CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J1735

Project Title
The Effect of Sodium Chloride on Lactuca sativa Plant Growth

Abstract

Objectives/Goals
This experiment will determine what happens to Oakleaf lettuce (luctuca sativa) when sodium chloride is added into the plants water. It is my hypothesis that the two plant groups that have salt added into their water (two grams and six grams) will not grow as well as the one group with no salt added.

Methods/Materials
In this experiment, I used 3 groups with 6 plant pots in each group. The first group will be watered with plain water. Water for the second group will contain 2 grams of salt per liter. Water for the third group will contain 6 grams of salt per liter. Each group will have six 8.5 centimeter high peat planting pots. Three Oakleaf lettuce (Luctuca sativa) seeds will be planted in each pot in case of germination faliure. Seeds will be planted at a depth of 2 centimeters. All test groups will be planted and monitored at the same time.

Results
After thirty days, the plant group with zero grams of added sodium chloride turned out to be the healthiest and tallest of all three groups. All seeds in this group germinated and grew at a steady rate to approximately 8.5 centimeters in height with no visible discoloration to the leaves. The second plant group with two added grams of sodium chloride grew to about 6.5 centimeters tall. All seeds in this group germinated, but the leaves were not as broad as the zero grams group and some slight discoloration developed. The third plant group with six grams of sodium chloride added was stunted and grew to approximately three centimeters in height.

Conclusions/Discussion
The group with no salt added to the water grew larger than the 2 other groups with salt added. The group with 2 grams grew less. The last group with 6 grams added grew the least. The last groups of plants (6 grams) were the shortest in height. I think this because as time went on, the salt builds up in the soil. This caused some of them to die. This took place in the second group too. The salt tolerance for oak leaf lettuce is 1.04 grams per liter. This explains why the 2 grams per liter group developed stunted growth. I would also like to have a little more time on the experiment just to see what the outcome would be. Another improvement would also be to repeat the experiment at least another time because if you repeat it the outcome might be different than the first trial.

Summary Statement
My project is about how different salt levels in water effect plant growth.

Help Received