CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
Niree A. Hindoyan

Project Number
S1410

Project Title
Tell Tale Heart: The Effect of Varying Percent Solutions on the Heart Rate of a Daphnia

Abstract

Objectives/Goals
The purpose of this project was to identify the effect of sucrose, salt and caffeine on a Daphnia's heart rate. These experiments determined the affect these variables had on the increase or decrease of the water flea's heart rate. Experimentation involved placing Daphnia species onto depression slides and testing them with drops of different concentrations of sucrose, saline, and caffeine solutions (measured in ppm). Average heart rates were measured by multiplying the number of beats in 10 seconds by 6 to get the beats/minute. The results of the experiment showed that high concentrations of sucrose, salt, and caffeine drastically increased the Daphnia's heart rate. As the concentrations were diluted, the heart rate of the Daphnia decreased, reaching closer to the original heart rate. The results of the increasing of heart rate for sucrose and caffeine solutions supported the hypothesis, yet the results of increasing heart rate as a result of salty environments proved the hypothesis wrong.

Summary Statement
My project is to see whether percent solutions of sugar, salt, and caffeine have an affect on the heart rate of a Daphnia.

Help Received
Teacher, Ms. Heather Jones, helped order products and kept track of my experimentation; Teacher, Dr. Quinn helped with measurements; Parents as well as sister helped revise final draft; Classmates and friends helped with the timing portion of my project;