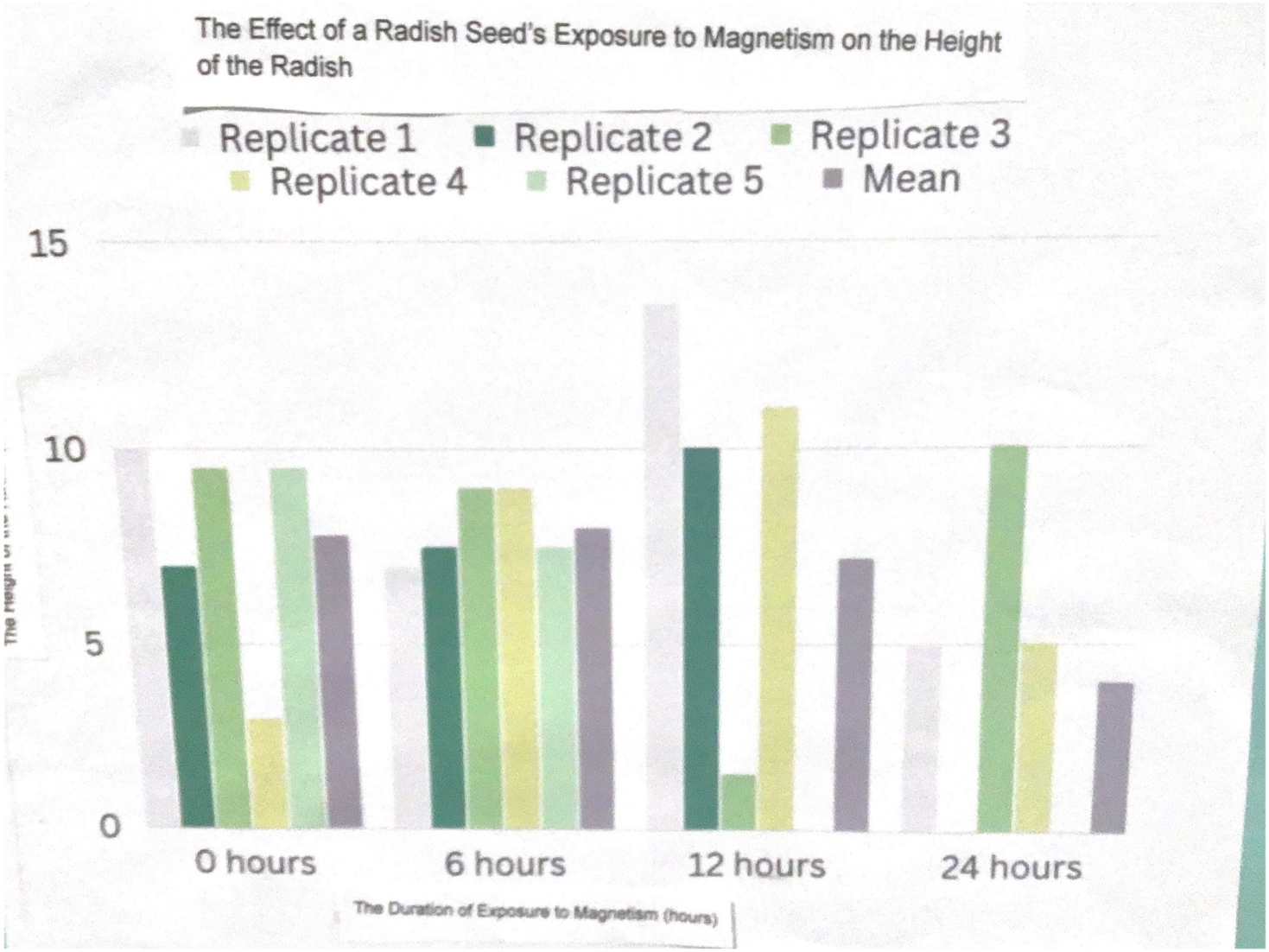
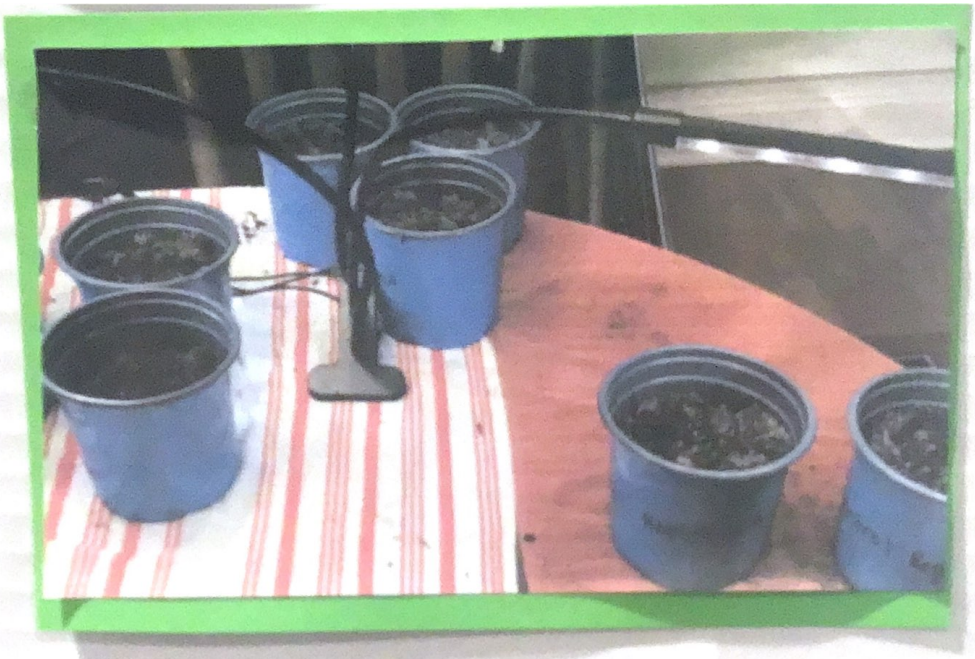

The Effect of a Radish Seed's Exposure to Magnetism on the Height of the Radish
Replicate 1
Replicate 2
Replicate 3
Replicate 4
Replicate 5
Mean
15
10
5
0
0 hours
6 hours
12 hours
24 hours
The Duration of Exposure to Magnetism (hours)



Radishes on Day 1

Radishes on Day 25

In this experiment on the effect of a radish seed's exposure to magnetism on the height of the radish, minor errors occurred that may have affected the accuracy of the data collected. A random error that occurred in the experiment was the existence of several outliers in the data set. As shown in the data table, several of the replicates did not grow, or had stunted growth after 7 or 8 days. 5 replicates were tested for each level of magnetism to minimize the effects of outliers on the data set. Despite the fact that water and sunlight were constants in the experiment, it is probable that the experimenter made an error and the outlier plants did not receive the necessary amounts of sunlight or water. However, this error most likely occurred due to the fact that approximately only 70% of Cherry Belle radish seeds will germinate. With this information, it can be concluded that out of 20 seeds, at least 3 seeds will not grow properly. Out of the bag of 1,000 seeds that was used for this experiment, 300 of those seeds would not grow. Another random error in this experiment was the inconsistency of the measurement of the radishes. Due to the unreliability of the human hand-eye coordination, the water was not spread perfectly evenly throughout the soil in each replicate's pot. Because of this factor, the soil was lower or higher in different areas due to the influence of water. This may have led to inconsistencies in the measurement of the radishes.

A systemic error that occurred in this experiment were the limitations of the procedure. The procedure included 5 replicates for each level, totaling to 20 plants. Ideally, this experiment would need a far greater amount of replicates to accurately represent the data.

Conclusion

The hypothesis is rejected. As shown in the graph, the final height of a radish's growth has no causational element linked to its exposure to magnetic fields. The mean final height for the radishes in the control group was 7.5 centimeters, compared to 7.2, 8, and 4 centimeters for seeds magnetized for 6,12, and 24 hours respectively. While there is not a clear, significant causational link between the time exposed to magnetism on the final height of the radish, there is a very clear causational relationship between the amount of time magnetized on the overall growth rate of the radishes. The control seeds took the longest to germinate and to peak at their maximum height, whereas the seeds in the level 3 group germinated first and reached their final height first. In conclusion, the data disproves the hypothesis.