CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
S1511

Project Title
Toxicity of Methyl Iodide on Invertebrates

Abstract

Objectives/Goals
The objective is to determine if methyl iodide is toxic towards invertebrates. Methyl iodide is under consideration as a drop-in replacement for methyl bromide for use on plants requiring fumigation. Methyl iodide could, potentially, be used in our local strawberry fields. In contrast with methyl bromide, the liquid and water-soluble methyl iodide could end up in run-off from fields where it might interact with aquatic organisms.

Methods/Materials
I researched the effect that methyl iodide would have on two types of fresh water crustaceans, Daphnia and Amphipods. The crustaceans were exposed to a range of levels of methyl iodide from 0ppm to 3500ppm and the effect of the chemical on survival of the crustaceans was examined.

Results
I determined that methyl iodide killed all crustaceans over a 270 hour period, including the controls. As the concentration of methyl iodide decreased, the time that it took for the crustaceans to survive increased. These results indicate that at these concentration ranges methyl iodide is harmful to crustaceans. More testing is in process.

Conclusions/Discussion
If scientists and researchers decide to implement methyl iodide as a pesticide into the world of agriculture, they must be aware of its toxicity towards invertebrates. It potentially could affect other aquatic life because they feed on the lower organisms like crustaceans. As a result, if crustaceans are killed off through the use of methyl iodide, it eliminates the food source for other aquatic life forms. For that reason, it is important that if we do implement methyl iodide into agriculture, we must make sure that it#s at low concentrations

Summary Statement
The focus of my project is to determine if methyl iodide is toxic towards invertebrates.

Help Received
Used lab at the University of Channel Islands under the supervision of Dr. Hampton.