# CALIFORNIA STATE SCIENCE FAIR
## 2010 PROJECT SUMMARY

**Name(s)**
Matthew C. Moropoulos

**Project Number**
**J2018**

**Project Title**
## Electrifying Soil: Year Two

**Abstract**

**Objectives/Goals**
The purpose of this project was to confirm and refine results of a previous experiment conducted last year by myself regarding the effect of electricity on plants. A.C. current will accelerate plant growth, while D.C. current will stunt it.

**Methods/Materials**
Methods were: 1)soil uniformly with water, 2)distribute to bins, 3)plant pea and lettuce seeds, 4)set up electrical setup (see schematic diagram), 5)monitor and record growth while watering every two days. Be sure to monitor the levels of electricity in containers, keep at normal levels, about 16V and 20mA. Grow to maturity, pick pea pods off plants. Photograph, record weight, open, photograph, record diameter of peas, perform taste test. Use low pressure hose to wash dirt away from the root systems of the plants. Photograph and record plant weight.

**Results**
Results from last year were confirmed. A.C. made plants grow faster, bear larger fruit, and respond to stimulus faster. D.C. stunted growth, made plants bear smaller fruit, and root systems very weak. In some cases the root systems completely detached themselves from the plant, causing the plant to shrivel and die. In the case of peas grown by the plants, there was no distinguishable difference in taste between all three classes of plants, D.C., A.C., and control. A.C. had a considerable effect on lettuce, causing every plant to be nearly two times larger than control or D.C. plants of the same species. A.C. current has had a very noticeable effect on all species on which I have tested, causing them to grow faster, larger, and healthier.

**Conclusions/Discussion**
Since the amount of current that I used is easily attainable using solar power, this may be a new way of cleanly accelerating plant growth, producing more surplus food, and boosting the agricultural industry.

**Summary Statement**
My project was to test the physical effects of electricity and plant growth, including speed of growth, size, and taste.

**Help Received**
My dad helped me build the greenhouse I used, and assisted in some of the electrical setup.