



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Page B. Benoit	Project Number J0602
Project Title Some Like It Hot: The Effect of Temperature on Taste Perception	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to determine if temperature affects the perception of sweetness. My hypothesis was that, when given two solutions of varying sweetness, a taster would be able to identify the sweeter solution with greater accuracy as the temperature of the solution increased.</p> <p>Methods/Materials I prepared six solutions of varying sugar-water ratios: 12%, 13%, 14%, 15%, 16% and 17%. The solutions were given to tasters at four different temperatures: 10 degrees Fahrenheit (Freezer), 40 degrees F (Refrigerator), 66 degrees F (Room Temperature), and 110 degrees F (Hot Bath). I used a sip and spit method in which tasters were given two cups at a time and asked to identify which solution was sweeter. The solutions were given in the following pairs: 13%-14%, 15%-17%, and 12%-16%. In the end, each taster had three opportunities to make judgments about sweetness at each temperature. I tested 18 healthy males and females, all under the age of 16.</p> <p>Results The test results showed that as temperature increased, the taste tester's ability to perceive sweetness increased as well. At 10 degrees F, tasters identified the sweetest solution with 49% accuracy, at 40 degrees F with 77% accuracy, at 66 degrees F with 79% accuracy and at 110 degrees F with 82% accuracy.</p> <p>Conclusions/Discussion The test results supported my hypothesis. As the temperature increased, the taster's ability to perceive sweetness increased as well. This is important information for the food industry to take into consideration when developing food that will be pleasing to consumers. Arlene Higgins from Humboldt Creamery confirmed that they do consider temperature when making ice cream. When the product is cold, the general rule is that it takes more flavor, and generally more sweetness, for optimal perception</p>	
Summary Statement My objective was to determine if temperature affects the perception of sweetness.	
Help Received My mother typed my project.. I consulted Dr O'Gara at Humboldt State University regarding my test design	