



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Suchith R. Nareddy</b>	<b>Project Number</b> <b>S1816</b>
<b>Project Title</b> <b>Longevity and Diet: Studying the Relationship between Caloric Intake, Dietary Manipulation, and Lifespan in Drosophila</b>	
<b>Objectives/Goals</b> Test the effects of caloric restriction and dietary supplementation of Resveratrol and Rapamycin on the lifespans of Drosophila Melanogaster.	
<b>Abstract</b> <b>Methods/Materials</b> 1 Live Drosophila Melanogaster Culture. 18 Drosophila Culture Vials w/foam stoppers for each. 18 Plastic Vial Nettings. 1 Liter Drosophila Media. 1 Liter Distilled Water. 100% Purified Trans-Resveratrol. 100% Purified Rapamycin. 1 Dissection Scope. 1 100mL Vial Fly-Nap(c) Solution. 5 Anesthetic Wands. <ol style="list-style-type: none"><li>1. Allow live culture to reproduce to adequate experimental size.</li><li>2. Move all adult flies to large mating container with media and netting.</li><li>3. Allow flies to mate over a period of 3 days and then remove all adult flies to previous vial, leaving only eggs in the new vial.</li><li>4. Allow newly laid flies to grow to a size wherein sex can be determined.</li><li>5. Prepare experimental vials by mixing required amounts of basic fly feed, water, resveratrol, and rapamycin.</li><li>6. Anesthetize young flies and separate them according to their sex.</li><li>7. Place male flies into newly prepared vials. Repeat with female flies. The sexes are separated in order to prevent mating and thereby maintain a constant number of flies.</li><li>8. Check vials approximately every 8 hours and record time of death when a fly dies.</li><li>9. Repeat steps 2-8 for each experimental group.</li></ol>	
<b>Conclusions/Discussion</b> My hypothesis stated that a calorically restricted diet, along with supplementation of resveratrol and rapamycin, would significantly increase the lifespan of the flies; and that a diet containing a caloric surplus would significantly decrease their lifespan. Based on the data observed, I found that caloric restriction and resveratrol caused statistically significant lifespan increases and that caloric surplus causes nearly statistically significant lifespan decreases. However, my data also points to the conclusion that rapamycin supplementation has no significant effect on lifespan	
<b>Summary Statement</b> Testing whether caloric restriction coupled with dietary supplementation of Resveratrol and Rapamycin(Sirolimus) will have a quantifiable lengthening effect on the lifespan of Drosophila Melanogaster(common fruit fly).	
<b>Help Received</b> Conducted project in the back of Mr. Garabedian's classroom at school. Used certain materials such as beakers, scales, and dissection scope.	