



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Kaitlin A. Kirk	Project Number 22479
Project Title The Effect of Microorganisms on Plant Growth	
Abstract Objectives/Goals The objective of my experiment is to determine if removing all microorganisms in a sample of potting soil through dry sterilization will have any effect on plant growth. Methods/Materials Using two commercially available Jiffy Easy Grow Greenhouse kits, a control group of radish and spinach seeds was planted in commercial potting soil. An experimental group of radish and spinach seeds was also planted in the same commercial potting soil after it had been sterilized by baking for 3 hours in an oven at 365 degrees Fahrenheit. The plants were watered as needed and exposed to direct sunlight as per the greenhouse kit instructions. Every week data were collected about the plants in each cell. The height of each plant, the color intensity on a scale between 1 and 10, and an assessment of overall appearance (i.e. healthy, unhealthy, and dead) were measured and documented. Results Overall, the control group germinated sooner; grew taller; appeared greener and healthier; and lived longer than the experimental group. Conclusions/Discussion My conclusion is that if soil is sterilized, not only will harmful microorganisms be eliminated, but also microorganisms essential to healthy plant growth. Therefore, the plants in the sterilized soil were not able to grow as successfully as the plants in the untreated soil. Further research should focus on whether this effect occurs in other types of plants.	
Summary Statement The effect of removing microorganisms through soil sterilization on plant growth.	
Help Received My parents purchased all project materials, and my mother helped edit my report.	