CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

Amirah J.X. Battle

Project Number

J2202

Project Title

Fruit Fly Frenzie: The Effect of Temperature on Gender Development of Drosophlia melanogaster

Abstract

Objectives/Goals

Drosophila melanogaster, a small fruit fly, feeds and lives on fruit because of the high sugar content of most fruits. D. Melanogaster originated in Africa, about 10,000 years ago and began migrating north. This species of fly is related to the Musca domestica, common housefly. Fruit flies are one of the most studied organisms in biological research because they are easy to care for, breed quickly, and the females lay many eggs in a short period of time. Traits of the fruit fly are determined by factors such as temperature and several environmental factors. Previous studies have shown that temperature plays a vital role in gender development in fruit flies. Varying temperatures generally produce equal ratios of female to male while controlled temperatures produce higher ratios of males to females. We performed experiments to help determine the effects of temperatures on gender in fruit fly development. We hypothesize that there will be more females born in the varying room temperature vial. The varying room temperature#s environment is more like the natural environment that the flies live in. Our experiment was performed by crossing 20 males with 20 females in vials of fly food in a controlled room temperature (~25°C) and a varying room temperature (~20°-30°C). Our collected data, a higher ratio of female to male flies, demonstrates that temperature does affect gender of the fruit fly development. This project demonstrates the ease in which fruit flies can be used in research and why they are so important in scientific research.

Summary Statement

My project is about how temperature effects the gender of a fruit fly.

Help Received

I was trained and used lab equipment at SFSU under the supervision of Torey Jacques, an undergraduate perusing a degree in Cell and Molecular Biology.