



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Jorie A. Moore	Project Number S1723
Project Title Investigating the Effectiveness of Indigenous Plants in Inhibiting Mosquito Larvae Development	
Objectives/Goals The goal of this project is to determine the effectiveness of indigenous plants as natural pesticides in inhibiting mosquito larvae development.	
Abstract Methods/Materials 600 mosquito larvae were obtained from a local mosquito abatement facility. Three indigenous plants were used: Jimson Weed, Stinging Nettle, and Milk Thistle. There was a control for every test consisting of developing the mosquito larvae in water. There were three different concentrations prepared, a 10%, 5%, and 2% concentration made from a ratio of water to plant when blended. There was a direct kill test using the 10% solutions as a spray pesticide over a one-day period. There were developmental tests conducted using the 2% and 5% solutions where the larvae were placed into containers filled with the different concentrations of the plants. The number developed was recorded after the corresponding control group underwent a full cycle. Afterwards a field test using only the Jimson Weed plant was conducted to test its effectiveness in natural conditions. The results were observed after the control underwent the full developmental cycle.	
Results After the testing period the field control had survival of 95%. After the testing period the spray control had development of one hundred percent. The solutions control had 98% survival and development. The direct spray results are: Milk Thistle- 78% alive, Jimson Weed- 54% alive, Stinging Nettle- 100% alive. The 2% developmental results are: Milk Thistle- 84% developed, Stinging Nettle- 88% developed, Jimson Weed- 6% developed. The 5% developmental results are: Milk Thistle- 82% developed, Stinging Nettle- 90% developed, Jimson Weed- 4% developed. The field test results were 0% developed in the Jimson Weed test.	
Conclusions/Discussion As a natural pesticide, indigenous plants are effective in various degrees. Jimson Weed shows the most potential as a pesticide. Stinging Nettle was the least effective plant. The various methods of application in this experiment could mean producing different versions of a Jimson Weed pesticide. Using indigenous plants located within a common ecological system could be effective against various pests. It would maintain the ecosystem's diversity and not cause immediate or insidious damage that a synthetic pesticide would produce.	
Summary Statement The effectiveness of indigenous plants from the surrounding environment where mosquito larvae develop was investigated as natural pesticides against mosquito larvae in a direct kill test, developmental inhibition test, then a field test.	
Help Received mother helped tape up papers on board.	