



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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Project Title Plant Chemistry	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project was to determine how the main chemicals in plant fertilizers individually effect plant growth. Due to my research, I found out each chemicals benefit to plants. I hypothesized the following: the Magnesium Group would be strong, sturdy, and would have a vibrant green color; the Potassium Group would be very sturdy and substantially sized; the Nitrogen Group would grow at a quicker pace and should have a vibrant green color, and the Control Group would be well-built, but average, since these plants were not treated with any chemical to benefit plant growth.</p> <p>Methods/Materials I researched the main chemicals in plant fertilizers, and with the help of my Science Teacher we were able to obtain the chemicals Magnesium Oxide, Potassium Citrate, and Sodium Nitrate. There were 4 groups of 10 radish plants; the Control Group, Magnesium Oxide Group, Potassium Citrate Group, and Sodium Nitrate Group. These 40 radish plants were watered every day for a course of about 7 weeks. The Control Group was left to grow naturally with just water every day, while the other 3 groups were treated with a chemical solution every day.</p> <p>Results At the end of the 7 week growth period, the Control Group was robust, the Magnesium Oxide Group was very strong, sturdy, well developed, and held a vibrant green pigment, the Potassium Citrate Group was fairly strong, healthy looking, with few yellow leaves, and the Sodium Nitrate Group stunted growth within the 2nd week, and all plants in this group completely shriveled up and died within the 3rd week.</p> <p>Conclusions/Discussion My hypothesis was correct for the most part, but flawed in some areas. I hypothesized that the Magnesium Group would be sturdy and have a vibrant green color, which was true. I hypothesized that the Potassium Group would be very sturdy and substantially sized, but turned out to be 80% of what I was expecting. I hypothesized that the Nitrogen Group would grow at a quicker pace and would have a vibrant green color, which was incorrect; about 2 weeks into the 7 week growth period, they stunted growth, and by the 3rd week, they all died. I hypothesized that the Control Group would be well-built, but average; I was correct for the most part.</p>	
Summary Statement The central focus of this project is to isolate the main chemicals found in plant fertilizers, individually test them on plants to find out each chemical's effect on plant growth, and compare the differences between them.	
Help Received Chemicals provided by Science Teacher; Science Teacher taught me how to properly and safely work with the chemicals.	