



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Todd K. Kawakita	Project Number J1417
Project Title The Redgum Lerp Psyllid: Threat to the Eucalyptus Tree	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals What is the most cost effective and environmentally safe way to eradicate the redgum lerp psyllid? The redgum lerp psyllid is a parasitic insect that causes extensive defoliation and weakens the eucalyptus tree. My objective is to try different solutions and note the effects in eliminating the redgum lerp psyllid. It is hypothesized that antibacterial soap and water will be the most effective and least hazardous. The antibacterial soap and water will wash away the honeydew and lerps on the leaves.</p> <p>Methods/Materials Five solutions were formulated: antibacterial soap and water, water, pesticide, oil and water and betadine and water.</p> <p>Cut down branches of a eucalyptus tree that have infestation on its leaves. Make the following mixtures: 30% oil/70% water, 10% antibacterial soap/90% water, and 50% betadine/50% water. Record black soot lerps, honeydew spots and crystallized lerps. Spray each of the solutions on each branch. After spraying one solution, change the set of leaves and use another spray. Spray for five minutes and use 25 ml of each solution on each branch. Wait for 1 hour and then count and record how many black soot like lerps, honeydew spots, and crystallized lerps are remaining on each leaf. Cut off all remaining lerps to see if the nymph is still alive. Examine the lerp under a microscope and look for movement.</p> <p>Results Antibacterial soap was most effective in removing the lerps among all the applications. The antibacterial soap removed 33% of the lerps that were on the leaves tested. The betadine was most effective in removing the honeydew spots among all the applications. The betadine solution removed 52% of the honeydew spots that were on the leaves tested. Pesticides had a minor effect on removing the honeydew spots and no effect on removing the lerps. The oil and water mixture removed some of the honeydew spots and stayed on the leaf for more than 24 hours. The oil and water was detrimental because it suffocated the leaves.</p> <p>Conclusions/Discussion My conclusion is that the redgum lerp psyllid is a dangerous predator and parasite. By using these different solutions on eucalyptus trees we can be sure to extirpate this hazardous pest. Antibacterial soap and betadine were consistently the most effective ways to treat the eucalyptus by removing the crystallized lerps and honeydew spots, respectively.</p>	
Summary Statement I plan to demonstrate what is the most cost effective and environmentally safe way to exterminate the redgum lerp psyllid.	
Help Received Mother and father helped paste items on board.	