CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
S1605

Project Title
The Effects of Metals on Plant Growth

Abstract

Objectives/Goals
To find if the plant growth in poppies and bush pea plants is affected by the application of aluminum, zinc, or iron sulfate; and to find if plants grow and germinate faster in an artificial, heated environment, or a natural, room temperature environment?

Methods/Materials
1 # Bag of California Poppy Seeds, 1 # Seed Heating Mat, 1 # Bag of Bush Pea Seeds, 1 # Plant Heating Lamp, 1 # Can of Aluminum Sulfate, 2 # Plant Flats (Capacity 68),1 # Can of Iron Sulfate, 2 # Bubble Covers for Flats, 1 # Can of Zinc Sulfate, 2 #Water Spill Trays for Flats, 1 # Bag of Seed Starter Soil, 1 # Water Spray Bottle.

Results
The metal additives in both poppies and peas had poor effects on the plant#s growth, and in fact most of the slots with metal sulfates in them didn#t even sprout. In contrast of this, the control groups thrived and grew tremendously. Of the metals iron had the best effects and zinc had the worst. As for the environment, the natural, un-altered environment provided more plant yield and more growth.

Conclusions/Discussion
My conclusion is that in general, metal additives in the soil have more negative effects than good on the plant growth. Also, the environment plays a key role in plant growth, and I found that staying with the natural growth patterns of plants, with real sunlight and no artificial heat, is important to obtain the best possible results.

Summary Statement
I applied 3 different metal sulfates to poppy and pea plants, in two different environments, and I observed and recorded the results.

Help Received
My mother and father drove me to purchase any needed supplies, and gave me some advice to better my project.