



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Cameron M. Rossi	<b>Project Number</b> <b>J2298</b>
<b>Project Title</b> <b>Crickets: A Sense for Scents. Exploring Natural Insect Repellants</b>	
<b>Abstract</b>	
<b>Objectives/Goals</b> My project was to determine which scents crickets like the least. By understanding how crickets sense and react to scents we can protect gardens and crops in a safe and natural way by using scents as repellants. My hypothesis is they will dislike the peppermint, lemon, pine-sol, and musk because they are strong and/or unnatural scents that can be dangerous. Crickets will like vanilla and cinnamon which are food sources.	
<b>Methods/Materials</b> Crickets were tested 12 at a time for 5 minutes in a in a clear plastic container (14x21x6) during three different trials to measure distance in cm from each scent which was recorded every one minute. The control group was crickets were observed with no scent present on a cotton ball that was placed in the center. The variables were the six different scents added to cotton balls that were measured separately. The scents used were vanilla extract, peppermint extract, lemon juice, pine-sol cleaner, musk cologne, and cinnamon oil. Vanilla and cinnamon scent were chosen because they are natural food scents. Musk cologne, lemon juice, peppermint, and pine-sol cleaner were chosen because they are very strong and unnatural scents.	
<b>Results</b> The crickets disliked the peppermint, lemon, and cinnamon and kept the furthest distance on average compared to the control group and the other scents. They liked vanilla the most and averaged the closest distance overall when comparing to the control group and the other scents. They also liked the pine-sol and musk and averaged a closer distance than the control group, peppermint, lemon, and cinnamon.	
<b>Conclusions/Discussion</b> My hypothesis is partially correct because they did not like peppermint and lemon which research supports is used in insect repellent but they did like vanilla. My hypothesis is partially incorrect since they did not like cinnamon which is used in insect repellent. They did like pine-sol and musk. Pine-sol contains natural pine oil which comes from trees that crickets inhabit. Musk contains pheromones and crickets use scents for mating. In conclusion, crickets chose to stay away from harmful scents using their sense of smell. This supports using organic scents as natural insect repellants that are also environmentally safe.	
<b>Summary Statement</b> My project is to find out what scents crickets like the least to determine if scents can be used as natural insect repellants.	
<b>Help Received</b> Mother helped set up the graphs; Father helped put mesh screen on the plastic container.	