



CALIFORNIA STATE SCIENCE FAIR 2010 PROJECT SUMMARY

Name(s) Shannon V. Foy	Project Number J2308
Project Title How Do Liquid Pollutants Affect Radish Growth, Germination, and Appearance?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project is to see how three different liquid pollutants: motor oil, paint, and laundry detergent, affect a radish seeds germination, growth, and appearance. In addition, how do these three groups react in comparison to one control group? I hypothesized that the motor oil will have the worst overall results and that the control group will have the best overall results in the plant's germination, growth, and appearance.</p> <p>Methods/Materials I used 24 medium-sized plastic cups, backyard soil, a ruler, liquid measuring cup, Formula Shell motor oil, Sun Burst liquid laundry detergent, and Speed-Wall white paint. I then separated the 24 cups into 4 groups of 6 cups labeling each group either A-D and the cup number (i.e. A1, D3) I planted three radish seeds equal distance apart and watered them with 50 ml of water. After one day, I gave Group D its 50 ml of water but then gave the rest, Groups A-C, 20ml of their designated pollutant and 30 ml of water to fulfill the 50 ml of liquid every other day. I set them by a window; not wanting the temperature as a variable, and each received the same amount of sunlight. I watered, measured, and recorded observations for 35 days.</p> <p>Results The results for Group A, motor oil, had an average growth of .33cm. Group B, paint, was .0015cm. Group C, laundry detergent, was 0cm. And Group D was 2.71cm.</p> <p>Conclusions/Discussion It turns out that my hypothesis was somewhat incorrect. I was right in assuming that Group D would have the best results, but I hypothesized Group A, motor oil, would have the worst results when it actually had the 2nd best results. Group B came in 3rd and Group C ended up in last. During my research, I discovered the laundry detergent actually had the most toxic ingredients such as some Quatemium, Xylene Sulfonate, and Petroleum. Also, I thought about how crude oil is found at the bottom of the ocean by decomposition. Motor oil is a refined version of crude oil, thus making it very similar and organic. If I could do this project again, I might make it more complicated by using the temperature as a variable to see the reaction in a more natural setting. I also might take the mass of the plant and soil to see how much the soil actually absorbed with the pollutant or grow the plants for a longer period of time to get more solid numbers.</p>	
Summary Statement My project is about the affect that liquid pollutants have on radish seeds' growth, germination, and appearance in backyard soil.	
Help Received Dad bought seeds, cups, paint, detergent, and motor oil and science teacher helped with planning and idea.	