CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
Etta L. Grover-Silva

Project Number
22275

Project Title
Does Rainfall Affect the Amount of Coliform in Janes Creek?

Abstract

Objectives/Goals
My objective was to learn if rain effected the amount of coliform bacteria in Janes Creek.

Methods/Materials
Water samples were taken from three different sites along Janes Creek before rainfall. Samples were put through Presumptive and Confirmed Tests to determine the Most Probable Number of coliform per 10t ml of water (MPN/100 ml) and to identify the type of coliform. These steps were repeated after it rained| one inch in 48 hours.

Results
There was a huge increase in coliform after it rained. Before rain, Site 1 had an MPN/100 ml of 240, Sit| 2 had an MPN of about 240. Site 3 hand an MPN of 23. After rain, Site 1had and MPN of more thant 4,400 and the bacteria was all E. coli. Site 2 had an MPN of more than 2,400 and less than 11,000. Site | had an MPN of more than 2400 and less than 11,000. The bacteria in the medium from Site 3 product less gas and less cloudiness than Site 3, leading me to think Site 2 had more coliform than Site 3.

Conclusions/Discussion
The location and surrounding geography of each site were the main factors in the amount of increase and type of coliform present. Site 1 had a cow pasture right next to it leading to the large increase in E. coli from fecal contamination. Site 2 was not located next to any cow pastures so all the run-off that ran in| the stream only contained sediment leading to the increase in E. aerogenes. Site 3 was also not located near any cow pastures and is below a logging area leading to a lot of sediment in the creek and a large increase in E. aerogenes. If I were to do this experiment again I would order or make my own media to have more tubes and plates so I could repeat my experiment.

Summary Statement
I studied the Effect of Rainfall on the Amount of Coliform Bacteria in Janes Creek.

Help Received
Used lab equipment at Humboldt State University under the supervision of Dr. Patricia Siering.