CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
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Project Number
31819

Project Title
Copepod Culturing: Conditions for Maximum Yield per Generation

Abstract

Objectives/Goals
Today, certain marine animals cannot be kept for research due to their specialized diet on micro-organisms known as copepods. This is caused by the copepod#s unusually long period of sexual maturation. The reproduction of copepods cannot keep up with the demand for food, forcing laboratories to keep multiple cultures. This project aims to eliminate the need for excess cultures and maximize the productivity of copepod reproduction through manipulations of culture conditions.

Methods/Materials
This study tested three variables: food, light, and water temperature. Each trial measured one variable at a time, lasting four weeks. Cultures were five gallon buckets hooked up to an airstone for circulation. Each culture started with 100 gravid females of the species Tigriopus Californicus. Every two weeks, water was agitated, forcing copepods into suspension, and three 20ml samples were taken. Next, the averages of the three samples were used to estimate the population.

Results
Results showed that of the three types of algae used, Isochrysis yielded up to 360% more individuals. Temperature trials showed that copepods will not survive in temperatures above 75 degrees, and a temperature of about 69 degrees was ideal. Finally, a light intensity of 75 watts produced slight increases in population.

Conclusions/Discussion
The data shows Tigriopus Californoicus cultures produce the most individuals when fed with Isochrysis algae paste, kept at 69 degrees Fahrenheit, and kept under 75 watt bulbs. With this data, a wider variety of marine animals such as corals and pipefish would be able to be kept for both research and conservational reasons.

Summary Statement
Determining the conditions that will produce the most copepods in a culturered and delicate species kept in the laboratory.e to be used as food for endang

Help Received
Dr. Kiersten Darrow was my mentor/advisor, Mother drove me to Cabrillo Marine Aquarium, Mr. Peter Starodub was my research teacher from school.