



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

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Project Title Galleria mellonella Immune System Response to an Insecticide	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Evaluate which concentration of the insecticide, cypermethrin, would kill the larvae the most efficiently. Study the immune system response of the Galleria Mellonella Larvae to insecticide, strictly checking for the production of phenoloxidase in the larvae.</p> <p>Methods/Materials Injected the larvae with 10 mL of insecticide by using a syringe. Extracted the hemolymph by cutting the larvae open and spinning them through a centrifuge. The hemolymph was then tested to see the phenoloxidase level by using ELISA reader spectrophotometer.</p> <p>Results The survival rate data showed that the insecticide did not cause the death of the larvae and that the phenoloxidase response seemed to protect the larvae.</p> <p>Conclusions/Discussion We discovered that the insecticide used (Demon WP) did not kill the larvae. The immune system did have a response to the insecticide by producing phenoloxidase in order to defend itself. The project was important because in the field of beekeeping, there has been many issues involving the Galleria Mellonella larvae. Beekeepers are attempting to produce a sufficient amount of honey; however, the moth Galleria Mellonella is preventing this to take place. The Galleria Mellonella enters the beehives and consumes the honey and wax.</p>	
Summary Statement Galleria mellonella immune system response to an insecticide.	
Help Received Our chemistry teacher provided the necessary materials and explained the overall concepts of the experiment. Our mathematics teacher help us understand the basic concepts of standard deviation, graphing, and P value. Daniel Covarrubias helped us with the presentation of our data.	