



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jade J. Wentz Fitzgerald</b>	<b>Project Number</b> <b>J0929</b>
<b>Project Title</b> <b>How Is It Possible that by Washing Our Cars and Spraying Our Flowers, We Are Polluting Our Creeks, Streams, and Ocean?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project was to see if even the smallest percentages of pesticides and detergents would affect life in the creeks that lead into the ocean and which would be the most harmful. <b>Methods/Materials</b> I used 80 Daphnia magna in this experiment. My control was 5 testing chambers with 2 daphnia in each for each solution percentage from 100% to as low as .78% for each pollutant. Their mortality was recorded every 2 hours visually and with a magnifying glass, (LC50) and their heart rate was observed and recorded at the end of the control using a microscope and stopwatch (BPM). <b>Results</b> Pesticides killed the daphnia faster than the car soap. The LC50 results for both were 4.5%, meaning 50% mortality at 4.5%#. The heart rate was not consistent between the pollutants. The car soap put them to a sleep type death while the pesticide killed them quickly at higher percentages and at lower percentages made them extremely active. In the end, the mortality rate when recording the BPM, was 100% at 6.25% for both the pesticide and car wash solutions, although 1 of the daphnia was still alive at 12.5% of pesticide solution, the detergents had a lower mortality rate at the lower levels of 3.125, 1.56, and .78 percents. <b>Conclusions/Discussion</b> Chemical pesticide is harmful to our environment even below 1% and that other methods should be addressed if we are to protect our creeks and streams. Any type of car soap is harmful to our environment if it is allowed to run down our streets, into our storm drains directly to our creeks and ocean. My belief is that all individuals should be educated to the effects they pose on our environment and seek better methods to stop this type of pollution. Better use of organic pesticides, such as vinegar, garlic oil and cornmeal. Washing your car on your lawn so there is no runoff, or local carwashes that dispose of detergents ecologically would greatly reduce the amount of deadly pollutants that run directly into our creeks, steams, and ocean.	
<b>Summary Statement</b> Determining the effects of pesticides and detergents on our creek life.	
<b>Help Received</b> Mother helped with board layout and editing; father supervised with baseline concentrations.	