



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Kelly Ngo	Project Number S2014
Project Title Acid Rain's Effect on Beans	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals How does acid rain affect bean plants? Bean plants are vital to humans in the fact that they create oxygen, if acid rain kills these plants there would be fewer oxygen in the atmospheres. So then I wonder, if acid rain kills bean plants, would it also kill other plants and trees? If acid rain kills plants and trees, then it will add to the green house effect. This is what we do not want to happen. So is it really true that acid rain kills bean plants? Once this issues is discover, scientist can determine a way to prevent the amount of acid rain a plant gets, or even better stop plants from getting acid rain. The fewer acid rains a plant gets it will help the plants say alive.</p> <p>Methods/Materials 16 - 9 oz plastic cups; 4 # Empty 16 oz water bottles; Vinegar & tap water; Napkins; PH Meter; Pipette; Ruler; Pencil; Color pencil; 40 Peruano Beans; 40 Garbanzo Beans; 40 Pinto Beans; 40 Black Loose Beans.</p> <p>Results Acid rain will delay the sprouting of beans. The lower the PH of liquid, the chance for a bean to sprout will be less compare to tap water. As a result, the beans being watered with tap water will sprout more.</p> <p>Conclusions/Discussion The more acidic a liquid is, the less the beans will sprout; a bean in tap water will sprout more. The results of the experiment generally supported my hypothesis. From the data I have collected, the height of the beans show that the beans being water with tap water, grew taller than the ones being watered with acidic rain. The average estimated height for PH 2.95 is 2.875 inches, PH 4.02 is 2.875 inches, PH 5.18 is 3.0625 inches, and PH 7.45 is 3.4375 inches. The lower the PH the more deadly the plant was with more fungi. The results also tell me that in some rare cases, the bean will do better in acidic rain, like the Peruano bean. If I were to conduct this experiment a second time, I would try to think of a different way to collect my data because the way I did it was very time consuming. Overall, the conclusion of my experiment went very well.</p>	
Summary Statement What happens to a bean when a liquid is more acidic.	
Help Received Project done by self	