



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Kathryn N. Keeley	Project Number J1612
Project Title Factors Affecting Germination of Native and Non-native Plants in the Sierra Nevada	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I wanted to study what factors caused non-natives to come up earlier than natives in the Sierra Nevada grasslands. I also was interested in why the non-natives seem to grow in the open and natives sometimes grow under the trees and bushes. I proposed three hypothesis that concerned effects of 1: Cold - If I give non-native and native seeds cold and no cold, then non-natives will germinate regardless of the cold, while natives will germinate better with cold. 2: Day Length - If I give non-native and native seeds longer hours of light (12 hours) and shorter hours of light (6 hours) then non-natives will germinate regardless of day length, but natives will germinate better with short days. 3: Full Sun Light vs. Filtered Light - If I give non-native and native plants full light (like a flourescent light), and filtered light (a flourescent light covered in green cellophane) representing green leaves that filter out sun light, then I predict non-natives will germinate best with full light and natives will germinate best with filtered light.</p> <p>Methods/Materials I contacted a seed company and they gave me 6 native and 6 non-native species. In my experiment, there were 3 replicates for each species in each treatment in each experiment, and 30 seeds in each Petri dish.</p> <p>Results 1: Cold- For the natives the 2 days cold treatment germinatinon is variable, but for 2 weeks of cold treatment, 2 species fit the hypothesis, when 1 was complete opposite. 2: Day Length- For the natives, my hypothesis is incorrect; the seeds did not germinate better in short days. However, with the non-natives, 4 out of 6 species was correct to my hypothesis. 3: Full Light vs. Filtered Light- For the natives, there is only 1 out of 6 species that proves my hypothesis is correct. For the non-natives, there is no difference between filtered light and full light.</p> <p>Conclusions/Discussion 1: Cold- the non-natives followed my hypothesis, while the natives did not. 2: Day Length- The non-natives germinated reardless of daylength, while natives did not germinatate better with short days. 3: Full Light vs. Filtered Light- Full Light vs. Filtereed Light has no affect on non-native species, and Full Light vs. Filtereed Light has barely any affect on native species.</p>	
Summary Statement The central focus of my project was to figure out what factors cause germination of native and non-native plants in the Sierra Nevada grasslands.	
Help Received Father answered some questions related to my project.	