



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jorie A. Moore</b>	<b>Project Number</b> <b>S1815</b>
<b>Project Title</b> <b>Investigating the Effectiveness of Natural Pesticides in Controlling Leaf Gall Insect Development</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective is to determine the effectiveness of natural pesticides in controlling leaf gall aphid development. <b>Methods/Materials</b> 250 leaves with galls from poplar cottonwood trees were collected. Four different pesticides were tested: lemon, 30% vinegar, tomato, and pepper. The pesticides and a water control were sprayed on the collected leaves in an enclosed environment then observed for one day. A second test was conducted in the natural environment of the leaves. Parts of the cottonwood trees were sectioned off then sprayed with the pesticides and control and were observed for one day. <b>Results</b> After one day of testing the controls in the lab and field test were 100% of the aphids alive. The field results are: tomato- 78% alive, lemon- 76% alive, pepper- 70% alive, vinegar- 62% alive. The lab results are: tomato- 70% alive, lemon- 56% alive, pepper- 40% alive, vinegar- 36% alive. <b>Conclusions/Discussion</b> The 30% vinegar pesticide was the most effective in both the lab and field test but it killed the cottonwood leaves as well as the aphids. The tomato pesticide was the least effective in both the field and lab test. All the pesticides were more effective in killing the aphids in the lab test over the field test. Overall the pesticides were effective in controlling the aphid development, which indicates their effectiveness against other insects.	
<b>Summary Statement</b> I tested natural pesticides in controlling leaf gall aphid development to indicate their effectiveness.	
<b>Help Received</b> Norman Smith, certified Fresno County entomologist, helped identify the type of insect tested	