



CALIFORNIA STATE SCIENCE FAIR 2010 PROJECT SUMMARY

Name(s) Johanna C. Walker	Project Number J1737
Project Title Algae Bio-Fuels	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Three different strains of micro algae will be obtained from Carolina Biological Supply (Oedogonium Filamentous, Spirogyra, and Oscillatoria). These samples will be divided and placed in 250 mL culture flasks and commercially available growth media and allowed to grow under fluorescent lights for two weeks. The resulting biomass will be collected by filtration, dried and weighed. The differences in the amount of the biomass will be noted to determine the strain which has the most rapid growth.</p> <p>Methods/Materials Three different strains of micro algae and growth media were obtained from Carolina Biological Supply. Three samples of each strains were placed in culture flasks to grow for 2 weeks. All of the flasks were then put into an aquarium where the temperature would be kept the same. Each flasks had air bubbled through them at all times and there were ultra white florescent light bulbs on the sides of the tank. After the 2 week time-span, the algae was filtered with a Buchner funnel and a paper filter. Next the algae was completely dried in a oven, then weighed.</p> <p>Results Oedogonium Filamentous showed the largest amount of growth with a weight of 0.0792g. Second was Oscillatoria with a weight of 0.0696g. Last was Spirogyra with a weight of 0.0595g. The average weight of all of the different algae ranged from .08g-.06g. The results do not support my initial hypothesis that Spirogyra was going to grow the most. References showed Spirogyra grew the most. Spirogyra seemed to die during this experiment perhaps because the growth media was not appropriate and too basic. After a few days of bubbling air through the culture flasks, the pH level may have lowered because the Spirogyra strains began to grow again. The reason Oedogonium Filamentous and Oscillatoria did not die was probably because they were not as sensitive to change in pH. So I believe that because the Spirogyra had died about half-way through the experiment, it got behind all the other strains.</p> <p>Conclusions/Discussion The Oedogonium Filamentous grew the most during the 2 week time-span with an average weight of 0.0792g. Second was Oscillatoria, which had an average weight of 0.0696g after the 2 week time-span. Last place, with the smallest amount growth after the 2 week time-span, was Spirogyra with a average weight of 0.0595g. In conclusion, Oedogonium Filamentous grew the most biomass after the growth period.</p>	
Summary Statement My project is about seeing which algae strain will be the best candidate for producing bio-fuels.	
Help Received The program, BEWISE, gave me the idea for my project. Dr. Mendola, from Scripps Institute of Oceanography helped me plan out my project and procedures.	