



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> <b>Emily L. Dolson</b>	<b>Project Number</b> <b>J1004</b>
<b>Project Title</b> <b>Are 31 Flavors Really So Great? The Effects of Long-Term Flavor Variety on Rat Eating</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The aim of my project was to find out whether rats would eat more of a single kind of food over the course of a week when given that food in a variety of flavors.</p> <p><b>Methods/Materials</b> The subjects for this experiment were my five female pet rats, 6 to 9 months in age. They were housed together in a large cage with water but no food. Every night for four consecutive weeks, I placed the rats in separate feeding cages for six hours, and provided each with as much laboratory rat chow and water as they wanted. Each night, before measuring fresh food into the bowls, I weighed the food that was left over from the night before (including all spillage I could collect) to see how much each rat had eaten.</p> <p>I flavored the food with sugar-free syrup. For weeks 1 and 3, I gave the rats only macadamia-flavored food. During weeks 2 and 4, I gave the rats three flavors (macadamia, raspberry, and vanilla) in three separate bowls. I chose these three flavors as a result of some preliminary tests to see what flavors the rats seemed to like equally well. These preliminary tests also got the rats comfortable with the eating cages and the laboratory rat chow.</p> <p><b>Results</b> The rats ate an average of 17.5 grams per day during the first single-flavor week and an average of 17.6 grams per day during the second single-flavor week. In contrast, they ate an average of 21.2 grams per day during the first variety week and an average of 20.4 grams per day during the second variety week. This increase is statistically significant at the 0.025 level according to a t test that I performed.</p> <p><b>Conclusions/Discussion</b> Rats do eat more of a single food over a long-term period when given a variety of flavors. This means that changes in eating in response to different diets may be partly due purely to changes in flavor variety, independent of nutritional effects.</p>	
<b>Summary Statement</b> My project tests whether rats will increase the amount they eat purely as a result of having access to a wider variety of food flavors.	
<b>Help Received</b> Dr. Tony Deutsch told me about the over-eating problem and answered my questions about experiments with rats. My mother helped me clean the cages and measure the food each night. My father helped me with the data analysis and document review. He also helped me figure out my procedure.	