CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
J1725

Project Title
Investigating Bacteria Contamination Levels on Different Coins Exposed to Various Environments

Abstract

Objectives/Goals
The purpose of my project is to compare the effects of various environments on the contamination level of different coins. This is a second year study, I am furthering my investigation by including different coins and by placing the coins tested directly onto the petri dishes. The reason that I am doing this experiment is to determine whether the metal composition of coins is a factor in keeping bacteria from growing.

Methods/Materials
I conducted my experiment by using sterilized Q-tips, Petri dishes containing agar, pennies, dimes, nickels, quarters, silver dimes, gloves and subbing alcohol.
I gathered samples from a lake, soil, and placed coins in students hands. I placed 20 of each coin in the different environments for 24 hours. The coins tested on human hands, where handled by students for 10 minutes. I swabbed the coins onto a petri dish and place coins directly onto the agar. After 48 hours I counted the bacteria colonies using a grid and a mathematical formula. I completed 10 trials.

Results
The results of my investigation concluded that the average amount of bacteria counted on nickels in the lake water had an average of 1,416 bacteria colonies. Quarters in the lake water had an average of 1,150 bacteria colonies. Pennies tested in lake water and placed on top of agar had an average of 20.8 bacteria colonies. Silver dimes and quarters tested in lake water and placed on agar had an average of 11.1 bacteria colonies. Dimes tested in soil had an average count of 24 bacteria colonies. Pennies tested in soil and placed onto the agar had an average 2.4 bacteria colonies. The human hand environment tested with silver dimes had an average of 190 bacteria colonies while quarters had .8 average bacteria colonies. Pennies tested on human hands had an average of 23.2 bacteria colonies and quarter had 12.4 bacteria colonies placed onto agar.

Conclusions/Discussion
After completing my investigation I found that quarters tested on human hands and swabbed onto the agar had the least amount of bacteria colonies. I learned that the coins tested in the environments and then placed onto the agar had less bacteria growth than the coins that were swabbed.

Summary Statement
This project is about testing wheter or not metal in coins can block bacteria from growing.

Help Received
Carl Gong