



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Jorie A. Moore</b>	<b>Project Number</b> <b>S1723</b>
<b>Project Title</b> <b>Investigating the Effectiveness of Indigenous Plants in Inhibiting Mosquito Larvae Development</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of this project is to determine the effectiveness of indigenous plants as natural pesticides in inhibiting mosquito larvae development.</p> <p><b>Methods/Materials</b> 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.</p> <p><b>Results</b> 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.</p> <p><b>Conclusions/Discussion</b> 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.</p>	
<b>Summary Statement</b> 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.	
<b>Help Received</b> mother helped tape up papers on board.	