CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J0902

Project Title
Storm Drain Dangers?

Abstract

Objectives/Goals
My objective was to find out if different concentrations of stormwater runoff pollutants affect brine shrimp and algae differently.

Methods/Materials
The brine shrimp and algae were exposed to 2%, 5%, and 10% of antifreeze and .25%, .5% and 1% of ammonium nitrate. To measure the growth of the algae I counted the cells using a hemacytometer and digital microscope. The brine shrimp were measured by the number still living. Observations were taken daily for brine shrimp and every other day for algae.

Results
Low concentrations of Ammonium Nitrate don#t hurt algae as much as it hurts brine shrimp. Low concentrations of antifreeze help algae and brine shrimp in the long run.

Conclusions/Discussion
Different concentrations of antifreeze and fertilizer did have different effects but not as much as I had expected. There was a very small difference in the reactions of algae and brine shrimp to the different concentrations of fertilizer. I think that this was because the Ammonium Nitrate is very toxic, even at much lower concentrations. There was a bigger difference for the antifreeze. Most interestingly, the lowest concentration of antifreeze actually helped both the algae and the brine shrimp over the long run, after increasing the death rate for the brine shrimp for the first nine days. These experiments show how difficult it is to predict or measure the effect that any pollutant has on the ecosystem.

Summary Statement
Exposing brine shrimp and algae to stormwater runoff pollutants to see their different reactions.

Help Received
Father helped type report, take pictures and set up expirement; Mother suplied art for back board; Godfather helped set up expirement.