



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Zachary Huang-Ogata</b>	<b>Project Number</b> <b>J1912</b>
<b>Project Title</b> <b>Different Liquids on Plants</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My project was done to determine whether alkaline water, acid water, sugar water, or regular tap water would help plants germinate faster and bigger. My goal is to prove which water is the best for plants, to change the world of agriculture. <b>Methods/Materials</b> For each of the five types of waters, (alkaline, acid, sugar, and tap), had five plants each. Every plant was the same, with each cup with 20 oz. The only difference among the plants was the type of liquid given to it. Each cup was filled with 6.5 cm of soil, and given a seed. Then it was covered with 2 cm of soil. Each plant received 40 milliliters of the specific water they were assigned, and were 20 total plants. I observed the plants and recieved data over a 10-day germination period. <b>Results</b> Tap water plants had the best results, with four out of five plants germinated. Acid water plants did the second best, with three out of five plants germinated. Alkaline and sugar water plants tied for the worst results, with two out of five plants germinated. The tap and acid water plants grew the biggest, and the alkaline and sugar water plants were the smallest in size. <b>Conclusions/Discussion</b> My conclusion is that water with a neutral pH of 7 given to plants helps it germinate faster and grow bigger. Although alkaline water contains healthy minerals like potassium, magnesium, and calcium, which benefit our body, it does not help plants. Plants are adapted to getting their own nutrients on their own, so there is no need to overfeed it with these extra nutrients. In this experiment, I learned that giving plants rich nutrient water doesn't really help speed up its growth process. The best water to give plants is regular water with a neutral pH, of 7.	
<b>Summary Statement</b> My project is about finding what type of liquid, (acidic, neutral, or alkaline), will help plants germinate the fastest, and have the best results.	
<b>Help Received</b> Mother bought materials like cups and soil. Science teacher gave me suggestions with my project.	