



Colorado Science and Engineering Fair

2024 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: The Effect of Acidification on the Health of Elodea

Finalist's Name: Andrew Dube

School and City: Aspen Middle School, Aspen

Sponsor's Name: Brandy Keleher

Category: Plant Sciences (PLNT)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

I am studying the effects of more acidic water on the health of Elodea. I am studying this because I want to know how freshwater acidification affects the aquatic environment. Due to increased Co2 emissions and other by-products of manufacturing water, pH levels have been decreasing, causing the water to become more acidic. I did this experiment because plants are the base of the food pyramid, and if they are affected negatively by more acidic water, then the whole ecosystem will fall apart. To set up the experiment I took three bottles and filled them with water. I then used white wine vinegar to acidify the water down to pH 6 and pH 5, the first bottle had a pH of 7. Next, I put 2 10-inch sprigs of Elodea into each bottle. I then suspended an aquarium light over the bottles about 8 inches from the water's surface. Then I cut off a leaf from one elodea plant in each bottle. I looked at the plants under 40x, 100x, and 400x taking a photo under each magnification. To quantify the data I compared each photo to a color and a physical health scale. My results found that the pH 5 water did the worst, the pH 6 did the second best, and the pH 7 did the best.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES o all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. A signed copy of this form must be included in your notebook.