CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

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Project Number

34066

Project Title

Sexual Dimorphism of the Market Squid, Doryteuthis opalescens

Abstract

Objectives/Goals

This experiment tested a method of differentiating male and female Market Squids based on the squids' mantle to arm length ratio.

Methods/Materials

One hundred and fifty three squids were used in this study. The mantle length and third arm length of each squid were measured manually with a standard ruler in millimeters. The squids were then dissected to determine their sexes. The collected data was then compared to see if the ratio of the two measurements alone, mantle length to arm length, showed any relationship to the sex of the given squid.

Results

This study showed that the computed mantle:arm length ratio means were significantly different between females and males, with 2.67 for females and 1.80 for males. Though some overlap in the data occurred, statistical analysis shows a P-value less than 0.05, and therefore the hypothesis can be accepted. In addition, the 95% confidence interval from 0.77 to 0.97 captures the difference in true mean ratio of mantle to arm length in females over males.

Conclusions/Discussion

There is a statistical difference between male and female market squid: female market squid will have a mantle length to arm length ratio that is greater than that of the males.

Summary Statement

This project tested whether male and female Market Squids can be distinguished based on their external appearances.

Help Received