



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Sahar H. El Abbadi	Project Number J1307
Project Title Chicken Sushi: A Good Idea? A Study of Bacteria Growth in Varying Acidic Environments	
Abstract Objectives/Goals The objective of my project was to discover the effect that liquids of different acidities would have on the growth of bacteria found on raw meat. It was predicted that the stronger the acid, the more the growth of the bacteria would be inhibited. Methods/Materials Petri dishes were prepared with an agar-broth mixture. Six different solutions, water, vinegar, 0.5 normal HCl, 1 normal HCl, pure lemon juice, and lemon juice diluted with an equal part of water, were prepared, and their pH measured. Pieces of chicken, each approximately 1 cubic centimeter, were placed in each liquid for two minutes. The chicken pieces were then removed, and each one rubbed over the surface of a Petri dish. Other pieces of chicken not dipped in any solution, were also rubbed against the surfaces of five Petri dishes, for comparison. The Petri dishes were then sealed. After four days, the lids were removed from the Petri dishes, and the percent of surface area covered in visible bacteria colonies was measured. Results There were no visible bacteria colonies on the surfaces of the Petri dishes rubbed with chicken dipped in 1 normal HCl, while the 0.5 normal HCl showed the next least amount of bacteria growth. The Petri dishes rubbed with chicken dipped in pure lemon juice had a larger amounts of bacteria than those rubbed with chicken dipped in diluted lemon juice and vinegar. The Petri dishes rubbed with chicken dipped in water grew the most bacteria out of the chicken dipped in any solution, while the Petri dishes rubbed with chicken not dipped in anything had the most bacteria. Conclusions/Discussion My conclusion is that stronger acids tend to inhibit bacteria's growth, unless there is another affecting factor, such as the sugar in the lemon juice, which seems to have affected the speed at which the bacteria grew.	
Summary Statement This project is a study of the effect that different acidic solutions have on the growth of bacteria found on raw chicken.	
Help Received Mother sterilized materials in pressure cooker; Dr. Martina Michenfelder of UCSB supplied HCl.	