CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35017

Project Title

Is It Safe to Place Your Mouth on the Water Fountains at Local Parks?

Abstract

Objectives/Goals

The objective is to determine if it is safe for people to place their mouths on the mouthpieces of water fountains located at six of the busiest parks in the Ukiah area; Todd Grove Park, Low Gap Park, Alex Thomas Plaza, Oak Manor Park, Vinewood Park, and West Fork Estates.

Methods/Materials

Sterile swabs circled a mouthpiece clockwise three times on eight water fountains. The fountains were from six of the busiest parks in the Ukiah Area-while both fountains were sampled in the parks that had an adult-height and kid-height fountain. Each was placed in a sterile container and plated on agar plates at 37 degrees Celsius for a 24-hour period. At the end of this time period, the colonies were counted and compared with four controls.

Results

75% of the sampled mouthpieces of water fountains grew bacterial colonies. Todd Grove Park grew one colony, Low Gap Park-adult fountain grew two colonies, Low Gap Park-kid fountain grew two colonies, Alex Thomas Plaza-adult fountain grew zero colonies, Alex Thomas Plaza-kid fountain grew three colonies, Oak Manor Park grew one colony, Vinewood Park grew one colony, and West Fork Estates Park grew zero colonies of bacteria. For the controls, the air-exposed plate grew two colonies, the plain agar plate grew one colony, the positive control grew 64 colonies of Enterobacter Aerogenes, and the negative control grew zero colonies of bacteria.

Conclusions/Discussion

The results of my experiment showed more colonies grew from the Alex Thomas Plaza-kid fountain. However, my agar-only control grew one colony and my air-exposed control grew two colonies. So, it is not certain whether my swabbed specimens produced bacterial colonies or whether this was due to air or agar contamination. But, I had three plates that produced zero bacterial growth-West Fork Park, Alex Thomas Plaza-adult fountain, and my negative control. If the agar or air was contaminated, there should have been growth on every plate. Therefore, I believe that my bacterial colonies may have been have produced by my swabbed specimens.

Summary Statement

My project is addressing whether there is too much bacteria to place your mouth on the mouthpieces of water fountains at six of the busiest parks in the Ukiah area.

Help Received

My mother helped drive me to locations and take pictures of me with specimens. Zee Hopper of Alpha Analytical Labs let me use her incubator, agar plates, sterile specimen bottles, colony counter, and facilities.

Preliminary