



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Cali C. Magdaleno	Project Number S1907
Project Title How Does Soil pH Affect Plant Growth?	
Abstract Objectives/Goals This science fair project is to test the effects of a soil's pH on the growth of grass. For my project, I adjusted the soil's pH, varying from 5.0-9.0, making it acidic, neutral, or alkaline. Usually a neutral pH is best for all plant growth, but I wanted to test a variety of pH's to clarify which aids growth the most. I checked the grass each week for three weeks, looking to see how many, if any, grass seeds had sprouted, the color of the grass, and the lengths of the smallest and largest blades (in cm). Methods/Materials -Materials: 12 Pots, soil, dirt, grass seed, lime, aluminum sulfate, pH measuring device, water, and ruler -Procedure: 1. Measure a cup of soil for each of the ten pots (A cup of dirt for the remaining two pots.) 2. Add lime or aluminum sulfate to the soil (depending on the specific pH wanted) 3. Measure the pH in each pot to make sure each is correct. 4. Add 20 grass seeds to each pot. 5. Water daily. 6. For the next three weeks, observe the growth patterns, once a week, and check the color, number of sprouts, and length. Results The results to the experiment were not all similar. The pots with the pH of 5.0 had no growth whatsoever. The pots with the pH of 6.0 had little growth, each with only 4 blades of grass. The pots with a pH of 7.0 grew well, one pot with more blades of grass than the other, an average of 11 blades of grass. The pots with a soil pH of 8.0 did as well as the 7.0 with an average of 11 blades of grass, also. The pots with a soil pH of 9.0 and the pots with just dirt had the best growth, with 17-20 blades of grass grown in each. These results showed that a slightly alkaline pH of about 8.0-9.0 is best for the growth of grass. Conclusions/Discussion The question for this project is #How Does the Soil pH affect Plant Growth?# My hypothesis was the more neutral the pH, the better the grass will grow. Based on my results, my hypothesis was incorrect. In most gardening opinions, a neutral pH is the best environment for plant growth, but in doing my experiments, the pots that showed the most growth were the ones that were slightly alkaline. The pots with the best growth overall were the pots with a pH of 8.0 and 9.0. I've learned that not all plants have to have a neutral pH to grow properly; sometimes alkaline or even acidic can work better for growth. Overall, I would say this experiment was a true success.	
Summary Statement This science fair project is to test the effects of soil pH on the growth of grass.	
Help Received No help with the entire project	