



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Jonathan D. Kroger	Project Number J0513
Project Title Which Juice Has the Most Vitamin C?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my project was to determine which fruit juice contains the highest vitamin C content. It was my belief that fresh squeezed orange juice would have a higher vitamin C content than any other juice.</p> <p>Methods/Materials An indicator was created by combining .1 grams of dichloroindophenol with 100 ml. of distilled water. Eight test tubes were filled halfway with the indicator solution and placed in a rack. To the first test tube, a vitamin C solution (ascorbic acid and water) was added with a dropper, changing the color of the indicator from blue to the color of the vitamin C solution (clear). In the remaining seven test tubes, one of seven fruit juices was added, also changing the indicator color from blue to the juices' natural color. The number of drops needed to alter the color of the indicator was noted, the lower number of drops reflecting a higher vitamin C level. The juices used were: store bought orange, grapefruit, and tomato juices; fresh squeezed orange, lemon, and lime juices; and frozen orange juice from concentrate.</p> <p>Results The results supported my hypothesis that fresh squeezed orange juice contains the highest level of vitamin C. However, the store bought tomato juice had nearly as much. The remaining juices ranking in order from greatest to least were: store bought orange juice, fresh lemon juice, frozen orange juice from concentrate, store bought grapefruit juice, and fresh lime juice.</p> <p>Conclusions/Discussion My conclusion is that of the juices I tested, fresh squeezed orange juice contained the highest levels of vitamin C. Since the store bought tomato juice had almost as much vitamin C as the fresh squeezed orange juice, I can assume that fresh tomatoes may be the best source of vitamin C. It is crucial to maintain an adequate vitamin C level for optimal health. Failure to do so will result in scurvy, as well as other health problems.</p>	
Summary Statement My project is about testing the vitamin C levels in various fruit juices.	
Help Received My mother helped with typing and proofreading and my father assisted in gathering supplies.	