



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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| Name(s) Mason S. Dougherty | Project Number J2207 |
| Project Title Determining the Detrimental or Beneficial Effects of Various Levels of Salt and Sugar on Drosophila melanogaster | |
| Abstract Objectives/Goals The objective of this study is to determine any harmful or beneficial effects that sugar and salt may have on Drosophila melanogaster longevity. Methods/Materials Commercially obtained Drosophila melanogaster cultures and food, and prepared sugar and salt concentrations. Record daily the number of living versus nonliving Drosophila melanogaster in each of the salt and sugar concentration cultures over the course of their lifespan. Results Living versus nonliving Drosophila melanogaster were evaluated daily in various concentrations of salt and sugar, as well as the controls. It was found that sugar concentrations showed greater longevity when compared to salt concentrations and the controls. Conclusions/Discussion Multiple trials of various concentrations of salt and sugar, compared to the control trials, revealed that all sugar concentrations increased the average lifespan in Drosophila melanogaster. All of the salt concentrations decreased the average lifespan of Drosophila melanogaster. Due to the sugar concentrations outliving both the control and salt trials, it is concluded that sugar solutions may have beneficial effects on Drosophila melanogaster longevity. | |
| Summary Statement I showed that salt and sugar concentrations have detrimental and beneficial effects on Drosophila melanogaster longevity. | |
| Help Received I assembled the Drosophila cultures and prepared the salt and sugar concentrations myself. I received help with the statistical analysis of my graphs from Mr. Carl Gong, Sanger Unified District Science Coordinator. | |