



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> <b>Guadalupe Melgarejo</b>	<b>Project Number</b> <b>S1996</b>
<b>Project Title</b> <b>Eucalyptol: A Plant's Worst Nightmare?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> Eucalyptol is allopathic, meaning it eliminates and kills bacteria. Therefore, I hypothesized that if eucalyptol is allopathic, then its inhibition in an area of germinating seeds will result in lower germination rates and impede the sprouting of seeds with lower resistances. The response of the plants to the eucalyptol is highly significant to determine what types of ecosystems will be affected the most affected as a result of the foreign growth of eucalyptus trees, determine how to balance invaded ecosystems, save native species living in the area, and create a natural pesticide. <b>Methods/Materials</b> I first tested one native California plant, the California poppy and a vegetable plant, the radish. I planted them in 12 different containers and separated them into three groups for both plants. To the experimental groups I added one third of a cup of fresh and crushed eucalyptus leaves and added soil, and for the control groups I only added soil. Each day, I watered them half of a cup of water and placed them in sunlight equally. After noticing a great change between the two groups, I tested 4 more native plants: bent grass, small fescue, red fescue, and dwarf barley. I also tested 4 more vegetable seeds, broccoli, fescue, alfalfa, and wheat. I used a high, medium, and no concentration. I used the filtered liquid as my medium concentration, and the unfiltered liquid as my high concentration. I planted and watered them 25 milliliters with their particular liquid for 18 days and recorded the heights. <b>Results</b> From the many tests, I saw a significant difference between the experimental and control groups. However, the native plants showed more vulnerability to the eucalyptol than the vegetable plants and overall failed to grow in the concentrations. Only one native, the red fescue, grew in the medium concentration, while all of the vegetable seeds successfully grew in the medium concentration, but only the wheat grew a few millimeters in the high concentration. <b>Conclusions/Discussion</b> The great effect of the eucalyptol on the native species of plants show that eucalyptol greatly affects ecosystems with native species. The inhibition of eucalyptus trees will result in the elimination of native plants and animals and will welcome foreign species creating an imbalance in the ecosystem. Also, the presence of eucalyptus trees and will result in the nightmares or farmers by resulting in undeveloped crops.	
<b>Summary Statement</b> The strong oil of eucalyptol is tested on native and crop seeds to determine what ecosystems will be affected most affected to save native animal and plant species, and help farmers prevent crop shortages.	
<b>Help Received</b> The company S&S Seeds donated four native seeds and natural resource specialist, Ms. Vartanian suggested what seeds I should test.	