



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Elyssa S. Lawrence	<b>Project Number</b> <b>S1723</b>
<b>Project Title</b> <b>The Effect of Agricultural Chemicals on Daphnia magna</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> If I put varying amounts of Tiger 90 Sulfur, diesel, motor oil, and regular gasoline in jars with live Daphnia magna, then the death rates will be higher in motor oil, lower in regular gasoline and diesel, and lowest in Tiger 90 Sulfur.</p> <p><b>Methods/Materials</b> My procedure began with the placement of twenty jars in columns of five and rows of four. Four columns tested the harshness of a particular agricultural chemical on D. magna. The fifth column of this experiment was used as a control. Each row then consisted of a specified amount added to the jars, for each chemical. The jars were filled with equal amounts(100mL) of tap water that had been treated with water conditioner, and the jars were filled with the same amount(6mL) of green algae for the D. magna to sustain themselves on. The designated amounts of toxins were added in each jar for each different chemical. The twenty jars were given three hours of direct light from grow lights for algae growth. The number of live D. magna were counted in each jar every twenty-four hours.</p> <p>Main Materials: Twenty jars, 120 Daphnia magna, 120 mL of algae, water purified with water conditioner, several pipettes, and two grow lights.</p> <p><b>Results</b> The Daphnia magna(D. magna) died more quickly in the motor oil than in any of the other chemicals. Diesel and regular gasoline followed up the motor oil by both incurring a slower death than which the motor oil D. magna had. Tiger 90 Sulfur resulted in deaths, but they occurred less quickly than all three of the oily substances used to intoxicate the D. magna.</p> <p><b>Conclusions/Discussion</b> The results support the hypothesis made that D. magna death rates would be highest with the added Motor Oil and least with the added Tiger 90 Sulfur. In conclusion, these results help promote awareness to create research opportunities and to develop new technologies to reduce agricultural run-off of Motor Oil and quite possibly diesel and regular gasoline.</p>	
<b>Summary Statement</b> The purpose of this project is to see how the agricultural chemicals in my area effect the biodiversity of life in a pond ecosystem.	
<b>Help Received</b> Mother helped assemble board; Mentor helped guide me in the right direction	