CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
Chip M. Thompson

Project Number
J1609

Project Title
Lemon-Aid

Abstract

Objectives/Goals
The objective is to find a solution to the large amounts of bacteria found in reused water bottles by determining if 4 millimeters of lemon juice will significantly inhibit the bacterial growth in water in reused water bottle

Methods/Materials
Twenty-three grams of dehydrated nutrient agar were prepared for used and poured into 12 petri dishes. After 24 hours, the lemon was cut in half. The lemon halves were squeezed into a bowl. All fourteen of the refresh# water bottles were emptied out and refilled with tap water. A dropper was used to add 4 milliliters of lemon juice into half of the water bottles. All of the bottles were shaken. After 5 hours, 12 unused droppers were used to transfer a 2-milliliter sample from each water bottle into the petri dishes. The droppers were used only once each to prevent cross-contamination. The observations of bacterial growth were recorded each day by the diameter and color.

Results
During the first day, there was no bacteria growth, but during the second and third days, the lemon water had less bacteria than the regular water. For seven out of the eight last days, the lemon water had more bacteria than the regular water.

Conclusions/Discussion
My conclusion is that 4 milliliters of lemon juice do not significantly inhibit bacterial growth in the water in reused water bottles. Even though lemon water does not completely stop bacterial growth in water, based on the results of the first few days, lemon juice may have a short-term effect on bacterial growth.

Summary Statement
My project involves the effect of lemon juice on bacterial growth in water in reused water bottles.

Help Received
Mother, father, and Mr. Mullen helped obtain supplies; Father helped prepare agar