



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

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| Name(s) Alejandro G. Gonzalez | Project Number J2006 |
| Project Title A Continuous Magnetic Pulse Increases the Mass of a Pinto Bean Seedling | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project was to determine if pinto bean seeds exposed to a slow continuous magnetic pulse would stimulate growth, causing the seedling to show an increase in mass.</p> <p>Methods/Materials I tested a total of 68 pinto bean seeds that each weighed 0.35 grams. These seeds were divided into two equal groups that had 34 seeds each. One group was exposed to a slow continuous magnetic pulse. This magnetic pulse was created by four magnets that rotated 25 cm apart along a looped conveyor belt that was 100 cm long. Each magnet created a magnetic field strength of 2 Newtons and attracted metal objects that were at least 3 cm away. The seeds were centered between the rotating magnetic conveyor belt and a tin plate that were 2.5 cm apart. The seeds were exposed to a continuous magnetic pulse every three seconds. The control group was in an identical environment without the magnetic pulse. Approximately every 8 hours the seeds were rinsed and received drops of water from a graduated pipette (0.30 ml for the first five days; 0.45 ml for days 6 through 12; 0.60 ml for days 12 through day 14). Using a digital scale all seeds were weighed on days 5, 8, 10, 12, and 14. The seeds were observed daily until seedlings developed.</p> <p>Results After 14 days the seedlings exposed to a magnetic pulse showed an increase in mass in comparison to the control group of seedlings.</p> <p>Conclusions/Discussion My conclusion is that a magnetic pulse does stimulate growth. Seedlings that are exposed to a magnetic pulse will show an increase in mass compared to seedlings with no magnetic pulse.</p> | |
| Summary Statement Pinto bean seeds exposed to a continuous magnetic pulse will stimulate growth, causing the seedling to show an increase in mass. | |
| Help Received Dad helped make tin plate. Mom and dad proof read report. | |