



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Ashley Bishop; Charlee Sullivan	Project Number J1905
Project Title Battling Bacteria	
<p style="text-align: center;">Abstract</p> <p>Objectives The purpose of this science fair project was to figure out what mouthwash brand kills the most bacteria in your mouth. Our hypothesis was if one mouthwash brand has more alcohol content than the other, it will do a better job of killing bacteria on your teeth than mouthwash without alcohol because alcohol is good at killing bacteria.</p> <p>Methods The constants and controls in our experiment were the amount of time the mouthwash or water was in the petri dish, how we swirled the petri dish, the amount of mouthwash or water in the petri dish, and the mouth that we swabbed with the q-tip. The independent variables were the water and the brand of mouthwash that we used. The responding variable was measured by swirling different mouthwash brands around in petri dishes that had bacteria in them to see which petri dish had the least amount of live bacteria in it compared to before the mouthwash.</p> <p>Results The results of this experiment were that Spry killed the most bacteria overall. Act was close to Spry, but it killed less of the different bacteria, and Colgate killed the most white dots, but that was all it killed. The results show that our hypothesis should not be accepted, because Spry, the brand that did the best overall, is only 8% alcohol, which is far less than Listerine.</p> <p>Conclusions Our results show that Spry killed the most overall bacteria, and Act killed the second most overall bacteria. This happened because the ingredients in Spry do a better job of killing bacteria than the ingredients in the other mouthwash brands. Our hypothesis said that the mouthwash brand that had the most alcohol in it would kill the most bacteria because alcohol is good at killing bacteria, but our hypothesis was wrong. Spry is only 8% alcohol, so our hypothesis was very wrong. Our data proved that alcohol does not always kill the most bacteria. We forgot to start the timer a few times, so the mouthwash might not have been in the petri dish for exactly one minute, but it was really close.</p>	
Summary Statement We tested the effectiveness of different mouthwash brands on common bacteria found in the mouth.	
Help Received We designed the project by ourselves. Mr. Hofsteen was our mentor, and he helped us with the formatting for our abstract. Dr. Valerie Aoki helped answer some questions, as did a Spry employee named Arie.	