CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)
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Project Number
J0902

Project Title
Neutralizing Soil pH Levels

Abstract

Objectives/Goals
Our project displays a simulation of a common rainfall in the San Joaquin Valley. The objective is to determine what rate common soils (sandy, silt, clay, and topsoil) found in this area neutralize the effects of acid rain. By mixing lemon juice and water, we created the correct pH of acid rain (5.0). Through careful testing, we were able to conclude that clay soil, a highly alkaline soil, neutralized the outcomes of the acid rain at the fastest rate. In the end, we were able to infer that the initial amount of alkalinity in soil will be a good indicator of how it will hold up to the pH of acid rain.

Methods/Materials
Soil pH tester, 4 different soil types, acid rain mixture, water. Measured soils' pH over 5 days after adding acid rain mixture.

Results
Several different soil types were water with acid rain mixture. Soils of higher initial levels of alkalinity tended to have a higher rate of change for pH.

Conclusions/Discussion
Results from our project indicate that clay soil, a highly alkaline soil, will neutralize the effects of acid rain at a much faster rate than other common soils.

Summary Statement
Our project displays a simulation of a common rainfall in the San Joaquin Valley and at what rate soils neutralize these low pH levels.

Help Received
Our coach helped us decide to focus on soil types commonly found in the Central Valley. These suggestions helped us make our project more relevant to our region.