: What does the data show?

The average for the height and you can tell that the low fertilizer group had a higher average then the high fertilizer group. For the stem color there is more purple colored stems in the low fertilizer group, and more green colored stems in the high fertilizer group.

How does this compare with your predictions?

The data showed that the low fertilizer group was taller than the high fertilizer group and I thought that it would be the other way around, were the high fertilizer would be taller than the low fertilizer.(and #of leaves) <u>Why?</u> What is your explanation for these results? I think that the low fertilizer was higher because the plants didn't get enough water they needed so some of them died and had no data and since the error bars are big that means there is no significant difference

What did your mentor say?

The mentor said that some plants did not get enough water along with nutrients levels which could of affected the growth of the plants.

Conclusions

<u>What can you conclude from this experiment?</u> We can conclude that from our data we can see that for the discrete traits there is no significant difference. Since we have not done the standard deviation/error for our continuous traits, we do not know whether or not there is a significant difference in that category. <u>What is the evidence to support this?</u> All of the results of our standard deviation tests are available in google slides, and since all of the error bars overlap with each other on the time graphs, there isn't any significant difference.

<u>What did you learn from this experiment?</u> In this experiment, we learned how to do standard error and standard deviation, and so now we can add this knowledge to any future experiments. We also learned the importance of controlling an experiment, because our data may have been offset by that.