



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Taylor M. Krilanovich</b>	<b>Project Number</b> <b>S1712</b>
<b>Project Title</b> <b>Effects of Ammonium Phosphate in Checkmate Spray on Dinoflagellate Blooms</b>	
<b>Objectives/Goals</b> The objective of this investigation is to test the effects of small concentrations of ammonium phosphate when introduced into cultures of the dinoflagellate proroentrum. By introducing small quantities of ammonium phosphate into cultured dinoflagellate populations, I hope to be able to determine the minimum concentrations that will result in an unnaturally elevated bloom	
<b>Abstract</b> <b>Methods/Materials</b> II: Introducing Ammonium Phosphate: 1/26/10 Calibrate the digital scale. Measure out 1 gram of ammonium phosphate crystals. Fill the 250 ml flask, sitting it on the stirrer/hot plate, with 160 ml of deionized water. To the last flask, add 1 ml of the ammonium phosphate. Place the three flasks on the rocker table and set the table to oscillate at a 20 degree angle for two days. IV: Measuring turbidity four sterile glass tubes. Fill one with 30 ml of deionized water; Shake the cultures vigorously, then put 30 ml of each culture into tube. Read turbidity for each sample. Dinoflagellates; culture flasks; 1 Liter bottle of medium. II: Introduction of A. Phosphate Ammonium phosphate; electronic balance; stirrer/hot plate; 250 ml glass flask; magnetic stir stick; small plastic cup; sterile pipets, 1 ml.; mechanical rocker table; original culture flasks; culture flasks. III: Measuring Turbidity spectrophotometer; 30 ml sterile glass tubes; deionized water; the control, 1g/100ml, and 10g/100 ml flaked cultures.	
<b>Results</b> I: Visible blooms Trial One: 1/28/10, at 12:55 noon: 0.0 g. Concentration: No visible bloom; 1.0 g. Concentration: Light bloom; 10.0 g. Concentration: Visible heavy bloom. II: Measuring Turbidity 3/5/10, at 11:35 am.: 0.0 g Concentration: 36 absorbency; 1.0 g Concentration: 48 absorbency; 10.0 g Concentration: 55 absorbency; Deionized water: 0 absorbency.	
<b>Conclusions/Discussion</b> In conclusion, the introduction of ammonium phosphate into dinoflagellate cultures shows a consistent elevated growth curve. The data supports my hypothesis in that small quantities of ammonium	
<b>Summary Statement</b> This project examines the environmental impact of Checkmate spray on our local marine biomes, focusing on the detrimental effects of Ammonium Phosphate, a carrier in the spray.	
<b>Help Received</b> School's equipment including rocker table, spectrophotometer, and digital scale and dissection scopes were used with consent of teacher and advisor Lisa Catteral.	