CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J1614

Project Title
The Effects of Acid Precipitation on Root Growth

Abstract

Objectives/Goals
I believe that both plants, epipremnum aureum and plectranthus verticillatus, will be stunted or halt totally in root growth when placed in a container containing either acid solution of pH 6.0 or pH 3.0 (to simulate acid precipitation).

Methods/Materials
I conducted the tests on two different plant species, epipremnum and plectranthus,using two acid solutions of a pH 3 and pH 6 (to simulate acid precipitation). I used distilled water with a pH 7 as a control. I measured root growth of the plants for 15 days and recorded root growth and any other changes in the plants appearance.

Results
The control and the low strength acid groups grew at almost a parallel rate whereas the high strength acid group#s growth came to a complete halt and then died.

Conclusions/Discussion
From the information I have acquired through the testing I have conducted I can conclude that my hypothesis was generally incorrect. I had hypothesized that, within the course of my testing, both plant groups (epipremnum aureum and plectranthus verticillatus) in either low or high strength acid solution would be halted in root growth. Whereas the results of my testing showed that the plants in the low acid solution both continued to grow in parallel to those growing in the control group. Nonetheless, the plants in the low strength acid group did begin to show signs of stress not totally apparent in the control group plants. However, the epipremnum aureum in the high strength acid group did totally halt in root growth as I had expected and then began to deteriorate. The condition of the plectranthus verticillatus suggested that over a longer period of time the plants may have died totally and began to deteriorate more rapidly. It became obvious that P. verticillatus apparently began the same process at a much slower pace; the roots began deteriorating or darkening at the tips and the leaves began to show stress and yellowing.

Summary Statement
I tested the effects of acid precipitation on plant root growth.

Help Received
My mom drove me to the nursery.