



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Lacey A. Benefiel	Project Number S1502
Project Title Mortality Rates of Capsicum frutescens Based Pesticides on Different Gender and Aged Acheta domesticus	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment was to observe whether the age and gender of crickets affects the mortality rate, while comparing chile pequin to chile de arbol peppers as environmentally friendly pesticides. This information would be useful to consumers who use pepper pesticides so they would know what dosage it would take to eliminate the entire population of pests.</p> <p>Methods/Materials The two pesticides that I used during my experimentation, chile pequin and chile de arbol, were used at a 40.81 g/L concentration. This has proved to be the most effective pesticide concentration during the past three years of my research. I first compared the rate of death of young nymph crickets to the adult crickets to see if it varied between them while comparing both pesticides. I then compared the death rates of adult males to the adult females to see if either gender showed more resistance to either pesticide. Once my experimentation was completed, I statistically analyzed my data.</p> <p>Results I found that the chile de arbol showed a significant difference in the mortality rates when comparing females to males and nymphs to adults. Both the nymphs and females were more tolerant of chile de arbol, whereas the adults and males were weaker. When looking at the results for chile pequin, I found no variance between mortality rates. When comparing the two pesticides directly, I found that chile pequin killed all age and gender groups more efficiently than the chile de arbol.</p> <p>Conclusions/Discussion From my results, I can conclude that female and nymph crickets are more tolerant to most pepper pesticides than male and adult crickets, which therefore affects the overall mortality rate. I can also conclude that chile pequin is the best overall pesticide, killing the cricket population most efficiently.</p>	
Summary Statement Adding on to my past years' results, I studied the effects of gender and age on crickets mortality rates while comparing chile pequin and chile de arbol as pepper pesticides.	
Help Received Mother helped with board layout, Father helped buy supplies, Dr. Tribbey, former college professor, helped with statistical analysis, Used lab equipment from Mr. Whittington's classroom at Sanger High.	