



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Neil D. Tennyson	Project Number J1332
Project Title Saving the World One Yard at a Time: How do Fertilizers Affect the Growth of Algae?	
Objectives/Goals Fertilizer in runoff increases algae growth, and I want to determine which fertilizer will decrease the amount of algae growth in water. I believe a fast acting three-ingredient fertilizer will cause the most algae growth, and a time-release fertilizer will cause the least algae growth because a time-release fertilizer only lets off a small amount of nutrients at a time.	
Abstract Fertilizer in runoff increases algae growth, and I want to determine which fertilizer will decrease the amount of algae growth in water. I believe a fast acting three-ingredient fertilizer will cause the most algae growth, and a time-release fertilizer will cause the least algae growth because a time-release fertilizer only lets off a small amount of nutrients at a time.	
Methods/Materials Three types of fertilizer were used: 14-14-14 time-release, 12-0-0 fast-release (one-ingredient), 15-30-15 fast-release (three-ingredient). A mixture of pond water and distilled water with a precise amount of fertilizer was added to twelve 1-pint glass jars. The jars were covered with cheesecloth and set in sunlight for 35 days. After 35 days the algae was scraped onto separate coffee filters, and weighed while wet with a gram weight scale.	
Results The one-ingredient fertilizer grew the most algae, 1.3 grams. The fast-acting three-ingredient fertilizer grew 1.2 grams. The time-release fertilizer resulted in the least amount of algae growth, .4 grams.	
Conclusions/Discussion The time-release fertilizer grew the least algae, as I hypothesized. I would recommend this fertilizer for gardening to reduce algae growth, but I would research in the future how well it helps plants grow. The one-ingredient fertilizer grew the most algae, and the fast acting three-ingredient fertilizer grew less algae, but only by .1 gram.	
Summary Statement Determine which fertilizer will grow the least algae in water.	
Help Received My father showed me how to do the calculations to equalize the fertilizer solutions. He assisted me by instructing me on how to use the programs Excel and Photoshop for my graphs and color intensities. My father also helped me glue the papers to my board.	