



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Thomas D. Zumkeller	Project Number 35409
Project Title Investigating the Effect of Phosphorous on Radish Seed Growth	
Objectives/Goals My goal was to determine how different levels of phosphorous added to soil would affect the growth of radish seeds. Abstract Methods/Materials I used 15 identical small pots that contained 8 ounces of potting soil in each one. Each pot had 5 radish seeds in each. I marked each pot in groups of 3 and numbered them along with the amount of added phosphorous to each pot. The phosphorous measurements were 1/2 tsp., 1/4 tsp., 1/2 c., 1/4 c. There was also a control group of just soil with no added phosphorous. Each pot received the same amount of sunlight daily and the same amount of water daily. This was done for 30 days. I measured each plant when I saw growth and recorded the growth. Results I found that adding 1/2 tsp. of phosphorous to all purpose potting soil will increase the growth of radish seeds. Conclusions/Discussion I found that phosphorous added to soil can be both beneficial and harmful to plants. It is important to understand the right ratio of phosphorous to soil so that the plant can grow at a faster rate. I thought it was interesting that a mineral like phosphorus which is supposed to be good for plants, can be harmful to them if you do not understand how to use it.	
Summary Statement What amount of phosphorous helps radish seeds grow at the fastest rate.	
Help Received Mother typed report.	