CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J1330

Project Title
Ethyl Alcohol vs. E. coli

Abstract

Objectives/Goals
My objective is to determine if the amount of Ethyl Alcohol in soap will affect the amount of E. coli killed/removed when washing hands with the soap. My hypothesis is that the more Ethyl alcohol used when making soap, the more E. coli will be killed/removed.

Methods/Materials
To achieve my objective, I prepared three soaps, each containing 30ml Castor oil, 10ml 40% NaOH, and 100ml saturated NaCl with a different amount of Ethyl Alcohol:10ml,30ml,50ml. To test each soap I soaked my hand in E.coli suspencion then washed my hands with one soap. After washing, I blotted my hand on one sheep blood agar plate (commercially made). I repeated this process with the two other soaps and incubated all plates at 35°C for 24 hours.
I used antibacterial soap in between the process to avoid carry over of bacteria present.

Results
All plates had almost the same amount of E. coli growth. The average growth of E. coli for the 30ml soap was 1 colony, the 50ml soap was 1 colony, and the 10ml soap was 2 colonies.

Conclusions/Discussion
After several tests and observations I was able to determine that the amount of Ethyl alcohol in each soap did not affect the amount of E. coli killed/removed, proving my hypothesis incorrect.

Summary Statement
Will the amount of Ethyl alcohol in soap affect the amount of E. coli killed/removed when washing hands?

Help Received
Used laboratory equipment at Quest Diagnostics under the supervision of Julie Sotomayor, Microbiologist.