CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
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Project Number
36016

Project Title
The Effect of Ocean Acidification on Halimeda incrassata

Abstract

Objectives/Goals
The objective of this project is to determine the effects of ocean acidification on the growth of Halimeda incrassata.

Methods/Materials
5 identical 2-5 gallon containers, 14 samples of Halimeda incrassata, 1 pH meter (pen type), 1 food scale, 6 CO2 generators, 1 hydrometer, 1 API calcium test kit, calcium supplements. Halimeda were grown in containers for a month in various pH levels, with weight of samples, salinity and calcium monitored and checked every 2 days.

Results
14 Halimeda samples were grown in varying levels of pH for a month, their weight being checked every 2 days. The plants grown in a pH of 7.4 did significantly well, and had an overall growth of 6.6 grams, almost double the overall growth in the control tank, which had a pH of 8.4. The control group had the 2nd greatest growth, and the group grown in a pH of 7.8 had the 3rd greatest growth of 3.1 grams.

Conclusions/Discussion
The Halimeda samples could tolerate a lower pH, and compared to the control group grown in a pH of 8.4, grew noticeably better. This may be due to their use of both photosynthesis and calcification. Results from the experiment showed that Halimeda could sustain a pH of 7.4, and could perhaps survive ocean acidification up to that point.

Summary Statement
This project showed that Halimeda could tolerate a pH of 7.4.

Help Received
I set up and performed the experiment myself, my science teacher helped edit my paper, Dr. Talina Knotchick from the Scripps Institute of Oceanography answer questions on ocean acidification