



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> Caitlin C. Russell	<b>Project Number</b> <b>J1530</b>
<b>Project Title</b> <b>Determining If Household Materials Can Neutralize the Toxic Levels of Pesticide</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My objective is to determine if i can use household materials to neutralize a toxic spill (pesticide spill) Can I add a liquid to the pesticide to make it a safe environment for a puppy or little child if there was an accidental spill? How will different soils affect how the neutralization works?</p> <p><b>Methods/Materials</b> I collected a clay loam,sand, and regular backyard soil. I then sprayed pesticide into the different soils. I made liquid bases to add to the pesticide. Soapy water, milk, antacids, and baking soda. I sprayed an equal amount of base to the pesticide on each soil. A total of 15 different trays. (3 soils X 4 bases and 1 control) Control was soil with no base. I then took soil samples from each tray. I added 2 crickets to the soil samples to test if pesticide was still toxic. Recorded death rate of crickets and compared results. This process was repeated for 10 trials, a total of 300 crickets in all. (crickets were obtained from pet store.)</p> <p><b>Results</b> Soapy water proved to be effective in neutralizing the pesticide. On average it worked 83% of the time, and 100% of the time in clay! Milk worked well overall, but especially well in clay. Antacids did not prove to be very effective. The antacid base worked at times, but nothing consistent or reliable. Baking soda proved to be very weak, to non-existent when being used to neutralize the pesticide. All of the bases worked better on the Clay Loam. This was most likely due to the fact that the pesticide did not seep into the clay. The base made direct contact with the pesticide when placed on the clay.</p> <p><b>Conclusions/Discussion</b> If you had a toxic spill (pesticide) you could use soapy water to help neutralize the toxicity of the spill. Especially if you can add it directly to the spill. (direct contact, before it seeps into the soil) Milk also works, but my results showed it wasn't as reliable. If you have a small pet, or child, adding the soapy water to the spill will help make it a safer place.</p>	
<b>Summary Statement</b> I will show how household liquids can help neutralize a toxic (pesticide) spill, by adding it directly to the spill.	
<b>Help Received</b> Parents helped obtain materials, supervised spraying of pesticide, and helped put board together.	