# CALIFORNIA STATE SCIENCE FAIR
# 2006 PROJECT SUMMARY

**Name(s)**
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**Project Number**
**S1617**

**Project Title**
## The Invasion of Foreign Allelopathic Plants in Santa Cruz County

**Abstract**

**Objectives/Goals**

The purpose of this study is to determine the relative inhibitory plant growth effects of allelochemicals from foreign plants on a variety of plants native to the Santa Cruz County. Through this I plan to see what see what effect these chemicals have upon the seeds to aid us in understanding how these foreign plants have become successful in their takeover.

Question: Which foreign plant tested inhibits more native seed germination?

Hypothesis: I believe that the Eucalyptus Tree allelochemicals will inhibit the germination of more native plant seeds than Cape Verde and Japanese Black Pine.

**Methods/Materials**

1. Take your 3 foreign plant samples and put each into a jar and fill it with 500ml of distilled water. Let the jars sit for 2 days
2. Prepare 3 54-seed space flat with potting soil in each seed holder
3. Take 50 seeds from #Native seed 1# and plant them in 50 spaces
4. Repeat steps 2-3 for each seed type
5. Begin to apply 1 tsp. of "Cape Verde tea" to 50 of each seed type.
6. Apply 1 tsp. " Japanese Black Pine Tea " to 50 of each seed type
7 Apply 1 tsp. " Eucalyptus Tree Tea " to 50 of each seed type
8. Apply 1 tsp. of water (control) to 50 of each seed type
9. Inspect the flats for germination of the seeds, collect and record data of how many have germinate of the seeds, collect and record data of how many have germinate

**Results**

The first trial showed Cape Verde tea being the least effictive inhibitor, Eucalyptus Tree Tea being the most effective respect to seed 1 and 2. Japanese Black Pine was the most effective inhibitor with seed 3. The second trial showed Cape Verde tea being the least effictive inhibitor, Eucalyptus Tree Tea being the most effective respect to seed 1 and 2. Japanese Black Pine was the most effective inhibitor with seed 3

**Conclusions/Discussion**

The results illustrate the substantial impact of allelochemicals from three foreign invasive plants on the germination of three native plants. Allelochemicals. That was clearly seen in both trial 1 and 2. Cape Verde was the least effective and Eucalyptus was the most effective germination inhibitor with respect to seed 1 and 2. In contrast, Japanese Black Pine allelochemicals were most effective on seed 3 (Figures 1 and 2). In lieu of these findings, further research is warranted with respect to the relationship between

**Summary Statement**

A study of the affect of Foreign Allelocheicals on Native Plant Seeds

**Help Received**

Dr. Kaplan allowed me to use the Soquel High Agriculture Greenhouse, she also supervised my project's report