



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Mary Y. Liu	Project Number J1916
Project Title Can Electricity Affect Plant Growth?	
Objectives/Goals My objective is to determine whether electricity in various forms can stimulate plant growth or seed germination.	
Abstract	
Methods/Materials Lettuce seedlings in pots were given either positive or negative charges of 5, 9, and 12V DC to determine whether electric charges would stimulate plant growth. Lettuce plants were given both positive and negative charges of 12V DC to determine whether the electricity would stimulate plant growth. Mung beans were soaked in both water with and without a 1% salt solution (with salt and pure water) and given either positive or negative electric charges from 9V DC in petri dishes. Observations were made on seed germination after 1 and 2 days. I also tested whether electric field can stimulate germination of fava beans and mung beans. Fava/mung beans were soaked in pure water in petri dishes. The petri dishes tops and bottoms were wrapped with foil tapes and connected to electrical wires that gave positive and negative charges of 12V DC. Observations were made on germination of fava/mung beans on days 2, 3, and 5. All experiments included controls for comparison.	
Results No real variation was found between lettuce seedlings with either positive or negative charges or the ones that remained neutral with 5, 9, 12V DC. Lettuce plants had no real variation either comparing with treatment and controls. Mung beans with the 1% salt solution inhibited seed germination compared with the mung beans that received only pure water. Mung/fava beans that were subjected to an electric field and were compared with those that were used as controls showed that there was no real variation between them.	
Conclusions/Discussion The results from all the experiments conducted has led to the conclusion that electricity cannot affect plant growth or seed germination under my experiment conditions. Earlier studies done in the 19th century could not be replicated because of lack of description. This means that my results cannot disprove those earlier results that were drawn. Also mung bean germination is inhibited by salt.	
Summary Statement My project was done to see whether electricity can affect plant growth or seed germination.	
Help Received Dr, Yongbiao Liu (my dad) provided the supplies and work space, helped in developing methods, and supervised during experiments.	