CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
Jennifer Y. Wang

Project Number
S0818

Project Title
Can Antacid Tablets Improve Soil Damaged by Acid Rain?

Abstract

Objectives/Goals
The objective is to determine if the antacid TUMS helps the plant spinach growing in soil affected by acid rain recreated by drain cleaner containing 93% virgin sulfuric acid.

Methods/Materials
Four spinach plants are planted in four pots filled with soil. One pot contained soil affected by acid rain, one pot contained soil affected by acid rain and antacids, one pot contained soil affected by antacids and one pot contained unaffected soil. Over time, It was recorded how much each plant grew.

Results
Spinach growing in soil affected by acid rain grew the most, but also looked shriveled and unhealthy. The spinach growing in soil affected by acid rain and antacid, turned out healthier with smooth, green leaves.

Conclusions/Discussion
My theory is that spinach growing in acid rain grew the most in size because the soil it was growing in had a soil pH in the range of spinach#s soil pH preference. Spinach has a pH preference of 6.0 to 6.5. When sulfuric acid was added to the soil of a pH of 7.0, the pH fell into that range of pH preference. Seeing that the effects of acid rain did not show up in the pot with acid rain and antacids, antacids clearly eliminated the effects of acid rain.

Summary Statement
Plant growth in soil affected by acid rain is a problem, but maybe it can be solved by a simple solution.

Help Received