



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Jesse J. Rothbard	Project Number J1427
Project Title Antibiotic Resistant Bacteria on Chickens: Are Organic and Nonorganic Store Bought Birds Equally Infected?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goals of these studies were 1. to determine whether antibiotic resistant bacteria could be isolated from store bought chicken breasts, 2. to determine whether organic products had less antibiotic resistant bacteria than nonorganic chickens</p> <p>Methods/Materials Two different types of organic and nonorganic chicken were swabbed, the resultant bacteria were incubated overnight and streaked on agar plates, with and without five different antibiotics to determine whether any organisms in the population were antibiotic resistant.</p> <p>Results 1. No bacteria grew on the control plates, where samples from the chicken were not applied to the agar, but because all other variable were held constant, I can conclude all bacteria arose from the surface of the chickens. 2. Antibiotic resistant bacteria were isolated from the surface of each chicken. 3. The organic chicken samples had a smaller range of antibiotic resistant strains and fewer colonies than samples from nonorganic chickens. 4. Bacteria resistant to ampicillin, kanamycin, streptomycin, and tetracycline were observed. No bacterium isolated was resistant to chloramphenicol.</p> <p>Conclusions/Discussion I could conclude that all bacteria observed on the plates arose from the bacteria because nothing grew on the control plates. More antibiotic resistant bacteria was isolated from nonorganic chicken than the organic samples, and they were resistant to a wider range of antibiotics. Even though I do not know which, if any, antibiotics were given to the chickens used in this study, ampicillin, kanamycin, streptomycin, and tetracycline are routinely included in chicken feed. In my limited research, I could not find any example of chloramphenicol being included in chicken feed. In this study, bacteria were found resistant to all antibiotics with the exception of chloramphenicol. A interesting correlation.</p>	
Summary Statement I found that there were more antibiotic resistant bacteria on the surface of store bought organic than nonorganic chickens and the resistance were to antibiotics routinely added to chickenfeed.	
Help Received My father was able to provide me all the reagents used in this experiment. The LB broth, the agar, the antibiotics, and the sterile swabs. In addition, I used an autoclave and 37oC incubator that were in his laboratory.	