California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)
Hema Bajaj

Science Fair Use Only

J1601

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)
What Are the Effects of Different Amounts of Phosphate on Aquatic Plants?

Division
X **Junior (6-8)** _ **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)
16 - Plant Biology

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)
Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: The objective of this project is to see the effect of different amounts of phosphate on aquatic plants.
Materials and Methods: Built seven tanks with one-gallon milk cartons and put two aquatic plants, Egeria Densa, in each tank, securing them into the gravel. Clear Air Line Tubing, an Aquarium Air Pump, 7 Air Stone and Two Gang Valves were used as a water pump for the tanks. The tanks were labeled (letter designates tank and numeral designates the drops of phosphate received every 5th day) as follows: A(1), B(2), C(3), D(4), E(5), F(6), G(0). The tanks were given the selected amounts of phosphate every 5th day using a dropper pipette. Measurements were taken and graphed for the growth of each aquatic plant. A journal was also kept for daily observations, such as additional growth on the aquatic plants. The experiment was conducted over a twenty-five day period.
Results: After conducting the actual experiment, I learned that tank G (0), the control tank that received absolutely no phosphate, thrived throughout the period of experimentation. The average growth of tank F (6) that received the most phosphate during the experimental period grew second best. Tank C (3) grew the third best, and surprisingly tanks B (2) and E (5) grew the same, while tank A (1) grew second worst. Interestingly, tank D (4) grew the least.
Conclusion: The outcome was due to the fact that each plants species requires certain environment to thrive, that environment includes temperature, sunlight, chemicals, etc. and Egeria densa's optimal environment is either very high levels of phosphate or none. Due to these factors my hypothesis was proven wrong.

Summary Statement (In one sentence, state what your project is about.)
Since phosphate is an important component in fertilizers, I wanted to see if phosphate is beneficial to the growth of aquatic plants and in what quantites.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.
Father helped make backboard; Sister helped with notebook; information for research paper was collected at the University of California, Irvine