



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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Project Title Step into the Light: How Choosy Are Cockroaches about Light?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project is to determine which colored light is most effective in deterring cockroaches.</p> <p>Methods/Materials In this experiment, six different light bulb colors (red, yellow, green, blue, black, and white) and no light were tested to see how well they deter Dubia cockroaches. The lights illuminated one side of a clear bin, which had egg crate nesting material on the non-illuminated side. One hundred cockroaches placed into groups of twenty were stored in small plastic containers. Five trials were conducted each with twenty roaches for every colored light and the control (no light) in the following way. A timer for one minute was set as the roaches were placed in the illuminated half of the bin. After one minute, the roaches that remained in the light were counted and any interesting behaviors were noted.</p> <p>Results The results of the investigation on what color will repel the greatest number of cockroaches, indicate that red light repels a greater number of roaches than the other five colored lights and the control group of no light. Green light deterred the second most roaches followed by white, yellow, and blue. Two interesting results: first, yellow light deterred fewer roaches than the control. This continues to validate previous years' investigations, where it was discovered that insects were attracted to the color yellow. Second, the cockroaches seemed to freeze when exposed to black light. They did not move much at all. It took several minutes for them to become active again.</p> <p>Conclusions/Discussion Dubia Cockroaches do react differently to different colored lights. Red light deterred the most roaches in this investigation. All colors tested, including the control, deterred at least one roach. Because of the unusual behavior of the roaches under the black light, it is difficult to conclude the effect of this color on the roaches. More experimentation is needed to determine if the black light disorients the roaches or if it simply does not deter them. To help keep roaches out of undesired areas, illuminate it with red light.</p>	
Summary Statement Using prior knowledge of insect color preference, this project investigates colors that deter Dubia cockroaches.	
Help Received	