



CALIFORNIA STATE SCIENCE FAIR 2013 PROJECT SUMMARY

Name(s) Sam D. Edwards-Marsh	Project Number J1707
Project Title How Does Caffeine Affect Plant Growth?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my experiment was to determine if you get good results watering plants with caffeine. I also wanted to know what amount of caffeine was too much for plants to handle. My hypothesis was that plants watered with caffeine would have a huge growth spurt, but as caffeine use increased the plant health would decrease.</p> <p>Methods/Materials I filled 12 small starter pots with planting soil and planted 2 garden beans in each. Three pots were labeled "control", three more were labeled "one tablet", three more were labeled "two tablets", and the last three were labeled "three tablets". For the first 5 days each pot was watered with 2 Oz of tap water. From day 6 to day 15, pots labeled "one tablet" had one caffeine tablet mixed in their water. Pots labeled "two tablets" had two tablets mixed in, and so on. The control group continued with water containing no caffeine.</p> <p>Results The plants in the control group were by far the strongest. They were always green, with thick stems and appeared healthy. Plants with 1 caffeine tablet had a faint yellow tint to them and were somewhat pale. Their growth was stunted compared to the control group. Plants with 2 caffeine tablets were very pale, yellow, had wrinkled leaves, and thinner stems. Their growth was stunted compared to the 1 tablet group. They eventually died. The 3 tablet group of plants barely grew at all and were severely wrinkled. They all died as well.</p> <p>Conclusions/Discussion My experiment demonstrated that caffeine does not benefit plant growth at all. The plants that received the most caffeine were the worst off, appearing wilted, wrinkled, and discolored. The plants that received the least amount of caffeine were the only caffeinated plants that survived, and they were far smaller and appeared less healthy than the control group.</p>	
Summary Statement I measured and documented the effect of varying amounts of caffeine on plant growth.	
Help Received My science teacher, Mr. Brown, helped me to better understand the scientific method. My mom and dad provided all the materials, took pictures of me performing the experiment, and showed me how to use Pages and Numbers software to make my presentation.	