



CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

Name(s) Ailish Kissane; Victoria LaFrance	Project Number J1907
Project Title Soapy Situation	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project is to use our experiment to show the possible effects that the pH, phosphate, and nitrate level in soaps may have in plants as soapy water is one of the largest forms of used water washed out into the bay. The goal is to raise awareness and have people understand why checking the ingredients in even soap is vital to ecosystem lives.</p> <p>Methods/Materials Pitcher, Measuring cups, Plastic cups, Soaps: Ajax, Generation, Gain Meyers, Palmolive, Dawn, Soil, Pea seeds, Ruler, Water. Put 1 cup of dirt into a plastic container. Place a seed into the hole in the container. Divide containers into 6 groups of 12. Water each group of plants $\frac{1}{4}$ cup of water. Take one dish soap, water, pitcher, first set of plants $\frac{1}{2}$ teaspoon and $\frac{1}{4}$ cup, measure $\frac{1}{2}$ teaspoon of the first dish soap, and pour it into the pitcher with $\frac{1}{4}$ tablespoons of water. Water the plants. Measure the height of each plant in each set of twelve plants. Find average height.</p> <p>Results The plants watered with the Dawn dish soap grew the highest, with an average height of 30.58 cm. per month, although it did not do well appearance-wise, with shriveling The plants watered with the Ajax dish soap had the most growth, with an average growth 8.2 cm. per month, doing the best appearance wise. The plants watered with the Palmolive dish soap were the shortest, with an average height of 24.52 cm. per month. They also grew the least, with an average growth of -0.8 cm, due to shriveling. The plants watered with the Gain dish soap were the only plants that didn't shrivel at any time during this experiment, with an average length of 24.5 cm. per month, and since the plants did not shrivel, only increased in growth.</p> <p>Conclusions/Discussion In the end, the plants watered with the Dawn dish soap grew the highest, meaning that positive results were achieved from this experiment, but others such as the plants watered with the Palmolive dish soap, were the shortest and had the least amount of total growth, which are negative attributes. This may be due to the ingredients in the soap, which inhibited the plant growth, or the fact that the Palmolive dish soap has a pH of about 9.4, which is too basic.</p>	
Summary Statement This experiment observes the effects different soaps may have on plants based on phosphate, nitrate and pH levels to reflect possible effects on the environment.	
Help Received We recieved aid in sourcing and buying all of the materials needed from family. We conducted the experiment completely ourselves, but we did receive help in plotting our data from our science teacher.	