CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
J1602

Project Title
Microorganisims beneath the Santa Clara River

Abstract

Objectives/Goals
The objective of this project was to observe and compare the different microorganisms in the Santa Clara River.

Methods/Materials
Observed Winogradsky columns made from one-liter bottles containing Mud or dirt samples from various locations along the river and water from source locations or tap. Egg yolk and newspaper nutrients were added as carbon and sulfer sources for the microbes. Documented using a camera for 12 weeks at a temperature range. The independent variable was the soil. The constants were the temperature and the amont of ingredients.

Results
The results showed the microbe growth in the Windogradsky columns did not vary compared to each other and that the salt water did not affect the microoganisms in the soil. Some pigmentation and coloring of the microbes developed, but no main difference occurred between the samples. Hypothesis that saltwater near the mouth of the river would affect microorganisms which in turn impact vegetation and wildlife was refuted. Vegetation and wildlife around the Santa Clara River did not vary as much as expected.

Conclusions/Discussion
Microbes in the Winogradsky columns formed over a period of 12 weeks and although the hypothesis was refuted the results are important because they show the different types of bacteria and vegetation/wildlife around the Santa Clara River which may impact how farmers and residents use the river. It may also influence people to be aware of the wildlife and vegetation on the river.

Summary Statement
I observed and compared microorganisms in the soil along the from Santa Clara River using Winogradsky columns to determine if they influence the environment..

Help Received
I built the columns myself and gained an understanding of the how Winogradsky columns work through my research.