



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Jorie A. Moore	Project Number S1718
Project Title Investigating the Effectiveness of Indigenous Plant Solutions in Inhibiting Leaf Gall Insect Development	
Objectives/Goals The goal of this project is to determine the effectiveness of indigenous plant extracts on the development of petiole gall aphids without harming the environment.	
Abstract Methods/Materials 200 petiole galls from the poplar cottonwood tree were collected. Three different indigenous plants were tested; jimson weed, stinging nettle, and tobacco plant. There was a control with water and a control consisting of extract from the cottonwood tree. After seven days of being sun-tead, the pesticides and controls were sprayed on split open petiole galls within containers. The aphids were observed for one day. Afterwards a field test with the same variables was conducted to test the effectiveness in the natural environment. The trees were sectioned off where the different variables were to be sprayed without opening or disturbing the petiole galls. The results were observed over one day.	
Results After one day of testing the controls in the lab and field test were 100% of the aphids alive. The field results are: stinging nettle- 42% alive, jimson weed- 74% alive, tobacco- 56% alive. The lab results are: stinging nettle- 86% alive, jimson weed- 50% alive, tobacco- 90% alive.	
Conclusions/Discussion All of the pesticides were effective in both the lab and field tests but all of the pesticides were more effective in the field test. Jimson weed was the most effective pesticide in the lab test and stinging nettle was the most effective in the field test. Tobacco was the least effective in the lab test with 90% survival rate while having a 56% survival rate in the field test. Overall the pesticides were effective, more so when tested in the petiole gall aphids# natural environment than in the lab test with direct contact.	
Summary Statement In my project I found that certain indigenous plant solutions are effective method of controlling pests in the environment without compromising the health of the ecosystem.	
Help Received	