CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
Vishaal Agrawal; William Duong

Project Number
S1301

Project Title
Culturing Strains of Volvox to Become Acclimated to a High Level of Salinity

Abstract

Objectives/Goals
The objective of this experiment was to determine if we could culture a strain of Volvox, normally freshwater algae, to become adjusted to a saltwater environment.

Methods/Materials
We obtained our Volvox Aureus from Centennial High School, which also supplied the experimental equipment, and initially exposed them to a wide range of Instant Ocean concentration, from .006g/ml to .014 g/ml, to monitor their sensitivity towards a salt-water environment. After this analysis stage, we exposed the algae to increasingly higher levels of salt concentration. Light transmission and absorbency, as well as visible observations were recorded daily.

Results
The data shows that after a period of adaptation, the Volvox was able to survive in an environment it did not expect. We cultured strains to .11 g/ml and .18 g/ml, and they continued to have growth in spite of increasing levels of salinity.

Conclusions/Discussion
Sensitivity to the salt water might be limited by the time given towards adaptation before increasing the level of salinity. An experiment conducted over a longer amount of time with a less aggressive schedule might procure different results. It was determined that Volvox could be cultured to survive as well as those in freshwater, when the salt concentration was at .11 g/ml and .18 g/ml.

Summary Statement
Strains of freshwater Volvox algae were cultured to become acclimated to oceanic conditions

Help Received
Volvox strains obtained through Mrs. Houseman. Mrs. Houseman advised us throughout project. Lab equipment used from Centennial High School.