



CALIFORNIA STATE SCIENCE FAIR 2010 PROJECT SUMMARY

Name(s) Aidan S. Gross	Project Number J2007
Project Title Speedy Plants	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment is to determine what color of light; red, white or blue, will make a plant grow the fastest. In this way, we can determine which electromagnetic wavelengths make plants grow the fastest. Different colors of light in the visible light spectrum have different wavelengths. I hypothesized that the plants would grow fastest under white light since that is the usual condition under which plants grow outdoors.</p> <p>Methods/Materials I chose seeds of Wisconsin Fast Plants (<i>Brassica rapa</i>) which I planted in three (3) separate containers. Each of the three (3) separate containers were made of similar 2-liter plastic soda bottles. Each growing container had its own hydroponic system of watering made out of rope. I placed each growing container in a separate cardboard box. Each box was custom cut the same and fitted with a hanging light socket, each with a different color fluorescent light bulb. One plant was grown with a white fluorescent, one with a red fluorescent and one with a blue fluorescent bulb. Besides these differences in light color, all three plants were grown under similar conditions, including temperature and duration of light each received. The dependent variable was the amount of plant growth. The independent variable in my experiment was each different color of light I used.</p> <p>Results A measuring stick in centimeters recorded the plants' height. The results of the experiment at the end of nine (9) days showed that the plant under the red fluorescent light grew the fastest.</p> <p>Conclusions/Discussion My hypothesis was that the plant under the white light would grow the fastest. The results of my experiment show that my hypothesis was incorrect and unacceptable since the red light actually grew the seeds the fastest. My experiment proves that the longer the wavelength of the color of light used, in this case red, the faster the rate of plant growth under similarly controlled conditions. If I were to do this experiment again, I would try to grow similar plants, except I would use all of the colors of light from the visible light spectrum; expanding my independent variable to include a larger studied group.</p>	
Summary Statement To determine what color of light; red, white or blue, will make a plant grow the fastest thus revealing the relationship of light color and its wavelength to the rate of a plant's growth.	
Help Received Mother helped typeset report. Father ordered seed and helped engineer the light growing boxes due to possible fire hazards.	