

Does one type of mustard tolerate nitrates better than the other?

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Research Question

Does one type of mustard tolerate nitrates better than the other?



Introduction

We wanted to investigate this question because we wanted to narrow down what we were looking at so we could be more specific in what we find.

Focusing on one specific plant will allow us to learn the most we can about water quality and how it affects plants.



Predictions

We predicted that some mustard plant species will tolerate nitrates better than others because they have all evolved to survive in their environment. Some will have evolved to have more tolerance to nitrates because they needed that to survive.



Methods of Data Collection

As a class, we planted multiple pots of two different species of mustard (non-purple stem fast plants and purple stem fast plants). We separated our plants into 3 trays (sets) so that we had both species in each tray.

We watered one set of plants with distilled water that did not have any nitrates.

We watered another set of plants with water that had low nitrates.

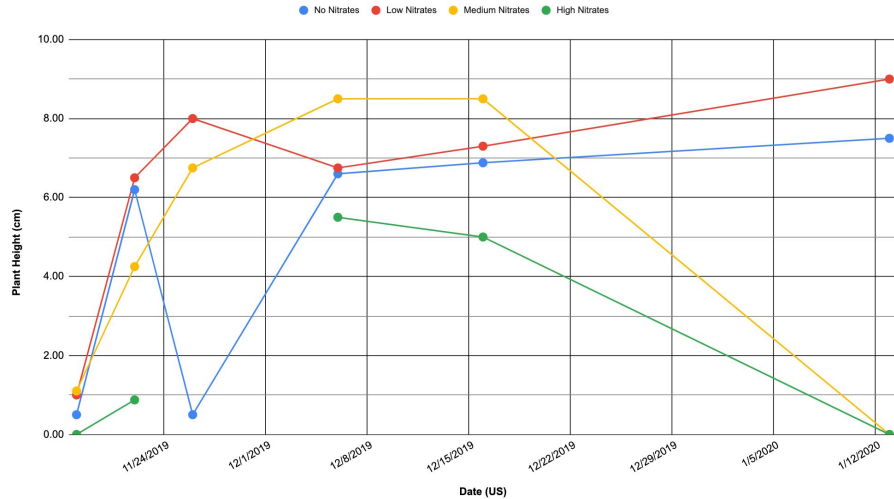
We watered another set of plants with water that had medium nitrates.

We watered the third set of plants with water that had high nitrates.

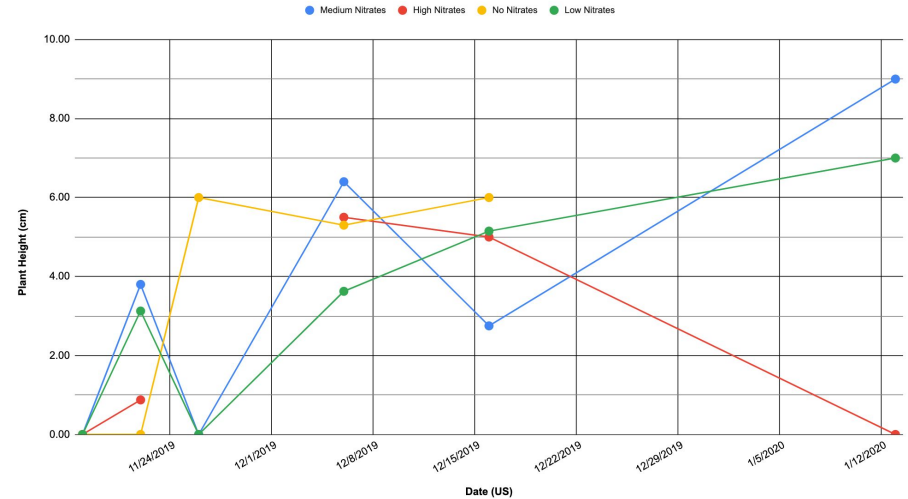


Results

The Effects of Water Nitrate Levels on Non-Purple Stem Fast Plants (Mustard)



The Effects of Water Nitrate Levels on Purple Stem Fast Plants (Mustard)



The non-purple stem Fast Plants grew faster and taller than the purple stem fast plants in all of the water types. They seemed to do the best in water with low nitrates because these ones kept growing taller on average and did not die over our winter break like some of the others.

Conclusions and Future Work

Our results show that some mustard plants just do better in general than other mustard plants. The non-purple stem plants grew better than the purple-stem plants in every kind of water we used.

We had some interruptions and some mistakes in our experiment. A lot of our plants died over winter break and then we had to end our investigation early because of changing to distance learning.



<https://youtu.be/Rago8Y7m5xA>