



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Amanda C. Kantor	Project Number J0916
Project Title Acid Rain: Friend or Foe?	
Objectives/Goals My objective is to observe the affects of four different pH levels on Water Hyacinths.	
Abstract	
Methods/Materials Materials: 1 thermometer 1 10ml syringe 4 7.5L buckets 20 2.0L containers 1 2L metric measuring cup 1 camera 20 Water Hyacinth plants 1 metric area template 1 2.5m table 330ml lemon juice 1 1.5m fluorescent light 1 pH tester	
Procedure: A. Set up 20 Water Hyacinth plants in separate containers containing 1.5L of water near a window receiving bright light. B. Samples 1 - 5 are kept in a neutral pH 7.0 environment. Samples 6 - 20 are divided into three pH levels of 6.5, 5.5, and 4.5. C. Samples are observed over a six-week period. The progression of brown spots on the samples' leaves are measured and recorded weekly, using the metric area template. D. Calculate the percentage change of brown areas for each plant.	
Results The plants exposed to the 7.0pH level of water showed the most distress of all the samples. The data demonstrates that plants exposed to the pH level of 4.5 exhibited 8% less distress than the plants at the pH level of 7.0. The plants exposed to the pH level of 6.5 exhibited 29% less distress, and the plants exposed to the pH level of 5.5 exhibited 40% less distress.	
Conclusions/Discussion The data shows that pH in the environment does have an affect on the life of plants. It is clear that in my experiment, the Water Hyacinths prefer a specific acidic environment at the 5.5pH level. A deviation from this to a more acidic or basic environment resulted in the plants enduring more distress. This demonstrates that even a small change in the environment could result in less reproduction of this plant, and all life that this plant supports. All plants have a preferred pH range, and pollution resulting in acid rain can affect their growth and life span.	
Summary Statement My project involves observing the affects of four different pH levels on Water Hyacinths	
Help Received My Parents drove me to stores to get supplies; my Dad helped me change the water in each container weekly; my Mom helped by typing a portion of the report.	