



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jeffrey A. Joh</b>	<b>Project Number</b> <b>J1413</b>
<b>Project Title</b> <b>Counteracting Pesticides</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Counteracting Pesticides is an effort to find a commonly-available substance that can neutralize the effects of insecticides. <b>Methods/Materials</b> Seven different commonly-available materials (Water, lemon juice, 3% vinegar, baking soda, milk of magnesium, diluted bleach, and activated carbon powder) were tested for their ability to detoxify Malathion insecticide. The materials were mixed with Malathion in a 1:1 ratio to create different seven mixtures. The mixtures were injected into small Petri dishes, which contained crickets, to observe the rate of death. Each of the seven materials were also tested individually to confirm the fact that those substances alone would not cause death in crickets. <b>Results</b> Activated carbon completely eliminated the deaths caused by Malathion. Water showed almost a three-fold improvement in survival times compared to just Malathion alone. All the other diluters showed approximately a two-fold or smaller improvement in survival times. <b>Conclusions/Discussion</b> This experiment clearly showed that activated carbon, which is also commonly used in the emergency room, can eliminate the deaths caused to crickets by Malathion. Perhaps, the public can be taught to keep some activated carbon pills in their medicine cabinets. However, this project also reinforces common first aid tip: Drink water if you ingest poison. Water does help lengthen survival times. For a human, that can give extra time for help to arrive.	
<b>Summary Statement</b> Counteracting Pesticides is an effort to find a commonly-available substance that can neutralize the harmful effects of insecticide.	
<b>Help Received</b> My dad borrowed some materials from his workplace, Chiron Corporation. He also helped collect crickets in the Petri dish.	