



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Ian S. Borchard	Project Number J1402
Project Title The Unclean Green: The Most Efficient, Fish Friendly Method of Algae Control in a Pond	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals What is the most efficient, fish friendly way to keep a pond free of algae.</p> <p>Methods/Materials I tested four different methods of algae control; Aeration, a floating plant, barley extract, and a combination of barley extract and a floating plant. I also had one bucket of only water as a control. I put each of these methods into five different buckets of well water and put a clear 5 in. x 5 in. plastic insert in the buckets to test algae growth on the walls. The aerator was turned on for an hour each evening, controlled by a timer. I left the buckets in full sun for four weeks. I measured algae growth using a transparency test for green algae on the plastic insert, counting white algae clusters on the plastic insert, and counting of algal rings and fragments in a water sample.</p> <p>Results Number of algae rings and fragments in the water samples was 9 in the aeration method, 64 in the plant method, 285 in the control, 59 in the barley and plant method, and 217 in the barley method. When examining the white algae clusters found on the plastic insert, the aeration method had forty-five algae clusters, the plant method had two algae clusters, the control had thirty algae clusters, the barley and plant method had fifteen algae clusters, and the barley method had forty-six algae clusters. The transparency test scale I developed ranges from one to ten; one being completely transparent to ten being nontransparent. The aeration method rated nine, the plant method rated two, the control rated eight, the barley and plant method rated three and the barley method rated six.</p> <p>Conclusions/Discussion The aeration method was best at reducing algae levels in the water and the plant method was best at preventing algae from growing on the walls of the bucket and second best at reducing algae levels in the water. The aeration method results in the water observation may not be accurate in a real pond situation due to the small size of the bucket. Therefore, the plant method which rates lowest in algae growth for the other two methods of measuring algae seems to be the best method of overall algae control.</p>	
Summary Statement I researched the most efficient, fish friendly way to keep a pond free of algae.	
Help Received Mother helped with writing the report; used microscope from Mesa Union's lab	