CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY

Name(s)
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Project Number
J1403

Project Title
Poison Down the Drain: The Effect of Triclosan on Algae and the Environment

Abstract

Objectives/Goals
My objective was to see if the widespread household anti-micro bacterial, triclosan, will adversely affect the growth and population of freshwater species of algae. Throughout the course of my research, I formulated a hypothesis that the addition of triclosan will diminish the algae growth and population because triclosan inhibits and even stops certain functions that fungus, bacteria, and other organisms need in order for growth, reproduction, and survival.

Methods/Materials
Creating a solution of 20 micrograms/ liter by dilution with purified water, add 0.4, 0.6, 0.8, 1 percent concentrations of the solution to 20 milligrams of three freshwater algae species in test tubes (leave one of each specie for a control). I must then wait one day before testing the population of algae using a hemocytometer and counting the algae cells using a microscope. I shall continuously check after three days twice using a hemocytometer for a period of one week.

Results
As I measured the population of algae, I noticed a significant decrease of algae population in each category of species as the concentrations of the triclosan increased in comparison to the control. An interesting thing that caught my eye while I was taking an algae count was that the size and color of the algae was also being affected by the triclosan, as I saw that the increase of triclosan also caused the algae to decrease in size and take on a grey looking pigment.

Conclusions/Discussion
Due to the test results that I had gathered it appears that the triclosan significantly decreased the algae population in all species and at all concentrations. What was especially surprising was that on the last testing at the highest concentration, there were several instances where there was no trace of algae population left, so we can see the potent effect this chemical has. With these results we can see that the accumulation of triclosan in our waters can lead to the corruption of the algae population in the environment which in effect can disrupt the cycle of the ecosystem.

Summary Statement
Interestingly, even at minute concentrations, triclosan can have a potent affect on the population of algae.

Help Received