



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Neil Bhambi	Project Number 22358
Project Title What's on Your Plate?	
Abstract Objectives/Goals The object of my project was to find out how the growth of E. coli on meat was affected by various cooking methods and storage time. I thought that the growth of E. coli in meat would decrease with the increase of cooking temperature, and when meat got stored at room temperature, will result into greater amount of bacterial growth. My hypothesis was based on the fact that increased temperature destroys bacteria and mesophilic bacteria like E. coli thrive at room temperature. Methods/Materials I tested my hypothesis by using quantitative dilution method. E. coli bacteria was inoculated onto the ground beef and mixed in thoroughly. I took the raw meat (Control) and blended it in 99ml of sterile water. Then I pipetted out 1ml of aliquot until 10 dilution. Then, I further diluted it by taking 0.1ml aliquot from the mixture to put on the Petri dish and spread it. I carried out the same process with varied meat: Medium Rare (60 C), Medium (71 C), and Well Done (77 C), incubated over a period of 2 days. I observed and recorded the Petri dishes. I conducted this experiment for storage time (8hours and 12 hours) at an ambient temperature. I observed the cultures and observed three different morphologic bacteria. I used isolated pure culture technique to study further different organisms. After obtaining pure culture gram stain study was done under microscope. Results Consistently, it was found that as cooking time increased, less bacteria was found present in my samples. Conclusions/Discussion My hypothesis proved to be correct. Meat that was cooked showed less amount of bacterial growth than Raw (Control). The meat left after 12 hours had the most amount of bacterial growth.	
Summary Statement The object of my project was to find out how the growth of E. coli on meat was affected by various cooking methods and storage time.	
Help Received I used a local hospital lab for microscopic study of organisms under the supervision of a registered microbiologist.	