



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Joseph W. Valdez	Project Number J1335
Project Title Does Oregano Oil Have an Antibiotic Effect on the Bacillus cereus bacteria?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My research was to determine if Oregano oil works as an antibiotic on the Bacillus cereus bacteria because there are claims on the Internet that Oregano oil, through its primary ingredient carvacrol, is effective as an antibiotic on the majority of bacteria. However, my hypothesis is that Oregano oil does not have an antibiotic effect on the Bacillus cereus bacteria.</p> <p>Methods/Materials Following the Kirby-Bauer Disk Diffusion Method, I placed a filter paper disk soaked in Oregano oil (Carvacrol 6 mg), five other disks with known antibiotics (Chloramphenicol 30 mcg, Penicillin 10 mcg, Gentamycin 10 mcg, Ampicillin 10 mcg and Tetracycline 30 mcg) and a control disk in a petri dish with the Bacillus cereus culture in a nutrient agar solution. I covered the petri dish and let it stand at room temperature. I then measured any growth inhibition zones around these disks after 24, 48 and 72 hours.</p> <p>Results There was no growth inhibition zone around the disk with Oregano oil. However, growth inhibition zones were found around the following disks: Chloramphenicol (2.5 cm), Gentamycin (2.0 cm), and Tetracycline (1.0 cm). These zones appeared after 48 hours and remained the same size after 72 hours. The disks coated with Penicillin and Ampicillin did not have growth inhibition zones around them. Also, as expected, there was no growth inhibition zone around the control disk.</p> <p>Conclusions/Discussion My hypothesis is supported. Oregano oil does not have an antibiotic effect on the Bacillus cereus bacteria. We must, therefore, continue to be wary of any generalized and unsubstantiated claims of the effectiveness of any herbal product like Oregano oil because these claims are not subject to review and approval from the Food and Drug Administration. Self-medication by relying on these claims can have serious side effects in addition to the untreated original condition possibly worsening. In the future, I would like to research and test Oregano oil on other bacteria such as E. coli and Staphylococcus. I can also conclude that not all antibiotics are effective against the Bacillus cereus bacteria.</p>	
Summary Statement My project was about researching and testing whether Oregano oil had an antibiotic effect on the Bacillus cereus bacteria.	
Help Received Mom supervised my research and my handling of the bacteria culture. Dad helped me select the topic and type the report.	