



CALIFORNIA STATE SCIENCE FAIR 2015 PROJECT SUMMARY

Name(s) Talie L. Cloud	Project Number 35379
Project Title The Effects of Momordica charantia on the Reproductive Rate of Drosophila melanogaster	
Abstract Objectives/Goals The purpose of the science fair project is to investigate the long term effects of bitter melon seed on the Reproductive rate of the Drosophila melanogaster. The hypotheses stated that as the concentration of bitter melon seed increased, the reproductive rate of the Drosophila melanogaster would decrease. The third generation of bitter melon fruit flies, when placed in control food, would yield a similar fecundity to the same concentration of bitter melon fruit flies that continued to receive bitter melon food for the fourth generation. Methods/Materials In order to harvest the bitter melon seed, scoop the seeds out of the melons and grind them into a paste using a mortar and pestle. Create the concentration solutions by creating a control, a 2.5%, and a 5% concentration group. To create the medium, add equal parts of the concentration mixture of water and bitter melon to the instant Drosophila medium. After creating the food, placing it into marked vials, and adding 5-7 grains of yeast, anesthetize and sex 360 fruit flies. Place 5 males and 3 females in each vial. Repeat these step for three generations of 14 days each before creating the final generation groups where half of the fruit flies with a history of bitter melon are placed in bitter melon concentration once again and half are placed in control food for the final generation. Count the fecundity after the 14 day final generation and conduct statistical analysis to find results. Results The 5% concentration group had the smallest average fecundity of 14.1 fruit flies whereas the control had the greatest reproductive fecundity of 95.95 fruit flies. The 2.5% bitter melon group had a fecundity of 27.8. After statistical analysis, there was no significant difference in the reproductive rates of the fruit flies that received bitter melon for the final generation and those that received control food for the fourth generation. Conclusions/Discussion As the concentration of bitter melon increases, the reproductive rate of the Drosophila melanogaster decreased. As for the different food mediums within each concentration group, there was no significance between the the reproductive rate of those placed in control and those placed in the concentration group for the final generation. This fact is important because it indicates that Momordica charantia effects the genetic sterility of the fruit fly and leads to the evolution of the population.	
Summary Statement This project is a study on the effects of bitter melon on the reproductive rate of the fruit fly after four generations of exposure.	
Help Received Teacher helped supply materials, Parent helped Purchase Board	