CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
S1421

Project Title
The Effect of Triclosan on Artemia

Abstract

Objectives/Goals

This project is designed to determine if triclosan, an antibacterial agent found as the active ingredient in common household items such as toothpaste, antibacterial lotion, and soap, affects the size in length of Artemia (commonly known as seamonkeys) over time. Triclosan is washed down the drain and goes into Sewage Treatment Plant water. In this experiment, Artemia are hatched from cysts and raised under concentrations of 1000, 2000 3000, and 4000 micrograms per liter. A control of 0 micrograms per liter is also set up.

Under constants of temperature, amount of food, concentration of salt, and degree of light, I predicted that by increasing the amount of triclosan that Artemia are exposed to, their lengths would decrease. Since Artemia are so small as to be measured in micrometers, they are hard to identify. Thus fifteen of them are randomly selected from each concentration. Pipets were used to suck them out of their concentrations. They were placed in droplets in depression slides that were then put under a video microscope. Along with Motic 1.3 software, the video microscope took pictures of Artemia and measured their lengths from eye to tail.

The results were uncalled for; under concentrations of 2000, 3000, and 4000 micrograms per liter, Artemia cysts did not even hatch. They did survive, however, in 1000 micrograms per liter. The difference in Artemia#s size between that concentration and the control sample was obvious to my naked eye. The difference showed, too, in the actual measurements. Not only did increasing amounts of triclosan stunt Artemia#s growth but it inhibited it completely. There is no great concern now for actual amounts of triclosan ocean water is much smaller. However, species living in unfiltered lakewater may be victim to an antibacterial we as humans wash down the drain as we wash our cars.

Summary Statement

The effect of an antibacterial agent on brine shrimp.

Help Received

Teacher got my board.