



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Wyatt H. Spence	Project Number J0419
Project Title Does the Type of Container Affect the Amount of Vitamin C in Orange Juice?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Vitamin C or Ascorbic acid is an important nutrient that keeps your body healthy. Ascorbic Acid is a water soluble vitamin that can be destroyed. The way foods are stored could affect whether or not the vitamin is protected. Containers that protect the vitamin from light like cardboard may keep more Ascorbic Acid in the food. Orange Juice is one of the best sources of Ascorbic Aid. It is possible that a transparent container like glass could let in enough light to destroy some of the vitamin C. In this project I compared opaque and transparent containers to see if they would affect the amount of Ascorbic Acid remaining.</p> <p>Methods/Materials In this project I tested 100 samples of Fresh Squeezed Orange Juice. Fifty 1 ounce samples in opaque containers. Fifty 1 ounce samples in transparent containers. I let these samples sit in a Household Refrigerator under normal use by a family of 4 for 7 days. I tested the samples for Ascorbic Acid content using a titration method. A starch solution was added to each sample. When the iodine was added it reacted with the Ascorbic Acid and resulted in de hydro ascorbic acid. This has no color. When the Ascorbic Acid ran out, the iodine reacted with the starch in the juice and the juice turned a blue color. When the juice turned blue, that was the endpoint. I counted the number of drops of iodine that had to be added. The more drops of Iodine, the more Ascorbic Acid. My Independent variable is the type of Container, and the dependent variable is the amount of Ascorbic Acid that is left in the Orange Juice.</p> <p>Results The results of my testing revealed it took 20 drops on average for the Transparent container to change, and It took 30 drops on average for the Opaque container to change. The Opaque container retained 33% more Vitamin C than the Transparent container.</p> <p>Conclusions/Discussion These results support my hypothesis That an opaque container would retain more Vitamin C. This information could be very useful to the consumer.</p>	
Summary Statement In this project I revealed that purchasing Orange Juice in an opaque container could retain 33% more Vitamin C than a transparent container.	
Help Received My mother purchased the supplies I needed.	