



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Daniel Bang; Thomas Kim	Project Number J1802
Project Title Dead Zones are Dead Jokes: Algal-Bloom Control by the Allelopathy of Aquatic Macrophytes	
Abstract Objectives This project focused on the question, which aqueous plants could affect the growth of blue- green algae in lakes and ponds, preventing dead zones from forming and allowing a natural solution to stop this problem. The results that arise are important to the scientific community because instead of using non-eco-friendly and artificial solutions to solve this complication, nature s own specimen can provide a better option. Not only is it natural, but this method reduces a carbon footprint in the environment itself. Humans should care about these results because if this continues to occur, several ecosystems may not have the ability to thrive and support organisms anymore. The independent variable is the different species of aqueous based plants to fight off the blue-green algae, which are anacharis, amazon sword, and ludwigia. The dependent variable is the amount of blue-green algae, in grams, after one week with the aquatic plants. Constant variables include ?the pH of water, mass of blue-green algae before three weeks, mass of plants, amount of water, size of tanks, amount of given solid and liquid fertilizer, and more. The control variable would be the algal bloom without any effect of the plants. The hypothesis is that if we placed different types of aquatic based plants in a habitat with blue-green algae (water pH: 8.0), then the anacharis will have the least amount of algal growth, in grams. Methods Materials 36 gallons of pure water 3 10-gallon tanks Electronic scale Blue-green algae (Cyanophycota) Measuring cup Elodea canadensis (Anacharis) Echinodorus grisebachii (Amazon Sword) Ludwigia repens (Ludwigia) 10 lbs. Fertilizer (Nitrogen and Phosphorus Rich) Liquid fertilizer Procedure Gather all materials	
Summary Statement The experiment conducted focuses on the negative effects of algal bloom and eutrophication to discover a natural method to fight this problem; Aquatic macrophytes.	
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