



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Julia B. Wilson	Project Number J1144
Project Title Weed Killers: Effectiveness and Harm to the Environment	
Abstract Objectives/Goals The objective of my science fair project is to test and find a weed killer that is quick, effective and does minimal harm to the soil and environment. Methods/Materials I did extensive research on types of weeds killers, store bought and homemade and chose 7 to use for this experiment. They were boiling water, Roundup, Bayer Advanced Garden/Power Force Grass and Weed Killer, Spectracide Systemic Grass and Weed Killer, bleach solution, vinegar solution, and ammonia solution. I then gathered and repotted over 80 dandelion plants of roughly the same size. With a control group I labeled the other plants, and applied the seven choices to groups of eight plants each. Temperature, weather readings, and plant measures were documented in a log book for a period of three weeks. Afterwards I analyzed the data, created charts and a picture diary. Results All eight plants exposed to boiling water died 4 days after one application. Only 3 dandelion plants died after the first application of Roundup. Bayer Advanced Garden Grass and Weed Killer had only one plant death after 7 days. All eight plants of the Spectracide group died after the second application seven days later. After the second application seven days later none of the bleach solution sprayed plants have died but many were stunted. None of the plants treated with 2 applications of vinegar died. After 7 days and 2 applications none of the ammonia treated plants had died. Conclusions/Discussion Of all seven additives used in this experiment, boiling water killed the dandelion plants the quickest and did no damage to the soil or the environment. Boiling water after only one application was able to cause plant death to all eight dandelions in just 4 days. The next best weed killer was Spectracide, which was predicted to be the best as per my hypothesis. Spectracide was able to cause plant death to all eight dandelions in seven days, but two applications were needed. Based on my research Spectracide was also proven to be the most harmful to the soil and environment. Based on these results I will reject my hypothesis and when safely used, I recommend boiling water to be poured on any unwanted weeds.	
Summary Statement The goal of my science fair project is to test and find a weed killer that is quick, effective and does minimal harm to the soil and environment.	
Help Received Mother helped with buying supplies and constructing the display board; Step-father helped with typing and printing the report and pictures; I applied weed killers and boiling water under the supervision of my step-father.	