CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
Michael Q. Nguyen

Project Number
J1622

Project Title
Sinking pH

Abstract

Objectives/Goals
The objective of this project was to evaluate whether the growth of a pinto bean would be affected by different pH levels. I predict that different pH's will affect the growth of pinto beans, and that chemicals that are alkaline will cause better growth than the acid chemicals.

Methods/Materials
Seven Petri dishes were set-up with labels; and each label was clarifying a different level of pH. Inside each petri dish included: three pinto beans, one cotton ball, and exactly 10 mL of the precise pH level solution listed on the label. Litmus Paper was used to determine the pH level of the solution. Here are the chemicals listed: Sulfuric Acid (pH 0), Lab Water (pH 5), Distilled Water (pH 6), Tap/Municipal Water (pH 7), Baking Soda (pH 8), Borax (pH 9), and Pure Ammonia (pH 14.)

Results
Some pinto beans did not grow or even germinate. The only pinto beans that did grow were the ones that were grown in the solutions of pH 5, pH 6, pH 7, and pH 8. The pH level that the pinto bean grew the best was pH 6.

Conclusions/Discussion
Therefore, concurring, I found out that different pH levels of a solution does affect the growth of plants, and that my hypothesis was incorrect. I stated that alkalinic solutions would make the plant grow faster. It seems that this bean type, the pinto bean, grew the best at the pH level of six. However, the pinto beans in the pH levels of 0, 9, and 14 all died. Therefore, these results must mean that plants grow best under the pH levels close to pH 7, (which is neutral.)

Summary Statement
To grow a pinto bean plant by using several, different, pH level solutions.

Help Received
Used Laboratory Equipment From MacArthur Fundamental Intermediate School Under Permission Of Ms. Kateryna Matwijewsky (Science Teacher); Dad Helped Store Materials.