# CALIFORNIA STATE SCIENCE FAIR
## 2012 PROJECT SUMMARY

**Name(s)**
Michaela A. Katz

**Project Number**
**S1713**

**Project Title**
# The Effect of Non-Native Allelopathic Plant Waters on the Growth of Native California Poppies

**Abstract**

**Objectives/Goals**
The objective is to determine whether non-native allelopathic plants affect the growth of native California poppy seeds and whether different non-native allelopathic plants would have differing affects.

**Methods/Materials**
The leaves from four non-native plant species (eucalyptus, scotch broom, fennel and lavender) were crushed and soaked in tap water. The California poppy was used as the representative native plant. The poppy seeds were placed on paper towels in petri dishes and watered with the infused water and, a tap water control. There were eight petri dishes for each of the non-native plant waters and the tap water control (40 petri dishes in total). Observations were made regarding germination, sprouting of leaves and, the relative dampness and color of the towels the California poppy seeds were grown on.

**Results**
The results of this experiment indicate that non-native allelopathic plants have a negative effect on the growth of native plants. Overall, poppy seeds watered with tap water were the healthiest by a significant percentage in all categories and against all non-native plants. Oils from eucalyptus had the most detrimental effect in all categories followed closely by scotch broom and then fennel and lavender.

**Conclusions/Discussion**
The known toxins in allelopathic plants explain why the poppy seeds grown with the allelopathic plant waters did worse than the poppy seeds grown with water. Eucalyptus and scotch broom are more allelopathic and release oils more readily than lavender and fennel. A further study would be to test the long term effects of non-native allelopathic plant water on native plants by using the offspring of the plants that germinated after being watered with non-native plant water and growing those with non-native plant water.

**Summary Statement**
This experiment measured how non-native allelopathic plants affect the growth of native California poppy seeds.

**Help Received**
None