



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Mirza H. Baig	Project Number J1401
Project Title The Effects of Herbs and Natural Remedies on Staphylococcus aureus: Year 2	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals There are nosocomial infectious bacteria like the Staphylococcus Aureus which no know antibiotics kill. It would be crucial to find an alternative use of potential killer for these types of bacteria. The objective is the possibility of finding natural alternatives for S. Aureus and/or no known antibiotic can destroy. It is hypothesized that the effect of natural herbs may be close to Amoxicillin to kill the S. Aureus.</p> <p>Methods/Materials To prove this theory, Staphylococcus Aureus was grown in Petri dishes with samples of Goldenseal Root, Echinacea Goldenseal mix, Fenugreek, Amoxicillin, along with Distilled water as control. The experiment was performed using sterile procedures working close to a flame and using isopropyl alcohol as needed. The Petri dishes were prepared with TSA and streaked with S. Aureus. Filter disks were dipped in samples of the Goldenseal Root, Echinacea Goldenseal mix, Fenugreek, Amoxicillin, along with Distilled water were applied. The Petri dishes containing the bacteria, herbs/Amoxicillin were incubated at 37 degrees C (TSA as medium), and examined after 24 and 48 hours for zones of inhibition. To be able to validate any of the findings, the experiment was performed four times.</p> <p>Results The results showed that Amoxicillin and goldenseal root inhibited the growth of Staphylococcus Aureus. The observations demonstrated that Goldenseal Root had average 6mm zone of inhibition around the disk and Amoxicillin had an average of 20mm zone of inhibition.</p> <p>Conclusions/Discussion The Goldenseal Root had substantial effect on the Staphylococcus Aureus this might synergistically improve the effect of the Amoxicillin or be used as an alternative so the antibiotic resistant strain. These results proved the hypothesis correct, therefore proving that the Goldenseal herb actually prevents bacterial growth. This research with the possibility of finding natural alternatives for bacterial infections without the harmful side effects of traditional medicine is favorable. This year's experiment showed that there may be a cure for antibiotic resistant S. Aureus. This means by using the Goldenseal Root, it might be possible to synergistically increase Amoxicillin's effect on S. Aureus.</p>	
Summary Statement The objective is the possibility of finding natural alternatives for Staphylococcus aures without the harmful side effects of traditional medicine.	
Help Received This experiment was performed at the City of Knowledge School's Science Lab under the supervision of my teacher Laila Shahrestani and my mother Fatima Baig. My mother also helped in the typing.	