CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J1306

Project Title
Bacterial Levels Compared to Distance from Mission Bay Storm Drains

Abstract

Objectives/Goals
My hypothesis is that water near the information center will be more polluted with E. coli and coliform bacteria the closer one gets to the storm drain. I am testing the levels of and coliform bacteria and E. coli, both found in human and animal fecal waste. I will see if the bacteria is more concentrated the closer one gets to a Mission bay storm drain.

Methods/Materials
I collected water samples at the mouth, 150 feet, and 300 feet North and South of two Mission Bay storm drains (the Information Center and De Anza Cove) on ten different occasions. I brought the samples to the microbiology lab at San Diego Mesa College. There I labeled and plated 100 microliters of the collected water samples onto EMB agar petri dishes. They were incubated for 24 hours to allow for the growth of the E.coli and coliform bacteria.

Results
My results showed that there was more bacterial contamination at the Information Center storm drain compared to the storm drain at De Anza cove. The average coliform count at the Information Center was slightly higher then at De Anza Cove, but the E.coli levels averaged five to tens times higher at the Information Center.The results of E. coli supported my hypothesis in that there was a greater concentration of bacteria at the mouth of the storm drains compared to 150 and 300 feet away

Conclusions/Discussion
The levels of coliform bacteria were the highest 150 feet away from the mouth of the Information Center storm drain and 300 feet away from the mouth of the De Anza Cove storm drain.

Summary Statement
I tested water sample for bacteria to see if distance from storm drains affected their number.

Help Received
The microbiology lab at San Diego Mesa College. My father, William Brothers, was the supervisor.