



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

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<b>Project Title</b> Does Ultrasonic Sound Increase the Activity Level of Insects?	
<b>Objectives/Goals</b> To determine whether or not insects, specifically crickets, red harvester ants, and ladybugs, activity levels will be increased by ultrasonic sound. <b>Abstract</b> <b>Methods/Materials</b> I took three different insects with different methods of hearing and placed them in separate habitats. I allowed them to settle into the habitats for a week after which I observed their normal behavior from 11:00am to 12:00pm for a single day. I then turned on an ultrasonic pest repeller that emits ultrasonic sound from 11:00am to 12:00pm after which I turned it off until the next day for three consecutive days to see if the ultrasonic sound would increase the activity levels of the insects. After that I repeated the entire procedure with new insects of the same species but purchased from different stores. <b>Results</b> My data shows that the activity levels of all three insects were increased when I had the ultrasonic pest repeller on. It also showed that the crickets activity level was increased the most by 467% average over when there was no ultrasonic sound. The ants had the second most increased activity levels with 167% more then with no ultrasonic sound. The ladybugs were least affected by the ultrasonic sound with 89% increase over when there was no ultrasonic sound. <b>Conclusions/Discussion</b> Based on my results I can conclude that ultrasonic pest control does increase the normal activity of crickets, red carpenter ants, and ladybugs. I can also conclude that the crickets activity level was increased the most, the red carpenter ants activity level increased less then the crickets but more then the ladybugs, and the ladybugs activity level was increased the least of the three species of insects. This was due to the varying sensitivity of the hearing structures of the insects.	
<b>Summary Statement</b> This project proved that ultrasonic sound increases the activity level of insects.	
<b>Help Received</b>	