



CALIFORNIA STATE SCIENCE FAIR 2006 PROJECT SUMMARY

Name(s) Alexander A. Bennett	Project Number J0904
Project Title E. coli and the Carmel River	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To find out if the amount of E. Coli bacteria in the Carmel River changes with the location, and whether the amount of E. Coli becomes greater farther up or closer to the mouth of the river, and if the rain lessens or dilutes the colonies. My hypothesis was that the amount of E. Coli would become greater farther down the river as I took samples and that the rain would lessen and dilute the colonies.</p> <p>Methods/Materials To find out if my hypothesis was correct I took water samples on November 13, 2005 from Sleepy Hollow, Rosie#s Bridge, Garland Park, the Mid-Valley Center, and two locations at the Carmel River Lagoon. I then took 1 ml of water from each location and added it to the Petri dish filled with Coli Scan Easy gel which corresponded with each location. I then left the dishes in a warm room to incubate for two days. After two days I recorded the amount of Coliform (purple) that I found in each location. I repeated the process on January 7, 2006 after a long period of rain.</p> <p>Results In Sleepy Hollow, I found 19 E. Coli colonies per 1 ml of water before the rain, and 3 colonies after the rain. At Rosie#s Bridge I found 29 colonies before the rain and 3 colonies after the rain. In Garland Park, I found 6 colonies before the rain and 2 after. At the Mid-Valley Center, I found 17 colonies before the rain, 15 after. In the marsh, (tulle) section of the Carmel Rive Lagoon, I found 3 colonies before the rain and 3 after. At the very mouth of the river, I found 3 colonies before the rain and zero after.</p> <p>Conclusions/Discussion I have concluded that the amount of E. Coli changes with the amount of civilization, and that the Carmel River Lagoon is the safest place to swim in terms of E. Coli concentrations. Rosie#s Bridge and The Mid-Valley Center are the least safe places to swim in, due to the fact that they have large amounts of civilization, including septic tanks, nearby. My hypothesis that the amount of E. Coli would increase as one gets closer to the mouth of the Carmel River appears to be incorrect. However, my hypothesis that the rain will lessen and dilute the colonies appears to be correct.</p>	
Summary Statement My project is about finding out how the number of E.coli in the Carmel River is affected by the distance from the mouth of the river, and how the rain affects the colonies.	
Help Received My mother drove me to the various sites along the Carmel River and purchased the materials. Mr. Smith, my science teacher, provided general guidance.	