



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Pallavi Bekal	Project Number J1304
Project Title Mother Knows Best: A Study of the Health Benefits of Spicy Cooking	
Abstract Objectives/Goals People in equador regions use spices in food preparation for thousands of generations. By using these spices, are they keeping themselves healthy by keeping their food "clean?" My objective is to find out if spices have the ability to kill food-spoilage microorganisms. And if they do, which spices are most effective and by how much? This is what I plan to find out after I have conducted my experiment. Methods/Materials My experimental setup was designed to test volatile emission from the spices. After obtaining agar dishes, E. coli, and sterile swabs from CSUF, I carefully streaked E. coli on all of my dishes. Then I turned them upside down and I applied 1/4 tsp. of spice on the lid. I used all of the following spices: cinnamon, garlic, mustard, black pepper, coriander, lemon juice, and chilli powder. Then I left my dish at 27 degrees Celsius for 4 days. I had three replicates. Results The results of my experiment show that not all of the seven spices used were effective. Complete Inhibition- coriander 100%. Partial Inhibition- mustard 83%, cinnamon 67%, lemon juice 67%, black pepper 17%, and garlic 17%. None- chilli powder 0%. Conclusions/Discussion According to my results, spices do have antibacterial properties, but not all of them. This is potentially beneficial in tropical countries that have ineffective food storage methods.	
Summary Statement The purpose of this project is to see whether spices have antibacterial properties.	
Help Received I would like to thank Dr. Schreiber from CSUF for advising me on what species of bacteria to use and for providing me with the needed materials for this experiment. I would also like to thank Mr. Karsevar for allowing me to work on this project during class and for helping me fill out the forms.	