



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Gurleen K. Virk	Project Number J1036
Project Title Determining the Toxicity Level of Insecticide in Various Types of Water Conditions	
Objectives/Goals The objective of my project is to determine how toxic insecticide is in different types of water conditions. I used one insecticide, 6 different types of test variables of water, and I used daphnia, because they are sensitive to toxic materials.	
Abstract	
Methods/Materials Materials used: daphnia, containers, insecticide, graduated cylinders, stopwatch, eyedropper, freshwater, saltwater, refrigerator, and microwave. I had a control group, which had no insecticide in it. To make my water cold I put the water into the freezer for 135 seconds. To make the water hot I put the water in the microwave for 45 seconds. I filled a container with 300 mL of water and add stir in 3 mL of insecticide in it. Next, I added two daphnia to the water and observed how long it took for the daphnia to die. After the daphnia had died, I removed them and added two more daphnia the next day. I kept doing this till the death rate of the daphnia reached about 5 hours. I had 5 containers for each test variable. After the whole experiment was done, I disposed of the water and cleaned all the containers. Then, I did the whole experiment again so I had a total of 10 trials for each test variable. I only had one trial for my control groups.	
Results At the end of my project, I have learned that the daphnia I used did not live in salt water, so they died very fast. In the saltwater the daphnia died the fastest in cold water and the slowest in room temp. water. In the cold saltwater the daphnia died at an average death rate of 1.15 min in five days and in the room temp. the daphnia died at an average death rate of 2.025 min in five days. In the hot water the daphnia died at an average death rate of 1.925 min in five days. In freshwater the insecticide was the most toxic in the cold water and the insecticide was the least toxic in room temp. In the cold water the daphnia died at an average death rate of 151.5 min and in the room temp. water the daphnis died at an average death rate of 177.25 min. In the hot water the daphnia dies at an average death rate of 166.5 min in five days.	
Conclusions/Discussion I have learned that insecticide is toxic to aquatic organisms. I have also learned that we, the people who use and live in this planet, need to care for our environment. I have learned that insecticide is a major source of water pollution around the world, and if we don't do something now our water will be too polluted to drink or even touch it.	
Summary Statement I am determining how toxic insecticide is in various types of water conditions by using daphnia.	
Help Received Mother helped supplied equipment, Mr. Turman helped edit research and other papers, Mr Gong helped tweak project	