



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

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| Name(s) Primavera Leal-Martinez | Project Number J2118 |
| Project Title The Effects of Different Beverages on Reducing the Calcium Levels of Eggshells | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to investigate the effects of beverages on tooth enamel. I believe that orange juice with a ph balance of 3.5, will reduce the calcium levels of eggshells the most.</p> <p>Methods/Materials I used eggshells to simulate tooth enamel since both are calcium based. I first removed the yolks and albumen from 50 eggs. The eggshells were rinsed in tap water and allowed to dry for 72 hours. I separated the eggshells into 5 bags of 10, then weighed each bag in grams recording the results. I then removed the egg shells from the plastic bags and transferred each group into one of 4 plastic containers. I poured 10 cups of orange juice into one of the containers. I repeated the same process for coffee, tea, and Pepsi. I used distilled water as the control. After soaking the eggshells for 48 hours, I rinsed each group of eggshells and allowed them to dry for 72 hours. The eggshells were then reweighed and the difference again recorded in grams.</p> <p>Results My results showed that Pepsi was the beverage that had the greatest difference between the two weights. The eggshells soaked in Pepsi decreased in weight by 6.14 grams. Of the variables, coffee was the beverage that had the least decrease in weight 1.43 grams. All the test variables that I used had a decrease in weight. The control, distilled water, had a decrease of 1.12 grams. I found that my hypothesis was incorrect. My results showed that Pepsi was the beverage that had the greatest difference between the two weights. The eggshells soaked in Pepsi decreased in weight by 6.14 grams. Of the variables, coffee was the beverage that had the least decrease in weight. All the test variables that I used had a decrease in weight. .</p> <p>Conclusions/Discussion I found that my hypothesis was incorrect. Orange juice did not cause the greatest reduction of calcium in the eggshells. My results showed that Pepsi was the beverage that had the greatest difference between the two weights. I learned that some beverages, more than others, could be unhealthy to tooth enamel. Pepsi is the beverage that will do the most harm to your teeth. People should be aware that some beverages will cause acid erosion if consumed over a long period of time. Consumers should be selective about the beverages they choose to drink.</p> | |
| Summary Statement The effects of different beverages on reducing the calcium levels of eggshells and how it may relate to tooth enamel. | |
| Help Received High School Biology teacher let me use his scale. | |