



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Addison D. Williams	<b>Project Number</b> <b>J0521</b>
<b>Project Title</b> <b>Comparing the Effects of Cobalamin and alpha-Tocopherol on the Reproduction Rate and Longevity of Caenorhabditis elegans</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> This project was conducted to determine if specific vitamins fed to <i>C. elegans</i> would effect their reproduction rate and longevity.</p> <p><b>Methods/Materials</b> Melted Nematode Growth Agar was placed in ten petri dishes that were each divided into three sections. Once the melted growth agar set, a half inch cube of <i>C. elegans</i> was placed in each section of the 10 divided petri dishes. The first group was fed 5 drops of the alpha-Tocopherol oil with 5 ml of water. The second group was fed 5 Cobalamin tablets crushed with a mortar and pestle and mixed with 5 ml of water. The third section was fed no vitamins at all and fed on just the agar itself. This procedure was done 3 times for a total of 30 trials each.</p> <p><b>Results</b> It was discovered that the alpha-Tocopherol water-based mixture fed to the <i>C. Elegans</i> sped up their reproduction rate. The <i>C. elegans</i> that were fed the Cobalamin water-based mixture had a slower reproduction rate but outlived the other two groups.</p> <p><b>Conclusions/Discussion</b> The hypothesis that stated Cobalamin fed <i>C. elegans</i> will live longer and reproduce more than the control group was incorrect. They did live longer but had a slower reproduction rate than the control group. The hypothesis that stated alpha-Tocopherol fed <i>C. elegans</i> will live longer and reproduce more was incorrect also. Their reproduction rate increased as compared to the control group, but their longevity decreased.</p> <p>The <i>C. elegans</i> that were fed Cobalamin did not have the fastest reproduction rate but lived longer than control group and the <i>C. elegans</i> that were fed alpha-Tocopherol.</p>	
<b>Summary Statement</b> This project is about feeding <i>C. elegans</i> two different kinds of vitamins and observing what happens with their reproduction rate and lifespan.	
<b>Help Received</b>	