



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Isabella Tromba; Lara Tromba	Project Number J1335
Project Title Chlorella Algae and the Attack of the Fertilizers	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment is to determine the effect of different fertilizers on algae growth.</p> <p>We hypothesize that a higher concentration of fertilizers will lead to more algae growth. At a certain point, the algae growth will start to decrease as the fertilizer concentration increases. We also hypothesize that the Phosphate/Nitrate fertilizer will promote the most algae growth, Phosphate fertilizer the second most, and Nitrate will help grow the algae the least.</p> <p>Methods/Materials Pipettes, spectrophotometer, chlorella algae, Alga-Gro freshwater medium, florescent light, grow box, Chemicals: Phosphate, Nitrate and Phosphate/Nitrate fertilizers</p> <p>Label your test tubes. Make the dilution series: add 8ml of Alga Grow Freshwater Medium to each sample; add 1ml of phosphate/nitrate fertilizer to the container you labeled .3% solution; to make the .03% solution, take 1 ml of the .3% solution and add it to the container you labeled .03%; to make the .003% solution, take 1ml of the .03% solution; to make the .0003% solution, take 1ml of the .003% solution. Then take 1ml of the .0003% and dispose of it to make all test tubes equal (at 8 ml). Repeat this process for the rest of the P/N dilution series and then for the remaining fertilizer dilution series (Phosphate and Nitrate). Also, shake the test tubes an equal amount of times before transferring the 1ml solution to mix it. Now, add 1ml of Chlorella algae to each sample. Control set #1: take 8ml of Alga-Gro and add 1 ml of phosphate fertilizer; repeat for each fertilizer (Phosphate/Nitrate and Nitrite). Now, test all of your samples using the spectrophotometer. Set up the Grow-box by attaching the light fixture then placing all of the samples inside. At day 7 test your samples again using the spectrophotometer.</p> <p>Results The Phosphate/Nitrate fertilizer and Phosphate fertilizers had equal toxicity. The Nitrate fertilizer was the least toxic. By toxic we mean the sample promoted less algae growth than the control.</p> <p>Conclusions/Discussion Not all fertilizer concentrations increase algae growth, some as we found kill algae.</p>	
Summary Statement The effects of different Nitrate and Phosphate fertilizer concentrations on Chlorella algae	
Help Received Mr. Darrell Steely supervised us when using the equipment in his classroom.	