



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Alvin B. Aguelo	Project Number S1503
Project Title Effect of Antifouling Paint on the Fertilization Rate of Strongylocentrotus purpuratus	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Rather than documenting the effect of antifouling paints on mature organisms, the impact on the gametes of the organism <i>S. purpuratus</i> was examined by analyzing the relationship between the fertilization success rate (%) and the presence of antifouling paints.</p> <p>Methods/Materials Various surface areas of PVC pipes were coated with IFB (with Irgarol) and HRC Rust Preventer and were exposed to seawater for varying time periods. The gametes from the purple searchin were collected and were added to the water samples in Petri dishes for period of 15 minutes, and then slides were prepared and observed to determine the success rate for a period of 15 minutes. Then, slides were observed to determine the fertilization rate for each surface area/volume ratios.</p> <p>Results The experimental results indicated a substantial decrease in the fertilization success rate of the antifouling paint IFB (with Irgarol) and further decline with HRC Rust Preventer.</p> <p>Conclusions/Discussion The data indicated that the success rate for the control group was between 70-75% which dropped drastically after the gametes were introduced to various surface area/volume ratios. Furthermore, statistical comparisons between groups exposed to different time periods showed mixed results. However, the statistical analysis between the two different types of paint had no significant difference. These results indicate that the addition of the Rust Preventer has no significant influence on the fertilization of the urchins.</p>	
Summary Statement Experimental investigation on the effects of antifouling paint on fertilization success rate of the <i>Strongylocentrotus purpuratus</i> (purple sea urchin).	
Help Received Mount Miguel Laboratory equipments used under the supervision of Mr. Linke; Mr. Linke helped explain statistics; Friend, Brandon Bilyeu helped in locating urchins; Parents assisting me to the tide pools; Mr. Larry Nordell for the letter response regarding the safety precautions for urchins	