CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)

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Project Number

J2121

Project Title

The Effect of Sodium Chloride on Pennisetum clandestinum

Abstract

Objectives

The objective of this study was to discover a concentration of sodium chloride in water that would negativity effect Pennisetum clandestinum without harming other turf grass.

Methods

I built a temperature and lighting controlled greenhouse to grow 36 specimens of Pennisetum clandestinum and 36 lawn grass turf samples. Each sample received the same amount of water and light. I introduced different concentrations of sodium chloride in water once all samples were established. My controls did not receive any sodium chloride in their water solution.

I measured the mass of each sample after finishing my experiment to determine the effect of the different concentrations of sodium chloride in water.

Results

I found that concentrations of 35 grams of sodium chloride and higher per liter of water was effective in controlling Pennisetum clandestinum. Concentrations of 20 grams of sodium chloride per liter of water seemed to have minimal effect on Pennisetum clandestinum growth. Any concentration of sodium chloride had a negative effect on the lawn grass growth.

Conclusions

My results showed that Pennisetum clandestinum is more tolerant to sodium chloride than my lawn grass. This means that sodium chloride is not effective in controlling Pennisetum clandestinum in lawn grass. My results are still interesting since Pennisetum clandestinum is tolerant to high levels of sodium chloride it may be possible to grow it where conditions are not favorable to other types of grasses.

Summary Statement

By measuring the mass of each sample at the end of my study, I found that Pennisetum clandestinum is more tolerant to sodium chloride than lawn grass.

Help Received

I designed and built my experiment on my own. My science teacher explained the concept of hypertonic and hypotonic.