



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Ryan M. Fox	Project Number J0810
Project Title The Removal of Toxic Chemicals from Contaminated Filter Materials: An Extended Study	
Abstract Objectives/Goals The Goal of my project is to properly remove and dispose of the Toxic chemical Malathion from my filter Media. Methods/Materials Remove the Malathion trapped inside my filter materials using the processes Photolysis or sunlight, Thermal Reaction or heat, and Chemical Reaction to then break apart the Malathion compound in to separate non-hazardous molecules. MATERAILS Almond, Walnut, and Pistachio shells, Activated Carbon, Filter rack, pH strips, cups, water, pans, 4 filters, Malathion, Crickets, Stop Watch, Milk Cartons, Blender, spray bottle, screen, Phosphorus tester, Sulfide tester, grill, thermometer, and stove. Results I was able to break up and remove the Malathion compound on some of my filters. Photolysis or sunlight was the best process for removing the Malathion, the Chemical reaction was the least successful. I removed the Malathion from the Activated Carbon using heat and the Walnut shells using Photolysis. The Chemical reaction did not appear to remove the Malathion. Conclusions/Discussion Malathion can be removed from contaminated water by natural filter materials such as Walnut Shells, Pistachio Shells and Almond shells. The trapped Malathion can be broken down into non-hazardous molecules such as hydrogen sulfide and phosphourus oxide. These molecules can be released back into the enviroment.	
Summary Statement Remove and safely dispose of the toxic malathion in my filter media.	
Help Received Dad; Revise writing, helping with interview, and getting materials	