



# CALIFORNIA STATE SCIENCE FAIR

## 2009 PROJECT SUMMARY

Name(s) <b>Mohamed A. Ibrahim</b>	Project Number <b>J2111</b>
<b>Project Title</b> <b>Which One to Use?</b>	
<b>Objectives/Goals</b> My project's objective is: Will different types of antiperspirant gel deodorant affect the growth of bacteria? Does deodorant have an affect on bacteria.	<b>Abstract</b> The abstract section is currently empty.
<b>Methods/Materials</b> MATERIALS: 4 ml droppers; 1 liter of agar; someone's armpit; 20 Petri dishes divided in 4; Gillette antiperspirant gel deodorant; Right Guard antiperspirant gel deodorant; Speed Stick antiperspirant gel deodorant; Large ice chest; Lamp; Red, green, black fine tip Sharpies; Box of Q-tips; Thermometer.	PROCEDURE: Number first Petri dishes with a black sharpie, number each section on the side 1 through 4; 2. Do step 1 to the other four Petri dishes; 3. Do step 1 but with red sharpie to another five Petri dishes; 4. Do step 1 but with green sharpie to the other five Petri dishes; 5. On the top of the Petri dishes number them 1 through 5; match all the colors black with black, red with red, and green with green; 6. Place the lamp and the thermometer in the ice chest, and turn the lamp on, to heat the ice chest up to 90 degrees F. 7. Using 1 dropper take 7.5 ml of agar and place it in each section of all the Petri dishes; 8. Take the Q-tips and swab against an armpit for 5 seconds; 9. Swab the bacteria onto the Petri dishes in 1 section; 10. Do step 8 and 9 to the other 44 sections; 11. Put deodorants in droppers (use one dropper for one type of deodorant); 12. Label the droppers; 13. Put .5 of Gillette in each section numbered with the number one; 14. Put .5 of Right Guard in each section numbered with the number 2; 15. Put .5 of Speed Stick in each section numbered with the number 3; 16. Place the Petri dishes into the ice chest; 17. Turn the lamp inside the ice chest on and off every 30 minutes; 18. Turn off the lamp overnight and keep the ice chest tightly closed.
<b>Results</b> All three types of deodorant reduced the amount of bacteria; however Speed Stick deodorant inhibited bacterial growth the most.	
<b>Conclusions/Discussion</b> My experiment relates to my research, because it proved all three types of antiperspirant deodorant did lessen the amount of the bacteria. The main active ingredient in antiperspirant deodorants compound is aluminum. Aluminum enters through the pores and temporarily blocks the sweat ducts, stopping the flow of sweat from the sudoriferous glands to the surface of the skin.	
<b>Summary Statement</b> My project is about the affect of three different types of deoderant on bacteria.	
<b>Help Received</b> My teacher helped me order the agar( used for culturing bacteria) off the internet.	