CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J1301

Project Title
Bacteria Affected by Ultra-Violet Light

Abstract

Objectives/Goals
My objective was to see what the affect was of ultra-violet light on bacteria. I hoped that the bacteria would get killed, and wanted to see a decrease in bacteria colonies.

Methods/Materials
I first collected water samples at Arroyo Burro Creek. I immediately took the first sample with the water untouched by the UV light. I exposed the water sources to the light for 24 hours, taking samples of bacteria at 1 hour, 6 hours, 12 hours, and 24 hours. When completed, I took the samples to the microbiology lab of Cottage Hospital. My bacteria samples were incubated for 24 hours. I was then able to count colonies and record my data.

Results
The results I recieved weren't exactly what I wanted. After the first trials, there was a slight decrease in colonies, and then the numbers went back to even higher than the original sample. I repeated the experiment with a higher intensity lamp, and realized that now the colonies continued to decrease throughout the entire experiment.

Conclusions/Discussion
After being unsatisfied with my results, I decided to look on the Internet to find any information about the methods the city was proposing to use. I found exactly what I was looking for. I knew that I needed to have a higher intensity lamp, and my light was only 15 watts. I knew that Energy = Watts / Distance squared, (E=W/D^2), so I decreased the distance between the UV lamp and the water source. I learned that even the slightest difference in methods could prove devestating.

Summary Statement
My project is about the affect of ultra-violet light on bacteria of Arroyo Burro Creek.

Help Received
Lab equipment at Cottage Hospital Microbiology Lab, with help from Marian Jean, Microbiologist.