



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Rebecca Su	Project Number J1532
Project Title How Do Electromagnetic Fields Affect Plants?	
Abstract Objectives/Goals The goal of this experiment is to determine how electromagnetic fields, specifically those of different strengths and directions, will affect plants. Methods/Materials A DC-powered apparatus was built to generate the electromagnetic fields. 84 cloves of garlic were divided into Groups A, B, and C. After a 3-day germination period, Group A was exposed to a strong electromagnetic field, and Group B was exposed to a weaker field. Within the experimental groups A and B, half were exposed to an upward-facing field and half were exposed to a downward-facing field. After two weeks, the final measurements of all the subjects were recorded. The trial was repeated 2 more times. Results On average, the Group A (up) subjects grew approximately 7% shorter than those of the control, while the Group A (down) subjects grew 7% taller. By contrast, the Group B (up) subjects were 4% taller than the control, and Group B (down) subjects were 3% shorter. Conclusions/Discussion The results imply that stronger electromagnetic fields have more significant effects than weaker fields. Whether these effects are positive or negative depend on the field strength and direction; while Group A (up) had negative effects and Group A (down) had positive effects, the opposite result was evident in Group B subjects. Therefore, in future experiments, it is important to note both the electromagnetic field strength and direction as significant factors affecting the subjects.	
Summary Statement The purpose of this experiment is to examine how electromagnetic fields affect plant growth.	
Help Received Mother helped build apparatus; father provided information on plant biology.	