CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J1027

Project Title
It Will Grow, No Lye

Abstract

Objectives/Goals
We had two objectives:
First we wanted to determine how plant growth is affected by varying degrees of acid soil. Our second objective was to determine what pH level will neutralize acid soil.

Methods/Materials
Lemon juice was used to simulate acid soil conditions and baking soda was used as a neutralizer. Hydrion paper and the pH color chart was the indicator of choice. The potting soil used had a pH of 6.5. Four pots were used for acid soil (control 6.5, and the other 3 were 5.6 each). After 2 weeks these same soils (except the control) were treated with different levels of alkalinity, 7.5, 8 and 8.5. Growth rate of lettuce seeds were compared for each soil type.

Results
In each trial plants performed better in acid soil than in alkaline soil. The average number for germination rate for acid soil was 4.3 and for alkaline soil it was 4 for pH 7.5; pHs 8 and 8.5 both had germination rates of 0. Overall, the growth height ratio of acid to alkaline soil was 1.2 meters to .33 meters.

Conclusions/Discussion
Although we did not find out the correct pH level to neutralize acid soil, caused by acid rain, we have learned that lettuce seeds prefer a slightly more acidic soil than alkaline soil. This is reflected in the higher germination and growth rates in acid soil when compared to alkaline soil.

Summary Statement
The effect of acid rain on plant growth and the determination of the correct pH to neutralize acid soil.

Help Received
Mrs. Hinds, Science Teacher